

**PSYCHOLOGICAL SAFETY AS A DRIVER OF INNOVATIVE TEACHING BEHAVIOR AMONG
UNIVERSITY LECTURERS**

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Abstract

This literature study examines how psychological safety, defined as the freedom from interpersonal fear when making mistakes, drives university lecturers to experiment with new learning technologies. The analysis identifies several mechanisms through which this process operates, including cognitive reframing of failures as learning opportunities, reduction of cognitive load previously spent on impression management, emotional transformation of anxiety into positive anticipation, and social learning from peers who openly discuss their struggles. The study also reveals that psychological safety is shaped by leadership behavior, student responses to classroom experiments, the design of collaborative spaces for lecturers, availability of non judgmental technical support, and disciplinary norms. Findings suggest that without adequate psychological safety, technical training and infrastructure investments may fail to translate into actual behavioral change. The study concludes that fostering psychological safety requires deliberate policy design, including evaluation systems that reward experimentation effort regardless of immediate outcomes and leadership modeling of vulnerability. Practical recommendations include creating informal discussion forums for lecturers to share failures safely and preparing students to respond constructively to their lecturers' technological experiments.

Keywords: psychological safety, innovative teaching behavior, technology experimentation, lecturer development, higher education.

Introduction

The changing landscape of higher education over the past two decades has demanded a transformation of teaching methods that are adaptive to technological advancements. Lecturers are faced with the need to integrate various digital tools, online learning platforms, and virtual collaboration software into their pedagogical routines (Lata, 2024). However, the adoption of these new technologies is often hindered by internal psychological factors, such as the fear of failure in front of students or negative evaluation from colleagues. Academic ecosystems, which traditionally value authority and mastery of subject matter, leave limited room for lecturers to appear imperfect during the learning process. Yet, experimentation is the heart of innovation, including in teaching practices. Without space to try and fail, real change in pedagogical approaches is difficult to realize. This situation creates tension between the demand for innovation and the psychological reality of educators (Turgumbayeva et al., 2025).

The concept of psychological safety, first developed in studies of team dynamics in organizations, offers a lens for understanding this tension (Baarle et al., 2025). A psychologically safe environment is one where a person feels free to take interpersonal risks without fear of negative consequences for their self-image, status, or career. In the context of university teaching, this sense of safety means that lecturers can admit they do not know a technological feature, ask more skilled colleagues for help, or acknowledge that a method did not go as planned. When this element is present, the worry about losing face or being seen as incompetent decreases. Conversely, high psychological tension encourages defensive behavior, such as insisting on old methods that have proven reliable or avoiding the use of complex technology.

The academic world has unique characteristics that strengthen the need for psychological safety. Lecturer performance assessment systems often rely on student evaluations, peer review, and publications, which can create a competitive atmosphere. In an environment that strongly emphasizes individual achievement, admitting failure in a teaching method can be seen as a weakness (Guo, 2025). Junior lecturers, who are still building their reputations, may be the most vulnerable to this pressure. They may choose the safe path of repeating conventional methods because they fear that a failed experiment will damage their career assessment. Senior lecturers are not entirely immune either, because the expectation to be role models and sources of knowledge often weighs on them. As a result, the whole system loses its potential for collective innovation.

New learning technologies such as virtual classrooms, adaptive assessment tools, interactive simulations, and artificial intelligence in education continue to emerge. Each of these technologies offers a new way to engage students and improve learning outcomes. However, each also brings a steep learning curve and the possibility of unexpected technical disruptions (Roy, 2025). Technology adoption also faces challenges such as limited lecturer competence. A lecturer who tries an interactive poll for the first time may experience an awkward pause when the system does not respond. Technology alone cannot resolve the disruptions that arise (Irfan & Darmawan, 2024). Without the safety to explain such failures as part of the learning process, lecturers may abandon the tool permanently. Yet early failure is a normal part of mastering a new tool. Therefore, the relationship between psychological safety and the willingness to experiment becomes a key determinant of whether technology adoption succeeds in the classroom.

