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# DEVELOPING POSITIVE ATTITUDES TOWARD CHANGING LEARNING CONDITIONS AMONG THIRD- AND FOURTH-YEAR PEDAGOGY STUDENTS: AN EXPERIMENTAL STUDY

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## ABOUT ARTICLE

**Key words:** positive attitude formation, changing learning conditions, educational adaptability, pedagogy students, growth mindset, higher education, academic resilience, cognitive openness, emotional-motivational orientation, professional identity, self-regulated learning, reflective practice, formative feedback, competency-based education, instructional design.

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**Abstract:** The present article addresses the pedagogically significant challenge of cultivating positive attitudes among third- and fourth-year bachelor's degree students enrolled in pedagogy and educational methodology programmes toward the continuously changing conditions of contemporary higher education. Amid the accelerating transformation of educational environments — driven by digitalization, the proliferation of hybrid and remote learning formats, frequent curricular revisions, and the growing demands of competency-based education — the ability of students to maintain constructive, open, and proactively adaptive orientations toward change has emerged as a critical determinant of academic success and professional readiness. This study reports the design, implementation, and outcomes of a systematic pedagogical experiment conducted over one academic year at a higher education institution in Uzbekistan. One hundred and twenty third- and fourth-year pedagogy students were distributed into an experimental group and a control group of sixty participants each. The experimental group participated in a specially developed instructional programme incorporating growth mindset cultivation activities, scenario-based adaptability training, reflective professional

portfolio practices, peer collaborative problem-solving sessions, and formative feedback mechanisms. The control group followed the standard curriculum without modification. Pre-test and post-test diagnostic assessments were administered using a validated multi-criteria instrument measuring four principal dimensions: cognitive openness to educational change, emotional-motivational orientation toward academic challenge, behavioral adaptability in learning situations, and professional identity resilience. The results demonstrate statistically significant and practically meaningful improvements across all four dimensions in the experimental group, whereas the control group exhibited only marginal progress. The article elaborates on the theoretical grounding of the study, presents the methodological design of the experimental programme, analyzes quantitative findings with supporting comparative tables, and offers evidence-based recommendations for pedagogical practice and curriculum development in higher education.

**Introduction.** Contemporary higher education is characterized by an unprecedented velocity and complexity of change. The convergence of several transformative forces — including the accelerating digitalization of instructional delivery, the widespread adoption of hybrid and fully remote learning formats, the iterative revision of competency frameworks and curricular structures, and the growing integration of artificial intelligence-assisted educational tools — has rendered the learning environment of today's university student qualitatively different from that of any preceding generation. Within this context of perpetual flux, the psychological and behavioral orientations that students bring to educational change have emerged as a crucial mediating variable between the quality of institutional innovation and the actual educational outcomes experienced by individual learners [1].

The concept of attitude toward change, as applied to educational contexts, refers to a multidimensional psychological construct encompassing cognitive, affective, and behavioral components. A student who holds a positive attitude toward changing learning conditions approaches novelty, uncertainty, and curricular disruption with intellectual curiosity rather than anxiety, maintains motivational engagement rather than withdrawal, and actively seeks adaptive strategies rather than resisting or circumventing institutional change. Conversely, a negative or ambivalent attitude toward educational change tends to manifest as cognitive

rigidity, motivational depletion, academic disengagement, and reduced professional competence development — outcomes with significant implications not only for individual academic trajectories but for the quality of future pedagogical practice [2].

For students enrolled in pedagogy and educational methodology programmes, the stakes associated with attitude toward educational change are particularly elevated. These students are not merely consumers of educational innovation; they are its future agents and implementers. The teacher who emerges from initial professional preparation with a constructive, growth-oriented orientation toward change in educational conditions is far better positioned to navigate the dynamic demands of twenty-first-century classroom practice, to embrace pedagogical innovation, and to model adaptive learning dispositions for their own future students [3].

