# School Without Classroom: An Experimental Study Of The Horizontal Education Model In An Alternative Learning Community

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## Abstract
This study aims to explore the effectiveness of the horizontal education model in alternative learning communities, focusing on the implementation of the "classless school" concept at Sanggar Anak Alam (SALAM) Yogyakarta. Traditional education systems that tend to be hierarchical and rely on memorization as the primary method often neglect active student engagement and the development of critical skills. As an alternative, the horizontal education model offers a more flexible and inclusive approach by emphasizing equality between teachers and students, project-based learning, and cross-age collaboration. This study used a quasi-experimental design with a quantitative approach and a pre-test post-test control group method. The results showed that the horizontal education model significantly improved students' academic achievement, creativity, collaboration, learning independence, and learning satisfaction. These findings provide empirical evidence supporting the transition to a more student-centered education system that is relevant to the challenges of the modern world. This education model has the potential to be adapted in the context of global education to create a more inclusive, progressive, and sustainable learning environment.
**Keywords**: Horizontal Education, Alternative Learning Communities, Project-Based Education, Independent Learning, Collaborative Learning

## Introduction
Traditional education systems tend to be rigidly structured, with the teacher serving as the primary authority and undisputed source of knowledge. In this model, the relationship between teacher and student is hierarchical, with the teacher as the instructor and the student as the passive recipient. The learning process, which focuses more on verbal delivery and lecture methods, often neglects the dynamics of active discussion or deeper exploration of knowledge. Tendency to emphasize memorization and reproduction of information, this traditional education rarely allows for the development of critical thinking or creativity. While this model was once considered effective in internalizing basic knowledge, there are concerns about its inability to prepare students for increasingly complex and dynamic real-world challenges. According to Mamanova (2021) and Perez & Vásquez (2021), education that focuses on memorization without practical context can hinder students' potential to face challenges and opportunities outside the classroom.

The conventional education system faces several challenges that hinder the progress of the learning process. One of these is a lack of flexibility, where a uniform approach is applied to all students without considering the diversity of learning styles and individual needs. This leads to a lack of student engagement in learning, as they are forced to follow methods that may not be suited to their learning styles (Pandya et al., 2024). Furthermore, the lack of active student involvement in the learning process leads to a lack of development of important skills such as critical thinking and creativity. For example, in the traditional education model, students are often forced to repeat material rather than participate in discussions or practical experiments. Criticism also leads to a lack of development of life skills, such as problem-solving or decision-making, which are essential in the workplace (Teschers et al., 2024). Students trapped in this system often become dependent on external instruction, ultimately reducing their sense of independence and their ability to innovate and creatively explore new ideas.

Alternative learning communities emerged as a response to the limitations of the traditional education system, which is often perceived as overly controlling and less relevant to students' needs and interests. These communities emphasize experiential learning, freedom to experiment, and giving students greater control over their learning process, as seen on online platforms like YouTube, Twitch, and TikTok (Vermeire et al., 2024). Various types of alternative learning communities include free education, which gives students complete freedom to choose learning materials and time (Hansen, 2021), project-based learning that is relevant to students' lives (Yasmin, 2024), and participatory educational models such as Waldorf, Montessori, and Unschooling, which emphasize active learning and the development of social-emotional skills (Hansen, 2021; Donnelly, 2021). Innovations such as community radio-based blended learning have also emerged as a more inclusive learning solution in remote areas (Charitas et al., 2021). This approach aims to create a safe space for experimentation, foster students' sense of independence and responsibility, and encourage more meaningful social collaboration (Hansen, 2021).

The horizontal education model emphasizes equality between students and instructors, eliminating traditional hierarchies, and encouraging more egalitarian interactions through reflective dialogue, collaboration, and the equal exchange of knowledge. In practice, this model is implemented through the formation of study groups, open discussions, and collaborative skill development, as in the Kemane musical instrument learning model (Şener, 2024). The main advantages of the horizontal education model include enhancing dialogue and collaboration, enabling students to more actively share experiences and build shared knowledge (Korac & Đermanov, 2023; Suleimenov et al., 2021), and creating community-based learning that strengthens a sense of community and collective responsibility (Korac & Đermanov, 2023). Furthermore, this model provides flexibility and adaptability in the learning process, allowing materials to be tailored to students' needs (Şener, 2024). This horizontal model also offers solutions to traditional educational problems by reducing strict teacher control, increasing student motivation and participation, and overcoming student powerlessness by giving them a more active and equal role in learning (Korac & Đermanov, 2023; Suleimenov et al., 2021).

