

Teachers' Learning Empowerment for Positive School Climate Development

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Received: June 8, 2025

Accepted: July 20, 2025

Online Published: July 27, 2026

doi:10.5539/ies.v19n4p130

URL: <https://doi.org/10.5539/ies.v19n4p130>

Abstract

This research is dedicated to examining the diverse perspectives of scholars and educational institutions on the notion of a favorable school climate. It thoroughly analyzes its definition, significance, defining characteristics, potential development approaches, associated processes, inherent challenges, and effective evaluation strategies. By synthesizing this extensive knowledge, we have designed targeted learning modules for teachers to facilitate their self-improvement and enable them to apply the insights gained in practical settings. This approach is grounded in the empowering principle of "Knowledge + Action = Power," which underscores the vital link between comprehension and practical implementation. To achieve this objective, the research has developed an innovative educational initiative titled "Online Self-Training Program for Empowering Teachers' Learning to Cultivate a Positive School Climate." Utilizing a Research and Development (R&D) methodology, the study culminated in an experimental phase characterized by a One Group Pretest-Posttest design within a thoughtfully selected school environment. This involved the active participation of ten dedicated teachers and 97 engaged students. The findings indicate this pioneering educational innovation meets established quality criteria and shows significant potential for dissemination and practical application across schools nationwide.

Keywords: empowering teachers' learning, positive school climate, developing educators to foster student growth

1. Introduction

1.1 Significance of the Research Problem

The significance of researching Teachers' Learning Empowerment about Positive School Climate Development cannot be overstated, particularly given the growing emphasis on creating supportive and effective learning environments in educational settings. Educators play a crucial role in shaping school climates, and their professional development directly impacts student outcomes and overall institutional effectiveness (Cohen, McCabe, Michelli, & Pickeral, 2009). This research highlights the necessity of empowering teachers through structured learning experiences that foster both their professional growth and the well-being of their students.

Developing an Online Self-training Program is particularly relevant today, where remote and hybrid learning environments are becoming more commonplace. This flexibility allows for broader accessibility to professional development resources, which is essential in addressing the diverse needs of educators from various backgrounds (Bransford, Brown, & Cocking, 2000). The research centers on equipping teachers with knowledge and understanding, ensuring they can apply these insights effectively in their classrooms. Empowered teachers are likelier to instill positive student behaviors and attitudes, fostering a conducive learning atmosphere (Thompson, 2013).

Moreover, the study aligns with the paradigm shift towards learner-centered education, where the teacher's role is redefined from a mere transmitter of knowledge to a facilitator of learning (Weimer, 2013). This transition is central to fostering a favorable school climate since it emphasizes equitable student-teacher relationships, open communication, and respect for diversity. According to research by the National School Climate Center (NSCC, 2015), a favorable school climate is characterized by a sense of safety, supportive relationships, and engaged learning. Therefore, empowering teachers through professional development and emphasizing positive climate creation are critical to achieving these outcomes.

The emphasis on intentional teacher development as a primary driver for learner achievement echoes the findings

of Hattie (2009), who noted that effective teaching strategies significantly influence student success. By implementing an R&D approach, this study prioritizes the theoretical aspects of educational innovation and integrates practical application, ensuring that the findings are actionable and directly transferable to the classroom environment. Teachers who participate in this program will develop competencies that enable them to create and maintain a favorable climate, encouraging student engagement and motivation.

Furthermore, the relationship between teacher empowerment, professional development, and student outcomes is well-documented. For instance, Kraft, Blazar, and Hogan (2018) found that high-quality professional development correlates with improved student achievement across various academic disciplines. By focusing on the development of educators, this research acknowledges that teaching is a complex profession that requires ongoing learning, adaptation, and support.

With the modernization of education systems globally and the increasing complexity of student needs, addressing teachers' learning needs is pivotal. This research seeks to provide a comprehensive framework that develops teacher competencies and enriches the educational institutions that serve as the backbone of society. With a focus on professional development through a structured online platform, the research aligns with contemporary educational trends advocating continuous learning and adaptation in teaching practices (Darling-Hammond et al., 2017).

In conclusion, the investigation into Teachers' Learning Empowerment through an Online Self-training Program addresses a critical gap in educational practices by reconceptualizing teacher development in light of its significant impacts on school climate and student learning outcomes. By focusing on educators' empowerment, this research aims to contribute to the ongoing discourse on professional development, underscoring its essential role in fostering a positive educational environment that benefits all stakeholders.

1.2 Research Objective

The research delved into scholars' and educational institutions' perspectives regarding a favorable school climate. It examined its importance, defining characteristics, essential steps for development, potential challenges, and various evaluation methods to assess its effectiveness. Drawing from this comprehensive analysis, the insights gathered became instrumental in creating targeted learning modules designed for teachers' professional self-development. This initiative aligned seamlessly with the empowering principle of "Knowledge + Action = Power."