Third- and fourth-year bachelor's students in pedagogy programmes occupy a developmentally and professionally strategic position within the higher education trajectory. Having completed the foundational coursework of their first two years, these students are in the process of consolidating their professional identities, deepening their pedagogical knowledge bases, and transitioning toward the practical dimensions of their preparation. It is precisely at this stage that the formation of durable, positive attitudes toward educational change may yield the greatest long-term returns — both for the individual student's academic resilience and for the quality of their future professional practice [4].

Despite the clear theoretical and practical importance of this issue, empirical research specifically focused on the development of positive attitudes toward changing learning conditions among pedagogy students in higher education remains relatively sparse. The present study is designed to contribute to this literature by reporting the design and outcomes of a systematic pedagogical experiment implemented with third- and fourth-year pedagogy students at a higher education institution in Uzbekistan. The central research question of the study is: To what extent does a purposefully designed instructional programme, incorporating growth mindset cultivation, scenario-based adaptability training, reflective portfolio practices, and peer collaborative problem-solving, promote the development of positive attitudes toward changing learning conditions among third- and fourth-year pedagogy students, as measured across cognitive, emotional-motivational, behavioral, and professional identity dimensions? [5]

**Materials and Methods.** The theoretical foundation of the present study is constructed from four converging conceptual frameworks. The first and most central is Dweck's theory of implicit theories of intelligence, commonly operationalized as the distinction between fixed and growth mindsets. Dweck's extensive programme of research demonstrates that individuals

who hold a growth mindset — the belief that abilities, competencies, and dispositions are malleable and developable through effort, strategy, and learning — are significantly more likely to respond to challenge, setback, and change with constructive engagement rather than avoidance or withdrawal. The cultivation of a growth mindset orientation is therefore a primary mechanism through which positive attitudes toward educational change may be fostered [6].

The second theoretical framework is Bandura's social cognitive theory, with particular reference to the concept of self-efficacy. Self-efficacy — the individual's belief in their capacity to execute the behaviors required to produce specific outcomes — has been identified across numerous studies as a powerful determinant of attitude formation and behavioral intention. Students who possess high self-efficacy beliefs with respect to their capacity to adapt to changing learning conditions are more likely to approach such changes with positive expectations and proactive engagement. The experimental programme designed for this study incorporated multiple mechanisms for self-efficacy enhancement, including mastery experience facilitation, vicarious learning opportunities, and constructive verbal encouragement [7].

The third framework is Mezirow's transformative learning theory, which addresses the processes through which adults critically examine, challenge, and reconstruct the meaning perspectives and assumptive frameworks that govern their responses to experience. Within the context of the present study, transformative learning theory provides a rationale for reflective practices as instruments of attitude change: by engaging students in structured critical reflection on their own orientations toward educational change, the programme aimed to support the transformation of constraining, change-resistant meaning perspectives into more expansive, adaptive ones [8].

The fourth theoretical foundation is the concept of academic resilience, understood as the capacity to maintain positive adaptation and continued engagement with learning goals in the face of significant academic challenge or adversity. Research on academic resilience consistently identifies several modifiable factors that contribute to its development, including the quality of peer relationships, the availability of formative feedback, the cultivation of growth-oriented beliefs, and the development of flexible problem-solving repertoires — all of which were explicitly incorporated into the experimental programme [9].

The pedagogical experiment was conducted during the 2023–2024 academic year at a higher education institution in Uzbekistan. Participants comprised 120 third- and fourth-year bachelor's students enrolled in pedagogy and educational methodology programmes,

distributed into two groups of 60 students each. The experimental group (EG) and control group (CG) were matched for year of study, gender composition, academic performance indicators, and prior exposure to digital learning formats to ensure comparability at the outset of the experiment.

The experimental group participated in a semester-long instructional programme specifically designed to develop positive attitudes toward changing learning conditions. The programme was structured around four principal components:

1. Growth mindset cultivation module — a six-session workshop series grounded in Dweck's research, incorporating psychoeducational content on neuroplasticity and talent development, reflective exercises examining students' own implicit beliefs about learning ability, case study analyses of educators who successfully navigated professional change, and structured goal-setting practices oriented toward embracing academic challenge.