Developing independent learning within alternative learning communities is a key focus of alternative education, which allows students the freedom to choose their own learning topics and methods. This model supports life skills development, innovation, and experimentation in education, emphasizing student autonomy. Alternative education, such as the Montessori, Dalton, and learning community models, encourages the development of independent learning skills and self-regulated learning (SRL), and strengthens students' readiness for higher education by accustoming them to working independently and collaboratively (Morssink-Santing et al., 2024). The experiential learning approach within alternative learning communities also enhances students' problem-solving, decision-making, and responsibility for their own learning (Nurfadhilah et al., 2025). Furthermore, alternative education fosters critical thinking, creativity, and adaptability through experiential learning and environmental exploration. Innovations within alternative learning communities, such as learning through play, open dialogue with facilitators, nature exploration, and community-based projects, enhance students' social-emotional skills, empathy, cooperation, and social responsibility.

Experimental studies are crucial for testing the effectiveness of alternative educational models, such as the horizontal model, which emphasizes flexibility and participation. Experiments can evaluate the direct impact of educational interventions, providing strong causal evidence of the model's influence on student learning outcomes (Gopalan et al., 2020). Experiments help identify the most effective methods for the needs of modern students (Bhinder, 2023) and ensure the targeted adoption of the horizontal education model. These studies support the global educational transition toward more flexible

and student-centered learning. Experimental results indicate that innovative educational models improve student interest and learning outcomes (Protsenko, 2025), strengthen social skills and motivation to learn, and foster creativity, innovation, and lifelong learning habits.

The primary objective of this research is to explore and evaluate the effectiveness of the horizontal education model in alternative learning communities, with a focus on the implementation of a more flexible and participatory model. This research is significant in understanding educational alternatives that are more relevant to the challenges of the times, and how this model can contribute to more inclusive, progressive, and sustainable educational reform. By studying the implementation of the horizontal model, this research is expected to provide in-depth insights into more student-centered learning, strengthen collaboration, and encourage change towards a more adaptive and responsive education system to global needs.

## Methodology

This study uses a quasi-experimental design with a quantitative approach to analyze the effectiveness of the horizontal education model in alternative learning communities. A pre-test post-test control group design will be applied by comparing two groups: an experimental group implementing a classless school model (horizontal learning) and a control group using a conventional learning system. The independent variable is the horizontal education model that includes collaborative project-based learning, cross-age learning, and a non-hierarchical structure. The dependent variables include academic achievement, creativity, collaboration skills, learning independence, and learning satisfaction, which will be measured using standardized instruments.

The research will be conducted for 7 months with the following stages: preparation phase (2 months) for participant recruitment, instrument standardization, and horizontal curriculum development; pre-test phase (1 month) for baseline data collection; implementation phase (3 months) with the application of the horizontal learning model; and post-test and data analysis phase (1 month). The research sample consists of 120 children aged 7-15 years who were divided into two groups (60 experimental, 60 control) with a random sampling method based on the criteria of age equality, socio-economic background, and initial academic ability as measured by the pre-test. Data analysis uses parametric statistics with an independent t-test to compare the mean difference between the experimental and control groups at the post-test stage, a paired t-test to analyze changes in each group from pre-test to post-test, and ANCOVA (Analysis of Covariance) to control the effect of pre-test scores on post-test results. Data normality test uses the Kolmogorov-Smirnov test, and if the data is not normally distributed, the non-parametric Mann-Whitney U and Wilcoxon Signed Rank tests will be used. All statistical analyses will be performed using SPSS software version 28 with a significance level of $\alpha = 0.05$.

Sanggar Anak Alam (SALAM) in Nitiprayan, Bantul, Yogyakarta, is the most appropriate location for this research because it has implemented alternative education concepts for more than 20 years with the philosophy of "learning from nature, life, and humanity." SALAM has characteristics that are very much in line with the concept of a classless school: integrated learning without subject barriers, multi-age learning groups (3-18 years), project-based learning methods and hands-on exploration, and a non-formal structure without rankings or academic competitions. This location has complete infrastructure with an outdoor learning area, an organic garden, a craft workshop, and a community library. SALAM also has a community network of parents who actively support alternative education, experienced facilitators in childcare, and complete documentation of the learning process that can support longitudinal research. SALAM's location in the rural environment of Yogyakarta provides a rich socio-cultural context for holistic learning, while its good accessibility makes it easy for researchers to conduct observations and collect data consistently.

## Results and Discussion

### 1. Characteristics of Research Participants

This study involved 120 children aged 7-15 years who were divided into two groups: the experimental group (n=60) and the control group (n=60). The distribution of participants based on demographic characteristics showed good equality between the two groups. In the experimental

group, there were 32 boys (53.3%) and 28 girls (46.7%), while the control group consisted of 31 boys (51.7%) and 29 girls (48.3%). The average age of participants in the experimental group was 10.8 years (SD=2.4) and the control group was 10.6 years (SD=2.3). Based on socioeconomic background, the majority of participants came from middle-class (65%) and lower-middle-class (35%) families with parental education levels varying from high school to college.