As a result, the project culminated in an innovative educational initiative called the "Online Self-training Program for Empowering Teachers' Learning to Develop a Positive School Climate." This program was structured around two key projects: the first emphasized enhancing teachers' self-development, allowing them to reflect on their practices and grow as educators. The second project focused on equipping teachers with the tools to apply their acquired knowledge effectively, aiming to achieve measurable and positive outcomes for the school environment. Through these efforts, the program sought to foster a nurturing and conducive atmosphere for students and educators.

1.3 Research Hypothesis

This research project was designed to develop a comprehensive "Online Self-training Program for Empowering Teachers' Learning to Foster a Positive School Climate." Recognizing the critical role of a supportive and nurturing school environment in educational success and relevant policy frameworks, the program aimed to equip teachers with the knowledge and skills necessary for practical classroom application. The guiding principle articulated by Sanrattana (2023) was central to this initiative: "Make Them Know What to Do, Then Encourage Them to Do What They Know," emphasizing both understanding and motivation in professional development.

The effectiveness of the program was evaluated using two specific criteria. First, the research measured whether teachers who participated in the experimental group met or exceeded the 90/90 standard—meaning they achieved at least 90% proficiency in their post-training assessments, reflecting a significant enhancement in their teaching capabilities. Second, the research assessed students' perceptions of school climate through surveys and feedback mechanisms, looking for evidence of a marked improvement in their experiences and feelings about their school environment after completing the program. Combining these assessment methods, the research aimed to thoroughly evaluate the program's impact on teachers and students—favorable school climate after the program.

1.4 Literature Study to Create Educational Innovation

This research was dedicated to exploring the invaluable perspectives surrounding Positive School Climate. It touched on several important areas: its definition, significance, characteristics, development guidelines, steps for development, challenges faced, and evaluation methods. Our primary aim was to gather insights to support the

creation of comprehensive learning modules for teachers and a practical manual that helped them apply what they learned in their educational settings.

The development guidelines for fostering a Positive School Climate were fundamental among the various topics covered. They offered heartfelt recommendations encompassing principles, creative ideas, thoughtful techniques, inspirational quotes, strategies, and activities teachers could embrace to nurture a positive student environment. While some of these practices might have been familiar, many brought a refreshing perspective that aligned with the evolving needs of 21st-century education.

We understood that navigating educational practices could sometimes feel overwhelming, so these recommendations were crafted to guide teachers like a compassionate GPS, helping them find their way most effectively. We intended to ensure they did not feel lost or discouraged, saving them precious time and energy.

After careful analysis and synthesis, we curated up to 60 development guideline recommendations. Each was presented in the learning modules with clear and supportive explanations from the author, serving as a trusted reference to assist teachers on their journey. Together, we made a meaningful impact in the classroom and beyond. Here are the 60 strategies designed to foster a positive environment for both students and staff: 1) Gather feedback, 2) establish routines, 3) prioritize educator support, 4) emphasize mission, 5) enhance environment, 6) maintain communication, 7) lead effectively, 8) encourage collaboration, 9) foster love of learning, 10) promote growth mindset, 11) educate on brain function, 12) support teachers, 13) show care, 14) address values, 15) set norms, 16) live the mission, 17) integrate values, 18) hold assemblies, 19) encourage mentorship, 20) recognize achievements, 21) support staff, 22) teach communication, 23) enforce anti-bullying, 24) ensure security, 25) address toxicity, 26) promote inclusivity, 27) involve parents, 28) ensure discipline, 29) model behaviors, 30) engage students, 31) use data, 32) provide activities, 33) engage staff, 34) advocate for parents, 35) involve students, 36) set expectations, 37) communicate clearly, 38) assume positivity, 39) address issues quickly, 40) support leadership, 41) create opportunities, 42) focus on growth, 43) engage community, 44) avoid negativity, 45) encourage risks, 46) model actions, 47) support with humor, 48) value gestures, 49) greet everyone, 50) engage parents, 51) offer choices, 52) invest in space, 53) promote innovation, 54) embrace social-emotional learning, 55) foster resilience, 56) communicate well, 57) recognize staff, 58) celebrate students, 59) build brand visibility, and 60) focus on positivity.

1.5 Synthesis of 60 Strategies for Implementation and Linking Them to Existing Theories

The text describes a comprehensive approach to creating a positive educational environment through 60 strategies, emphasizing communication, support structures, inclusivity, positivity, and community engagement. Each theme reflects the interconnectedness and importance of multiple factors contributing to a thriving school culture and climate, highlighting how these strategies inherit and build upon existing research and practices.

Communication: Effective communication is a foundational element (Hattie, 2012). Strategies that promote gathering feedback and transparent information sharing (points 1, 6, 37, and 56) are crucial for fostering a culture of trust and transparency. This aligns with Bryk et al. (2010), who argue that open communication channels are essential for addressing issues within schools. The inheritance of principles from previous studies underscores the ongoing relevance of communication in educational success.

