
BEYOND ACHIEVEMENT: REIMAGINING PSYCHOLOGICAL SAFETY AS A FOUNDATION FOR MEANINGFUL LEARNING IN INDONESIAN EDUCATION

Aoliya Wijayanti Kusuma Asri Arifin¹

¹ Faculty of Psychology, Far Eastern Federal University

Email: aoliyaarifin@gmail.com¹

Article Info

Article history:

Received: 08 May 2026;

Accepted: 24 May 2026;

Published: 03 June 2026.

Keyword:

Educational Psychology; Intellectual Risk-Taking; Meaningful Learning; Psychological Safety; Student Engagement; Student Voice

Abstract

Contemporary education increasingly asks students to think critically, collaborate, and participate actively in constructing knowledge, yet active-learning designs often assume that participation will follow automatically once instructional strategies are well designed. This assumption leaves an important psychological condition underexamined: whether students perceive the learning environment as safe enough to speak, question, disagree, and err without fear of humiliation or negative evaluation. This article develops a conceptual argument that meaningful learning depends not only on pedagogical design but also on the psychological conditions that allow students to engage intellectually and socially in the learning process. Using a structured narrative literature review, the article synthesizes scholarship on psychological safety, student voice, intellectual risk-taking, student engagement, and meaningful learning that has largely developed along parallel rather than integrated theoretical lines. From this synthesis, the article proposes the Psychological Safety Centered Learning (PSCL) Model, a five-stage conceptual framework describing a hypothesized pathway from psychological permission to student voice, intellectual risk-taking, reflective engagement, and meaningful learning. The article discusses the model's theoretical and practical contributions, along with anticipated challenges related to cultural variation, measurement, and teacher capacity. As a conceptual proposal built from literature synthesis rather than original data collection, the PSCL Model requires further empirical validation, instrument development, and testing across diverse educational contexts before its practical claims can be considered established

1. INTRODUCTION

Education is no longer adequately described as a process of transferring information from teacher to student. Across curricula and policy documents, students are increasingly expected to question, explore, test ideas, and construct understanding through active participation rather than passive reception. Active learning, collaborative problem-solving, inquiry based instruction, and student centered pedagogy have become the default vocabulary through which good teaching is described, and learning outcomes are increasingly framed not only in terms of content mastery but also critical thinking, communication, and collaborative capacity.

Yet this shift in expectation exposes a paradox that is rarely examined directly. A great deal of instructional design effort is invested in structuring discussion, group work, presentations, and inquiry activities, on the assumption that a well designed activity will, more or less automatically, produce active participation. In practice, however, participation is not guaranteed by design alone. A learning activity may be pedagogically well designed yet

psychologically inaccessible to students who fear embarrassment, negative evaluation, or social exclusion. Students may sit through a carefully structured discussion without asking the question they actually have, or complete a group task without voicing the disagreement they actually feel, because the perceived cost of speaking exceeds the perceived benefit of doing so.

This observation points toward a dimension of learning that is not primarily instructional but psychological. Learning does not occur only through cognitive processing of content; it is also shaped by how students perceive their social environment, whether they feel it is safe to be wrong, how they interpret evaluation, and what they have learned, often implicitly, about the consequences of speaking up in that particular classroom. These perceptions are not incidental to learning; they condition whether a student is willing to engage with the intellectual demands that active learning requires in the first place.

The construct that most directly addresses this condition is psychological safety, originally theorized by Edmondson (1999) as the shared belief within a team that it is safe to take interpersonal risks such as admitting error, asking for help, or raising a concern. Although this construct originated in the study of organizational teams, it has increasingly entered discussions of educational and learning environments, from clinical training contexts to language classrooms and digital learning platforms (Tu, 2021; Baranova et al., 2022). What remains less settled is how psychological safety relates conceptually to constructs that education researchers already study extensively, namely student voice, intellectual risk-taking, and the various dimensions of student engagement identified by Fredricks, Blumenfeld, and Paris (2004) and later extended by Reeve and Tseng (2011) to include student agency.

Although psychological safety has increasingly entered discussions of educational and learning environments, its relationship with student voice, intellectual risk-taking, and meaningful learning remains dispersed across multiple theoretical traditions. Studies of classroom psychological safety tend to be examined either as an antecedent of engagement in a single disciplinary context, such as language learning (Tu, 2021) or digital higher education (Baranova et al., 2022; Ananta, 2026), or as a general climate variable without being connected explicitly to the intellectual risks that meaningful learning actually requires. The literature remains conceptually fragmented: these constructs are often examined in parallel rather than integrated into a unified learning framework, and existing discussions have not always translated psychological safety into concrete learning-design principles that connect permission to speak with the deeper cognitive work of reflection and knowledge transfer described in the meaningful learning literature (Novak, 2002).