2. Scenario-based adaptability training — eight structured sessions in which students engaged with realistically constructed scenarios depicting various forms of educational change, including curriculum restructuring, the introduction of new assessment formats, the transition to digital or hybrid learning, and shifts in pedagogical expectations. Students analyzed these scenarios, identified potential obstacles and opportunities, and collaboratively developed adaptive response strategies.

3. Reflective professional portfolio practice — a longitudinal component sustained throughout the semester, in which students maintained developmental portfolios documenting their evolving attitudes, adaptive strategies, and professional learning experiences. Portfolio entries were structured around guided reflective prompts designed to foster metacognitive awareness of attitude formation processes and to support the progressive development of a growth-oriented professional identity.

4. Peer collaborative problem-solving sessions — biweekly collaborative learning sessions in which student groups of four to five engaged in structured problem-solving around authentic pedagogical challenges related to educational change. These sessions were designed to develop peer learning networks, foster collective efficacy beliefs, and provide students with collaborative resources for navigating change.

The control group followed the standard curriculum of their respective programmes, which addressed pedagogical theory and methodology without incorporating systematic attitude formation components related to educational change.

The diagnostic instrument used to assess positive attitude formation was developed and subjected to expert validation by a panel of six specialists in higher education pedagogy and

educational psychology prior to the experiment. The instrument comprised four dimensions assessed through a combination of Likert-scale attitude surveys, scenario-response tasks, and structured self-assessment protocols:

5. Cognitive openness to educational change — the degree to which students demonstrate intellectual curiosity, flexible thinking, and willingness to engage with novel learning approaches and curricular innovations.

6. Emotional-motivational orientation toward academic challenge — the quality of students' affective responses to learning difficulty and change, including emotional regulation capacity, intrinsic motivation maintenance, and challenge-seeking rather than challenge-avoidance tendencies.

7. Behavioral adaptability in learning situations — the extent to which students demonstrate flexible, proactive, and effective behavioral responses to changing learning demands, including strategy adjustment, help-seeking, and creative problem-solving.

8. Professional identity resilience — the stability and growth-orientation of students' emerging professional self-concepts as pedagogy practitioners in the face of educational change and uncertainty.

Each dimension was scored on a three-tier scale: low, medium, and high level of positive attitude formation. Pre-test assessments were conducted at the beginning of the semester and post-test assessments at its conclusion. Between-group and within-group statistical comparisons were conducted using the Mann-Whitney U test and the Wilcoxon signed-rank test respectively, with a significance threshold of $p < 0.05$ [10].

Result and Discussion. Pre-test results confirmed the initial equivalence of the experimental and control groups. As presented in Table 1, the distribution of students across attitude formation levels was broadly comparable at the commencement of the experiment, with the majority of participants in both groups demonstrating low-to-medium levels of positive attitude toward changing learning conditions — a finding that underscores the limited extent to which conventional pedagogy curricula address this dimension of student development.

**Table 1. Pre-test Distribution of Positive Attitude Formation Levels (n=60 per group)**

| Level / Daraja | Experimental Group / % | Control Group / % |
|---|---|---|
| Low / Past | 43.3 | 45.0 |

| Level / Daraja | Experimental Group / % | Control Group / % |
|---|---|---|
| Medium / O'rta | 40.0 | 38.3 |
| High / Yuqori | 16.7 | 16.7 |

Following the semester-long instructional intervention, post-test results revealed markedly divergent outcomes between the two groups. Table 2 presents a comprehensive comparison of pre- and post-test high-level performance across all four diagnostic dimensions for both groups.