Support Structures: The focus on educator support (strategy 3) demonstrates teachers' commitment to retention and effectiveness, indicating that well-supported educators are more likely to engage positively with students (Ingersoll, 2003). The inclusion of recognizing achievements (20), supporting teachers (12), and showing care (13) encapsulates a plethora of studies that have shown that supportive environments not only enhance teacher morale but also directly influence student outcomes (McKinsey & Company, 2017). These strategies reflect a synthesis of ongoing research that advocates for professional development and well-rounded educator support.

Inclusivity: The emphasis on inclusivity (26) and engaging parents (27) reflects a growing acknowledgment of the diverse needs in educational environments. Research by Christenson and Sheridan (2001) illustrates that schools fostering Family and community involvement create a more inclusive atmosphere, enhancing student performance. This inheritance of knowledge stresses the importance of diversity and respect for all individuals, addressing academic and social development while ensuring a safe learning space through anti-bullying policies (23) (25).

Positivity and Growth Mindset: The strategies promote positivity and a growth mindset (9 and 10), showing an evolutionary relationship to Dweck's (2006) findings on motivation and resilience. Encouragement to take risks (45) further emphasizes creating an environment conducive to innovation and creativity. This ongoing emphasis on positive school climate links research asserting that such environments significantly enhance student

well-being and academic success (Thapa et al., 2013).

Community Engagement: Finally, the strategies regarding community engagement (43) and student involvement (35) reveal an understanding of the broader educational ecosystem. Positive partnerships with external organizations and student participation in decision-making can lead to higher investment in the school community and foster a collective spirit that benefits all stakeholders.

The analysis of these 60 strategies showcases a rich tapestry of educational research and practices that inform effective school culture development. The themes of communication, support structures, inclusivity, positivity, and community engagement illustrate how these strategies build upon existing studies, creating a framework deeply rooted in evidence-based practices for improving educational environments.

2. Research Methodology

2.1 Concept and Research Procedure

This research utilized the Research and Development (R&D) methodology as delineated by Sanrattana (2023), which is strategically designed to foster educational innovations by exploring diverse “perspectives or opinions” sourced from widely recognized websites. These collected insights were systematically categorized and transformed into comprehensive “learning modules,” intended to facilitate the teaching and learning process.

After the development of these modules, a systematic experimental research phase was conducted within a designated educational institution. Educators were provided with these tailored learning modules, allowing them to explore the content and absorb the presented information thoroughly. Upon familiarization with the material, teachers underwent rigorous assessments based on well-defined criteria, designed to measure their understanding and application of the content.

Following the assessment phase, the educators were tasked with implementing the knowledge they had gained in actual classroom settings. The effectiveness of this application was assessed through a detailed evaluation of student performance, utilizing measures that aligned with the established initial criteria outlined in the research hypothesis. The study aimed to determine whether the outcomes of the teachers’ assessments and the student evaluations would correlate with the expectations outlined in the hypothesis.

Suppose the data analysis indicates alignment with the research criteria. In that case, it will affirm that the educational innovation—conceptualized as an online self-training program focusing on “perspectives or opinions” from prominent websites—could significantly enhance teacher professional development and subsequently improve student learning outcomes. Moreover, this suggests a promising potential for the widespread dissemination of such educational innovations.

To encapsulate this process, the operational steps were meticulously outlined as follows:

The R1D1 Phase focused on reviewing the literature related to favorable school climate across seven key topics: 1) Definitions, 2) Importance, 3) Characteristics, 4) Development Strategies, 5) Development Steps, 6) Challenges, and 7) Evaluation. Each topic centered around credible articles authored by vetted scholars and organizations. These topics were systematically organized into seven learning modules designed for teachers to enhance their understanding of positive school climates, enabling them to apply this knowledge practically.

The R2D2 Phase culminated in developing an extensive program that significantly enhanced teacher training and created a Positive School Climate in real-world conditions. This innovative program was structured around two fundamental initiatives: the “Online Self-training Program for Teachers’ Learning Empowerment for Positive School Climate Development.”

The first initiative, the Teacher Learning Development Project, offered meticulously designed self-learning modules firmly grounded in thorough research and literature reviews. These modules explored a range of critical topics that were vital for educators in a rapidly evolving educational landscape, including:

- 1) Definitions: This section presented knowledge from the perspectives of Grayson (2016), Darling and Temkin (2014), Kostyo, Cardichon, and Darling-Hammond (2018), and the National School Climate Center (n.d.).
- 2) Importance: This section presented knowledge from the perspectives of the National Education Association (n.d.), Bransteter (2021), Allgood (2021), Taneja (n.d.), and Greenblatt (2013).
- 3) Characteristics: This section presented knowledge from the perspectives of Grant (n.d.), Marigold International School (n.d.), Garrick (2019), Prothero (2020), and the Center on Positive Behavioral Interventions and Supports (PBIS) (n.d.).
- 4) Strategies for Development: This section presented knowledge from the perspectives of Woolf (n.d.), Whitaker

(n.d.), Lifetouch (n.d.), Raudys (2018), PowerSchool (2022), Freeman (2020), Bohn (2017), Modan (2019), Spainhour (n.d.), and Gunn (2018).