In contrast, when university lecturers work in an environment that supports openness about technical and pedagogical difficulties, a different pattern of behavior emerges. They tend to share findings about which tools work and which do not, creating collective knowledge among peers. Informal discussion spaces about teaching practice become a valuable source of learning. Institutional support through the provision of facilities and equal access improves effective teaching method (Rozikin et al., 2023). Lecturers who feel safe will more readily invite colleagues to observe their classes and give honest feedback. This feedback cycle speeds up the improvement of teaching methods and spreads best practices across the faculty more quickly. Under such conditions, innovative teaching behavior is no longer the responsibility of isolated individuals but a collective activity driven by a supportive psychological structure.

Although much of the literature claims that psychological safety is important for innovation, the specific relationship between feeling safe to make mistakes and innovative teaching behavior among university lecturers remains poorly mapped. Most research on psychological safety comes from corporate or project-team settings, while academic environments have different norms, reward structures, and professional hierarchies. Higher education also works as a social environment with its own norms that shape how people think and act (Hariani & Mardikaningsih, 2022). A manager in a technology company may face different risks from a lecturer who faces semester evaluations from students. Findings cannot be transferred from one domain to another without conceptual adjustment. Evidence from university settings shows that outcomes depend on the institutional context (Rojak et al., 2024). As a result, university policymakers lack evidence-based guidance on how to create the right conditions for encouraging lecturers to take necessary pedagogical risks.

Another problem lies in the multidimensional nature of psychological safety itself. Is the most important factor safety from negative judgment by superiors, safety from ridicule by colleagues, or safety from student criticism? Each of these sources of insecurity may require a different intervention. A lecturer may feel very comfortable with colleagues but fear student evaluations, while another lecturer may be the reverse. Without a more detailed understanding of which dimension is most relevant to innovative teaching behavior in universities, efforts to improve psychological safety may be misdirected. Studies in higher education suggest that such constructs are best examined by dimension, because each dimension may relate differently to outcomes (Zahid & Darmawan, 2025). In addition, innovation in teaching itself needs to be defined carefully, whether it means trying a new

method once, adopting a technology permanently, or sharing practices with colleagues. This conceptual clarity is needed before causal relationships can be tested or interventions designed.

The acceleration of digitalization in higher education, triggered by the need for remote learning in recent years, has created an unprecedented moment to observe how lecturers adapt to new technology. Many institutions were forced to make technological leaps that were previously considered impossible. In such circumstances, the difference between lecturers who quickly adopt new tools and those who stay with old methods becomes very striking. Understanding the psychological factors that distinguish these two groups is not only an academic interest but also an urgent practical need. Psychological conditions influence how people cope with demanding academic work (Darmawan & Zahid, 2025), and digital skills shape how readily people turn technology into actual practice (Darmawan, 2025). Without this understanding, large investments in educational technology infrastructure may not produce real change in teaching practice. Therefore, examining how the safety to make mistakes can encourage experimentation is highly relevant.

This study aims to outline the mechanisms underlying the relationship between psychological safety and innovative teaching behavior among lecturers, with a specific focus on how the safety to make mistakes facilitates experimentation with new learning technologies. These objectives include identifying the psychological conditions necessary for lecturers to take pedagogical risks, mapping the dimensions of psychological safety that are most relevant in an academic environment, and explaining how this sense of safety translates into concrete actions of trying, evaluating, and adopting digital teaching tools or methods. Theoretically, this research seeks to enrich the psychological safety framework by adapting it to the academic profession. Practically, the synthesized findings are expected to provide guidance for university administrators in designing policies and work cultures that support sustainable teaching innovation.

Method

This study employs a qualitative literature review approach to explore the relationship between psychological safety and innovative teaching behavior among lecturers. As explained by Snyder (2019), a literature review as a research methodology requires a systematic process of identifying, evaluating, and synthesizing existing works to generate new insights that cannot be achieved by examining each study in isolation. The procedure followed the standard stages in qualitative research, starting with the formulation of clear research questions, searching the literature using academic databases such as Scopus and Google Scholar with keywords related to psychological safety, innovative teaching behavior, and technology experimentation, followed by article selection based on relevance and quality.

