

TEACHER RESILIENCE IN A BANI WORLD: THE INTERPLAY OF METACOGNITIVE SKILLS AND SELF- EFFICACY BELIEFS

Ana-Maria MADINA*, Diana-Georgiana PALEA**

*West University of Timișoara, Romania

**Secondary School No. 2 Extended Day Kindergarten No. 16, Sibiu, Romania
dianapalea@yahoo.com

Abstract: *In the context of knowledge-based organizations, characterized by complexity, uncertainty, and rapid change, as described by the BANI framework (Brittle, Anxious, Nonlinear, Incomprehensible), individual resilience becomes a critical factor for organizational adaptability and sustainability. In educational settings, teachers are key organizational actors whose capacity to cope with such challenges directly influences institutional performance and the quality of educational processes. This paper examines the interplay between metacognitive skills and self-efficacy beliefs as psychological mechanisms underpinning teacher resilience in BANI contexts. Drawing on Flavell's perspective on metacognition as the awareness and regulation of cognitive processes, and Bandura's theory of self-efficacy, the study highlights how these dimensions support adaptive behavior, reflective practice, self-regulation, and decision-making under conditions of uncertainty. It is argued that the interaction between metacognitive regulation and self-efficacy contributes to the development of individual resilience, with implications for organizational culture, professional collaboration, and institutional performance. The paper proposes an integrative conceptual framework and outlines directions for future empirical research in knowledge-based educational organizations. Specifically, it emphasizes the importance of developing these competencies through targeted professional training and reflective practice in teacher education programs and organizational learning environments.*

Keywords: teacher resilience; metacognition; self-efficacy; BANI context; knowledge-based organizations

1. Introduction

Contemporary education systems are characterized by uncertainty, complexity, and rapid change, aspects captured by the BANI (Brittle, Anxious, Nonlinear, Incomprehensible) framework, which describes the fragility and unpredictability of current environments [1]. In this context, teachers face increasingly complex professional and emotional demands, making resilience an essential competency for maintaining performance and adapting to change [2].

Teacher resilience is understood as the ability to cope with challenges, adapt to difficult situations, and maintain professional commitment under pressure [3]. Recent research highlights that resilience is closely linked to internal psychological factors, such as self-efficacy beliefs and self-regulation processes [4]. Studies show that resilience is associated with high levels of self-efficacy, influencing teachers' ability to manage teaching activities and maintain effective educational relationships [5].

Self-efficacy beliefs, conceptualized within the framework of social-cognitive theory, reflect individuals' conviction in their own ability to organize and carry out the actions necessary to achieve goals [6]. These influence how teachers approach challenges, persist in the face of difficulties, and regulate their professional behaviors. Recent research confirms that high levels of self-efficacy are associated with professional performance and engagement, contributing to the development of resilience [5],[17].

Another essential factor is metacognitive skills, defined as the processes of planning, monitoring, and evaluating one's own thoughts and actions [7]. These allow teachers to adjust their strategies and effectively manage complex situations. Recent studies highlight that metacognitive strategies contribute to adaptability and performance, especially in dynamic educational contexts [13],[15].

Current literature emphasizes the interdependence between cognitive and motivational factors in the development of resilience. The relationship between metacognition and self-efficacy is a dynamic one, in which beliefs about one's own ability influence the use of cognitive strategies, which in turn strengthen adaptive capacity [13],[14]. This interaction becomes particularly relevant in BANI contexts, where teachers are required to manage ambiguous and unpredictable situations.

However, existing research frequently addresses resilience, metacognition, and self-efficacy separately, without explicitly integrating the relationships between them in complex educational contexts. There is thus a clear need to develop conceptual frameworks that explain how these dimensions interact and contribute to teacher adaptation.

In this context, the present article aims to analyze teacher resilience from the perspective of the interaction between metacognitive skills and self-efficacy beliefs, within the context of BANI. The

aim of the paper is to propose an integrated conceptual perspective that highlights the role of these factors in supporting adaptability and professional performance in contemporary educational organizations.