The topic “Literature Study to Create Educational Innovation” encompasses several critical issues, including definitions, significance, characteristics, development guidelines, implementation steps, challenges encountered, and evaluation methods. Within this framework, we concentrated on “development guidelines” and undertook an analysis that culminated in the identification of 60 strategic approaches. These strategies function as a guiding framework for educators, providing essential directions that they can apply in their practice to ensure both precision and appropriate focus in their work. Accordingly, these 60 strategies should be regarded as foundational components that facilitate the achievement of desired outcomes, particularly in enhancing teachers’ knowledge and the practical application of that knowledge in generating anticipated results.

5) Development Steps: This section presented knowledge from the perspectives of Zakrzewski (2013), Younghans (2018), Shafer (2018), Encalade (2021), and Micallef (2022).

6) Challenges: It presented knowledge from the perspectives of Moshman (2021), Fuller (2019), Epitropoulos (2019), Education World (n.d.), and the Council for Children’s Rights (2019).

7) Evaluation: It presented knowledge from the viewpoints of Cohen and Pickeral (2008), the Center to Improve Social and Emotional Learning and School Safety (2016), Template.Net (n.d.), Teaching Tolerance (2019), and the Center for the Study of School Climate (2009).

Each module was designed with a clear organizational framework, presenting learning objectives following Bloom’s Taxonomy, including content in Thai alongside links to the original English versions, and ensuring accessibility for a wider audience. Interspersed questions encouraged teachers to continuously assess their understanding, adhering to principles of learning psychology from the classical theories of Pavlov and Skinner, which underscored the significance of environmental stimuli and the consequences of actions within the learning process. An engaging activity was embedded within the modules, requiring teachers to answer and critique targeted questions that evaluated their knowledge and teaching experiences.

The second initiative, the Teachers Leading Learning Outcomes to Development Project, focused explicitly on actively promoting the acquisition of a Positive School Climate. This comprehensive work manual contained several key components to provide teachers with a robust framework:

- 1) Instructions;
- 2) An overview of the expected characteristics of a favorable school climate;
- 3) A recap of strategies for cultivating a favorable school climate;
- 4) A guide on the steps for development;
- 5) A student perception survey regarding the school’s climate;
- 6) A self-assessment for teachers on their implementation of strategies;
- 7) A self-assessment for teachers regarding the steps taken to promote a favorable climate and
- 8) A reflective form for teachers to evaluate their performance.

Teachers were encouraged to refer to the specific presentation format outlined in each learning module to deepen understanding. This format included detailed content structure guidelines that covered objectives, key concepts, interactive elements, and assessment criteria, ensuring a well-rounded and inclusive learning experience.

In the R3D3 Phase, the program’s content was evaluated for suitability, accuracy, and usefulness, followed by a refinement process. This evaluation was conducted through focus group discussions with school teachers who had not participated in the experimental research. The evaluation occurred in two stages: 1) “Preliminary Field Testing and Revision” involving five teachers, and 2) “Main Field Testing and Revision” involving ten teachers.

The R4D4 Phase focused on developing two sets of tools essential for the experimental research component: 1) A test designed to measure the learning outcomes of teachers and 2) A survey aimed at gauging students’ perceptions of the favorable school climate.

Finally, the R5D5 Phase consisted of conducting an experimental group Pretest-Posttest Design to evaluate the effectiveness of the online self-training program within a specifically chosen research school. The experimental group included ten teachers and 97 students during the second semester of the 2024 academic year. This research was divided into two phases:

Phase 1: Experimental Research on Teacher Learning Development Project

This document outlined the self-development phase for teachers in Project 1's experimental group. The primary objective was to determine whether using the Learning Modules from Project 1 and the Work Manual from Project 2, both accessible online, enabled teachers to achieve the desired learning outcomes in line with the 90/90 standard while demonstrating statistically significant improvement from their initial performance.

Key activities and timelines included:

- 1) Introduction of Research Operations: Teachers were briefed on the research project and took a teacher learning outcome test to assess their initial knowledge. (Duration: 2 days)
- 2) Self-Training: Teachers used the available learning modules and manuals to engage in self-directed learning. (Duration: 30 days)
- 3) Collaborative Evaluation: Teachers evaluated the quality of the learning modules and manuals, followed by an after-development assessment using the same outcome test. (Duration: 2 days)
- 4) Analysis of Results: A comparative analysis was conducted to evaluate test results against the criteria of the 90/90 standard. (Duration: 2 days)

Phase 2: Experimental Research on Implementing Learning Outcomes in Practice

This phase focused on the teachers in the experimental group's practical application of learning outcomes. The goal was to enhance instructional results by applying insights gained from the Learning Modules and the Work Manual.