**Table 2. Pre- and Post-test Results: Percentage of Students at High Level by Dimension**

| Diagnostic Dimension | EG Pre (%) | EG Post (%) | CG Pre (%) | CG Post (%) | EG Gain (pp) |
|---|---|---|---|---|---|
| Cognitive openness to educational change | 15.0 | 71.7 | 16.7 | 23.3 | +56.7 |
| Emotional-motivational orientation | 18.3 | 75.0 | 15.0 | 21.7 | +56.7 |
| Behavioral adaptability in learning situations | 16.7 | 68.3 | 18.3 | 25.0 | +51.6 |
| Professional identity resilience | 16.7 | 73.3 | 16.7 | 23.3 | +56.6 |

The data presented in Table 2 reveal substantial and consistent gains across all four dimensions in the experimental group. Emotional-motivational orientation toward academic challenge showed the most pronounced improvement, with the proportion of high-level students increasing from 18.3% to 75.0% — a gain of 56.7 percentage points. Cognitive openness to educational change and professional identity resilience demonstrated equally impressive gains of 56.7 and 56.6 percentage points respectively, while behavioral adaptability in learning situations improved by 51.6 percentage points. In the control group, all four dimensions showed only modest improvements ranging from 6.6 to 8.3 percentage points, consistent with incidental development rather than targeted intervention.

Table 3 presents the overall distribution of positive attitude formation levels across both groups at pre- and post-test stages, providing an integrated picture of the programme's cumulative impact.

**Table 3. Overall Positive Attitude Formation Levels: Pre- and Post-test Comparison**

| Level | EG Pre (%) | EG Post (%) | CG Pre (%) | CG Post (%) | EG Change (pp) |
|---|---|---|---|---|---|
| Low / Past | 43.3 | 3.3 | 45.0 | 35.0 | −40.0 |
| Medium / O'rta | 40.0 | 25.0 | 38.3 | 43.4 | −15.0 |
| High / Yuqori | 16.7 | 71.7 | 16.7 | 21.6 | +55.0 |

The overall results are particularly compelling. At the pre-test stage, only 16.7% of experimental group students demonstrated a high level of positive attitude formation toward changing learning conditions. By the post-test stage, this proportion had increased to 71.7% — a gain of 55.0 percentage points — while the proportion performing at the low level declined dramatically from 43.3% to 3.3%. The medium-level category contracted correspondingly, with the majority of previously medium-level students progressing to high-level performance. In the control group, the high-level proportion increased only marginally from 16.7% to 21.6%, while the low-level category declined modestly from 45.0% to 35.0%, consistent with routine developmental progress rather than targeted intervention effects.

Statistical analysis confirmed that between-group differences at post-test were highly significant across all four dimensions ($p < 0.01$ in all cases using the Mann-Whitney U test), while pre-test differences were non-significant ($p > 0.05$). Within-group analysis using the Wilcoxon signed-rank test confirmed statistically significant improvement in the experimental group ($p < 0.01$) and statistically non-significant change in the control group ($p > 0.05$) across all dimensions.

The particularly strong gains observed in the emotional-motivational orientation dimension warrant careful interpretive attention. This finding is consistent with Dweck's extensive research demonstrating that the cultivation of a growth mindset produces its most immediate and robust effects in the affective-motivational domain — specifically in reducing the anxiety, defensiveness, and motivational withdrawal that characterize fixed-mindset responses to challenge and change. The growth mindset cultivation module appears to have been especially effective in reorienting students' emotional responses to learning disruption

from threat-based to challenge-based appraisal, thereby sustaining motivational engagement in the face of academic uncertainty [11].

The substantial gains in cognitive openness to educational change are theoretically consonant with transformative learning theory's account of perspective transformation. The combination of reflective portfolio practice and scenario-based analysis appears to have supported a meaningful reconstruction of students' assumptive frameworks regarding educational change — shifting from orientations that construed change primarily as disruptive and threatening toward orientations that recognized change as a source of professional growth opportunity. Qualitative observations recorded by programme facilitators noted a progressive shift in the language students used to describe encounters with educational change across the course of the semester, from predominantly loss-framing to increasingly opportunity-framing discourse [12].