This article addresses that fragmentation. It undertakes a structured narrative literature review across educational psychology, learning sciences, and organizational psychology to synthesize scholarship on psychological safety, student voice, intellectual risk-taking, engagement, and meaningful learning, and from that synthesis develops a conceptual model termed the Psychological Safety Centered Learning (PSCL) Model. The model is proposed as a theoretical framework rather than a validated intervention; it is intended to make explicit a pathway that is often assumed but rarely articulated in instructional design, and to provide a basis for future empirical testing. The remainder of the article proceeds as follows: Section 2 reviews and synthesizes the relevant literature; Section 3 describes the review method; Section 4 presents the proposed model and its design principles; Section 5 discusses anticipated contributions and risks; Section 6 outlines implications for practice and a future research agenda; and Section 7 concludes.

2. LITERATURE REVIEW

This section reviews five bodies of literature that, taken individually, each explain part of why students do or do not engage meaningfully in learning, but that have rarely been read together as a single pathway. The purpose of this review is not to catalogue definitions but to identify where these literatures converge, where they diverge, and where the connections between them remain underspecified.

2.1 Psychological Safety: From Interpersonal Climate to Learning Conditions

Edmondson (1999) defined psychological safety as a shared belief that a team is safe for interpersonal risk-taking, characterized by interpersonal trust and mutual respect in which people are comfortable being themselves. Edmondson and Lei (2014) later traced how the construct moved from a narrow organizational-behavior variable to a broader interpersonal condition studied across leadership, innovation, and learning contexts. A systematic review by Newman, Donohue, and Eva (2017) further shows that despite its wide adoption, psychological safety continues to be operationalized inconsistently across fields, which is itself informative for education: if the construct's boundaries are still being negotiated in organizational psychology, its translation into classroom-specific learning conditions cannot be assumed to be straightforward.

In educational settings, psychological safety is not adequately captured by describing a classroom as comfortable or pleasant. Tu (2021) frames it, in the context of language classrooms, as a condition under which learners are willing to take the specific risks that learning a new skill requires, and Baranova et al. (2022) extend the construct into digital learning environments, showing that students' sense of psychological security predicts their engagement and academic performance even when physical classroom cues are absent. What these studies share is a recurring emphasis on intellectual risk rather than comfort as the object being protected. Asking a question that might

reveal a gap in understanding, proposing a hypothesis that may be wrong, voicing disagreement with a peer or instructor, admitting confusion, or attempting an unfamiliar strategy are all acts that expose the student to potential judgment. Psychological safety, in this reading, is the condition under which a student judges that risk to be acceptable.

This reframing carries an important implication for instructional design. If psychological safety concerns the perceived cost of intellectual exposure rather than general comfort, then interventions aimed at making classrooms more pleasant are not automatically equivalent to interventions that make classrooms more psychologically safe for learning. A classroom can be friendly in tone while still discouraging genuine intellectual risk if, for instance, mistakes are consistently corrected in ways that carry social cost, or if certain students' contributions are habitually dismissed.

2.2 Student Voice and the Psychology of Participation

A second relevant literature concerns student voice. Cook-Sather (2006) distinguishes voice from mere presence, arguing that student voice concerns whether students are afforded legitimacy to shape and comment on their own learning experience, not simply whether they are physically or nominally included in it. Mitra (2004) similarly argues that increasing student voice in schools is associated with gains in youth development, but only when students perceive that their contribution carries some consequence, rather than being solicited and then ignored.

This distinction between presence, participation, and voice becomes important when read alongside the psychological safety literature. Not all students who remain silent are without ideas; in several contexts, silence functions as an adaptive response to an environment perceived as unsafe rather than as an absence of thought. A student who has learned, through repeated experience, that questions are met with impatience or that wrong answers are met with visible correction may rationally choose not to speak, even while continuing to think actively about the material. Read this way, low observable voice is not necessarily evidence of low engagement; it may instead be evidence that the psychological cost of voice currently outweighs its perceived benefit for that student.