2. Theoretical Foundation

Teacher resilience is conceptualized as the ability to cope with adversity, adapt to change, and maintain professional commitment in difficult contexts [8]. In contemporary educational environments characterized by uncertainty and complexity, this capacity becomes essential for the effective functioning of the educational system. Recent research emphasizes that resilience is not a fixed trait, but a dynamic process, influenced by the interaction between individual and contextual resources [3],[2].

In the context of BANI, resilience takes on an additional dimension, being necessary not only to respond to change, but also to cope with uncertainty and ambiguity. Teachers are required to manage unpredictable situations and constantly adapt their practices, which implies a high level of cognitive and emotional flexibility [9].

The concept of self-efficacy, developed by Albert Bandura, refers to the conviction of individuals in their own ability to organize and carry out the actions necessary to achieve goals [10]. In the educational field, teachers' self-efficacy influences the way they approach teaching tasks, cope with difficulties, and regulate their professional behaviors [11]. Studies show that teachers with a high level of self-efficacy are more resilient and engaged, demonstrating an increased capacity to adapt in complex situations [17],[5].

Metacognitive skills refer to the processes by which individuals plan, monitor, and evaluate their own thoughts and actions [12]. In an educational context, they allow for the regulation of teaching strategies and the effective management of complex situations. Recent research highlights the

role of metacognition in self-regulation and in the development of professional skills, contributing to adaptation to change [13],[15].

The literature emphasizes the interdependence between cognitive and motivational factors in supporting performance and adaptation. Self-efficacy influences the use of metacognitive strategies, as individuals who have confidence in their own capabilities are more likely to regulate their behaviors [13]. In turn, metacognitive strategies contribute to the strengthening of self-efficacy by increasing the sense of control and competence [14].

This dynamic relationship is essential for developing teacher resilience, especially in contexts characterized by uncertainty. Integrating these dimensions provides a coherent perspective on how teachers can cope with challenges and maintain their performance in contemporary educational environments.

3. Teacher resilience in a BANI context: The interaction between metacognitive skills and self-efficacy beliefs

In the context of educational environments characterized by uncertainty and complexity, teachers' resilience is the result of the interaction between cognitive and motivational dimensions. In this respect, metacognitive skills and self-efficacy beliefs form an integrated mechanism that supports the adaptation and maintenance of professional performance [14].

Self-efficacy beliefs influence the way teachers perceive and interpret difficult situations. Teachers with a high level of self-efficacy tend to perceive challenges as opportunities for development and show perseverance when dealing with difficulties [10],[17]. These beliefs are associated with better stress management and an increased level of professional involvement, contributing to the development of resilience [5].

At the same time, metacognitive skills allow self-regulation of cognitive and behavioral processes. Through planning, monitoring, and evaluation, teachers can adapt their teaching strategies and manage unpredictable situations more effectively [13]. Metacognition supports cognitive flexibility and the ability to make decisions in complex contexts, and is associated with performance and adaptability in dynamic educational environments [15].

The interaction between these two dimensions is essential for the development of resilience. Self-efficacy stimulates the use of metacognitive strategies, as individuals who are confident in their own abilities are more likely to actively regulate their behaviors [6],[13]. In turn, metacognitive strategies contribute to the strengthening of self-efficacy by increasing the sense of control and competence, generating a mutual reinforcement process [14].

This synergistic mechanism supports adaptability and performance in difficult conditions. Research shows that teachers who combine high levels of self-efficacy with the effective use of metacognitive strategies demonstrate an increased ability to cope with stress and maintain professional engagement [17],[9].

In the context of BANI, this interaction becomes particularly relevant. The unpredictable and non-linear nature of the educational environment amplifies the need for internal mechanisms of self-regulation and adaptation. Thus, metacognition and self-efficacy function as essential psychological resources that support teacher resilience and facilitate an effective response to change [16].

Therefore, teacher resilience can be understood as the result of an integrated process, in which cognitive and motivational dimensions influence each other, contributing to the development of a sustainable capacity for adaptation in contemporary educational organizations.