Data analysis in this study refers to the qualitative research principles outlined by Mohajan (2018), where the researcher acts as the key instrument in interpreting the text. The approach used is thematic analysis, in which the collected literature is read repeatedly to identify patterns, themes, and relationships between concepts. Emerging themes were then grouped into broader categories that directly addressed the research questions regarding the mechanisms of psychological safety in driving technology experimentation by lecturers. This synthesis process involved comparing findings from various sources, identifying consensus and debates within the literature, and developing an integrated conceptual framework. The entire process was conducted while taking into account the unique characteristics of the higher education academic environment as the research setting.

Results and Discussion

Psychological safety creates conditions in which university lecturers change how they perceive mistakes when learning new technology. A person who tries unfamiliar software or an interactive platform will typically face the possibility of technical failure, navigation confusion, or an inability to

answer student questions instantly. In an environment without a sense of safety, such events are seen as a threat to professional reputation (Hanshaw & Hanshaw, 2022). However, when psychological safety is present, these failures are rationalized as a normal consequence of exploration. This shift in interpretation is fundamental because it changes the emotional response from shame or defensiveness to curiosity. Lecturers begin to ask, not “why did this fail for me?” but “what can I learn from this failure?” This cognitive change is the first step that opens the door to sustained experimentation and, in turn, innovative teaching behavior.

The second mechanism linking psychological safety to innovative teaching behavior is the reduced cognitive load that lecturers experience when trying new technology. Every experiment requires mental energy to learn the interface, adjust lesson plans, and anticipate potential problems. When lecturers must also allocate mental resources to managing worries about how others will judge them, the capacity available for actual learning is reduced. Psychological safety significantly lowers this impression management burden (Hartinah et al., 2025). No longer worried about maintaining an image of competence, lecturers can direct their full cognitive attention to the substantive task of mastering the technology. This cognitive efficiency explains why university lecturers in safe environments tend to show a steeper learning curve and reach a comfortable level with new tools more quickly.

The influence of psychological safety also extends to the affective domain, where university lecturers experience a change in their emotional relationship with risk. Pedagogical risk-taking, such as testing an interactive quiz for the first time in a large class, inherently arouses anxiety. Without a sense of safety, this anxiety can reach a paralyzing level and drive avoidance. In a supportive environment, however, anxiety is transformed into positive excitement or pleasant anticipation. Lecturers begin to see moments of technical failure not as a disaster but as a normal part of authentic teaching, sometimes even a shared joke with students. This change in emotional quality turns experimentation into positive reinforcement, which increases the likelihood that lecturers will repeat innovative teaching behavior in the future.

From a social perspective, psychological safety facilitates observational learning among lecturers. When a faculty member openly tries a new technological method and discusses the difficulties encountered without hiding failures, that person provides a model for colleagues. Observing a colleague who takes risks and remains socially respected reduces the perceived threat attached to similar behavior. This is a form of social learning in which group norms change through example (Porter-Stransky et al., 2024). Over time, the practice of sharing experiences of failed and successful experiments becomes an accepted routine. Psychological safety at the individual level thus expands into psychological safety at the collective level, creating a self-reinforcing cycle in which more lecturers feel inspired to try new things.

The role of faculty leaders or heads of study programs is critical in shaping the perception of psychological safety. When leaders explicitly state that failure in trying new methods will not affect performance evaluations, lecturers receive a clear signal about what is valued. However, an explicit statement alone is not enough. What matters more is how leaders respond when failure actually occurs. If a lecturer who dares to experiment with a virtual classroom and runs into technical difficulties is then protected or even praised for their courage, the message about the value of experimentation is conveyed strongly. Digital leadership can improve lecturers’ ability to adapt to technology (Mardikaningsih & Darmawan, 2023). Conversely, if that lecturer is subtly punished through lower evaluations or cynical comments, even the most eloquent statements of support will lose their credibility. Consistency between leaders’ words and actions is the key. Leader support, the adoption of educational technology, and a collaborative environment are important factors in sustaining lecturer motivation (Liwak et al., 2023).