2.3 Intellectual Risk-Taking in Learning

Beghetto (2009) identifies intellectual risk-taking as a distinct construct in elementary science learning, describing behaviors such as sharing tentative ideas, asking questions that expose uncertainty, and pursuing unconventional approaches, and shows that students' willingness to take such risks correlates with classroom conditions rather than being a fixed individual trait. Kapur's (2008) concept of productive failure adds a complementary argument from the learning sciences: struggling with a problem before receiving instruction, including generating incorrect solutions, can itself support deeper conceptual understanding, provided that the failure is subsequently made sense of rather than simply penalized.

Read together, these two literatures suggest that the pedagogical value often attributed to inquiry, experimentation, and open-ended problem-solving is conditional on how error is interpreted within the classroom. A psychologically safe learning environment does not eliminate failure; it changes the meaning of failure within the learning process, repositioning it as an expected and informative part of coming to understand something, rather than as evidence of a student's inadequacy. Where that reframing does not occur, students may rationally avoid the very productive struggle that inquiry-based pedagogy depends on, because failure continues to carry identity-level risk rather than being read as instrumental to learning.

2.4 Student Engagement Beyond Observable Participation

Fredricks, Blumenfeld, and Paris (2004) organize student engagement into behavioral, emotional, and cognitive dimensions, cautioning that these dimensions do not always move together and that engagement assessed only through observable behavior risks mischaracterizing students whose engagement is primarily internal. Appleton, Christenson, Kim, and Reschly (2006) build on this multidimensionality in developing an instrument to separate cognitive and psychological engagement empirically, while Reeve and Tseng (2011) add a fourth, agentic dimension, describing engagement that includes students proactively shaping the conditions of their own learning rather than merely responding to instruction.

Empirical work increasingly ties these engagement dimensions back to psychological safety and belonging specifically. In an Indonesian higher-education setting, Ananta (2026) finds that both psychological safety and sense of belonging significantly predict first-year students' classroom engagement, with the two constructs jointly explaining a substantial share of variance in participation. Baranova et al. (2022) report a comparable pattern in digital learning environments, where students' psychological security level predicts both engagement and academic performance. Taken together, these studies suggest a broader pattern: students who appear behaviorally active are not necessarily psychologically safe, and students who appear quiet are not necessarily cognitively disengaged; the visible behavior most commonly used to infer engagement in classroom observation may be a poor proxy for its emotional and cognitive components, particularly under conditions of low psychological safety.

2.5 Meaningful Learning as an Educational Outcome

The final construct this review addresses is meaningful learning itself. Novak (2002) describes meaningful learning as a process in which new information is deliberately connected to a learner's existing conceptual structure, in contrast to rote learning, in which information is memorized without integration into what the learner already

understands. Mezirow's (1991) theory of transformative learning extends this idea further, arguing that some of the most significant learning involves critically reflecting on and revising one's own assumptions, a process that inherently requires a learner to expose, examine, and sometimes discard prior beliefs in front of others. Jones and Bouffard (2012) connect this reflective and relational dimension of learning to social-emotional learning more broadly, arguing that academic and socio-emotional development are not separable tracks but interdependent processes.

Reading these five literatures together suggests a proposed relationship rather than an established causal chain: psychological safety creates the conditions under which student voice becomes more likely; voice creates opportunities for intellectual risk-taking; intellectual risk-taking, when its outcomes are reflected upon rather than simply evaluated, supports deeper cognitive and emotional engagement; and this deeper engagement is what Novak's and Mezirow's accounts of meaningful learning actually require. This pathway, however, remains a theoretically plausible mechanism assembled from literatures that were not designed to speak to one another. No single study reviewed here tests the full sequence, and rather than treating these constructs as isolated variables, the present article proposes an integrative framework intended to make this hypothesized interaction explicit and testable.

3. RESEARCH METHODOLOGY

This article adopts a structured narrative literature review as its method. Its purpose is theory building rather than effect-size estimation: rather than pursuing the exhaustiveness of a systematic review or meta-analysis, the review aims to (1) identify the core constructs relevant to the proposed pathway, (2) compare theoretical perspectives on each construct across educational psychology, learning sciences, and organizational psychology, (3) locate patterns of convergence and divergence between constructs, (4) identify the conceptual gap that motivates the present synthesis, and (5) use that synthesis to construct a coherent conceptual model.