The improvements in behavioral adaptability merit attention for their practical implications. The scenario-based adaptability training component appears to have been particularly effective in expanding students' repertoire of adaptive response strategies, providing them with both the cognitive tools to analyze changing learning demands and the behavioral scripts to respond to them constructively. The peer collaborative problem-solving sessions appear to have reinforced these gains by providing students with collaborative resources and collective efficacy experiences that extended their individual adaptive capacities [13].

The gains in professional identity resilience are of particular significance for the long-term professional development implications of the study. For pedagogy students, the construction of a stable yet flexible professional identity — one that can accommodate and integrate educational change rather than experience it as a threat to professional selfhood — is a foundational condition for effective career-long professional learning. The reflective portfolio practice appears to have been centrally important in supporting this developmental process, providing students with a structured vehicle for narrating, making meaning of, and ultimately integrating their experiences of educational change into an evolving professional self-concept [14].

Several limitations of the present study should be acknowledged. The experiment was conducted within a single institutional context over the course of one semester, which limits the generalizability of the findings. The diagnostic instrument, while expert-validated, relies substantially on self-report data, which may be susceptible to social desirability bias. Additionally, the sustainability of the observed attitude gains beyond the immediate post-

intervention period remains an open empirical question, as attitude change research consistently identifies maintenance and transfer as the most challenging dimensions of attitudinal intervention outcomes. Longitudinal follow-up studies tracking attitude trajectories into students' early professional practice would be a valuable contribution to the literature [15].

**Conclusion.** This study has demonstrated that a purposefully designed, theoretically grounded instructional programme significantly enhances the development of positive attitudes toward changing learning conditions among third- and fourth-year pedagogy bachelor's students. Across all four diagnostic dimensions — cognitive openness to educational change, emotional-motivational orientation toward academic challenge, behavioral adaptability in learning situations, and professional identity resilience — experimental group students demonstrated statistically significant and practically substantial gains compared to their control group counterparts. The overall proportion of experimental group students performing at the high level of positive attitude formation increased from 16.7% to 71.7% — a gain of 55.0 percentage points — representing a transformative shift in the attitudinal profile of the student cohort.

These findings carry important implications for pedagogy programme design and delivery. First, they demonstrate that positive attitudes toward educational change are not fixed psychological traits but malleable dispositions that respond meaningfully to deliberate pedagogical intervention. Higher education institutions need not accept the prevalence of change-resistant orientations among pedagogy students as an immutable feature of the student population; rather, they can actively cultivate adaptive, growth-oriented attitudes through structured instructional design. Second, the results affirm the particular effectiveness of a multicomponent intervention approach that simultaneously addresses the cognitive, affective, behavioral, and professional identity dimensions of attitude formation, rather than targeting any single dimension in isolation.

Practical recommendations for pedagogy programme coordinators and higher education instructors arising from this study include the following: growth mindset cultivation activities should be systematically embedded in the pedagogy curriculum, particularly in the third and fourth years when professional identity consolidation is most active; scenario-based adaptability training should be incorporated as a regular feature of professional preparation coursework; reflective portfolio practices should be sustained longitudinally across semesters rather than deployed as isolated assessment instruments; and peer collaborative structures should be deliberately designed to develop collective as well as individual adaptive capacities.

For educational policy-makers and institutional administrators, the findings suggest that investment in structured attitudinal development programmes for pedagogy students yields measurable returns in the form of enhanced adaptive capacity — a competency of growing strategic importance as educational systems navigate an era of accelerating transformation. Teacher education institutions should consider developing dedicated professional development resources and pedagogical support systems oriented toward the cultivation of positive attitudes toward educational change, recognizing this as a core component of contemporary pedagogy education rather than an ancillary concern.

In conclusion, the capacity to maintain a positive, growth-oriented, and proactively adaptive orientation toward changing learning conditions represents one of the most valuable professional competencies that pedagogy education can cultivate. In an era in which the only educational constant is change itself, the pedagogy graduate who approaches this reality with intellectual curiosity, emotional resilience, behavioral flexibility, and a stable yet expansive professional identity is not merely better positioned for personal academic success — they are better equipped to fulfil the transformative educational mission that the teaching profession, and the society it serves, demands.

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