Students also hold significant influence over the psychological safety of university lecturers in the teaching context. A lecturer may feel very safe among colleagues but become highly vulnerable when facing twenty or a hundred pairs of judging student eyes. Experimenting with new technology means

that lecturers become temporarily less proficient, and students can easily detect this discomfort. Unreadiness for change can lead to resistance to new technology and even a decline in productivity (Mardikaningsih & Wardoyo, 2024). If students respond with patience or even enthusiasm toward the new method, the experience becomes positive. However, if students show boredom, frustration, or negative comments in evaluations, the impact can be very damaging to lecturers' psychological safety (Mészáros & Csiszárík-Kocsir, 2024). Therefore, creating a sense of safety for lecturers also requires preparing students, for example by explaining the purpose of the experiment and asking for constructive feedback rather than judgment.

The relationship between psychological safety and innovative teaching behavior is circular, not a one-way linear path. Early success in technology experiments, however small, increases lecturers' confidence. Greater confidence in turn strengthens the perception that the environment is indeed safe, because lecturers experience for themselves that taking risks brings positive results. Conversely, negative experiences, especially when repeated, can erode psychological safety even in an environment that is objectively supportive (Shen et al., 2025). This process explains why interventions to improve psychological safety must consider the history of individual experience. Lecturers who have had a string of failures may need more intensive support to rebuild their sense of safety. It also implies that it is important to design successful early experiences, for example by starting with simpler technology.

The time dimension affects how psychological safety works. For short-term experiments, such as trying a single interactive poll in one meeting, a moderate level of psychological safety may be enough. Limited risk and small consequences of failure make lecturers bolder. However, for long-term technology adoption that requires fundamental changes in course design, such as moving an entire class to an adaptive learning platform, a much higher level of psychological safety is needed (Alsarayreh, 2025). Lecturers need to feel safe not only to start but also to persist through the challenging early period, when the chance of failure is greater and the benefits are not yet visible. This shows that interventions to support innovative teaching behavior must be adjusted to the scale and duration of the desired change.

Different sources of psychological safety may carry different weight depending on a lecturer's seniority. Junior lecturers, who are building a teaching portfolio for tenure assessment, may be most sensitive to signals from their direct superiors and promotion committees. Support from peers is also important, but the perception of how promotion decisions will view failed experiments can dominate. In contrast, senior lecturers with permanent positions may be more affected by the sense of safety in social interaction with colleagues than by worries about institutional sanctions. They may have passed the phase in which performance evaluation is a serious threat, so what matters more is the safety to remain respected in professional circles. The implication is that a one-size-fits-all approach to building psychological safety will not work.

Disciplinary culture also shapes how psychological safety is expressed. In engineering or natural science faculties, where teaching methods often center on structured problem solving, experimenting with technology may be seen as more natural. Technical failure can be explained within a debugging framework, which is familiar and non-threatening. In humanities faculties, by contrast, where teaching often relies on discussion and interpretation, technological disruption can feel more disruptive to the nuanced flow of a class (Robinson & Held, 2024). University lecturers in certain disciplines may develop different tolerances for technological risk. Psychological safety must be understood by considering the epistemological norms of each discipline. An approach that succeeds in one faculty will not necessarily succeed in another.

The physical and virtual structure of lecturers' collaboration spaces influences how far psychological safety can develop. Virtual interaction spaces between lecturers and students provide greater flexibility and accessibility (Hariani & Mendrika, 2023). When lecturers have a regular informal space, whether a physical corridor or a digital chat channel, to exchange stories about their experiences with technology, the sense of safety is strengthened by the recognition that others face

similar challenges. A space where failure can be discussed without fear of formal records or negative gossip serves as a container for normalizing difficulty. Conversely, if the only forum for discussing teaching is a formal meeting with minutes and evaluations, lecturers will censor themselves. The design of these conversation spaces is often overlooked in efforts to increase innovative teaching behavior, even though their impact on psychological safety is very large.

The availability of responsive technical support also moderates the relationship between psychological safety and innovative teaching behavior. A lecturer may feel psychologically safe enough to try new technology, but if the only result of a technical failure is frustration with no help available, further experiments become impossible. Technical support that is easy to access and non-judgmental widens the zone of experimentation, because lecturers know that if a problem occurs, there is a quick way out. In addition, the attitude of the technical staff matters (Rojak et al., 2022). A technician who responds to a lecturer's question in a condescending tone will destroy psychological safety faster than even the most supportive institutional policy. Technical support is therefore not merely a utility but an integral part of the psychological ecosystem.