Sources were drawn primarily from peer-reviewed journals in educational psychology, learning sciences, higher education, and, where directly relevant to the construct's theoretical origin, organizational psychology. The review prioritized literature published between 2015 and 2026, while retaining seminal earlier works, most notably Edmondson (1999) on psychological safety, Bandura's (1997) theorization of self-efficacy, Goodenow's (1993) work on classroom belonging, and Mezirow's (1991) theory of transformative learning, on the grounds that these sources remain the theoretical foundation on which more recent empirical work continues to build.

Literature was organized into six coding categories: (1) conceptualization of psychological safety, (2) student voice and participation, (3) intellectual risk-taking, (4) dimensions of learning engagement, (5) meaningful learning outcomes, and (6) educational conditions and implementation. Sources were included where they addressed one of these categories in a way that was directly relevant to classroom or learning-environment conditions, and where their authorship, publication venue, and bibliographic details could be verified. Because this article does not report primary data collection, no claims are made in Sections 4 through 6 about the empirical effectiveness of the proposed model; its status throughout the article is that of a conceptual proposal derived from synthesis, to be evaluated through the future research agenda outlined in Section 6.

4. PROPOSED CONCEPTUAL MODEL

The Psychological Safety–Centered Learning (PSCL) Model

Building on the synthesis above, this section proposes the Psychological Safety Centered Learning (PSCL) Model, a five-stage conceptual framework describing a hypothesized pathway from the psychological conditions that make participation possible to the cognitive and emotional depth that meaningful learning requires. Each stage is described below in terms of its central psychological process, illustrative educational practice, and the learning condition it is theorized to produce.

Stage 1. Psychological Permission. The stage begins with a question every student implicitly answers before choosing to participate: “Am I allowed to speak, ask, disagree, and make mistakes here?” This perception is shaped by a non-threatening classroom climate, respectful interaction, predictable responses from educators, and reduced fear of humiliation (Edmondson, 1999; Tu, 2021). Its proposed output is a student's perceived psychological permission to participate, prior to any observable behavior.

Stage 2. Student Voice Activation. Once permission is perceived, students begin to act on it by questioning, expressing opinions, requesting clarification, giving feedback, and disagreeing constructively (Cook Sather, 2006; Mitra, 2004). The proposed output of this stage is an increase in observable and felt student voice.

Stage 3. Intellectual Risk-Taking. With voice activated, students become more willing to test ideas, attempt unfamiliar approaches, offer answers that may be incorrect, and explore uncertainty rather than avoiding it (Beghetto, 2009; Kapur, 2008). The proposed output is active intellectual exploration.

Stage 4. Reflective Engagement. Intellectual risk-taking creates material, including errors and partial understanding, for students to reflect on. At this stage students evaluate their own mistakes, connect new information to prior experience, and build learning strategies rather than simply completing tasks (Fredricks et al., 2004; Reeve & Tseng, 2011). The proposed output is deeper cognitive and emotional engagement.

Stage 5. Meaningful Learning. The pathway's intended endpoint is learning that is personal, reflective, contextual, and transferable to new situations, consistent with Novak's (2002) account of meaningful learning and Mezirow's (1991) account of transformative learning. The proposed output is meaningful and sustainable learning.

Table 1. Proposed Stages of the Psychological Safety–Centered Learning (PSCL) Model.

Stage	Psychological Process	Educational Practice	Expected Learning Condition
Psychological Permission	Reduced fear of negative evaluation	Respectful classroom interaction	Willingness to participate
Student Voice Activation	Perceived legitimacy to express ideas	Dialogue and feedback opportunities	Increased student voice
Intellectual Risk-Taking	Tolerance for uncertainty and mistakes	Inquiry and experimentation	Active exploration
Reflective Engagement	Meaning-making and self-evaluation	Reflection and formative feedback	Deeper engagement
Meaningful Learning	Knowledge integration and transfer	Contextual and authentic learning	Sustainable understanding

Source: Author proposed conceptual mapping developed in the present article, synthesized from the literature reviewed in Section 2. The table does not report experimental results and is not intended as a validated measurement model

4.1 Design Principles of the PSCL Model

Four design principles follow from the synthesis above and are intended to guide how the model might be translated into practice.

First, safety does not mean comfort. Psychological safety does not imply that learning should always be easy or free of challenge; a psychologically safe environment is precisely what allows students to face uncertainty, complexity, failure, and disagreement without those experiences becoming threats to their sense of self (Beghetto, 2009; Kapur, 2008).