4. Conceptual model

Drawing on the specialized literature, this article proposes a conceptual model that explains teacher resilience as a result of the interaction between metacognitive skills and self-efficacy beliefs, in the context of BANI educational environments. The model integrates cognitive and motivational dimensions, highlighting their role in supporting professional adaptation.

Self-efficacy influences the way teachers perceive and interpret difficult situations, determining the level of involvement, perseverance and orientation towards solutions [6],[10]. Teachers with a high level of self-efficacy tend to adopt proactive strategies, take responsibility for professional outcomes and demonstrate a greater tolerance for uncertainty.

In parallel, metacognitive skills support the self-regulation of cognitive and behavioral processes, facilitating the planning, monitoring and adjustment of teaching strategies [13]. They allow teachers to analyze complex situations, make informed decisions, and adapt their practices flexibly. The model suggests that the interaction between self-efficacy and metacognition is bidirectional and synergistic. On the one hand, self-efficacy beliefs stimulate the use of metacognitive strategies, as teachers who are confident in their own abilities are more likely to actively regulate their behaviors. On the other hand, the effective use of metacognitive strategies contributes to the strengthening of self-efficacy, by increasing the sense of control, competence and personal effectiveness [17],[14].

This reciprocal relationship generates an advanced self-regulation mechanism, which supports the development of teachers' resilience. Resilience is thus conceptualized as the result of an integrated process, in which cognitive and motivational factors contribute to adapting to change, managing stress and maintaining professional performance.

The BANI context acts as a mediating and amplifying factor of these relationships.

The characteristics of this environment - uncertainty, non-linearity, and complexity - increase the pressures on teachers and intensify the need for internal self-regulation mechanisms. In this sense, the role of metacognition and self-efficacy becomes essential for maintaining professional balance and for adaptive response to unpredictable situations. Therefore, the proposed conceptual model offers an integrated perspective on teacher resilience, highlighting how the interaction between metacognitive skills and self-efficacy beliefs contributes to the development of a sustainable adaptive capacity in contemporary educational organizations.

5. Debates

The results of the conceptual analysis highlight that teacher resilience should be understood as the result of the interaction between cognitive and motivational processes, and not as an isolated individual trait. The proposed model contributes to the specialized literature by integrating metacognitive skills and self-efficacy beliefs into a coherent explanatory framework, relevant to educational environments characterized by uncertainty. A central aspect of the model is the dynamic relationship between self-efficacy and metacognition. In line with the existing literature, self-efficacy influences the level of involvement and perseverance in the face of difficulties [6], while metacognitive strategies support self-regulation and adaptation of professional behaviors [13]. The integration of these dimensions allows for a deeper understanding of how teachers develop their capacity to cope with challenges.

In the context of BANI, this interaction becomes essential. The uncertainty and complexity of the educational environment amplify the need for self-regulation and confidence in one's own capabilities. Teachers who have high levels of self-efficacy and use effective metacognitive

strategies are better able to manage ambiguity, make adaptive decisions, and maintain a high level of professional engagement [17]. The model also highlights that resilience is not just an individual outcome, but a process influenced by the organizational context. Although the article focuses on psychological factors, the results suggest that their development must be supported by organizational practices that encourage reflection, autonomy, and continuous learning.

From a practical perspective, these results have important implications for educational organizations. Interventions that aim to develop metacognitive skills and strengthen self-efficacy can contribute to increasing teachers' resilience. Continuing education programs, mentoring, and reflective practices can support the development of these competencies, facilitating adaptation to change and improving professional performance. Therefore, the article proposes an integrative perspective on teacher resilience, highlighting the role of the interaction between cognitive and motivational factors in supporting adaptability in contemporary educational environments.

6. Conclusions

This article analyzed teachers' resilience from the perspective of the interaction between metacognitive skills and self-efficacy beliefs, in the context of educational environments characterized by uncertainty and complexity. Starting from the BANI framework, the paper highlighted the need for an integrated approach that

goes beyond the isolated analysis of psychological factors.