Experimentation with new learning technology can be categorized into different levels, from light exploration to full integration. High psychological safety encourages lecturers to move along this continuum from the low end to the high end. At the lowest level, lecturers may only observe technology demos or experiment in a simulated environment. At the middle level, they may use the technology as an additional component in a single class session. At the highest level, they redesign an entire course around the new technology. Each move to the next level requires a larger leap of trust. Psychological safety provides a safety net that makes this leap feel acceptable. Without that net, lecturers remain stuck at the level of light exploration forever, never reaching the full potential of technology adoption. According to Putra, Mardikaningsih, and Darmawan (2021) trust fosters a sense of safety for developing knowledge.

In the context of teaching teams, psychological safety allows flexible distribution of roles when experimenting with technology. One lecturer may take the role of main user of a new technology in a team while other members observe and provide support. This arrangement reduces the risk for each individual because the cost of failure is shared. In addition, team members can give real-time feedback that helps quick correction. This collective experience creates a team memory of how to overcome technical difficulties, which becomes an asset for future experiments. The collective sense of safety in a team often exceeds individual safety because of mutual protection and shared responsibility. With the right approach, team spirit and cooperation will increase (Özkaya et al., 2023). This shows that encouraging team teaching can be a strategy to accelerate technology adoption at the faculty level.

Not all failures in technology experiments are created equal. Some failures are shallow and easy to fix, such as a button that does not work or an internet connection that drops. Others are systemic, such as a platform that is incompatible with the university's infrastructure or a method that is pedagogically unsuitable for certain material. Psychological safety helps lecturers distinguish between these two types of failure without paralyzing fear (Bridge et al., 2023). With shallow failures, a sense of safety encourages lecturers to try again right away. With systemic failures, a sense of safety gives the courage to admit that an approach did not work and to move to an alternative without guilt over having wasted time. The ability to stop a failed experiment without losing face is as important as the willingness to start a new one.

Psychological safety affects how lecturers communicate the results of their technology experiments to others. Lecturers who feel safe are more likely to document both successes and failures honestly in teaching reports or presentations at faculty forums. This honest documentation becomes the raw material for collective learning. In contrast, lecturers who feel unsafe will report only successes and hide failures, so the collective knowledge base becomes biased and incomplete. In the long run, this incomplete information hinders the whole faculty because others cannot learn from mistakes that were never disclosed. In this way, the psychological safety of individual lecturers has positive

externalities for the entire organization, creating shared knowledge about which technologies work under which conditions.

Conclusion

This literature study concludes that psychological safety serves as a central mechanism that enables lecturers to transcend reputational concerns and engage in continuous experimentation with new learning technologies. The safety to make mistakes works through transforming the perception of failure, reducing the cognitive load of impression management, converting anxiety into enthusiasm, and facilitating social learning among peers. Psychological safety is also significantly influenced by leadership behavior, student responses, the design of collaborative spaces, the availability of technical support, and disciplinary norms. The presence of this sense of safety encourages lecturers to move from mild exploration toward the full integration of technology into their course designs. Without a safe psychological foundation, investments in technological infrastructure and technical training programs will yield limited behavioral change because psychological barriers remain the untouched primary obstacle.

For university administrators, the implication of these findings is the importance of designing faculty performance evaluation policies that explicitly allow room for failure in pedagogical experiments. Reward systems need to recognize innovative efforts regardless of the immediate outcomes, at least for initial trials. Faculty leaders are advised to regularly communicate narratives about learning from their own failures in adopting technology, thereby normalizing the experience. For future research, it is recommended to empirically test the model generated from this literature study for instance, through a large-scale survey measuring various dimensions of psychological safety and their relationship to the frequency and depth of technology experimentation. Qualitative research involving in-depth interviews with lecturers known to be innovative is also needed to uncover the coping strategies they employ when facing failure.

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