Second, voice must be designed, not merely invited. An open invitation such as “feel free to ask questions” does not, by itself, alter a student's perceived cost of speaking. Cook-Sather (2006) and Mitra (2004) both suggest that voice requires structural mechanisms, such as low-stakes questioning routines or protected space for dissent, rather than a general disposition on the part of the instructor.

Third, mistakes must be pedagogically reframed. Consistent with Kapur's (2008) account of productive failure, error needs to be positioned within the learning sequence as a source of information rather than as a verdict on a student's ability, and this reframing needs to be visible and consistent rather than occasional.

Fourth, teacher behavior shapes learning psychology. How an educator responds to a question, a wrong answer, or a disagreement is not incidental to classroom climate; it is itself a component of the learning environment, consistent with Bandura's (1997) account of how modeled behavior shapes self-efficacy beliefs, including a student's belief in their own capacity to participate and recover from error.

5. DISCUSSION

5.1 Anticipated Contributions

The PSCL Model offers several potential contributions. Theoretically, it provides a conceptual bridge between a construct long studied in organizational psychology and constructs long studied in educational psychology, offering one account of why they are related rather than treating psychological safety, student voice, and engagement as parallel but disconnected research areas. Practically, the model extends conversations about active learning by directing attention toward a condition that active-learning design frequently assumes rather than addresses: whether students perceive themselves as psychologically able to take part. It also offers a more charitable interpretation of student silence, reframing it as a possible signal of perceived risk rather than a default indicator of disengagement or low ability, a distinction with direct relevance for how educators interpret quiet students.

5.2 Anticipated Contributions

Several risks deserve explicit attention before the model is applied in practice.

The first risk is that psychological safety may be misread as permissiveness. A psychologically safe environment is not one without standards, evaluation, or challenge; conflating safety with the absence of rigor would misrepresent both Edmondson's (1999) original construct and its educational application, and could inadvertently lower the very intellectual demand the model is meant to support.

The second risk concerns cultural and contextual differences. Responses to authority, disagreement, and public participation vary across educational cultures, and it should not be assumed that psychological safety operates identically across contexts. The contrast between Tu's (2021) study of EFL classroom culture in China and Ananta's (2026) study of first-year undergraduates in Indonesia illustrates this variation: both studies link psychological safety to engagement, but within classroom cultures that carry different norms around speaking, deference, and

disagreement, suggesting that the mechanisms connecting permission to voice may not generalize uniformly across settings.

The third risk concerns measurement. Psychological safety is a subjective perception, and its educational operationalization has not yet converged on a single validated instrument, a difficulty Newman, Donohue, and Eva (2017) also identify in the organizational literature more broadly. Developing measures specific to the PSCL Model's five stages will require careful attention to construct validity rather than adapting workplace-oriented instruments without modification.

The fourth risk concerns teacher capacity. The model, as proposed, places considerable weight on teacher behavior as the mechanism through which psychological permission is or is not communicated. This requires competencies in communication, feedback, classroom facilitation, and emotional awareness that are not evenly distributed among educators and that professional development programs do not always explicitly target.

6. IMPLICATIONS FOR EDUCATIONAL PRACTICE AND FUTURE RESEARCH

6.1 Practical Implications

As a conceptual framework, the PSCL Model may be useful as a reference point for instructional design, teacher professional development, classroom observation protocols, the development of psychological learning-climate instruments, and the interpretation of student engagement data. For instance, a professional development program might use the five stages as a diagnostic lens, asking not only whether an activity is well designed but at which stage, permission, voice, risk-taking, reflection, or transfer, students in a particular classroom appear to be getting stuck. These are offered as plausible applications rather than claims of demonstrated effectiveness, since the model itself has not yet been empirically tested.

6.2 Future Research Agenda

Several lines of empirical work follow directly from the conceptual status of this article. Future research should (1) develop and validate an instrument specific to the five PSCL stages rather than relying on adapted organizational measures; (2) test the proposed relationship between psychological safety and student voice empirically, extending Indonesian evidence such as Ananta (2026) beyond belonging and engagement to intellectual risk-taking specifically; (3) examine intellectual risk-taking as a mediating mechanism between voice and reflective engagement; (4) employ mixed-method designs that combine self-report measures with classroom observation, given the gap this review identifies between observable participation and internal engagement; (5) compare the model's applicability across school and higher-education contexts, and across cultural settings, building on the contrast between Tu (2021) and Ananta (2026); (6) test the model longitudinally, since psychological safety, voice, and engagement plausibly develop and shift over an academic term rather than remaining static; and (7) design and evaluate teacher-training interventions explicitly built around the model's four design principles.