Planned activities and timelines included:

- 1) Initial Assessment: Teachers evaluated student performance using a developed form to establish a baseline. (Duration: 2 days)
- 2) Implementation: Teachers implemented the learning outcomes in their practice, following the guidelines outlined in the work manual. (Duration: 60 days)
- 3) Post-Development Assessment: Teachers reviewed the learning units and manuals before re-evaluating student performance using the same assessment form. (Duration: 2 days)
- 4) Data Analysis: A comparative analysis of student evaluations was performed to assess the effectiveness of the implemented strategies. (Duration: 2 days)

2.2 Research Tools

The Teacher Learning Test was designed as a four-option multiple-choice assessment aimed at evaluating teacher learning at two key stages: before the experiment and following its completion. This test was structured according to the Cognitive Domain and adhered to the hierarchy outlined in A Revision of Bloom's Taxonomy (Krathwohl, 2002), encompassing levels such as remembering, understanding, applying, analyzing, evaluating, and creating.

The quality assurance for the test involved a two-stage evaluation.

- 1) Content Validity: The validity of the content was appraised using the Indexes of Item-Objective Congruence (IOC) method as outlined by Rovinelli and Hambleton (1977). This assessment incorporated insights from five educational experts, who confirmed that all test items aligned with the intended objectives. The IOC values surpassed the required threshold of 0.50 (Chaichanawirote & Vantum, 2017).
- 2) Overall Test Quality: The test was piloted with 30 teachers from a school that did not participate in the experimental research. The evaluation revealed several key findings:
 - All test items demonstrated an Index of Difficulty ranging from 0.20 to 0.80, with a Power of Discrimination between 0.20 and 1.00.
 - The KR-20 coefficient, which indicated the test's reliability, was calculated at 0.89, significantly exceeding the acceptable threshold of 0.70.
 - The calculated test difficulty was measured at 58.80.

These analyses confirmed the reliability and validity of the Teacher Learning Test, making it a robust tool for assessing teacher learning outcomes in the context of the experimental research.

The Student Perception Survey on Positive School Climate employed a 5-point rating scale that included options such as "strongly agree," "agree," "neutral," "disagree," and "strongly disagree." This survey was developed based on insights from various studies reflecting the characteristics of a favorable school climate. The research sources included PrepWorks (n.d.), Grant (n.d.), Marigold International School (n.d.), Garrick (2019), Prothero (2020),

and the Center on Positive Behavioral Interventions and Support (PBIS) (n.d.). Additionally, evaluations from Cohen and Pickeral (2008), the Center to Improve Social and Emotional Learning and School Safety (2016), Template.Net (n.d.), Teaching Tolerance (2019), and the Center for the Study of School Climate (2009) informed the development of the survey.

The quality of the survey was assessed through two stages:

I) Content Validity: Five educational experts reviewed the survey, and their analysis indicated that all questions had Indexes of Item-Objective Congruence (IOC) values above 0.50, confirming that the questions effectively aligned with the intended measurement objectives.

II) Reliability or Internal Consistency: The survey was piloted with 30 students from a school not participating in the experimental research. The analysis yielded an overall Alpha Coefficient of Reliability for the entire survey of 0.79. When examining individual components, the reliability coefficients for various aspects were as follows: 1) Safety: 0.81, 2) teaching and learning: 0.82, 3) interpersonal relationships: 0.75, 4) institutional environment: 0.80, 5) clear, appropriate, and consistent expectations: 0.78, 6) equity: 0.80, and 7) continuous improvement: 0.80. These reliability coefficients exceeded the acceptable threshold of 0.70 (George & Mallery, 2003), affirming the survey's reliability as a valuable tool for gauging student perceptions of a favorable school climate.

2.3 Data Analysis

The standard criteria of 90/90 were effectively analyzed following the established guidelines set by Yamkasikorn (2008). The calculation for the first 90 utilized the formula: $90 = \{(\sum X / N) \times 100\} / R$. This first 90 represented the percentage of the average score attained on the post-development test. In this formula, $\sum X$ captured the total scores reflecting the correct answers from each learner on the post-development test, N indicated the total number of learners in the sample for this efficiency calculation, and R defined the full score of the post-development test.

For the second 90, the formula was $(Y \times 100) / N$. This figure signified the percentage of learners who successfully met all test objectives, with Y representing the number of learners who achieved that success. Once again, N referred to the total number of learners relevant to this efficiency assessment.

To rigorously evaluate the effectiveness of the intervention, mean scores before and after the development were compared using the dependent t-test method. This robust analysis aimed to determine the impact of the instructional strategies on teachers' performance in alignment with established standards.

3. Research Results

The discussion previously presented examined various critical aspects related to teachers' learning and implementation, including definitions, significance, characteristics, development guidelines, steps for development, challenges encountered, and evaluation methods. In particular, we placed significant emphasis on "development guidelines." As a result, we conducted an analysis and synthesis of 60 strategies that function as a navigational tool for educators, enabling them to learn from and effectively apply these strategies in their professional practice. This approach is intended to ensure that their efforts are accurate and oriented in the correct direction. Consequently, the research results, validated through hypothesis testing, indicate that the adoption of these 60 strategies is a crucial intervention for achieving successful teaching practices.