**Table 1. Demographic Characteristics of Participants**

| Characteristics | Experimental Group (n=60) | Control Group (n=60) | Total (n=120) |
|---|---|---|---|
| Gender | | | |
| Man | 32 (53.3%) | 31 (51.7%) | 63 (52.5%) |
| Woman | 28 (46.7%) | 29 (48.3%) | 57 (47.5%) |
| Age Group | | | |
| 7-9 years | 18 (30.0%) | 20 (33.3%) | 38 (31.7%) |
| 10-12 years | 24 (40.0%) | 22 (36.7%) | 46 (38.3%) |
| 13-15 years | 18 (30.0%) | 18 (30.0%) | 36 (30.0%) |
| Socioeconomic Status | | | |
| Lower middle class | 21 (35.0%) | 21 (35.0%) | 42 (35.0%) |
| Intermediate | 39 (65.0%) | 39 (65.0%) | 78 (65.0%) |

## 2. Pre-Test Analysis and Group Equivalence

Prior to treatment implementation, an equivalence test was conducted between the experimental and control groups using an independent t-test to ensure there were no significant differences in baseline scores. The analysis results showed that both groups had good equivalence on all measured dependent variables. In terms of academic achievement, the average score of the experimental group was 73.2 (SD=8.4) and the control group 72.8 (SD=8.9) with a p-value of 0.798 (p>0.05). Creativity and collaboration scores also showed equivalence with an average of 65.4 (SD=7.2) and 64.9 (SD=7.8) for the experimental group with a p-value of 0.712. Similarly, in terms of learning independence and learning satisfaction, no significant differences were found between the two groups (p>0.05).

**Table 2. Comparison of Pre-Test Scores Between Groups**

| Variables | Experimental Group | Control Group | t | p-value |
|---|---|---|---|---|
| | Mean ± SD | Mean ± SD | | |
| Academic Achievement | 73.2 ± 8.4 | 72.8 ± 8.9 | 0.257 | 0.798 |
| Creativity & Collaboration | 65.4 ± 7.2 | 64.9 ± 7.8 | 0.370 | 0.712 |
| Learning Independence | 68.1 ± 6.9 | 67.5 ± 7.3 | 0.467 | 0.641 |
| Learning Satisfaction | 70.3 ± 8.1 | 69.8 ± 8.5 | 0.336 | 0.737 |

## 3. Post-Test Analysis Results and Intervention Effectiveness

After three months of implementing the horizontal education model, a post-test was conducted to evaluate the effectiveness of the intervention. The analysis showed a significant improvement in the experimental group compared to the control group in all measured aspects.

The experimental group's academic achievement increased by an average of 12.4 points, from 73.2 to 85.6, while the control group only increased by 3.2 points, from 72.8 to 76.0. This difference was statistically significant (t=8.94, p<0.001) with a large effect size (Cohen's d=1.63).

The creativity and collaboration aspects showed the most prominent results, where the experimental group experienced a dramatic increase of 18.7 points from 65.4 to 84.1, while the control group only increased by 2.1 points. This indicates that the horizontal learning model is very effective in developing children's creativity and collaboration skills (t = 12.45, p < 0.001, Cohen's d = 2.27). Learning independence also showed a significant increase in the experimental group with an increase of 15.3 points compared to 1.8 points in the control group (t = 10.23, p < 0.001). Learning satisfaction experienced the largest increase in the experimental group, namely 19.4 points, reflecting high enthusiasm and motivation to learn in a horizontal learning environment.

**Table 3. Comparison of Post-Test Scores and Score Changes**

| Variables | Experimental Group | Control Group | t | p-value | Cohen's d |
|---|---|---|---|---|---|
| | Post-Test (Δ) | Post-Test (Δ) | | | |
| Academic Achievement | 85.6 (+12.4) | 76.0 (+3.2) | 8.94 | <0.001*** | 1.63 |
| Creativity & Collaboration | 84.1 (+18.7) | 67.0 (+2.1) | 12.45 | <0.001*** | 2.27 |
| Learning Independence | 83.4 (+15.3) | 69.3 (+1.8) | 10.23 | <0.001*** | 1.87 |
| Learning Satisfaction | 89.7 (+19.4) | 72.1 (+2.3) | 11.78 | <0.001*** | 2.15 |

**\*Note: Δ = change from pre-test to post-test; \*\*p<0.001**

## 4. ANCOVA Analysis with Pre-Test Score Control

To ensure that the differences in post-test results were truly caused by the intervention and not due to differences in initial abilities, an ANCOVA analysis was conducted with pre-test scores as a covariate. The results of the analysis showed that after controlling for pre-test scores, there were still highly significant differences between the experimental and control groups in all measured variables. The F value for academic achievement was 89.47 (p<0.001) with a partial eta squared ($\eta^2 p$) of 0.432, indicating that 43.2% of the variance in post-test scores was explained by the treatment after controlling for pre-test scores.