7. CONCLUSION

Meaningful learning requires more than well-designed active-learning strategies. It also requires psychological conditions that allow students to take part in the learning process as full intellectual and social participants, willing to question, to disagree, to risk being wrong, and to reflect on the outcome. This article has argued that the literatures on psychological safety, student voice, intellectual risk-taking, engagement, and meaningful learning describe interconnected parts of this requirement, even though they have largely developed along separate theoretical tracks.

The Psychological Safety–Centered Learning (PSCL) Model proposed here offers one way of making that connection explicit, describing a hypothesized pathway from psychological permission through student voice, intellectual risk-taking, and reflective engagement, toward meaningful learning. Before asking students to participate, education may first need to ask whether students feel psychologically safe enough to participate at all.

This model, however, remains a conceptual proposal built through literature synthesis and therefore requires empirical validation, construct measurement, and evaluation of implementation across diverse educational contexts before its practical claims can be considered established. Its contribution at this stage is theoretical: to name and structure a pathway that instructional design has often assumed but rarely made explicit, and to provide a foundation on which the empirical research agenda outlined above can build.

REFERENCES

- Ananta, S. (2026). The role of psychological safety and belonging in classroom engagement among first-year undergraduates. *Jurnal Informasi dan Komunikasi Administrasi Perkantoran*, 10(1), 100–109. <https://doi.org/10.20961/jikap.v10i1.108676>
- Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology*, 44(5), 427–445. <https://doi.org/10.1016/j.jsp.2006.04.002>
- Bandura, A. (1997). Self-efficacy: The exercise of control. W. H. Freeman.

- Baranova, T., Kobicheva, A., Tokareva, E., & Federov, D. (2022). The relationship between students' psychological security level, academic engagement and performance variables in the digital educational environment. *Education and Information Technologies*, 27, 9385–9399. <https://doi.org/10.1007/s10639-022-11024-5>
- Beghetto, R. A. (2009). Correlates of intellectual risk taking in elementary school science. *Journal of Research in Science Teaching*, 46(2), 210–223. <https://doi.org/10.1002/tea.20270>
- Cook-Sather, A. (2006). Sound, presence, and power: “Student voice” in educational research and reform. *Curriculum Inquiry*, 36(4), 359–390. <https://doi.org/10.1111/j.1467-873X.2006.00363.x>
- Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350–383. <https://doi.org/10.2307/2666999>
- Edmondson, A. C., & Lei, Z. (2014). Psychological safety: The history, renaissance, and future of an interpersonal construct. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 23–43. <https://doi.org/10.1146/annurev-orgpsych-031413-091305>
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Goodenow, C. (1993). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *The Journal of Early Adolescence*, 13(1), 21–43. <https://doi.org/10.1177/0272431693013001002>
- Jones, S. M., & Bouffard, S. M. (2012). Social and emotional learning in schools: From programs to strategies. *Social Policy Report*, 26(4), 1–33. <https://doi.org/10.1002/j.2379-3988.2012.tb00073.x>
- Kapur, M. (2008). Productive failure. *Cognition and Instruction*, 26(3), 379–424. <https://doi.org/10.1080/07370000802212669>
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. Jossey-Bass.
- Mitra, D. L. (2004). The significance of students: Can increasing “student voice” in schools lead to gains in youth development? *Teachers College Record*, 106(4), 651–688. <https://doi.org/10.1111/j.1467-9620.2004.00354.x>
- Newman, A., Donohue, R., & Eva, N. (2017). Psychological safety: A systematic review of the literature. *Human Resource Management Review*, 27(3), 521–535. <https://doi.org/10.1016/j.hrmr.2017.01.001>
- Novak, J. D. (2002). Meaningful learning: The essential factor for conceptual change in limited or inappropriate propositional hierarchies leading to empowerment of learners. *Science Education*, 86(4), 548–571. <https://doi.org/10.1002/sci.10032>
- Reeve, J., & Tseng, C.-M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, 36(4), 257–267. <https://doi.org/10.1016/j.cedpsych.2011.05.002>
- Tu, X. (2021). The role of classroom culture and psychological safety in EFL students' engagement. *Frontiers in Psychology*, 12, 760903. <https://doi.org/10.3389/fpsyg.2021.760903>