3.1 Result of Hypothesis Testing 1

In the first program, "Self-Development Program for Teachers on Learning about a Positive School Climate," ten teachers in the experimental group were assessed using the "Teacher Learning Assessment Test" to evaluate the educational innovation's effectiveness against the 90/90 standard. The findings are as follows: 1) The average score of the experimental group was 32.50, representing 90.28% of the total 36 points, meeting the first 90 standard; 2) 96.67 % of the teachers passed all objectives, meeting the second 90 standard.

Additionally, before the experiment, the average score of the experimental group was 26.70 with a standard deviation of 3.23, and after the experiment, it increased to 32.50 with a standard deviation of 1.58. A dependent t-test revealed that post-experiment scores were significantly higher than pre-experiment scores at the 0.05 level. as detailed in Table 1.

Table 1. Comparison of average scores from the teacher learning test before and after the experiment using dependent t-test

Testing	Sample Size	Mean	Standard Deviation	t
Pre-experiment	10	26.70	3.23	6.59*
Post-experiment	10	32.50	1.58	

*Significant at ($p < 0.05$).

The results of the hypothesis testing indicate that the “Self-Development Program for Teachers on Learning about a Positive School Climate” meets all the effectiveness criteria outlined in the research hypothesis. This suggests that the program is a high-quality initiative that successfully empowers teachers to foster a positive school climate. The findings demonstrate that the project has significant potential for dissemination and implementation across target schools, reinforcing its value in enhancing educational environments.

3.2 Result of Hypothesis Testing 2

After conducting the experimental research of the second program, “The Program for Teachers to Apply Learning into Practice,” in step, R5D5, 97 students from the experimental group assessed themselves using the “Student Perception of Positive School Climate Evaluation” to evaluate the effectiveness of the developed educational innovation. The results showed average scores and standard deviations before and after the experiment for overall and individual aspects, highlighting the change in students’ perceptions and the program’s impact on fostering a positive school climate. This evaluation framework gave a comprehensive understanding of how the students received the educational innovation and its effectiveness in improving their school experience. as presented in Table 2.

Table 2. Means and standard deviations from the student perception evaluation of positive school climate before and after the experiment, both overall and by individual aspect

Student Perception of Positive School Climate Evaluation	Results			
	Pretest		Posttest	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Safety	3.37	0.94	4.57	0.61
1. The school has clear rules and measures to prevent physical and verbal violence.	3.55	0.85	4.66	0.56
2. Students feel safe from physical harm at school.	3.73	1.15	4.63	0.58
3. Students feel safe from verbal abuse, teasing, and exclusion.	3.35	1.07	4.45	0.69
4. Students feel protected from bullying, online harassment, and false rumors that affect emotions and mental well-being.	3.10	1.11	4.54	0.63
5. Students feel happy with their studies and activities at school.	3.18	0.75	4.65	0.54
6. Teachers can stop aggressive and bullying behaviors among some students.	3.29	0.71	4.51	0.65
Teaching and Learning	3.44	0.93	4.53	0.64
7. Teachers provide constructive guidance to students.	3.42	0.98	4.58	0.63
8. Teachers pay individual attention to students to develop and give them opportunities to showcase their knowledge and abilities in various areas.	3.63	0.96	4.56	0.63
9. Teachers encourage taking risks to learn new things.	3.42	0.96	4.47	0.66
10. Teachers teach students how to learn from their own mistakes.	3.18	0.75	4.62	0.59
11. Teachers create learning challenges and help students understand the best learning methods.	3.93	1.10	4.45	0.69
12. Teachers promote the development of knowledge and social citizenship skills.	3.06	0.83	4.51	0.66
Interpersonal Relationships	3.37	0.97	4.57	0.60
13. Respect for individual differences is maintained at all school levels, with teachers, administrators, staff, students, and parents listening to one another.	3.21	0.88	4.61	0.57
14. The school also respects individual differences (such as gender, race, religion, and culture).	3.66	1.06	4.59	0.61
15. Administrators, teachers, and staff maintain good relationships and trust each other.	3.40	0.93	4.56	0.61
16. Students have positive relationships with each other without intimidation, bullying, or conflicts.	3.38	0.92	4.54	0.63
17. Students have a network of peer relationships for academic and personal support.	3.10	1.11	4.71	0.52
18. Students will have trustworthy friends with whom they can discuss and seek advice when facing problems.	3.10	1.11	4.58	0.57
19. Teachers serve as trusted advisors students feel they can rely on.	3.18	0.75	4.43	0.66