The main contribution consists in proposing a conceptual model that explains teacher resilience as the result of a dynamic process, based on the reciprocal relationship between metacognition and self-efficacy. This perspective highlights the complementary role of cognitive and motivational processes in supporting adaptation and maintenance of professional performance. The results suggest that the development of resilience cannot be approached exclusively at the individual level, but it also requires an organizational context that supports self-regulation, reflection and continuous learning. Thus, teacher resilience becomes an essential element for the efficient functioning of educational organizations under conditions of uncertainty.

The paper also presents certain limitations. First, the conceptual nature of the study does not allow for empirical validation of the proposed relationships. Second, the analysis focuses on psychological dimensions, without extensively integrating organizational or contextual factors specific to different educational systems. In this regard, future research should aim to empirically test the proposed model, using quantitative and qualitative methods to analyze the relationships between self-efficacy, metacognition, and resilience. Also, extending the studies to different levels of the educational system and in varied cultural contexts could contribute to the validation and refinement of the model.

References

- [1] Cascio, J. Facing the age of chaos. *Medium*. 2020 [cited 28 May, 2026]. <https://medium.com>.
- [2] Mansfield, C. F., Beltman, S., Price, A., & McConney, A. (2021). Don't sweat the small stuff: Understanding teacher resilience at the chalkface. *Teaching and Teacher Education*. 2021; 102:103341. <https://doi.org/10.1016/j.tate.2021.103341>.
- [3] Gu, Q., & Day, C. Teachers' resilience: A necessary condition for effectiveness. *Teaching and Teacher Education*, 2007; 23(8): 1302–1316. <https://doi.org/10.1016/j.tate.2006.06.006>.

- [4] Mieres-Chacaltana, L., et al. Teacher resilience and self-efficacy in educational contexts: A systematic analysis. *Frontiers in Psychology*. 2025; 16:1660879. <https://doi.org/10.3389/fpsyg.2025.1660879>.
- [5] Zee, M., & Koomen, H. M. Y. Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*. 2016; 86(4):981–1015. <https://doi.org/10.3102/0034654315626801>.
- [6] Bandura, A. *Self-efficacy: The exercise of control*. New York: W. H. Freeman; 1997.
- [7] Flavell, J. H. Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*. 1979; 34(10): 906–911. <https://doi.org/10.1037/0003-066X.34.10.906>.
- [8] Day, C., & Gu, Q. *Resilient teachers, resilient schools: Building and sustaining quality in testing times*. London: Routledge; 2014.
- [9] Beltman, S. Conceptualising teacher resilience: A narrative review. *Educational Research Review*. 2021; 34:100409. <https://doi.org/10.1016/j.edurev.2021.100409>.
- [10] Bandura, A. *Self-efficacy: The exercise of control*. New York: W. H. Freeman; 1997.
- [11] Tschannen-Moran, M., & Hoy, A. W. Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*. 2001; 17(7):783–805. [https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1).
- [12] Flavell, J. H. Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*. 1979; 34(10): 906–911. <https://doi.org/10.1037/0003-066X.34.10.906>.
- [13] Zimmerman, B. J. Becoming a self-regulated learner: An overview. *Theory Into Practice*, 2002; 41(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2.
- [14] Fathi, J., & Derakhshan, A. Self-regulation and metacognition as predictors of teacher resilience: The mediating role of self-efficacy. *Teaching and Teacher Education*. 2023; 121: 103927. <https://doi.org/10.1016/j.tate.2022.103927>.
- [15] Dignath, C., & Veenman, M. V. J. The role of direct strategy instruction and indirect activation of self-regulated learning—Evidence from classroom intervention studies. *Educational Psychology Review*. 2021, 33:489–533. <https://doi.org/10.1007/s10648-020-09534-0>.
- [16] Mansfield, C. F., Beltman, S., Price, A., & McConney, A. (2021). Don't sweat the small stuff: Understanding teacher resilience at the chalkface. *Teaching and Teacher Education*. 2021; 102:103341. <https://doi.org/10.1016/j.tate.2021.103341>.
- [17] Skaalvik, E. M., & Skaalvik, S. Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*. 2014; 41:68–76. <https://doi.org/10.1016/j.tate.2014.03.005>.