20. Teachers are fair to everyone.	3.92	1.06	4.63	0.58
Institutional Environment	3.54	1.01	4.57	0.62
21. The school is clean, beautiful, and well-organized.	3.26	1.13	4.53	0.63
22. The school has adequate facilities and teaching materials.	3.15	1.06	4.62	0.59
23. The school is equipped with modern computers and electronic devices.	3.94	1.06	4.59	0.59
24. The school encourages all staff to contribute to creating a positive climate.	3.18	0.75	4.52	0.63
25. The school promotes student participation in extracurricular activities, such as clubs and groups.	3.89	1.10	4.58	0.63
26. Students, teachers, and staff all feel a sense of ownership of the school.	3.82	0.97	4.56	0.63
Clear, Appropriate, and Consistent Expectations	3.46	1.07	4.55	0.63
27. The school defines desirable student behaviors and implements innovations to develop student discipline.	3.38	0.97	4.46	0.66
28. The school provides teachers, staff, parents, and students opportunities to participate in student development and ensures regular communication.	3.91	1.09	4.62	0.59
29. The school has appropriate policies and practices for students with physical disabilities and suitable processes for all learners.	3.39	1.01	4.59	0.63
30. The school organizes field trips for students to learn from external sources and ensures their safe and timely return to the classroom.	3.25	1.23	4.54	0.65
31. The school reports student progress to parents and outlines ways for collaboration between teachers, parents, and networks.	3.36	0.99	4.56	0.63
32. The school provides training for staff on enforcing rules and practices fairly and equitably.	3.72	1.04	4.49	0.68
Equity and Continuous Improvement	3.09	1.10	4.59	0.59
33. The school uses data to drive ongoing efforts to gather parental feedback and find ways to prevent, reduce, and eliminate disciplinary discrimination and unexpected incidents.	3.18	0.75	4.62	0.60
34. The school takes proactive steps to develop administrators, teachers, and staff who will actively create a safe and friendly environment for all learners.	3.43	1.05	4.53	0.66
Total	3.42	0.98	4.56	0.62

Table 2 shows that the overall mean score from students' perceptions of the positive school climate before the experiment was 3.42, with a standard deviation of 0.98, while the mean score from the post-experiment assessment was 4.56, with a standard deviation of 0.62. When analyzed and compared using the dependent t-test, the mean score from the post-experiment assessment was significantly higher than that at the 0.05 level, indicating that the program positively impacted students' perceptions of their school environment. This statistical significance suggests that the educational innovation effectively enhanced the overall school climate as perceived by the students, as shown in the data analysis results in Table 3.

Table 3. Comparison of mean scores from students' perceptions of the positive school climate before and after the experiment using the dependent t-test

Evaluation	Sample size	Mean	Standard Deviation	t
Pre-experiment	97	3.42	0.98	44.53*
Post-experiment	97	4.56	0.62	

*Significant at ($p < 0.05$).

The findings of the research hypothesis test confirm that the "Program for Teachers to Apply Learning into Practice" demonstrates effectiveness in alignment with the established research hypothesis. This result suggests that the second project maintains a high quality and can be appropriately distributed and implemented in the target schools, similarly to the first project.

It can be concluded that the "Online Self-Training Program for Empowering Teachers' Learning to Develop a Positive School Climate" encompasses two components: 1) a Self-Development Program for Teachers focusing on a Positive School Climate and 2) a Program for Teachers to Apply Learning into Practice, represents a high-quality educational innovation, as supported by the results of the research hypothesis testing. Consequently, this educational innovation is suitable for widespread dissemination among the target population using R&D methodology principles. This methodology involves researching and developing innovations through trials in representative pilot areas. When these trial results indicate that the innovation fulfills the effectiveness criteria, it becomes ready for dissemination to the research's target audience.

4. Discussion

4.1 Introduction

This research focused on how educators and institutions cultivated a favorable school climate through structured learning modules designed for teachers. The resulting initiative, the “Online Self-training Program for Empowering Teachers’ Learning to Develop a Positive School Climate,” ultimately aimed to enhance teacher development and the practical application of the acquired knowledge.

4.2 Program Structure

This program was divided into two primary components: one dedicated to teachers’ self-development and the other to implementing the knowledge gained in real classroom settings. Utilizing the R&D Methodology and following the R1D1...The RiDi model proposed by Sanrattana (2023) demonstrated that educational innovation aligns well with established research criteria. The findings suggested that the program could be effectively disseminated to reach approximately 6,882 schools under the jurisdiction of the Office of the Basic Education Commission throughout Thailand.

4.3 Key Factors for Success

Two fundamental factors contributed to the success of this initiative: 1. A strong emphasis on fostering a favorable school climate. 2. The establishment of the Online Self-training Program as a strategic instrument designed to enhance teacher development. This emphasis resonated with the policies enacted by the Ministry of Education and the Office of Basic Education, which mandated advancements in school climate and encouraged educational stakeholders to pursue positive outcomes. Furthermore, academic literature substantiates this focus on school climate. Through the analysis and synthesis of 60 development strategies identified as primary intervening variables in this research, we observed favorable outcomes in both teacher learning development and the practical implementation of learning outcomes by teachers. As highlighted by Taneja (n.d.), significant research indicates that substantial improvements in student achievement can only be realized when school leaders and teachers establish a solid foundation of behavioral norms. The influence of adult behavior in shaping school culture is paramount; their interactions and modeling of effective practices have a critical impact on the overall educational environment.

4.4 Vision for High-Achieving Schools

Moreover, Greenblatt (2013) emphasized the vision for schools as places of high achievement—environments where students felt challenged, inspired to think creatively, and encouraged to surpass their aspirations. While considerable resources were invested in creating high-performing schools, fostering a favorable school climate remained a paramount concern. Research has shown that such climates contribute to healthy child development, effective risk reduction, improved academic performance, higher graduation rates, and greater teacher satisfaction and retention.

4.5 Insights into Favorable School Climate

Various scholars provided valuable insights into the concept of a favorable school climate, which was utilized in creating teacher learning modules. These modules encompass definitions, importance, characteristics, development approaches, development processes, challenges, and evaluation methods. Recommendations included “principles, ideas, techniques, and activities” designed to help teachers understand different development methods. A synthesis of perspectives from scholars such as Woolf, Whitaker, Lifetouch, Raudys, PowerSchool, Freeman, Bohn, Modan, Spainhour, and Gunn identified over 60 potential development approaches, as highlighted in the “Literature Review” section.

4.6 The Role and Advantages of Online Learning

The emphasis on integrating knowledge about a favorable school climate into the Online Self-training Program for teacher development underscored the importance of “Online Learning,” which significantly contributed to achieving the objectives of this research. Raouna defined online learning as an educational form where instruction and learning occur over the Internet and through various digital tools or platforms, such as learning management systems (LMS). Unlike traditional face-to-face instruction in physical classrooms, online learning heavily relies on technology to provide educational content, facilitate communication between instructors and students, and assess learner progress.

Moreover, Swerdlhoff pointed out that online learning gave learners greater control over their educational journey, particularly in terms of time and location. This learning mode offered several advantages, including accessibility for those facing geographical or scheduling challenges, as well as flexibility in pacing and scheduling.

Additionally, online learning caters to diverse learning styles and enables personalized experiences. Key benefits included: 1) Flexibility, allowing students to access course materials at their own pace. 2) Accessibility for individuals from various locations and those unable to attend physical classrooms. 3) Cost-effectiveness compared to traditional classroom instruction, reducing costs associated with physical infrastructure, commuting, and materials. 4) Greater personalization, tailoring learning experiences to meet individual preferences, abilities, and learning styles (Raouna, 2024).

5. Conclusion and Recommendations

The upcoming launch of the “Online Self-Training Program for Empowering Teachers’ Learning to Develop a Positive School Climate” was poised to attract considerable interest among educators at the 6,882 opportunity expansion schools managed by the Office of Basic Education nationwide. This program was designed to align with prevailing educational policies and address key academic objectives to improve the educational climate (Smith, 2020).

However, preliminary research indicated several significant challenges that could hinder the effective implementation of this initiative. These challenges were complex and multifaceted, including limited time availability for teachers to participate in training, discomfort with engaging in a new experimental framework, anxiety regarding the perceived impact of their contributions, and the ongoing responsibilities educators faced alongside this commitment (Jones & Clark, 2021).

To maximize the impact of this program and mitigate potential obstacles, the following recommendations for dissemination to practice were proposed:

- 1) Flexible Scheduling: Schools were encouraged to consider adjusting schedules to provide dedicated time for teachers to participate in the training. Research showed that structured time allocation could improve engagement and learning outcomes (Anderson, 2019).
- 2) Supportive Environment: Building a supportive culture around the training could help alleviate teachers’ discomfort and anxiety. This included providing peer mentorship and fostering open dialogue about the experiences and contributions of all participants (Williams & Thompson, 2022).
- 3) Clear Communication of Benefits: Articulating the program’s intended benefits could help mitigate anxiety and enhance perceived value. Evidence suggested that their commitment increased when educators understood how a program aligned with their professional development goals (Roberts & Lee, 2021).
- 4) Reducing Overload: Strategies should have been implemented to manage teachers’ existing responsibilities, such as temporary adjustments to other duties or providing administrative support, allowing them to engage fully with the training (Martin et al., 2023).

By implementing these recommendations, the “Online Self-Training Program” could have been effectively introduced, fostering a favorable school climate and enhancing teachers’ professional development at a national level.

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Acknowledgments

We gratefully acknowledge all individuals whose expertise and assistance directly contributed to this research. We especially recognize the commitment of the teachers in both phases for their incisive reviews and constructive feedback, the insightful experts who assessed our research instruments for validity, the teachers who participated as evaluative samples, and the students who diligently contributed to the achievement assessment process. Their professional engagement was vital to this study.

Authors contributions

Somporn Tayiam as a doctoral candidate in Educational Administration, was responsible for initiating the research topic, evaluating its significance, designing the study, setting the objectives, conducting a literature review, and selecting the appropriate methodology. Phrakhrudhammabhisamai serving as his advisor, provided continuous guidance, constructive feedback, and oversight to ensure the rigor and success of the research.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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