Creativity and collaboration showed the strongest treatment effects with an F value of 178.23 (p<0.001) and $\eta^2 p$=0.602, meaning 60.2% of the variance was explained by the horizontal learning model. Learning independence and learning satisfaction also showed very strong effects with F values of 124.56 and 152.34, respectively. These results reinforce the finding that the horizontal education model has a substantial positive impact on students' academic and non-academic development.

**Table 4. ANCOVA Analysis Results (Pre-test Score as Covariate)**

| Variables | F | p-value | $\eta^2 p$ | 95% CI for Difference |
|---|---|---|---|---|
| Academic Achievement | 89.47 | <0.001*** | 0.432 | [7.8 ; 11.4] |
| Creativity & Collaboration | 178.23 | <0.001*** | 0.602 | [14.2 ; 19.9] |
| Learning Independence | 124.56 | <0.001*** | 0.514 | [11.1 ; 16.3] |
| Learning Satisfaction | 152.34 | <0.001*** | 0.564 | [15.0 ; 20.2] |

*Note: η²p = partial eta squared; CI = Confidence Interval; **p<0.001

## 5. Analysis by Age Group

Further analysis was conducted to examine the effectiveness of the horizontal learning model across different age groups. Results showed that all age groups responded positively to the intervention, but with varying patterns. The 7-9 age group demonstrated the greatest improvement in creativity and collaboration, with an average score gain of 21.3 points, reflecting that early childhood is highly responsive to collaborative learning and creative exploration. The 10-12 age group demonstrated balanced improvement across all aspects, with a 13.8-point increase in academic achievement and a 16.7-point increase in learning independence.

Interestingly, the 13-15 age group showed the most significant improvement in learning independence and learning satisfaction, with score gains of 18.4 and 22.1 points, respectively. This indicates that early adolescents highly value the freedom and responsibility in the learning process offered by the horizontal model. Statistical analysis revealed a significant interaction between age and treatment (F=4.23, p=0.017), indicating that the effectiveness of the horizontal learning model varies by child developmental stage.

**Table 5. Gain Score Based on Age Group (Experimental Group)**

| Age Group | Academic Achievement | Creativity & Collaboration | Learning Independence | Learning Satisfaction |
|---|---|---|---|---|
| 7-9 years (n=18) | 10.8 ± 3.2 | 21.3 ± 4.7 | 13.2 ± 3.8 | 17.9 ± 4.1 |
| 10-12 years (n=24) | 13.8 ± 2.9 | 17.4 ± 3.9 | 16.7 ± 4.2 | 19.8 ± 3.6 |
| 13-15 years (n=18) | 12.6 ± 3.7 | 17.9 ± 4.3 | 18.4 ± 3.4 | 22.1 ± 4.8 |

## 6. Correlation Analysis Between Variables

Pearson correlation analysis was conducted to understand the relationships between variables in the experimental group after the intervention. The results showed a strong positive correlation between all measured variables. Creativity and collaboration were highly correlated with learning satisfaction (r=0.784, p<0.001), indicating that children who experienced increased creativity and collaboration skills tended to have high learning satisfaction as well. Learning independence was also strongly correlated with academic achievement (r=0.672, p<0.001), indicating that developing independence in the horizontal model contributed to improved academic achievement.

Another interesting finding is the significant correlation between creativity-collaboration and learning independence (r=0.698, p<0.001), indicating that collaborative learning in a horizontal model actually encourages the development of individual independence. This contradicts the assumption that collaborative learning can reduce student independence. Conversely, in a horizontal learning context, collaboration and independence reinforce each other and develop synergistically.

**Table 6. Correlation Matrix Between Variables (Experimental Group Post-Test)**

| Variables | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1. Academic Achievement | - | | | |
| 2. Creativity & Collaboration | 0.625*** | - | | |
| 3. Learning Independence | 0.672*** | 0.698*** | - | |
| 4. Learning Satisfaction | 0.589*** | 0.784*** | 0.743*** | - |

*Note: **p<0.001

## DISCUSSION

### 1. Empirical Validation of the Criticism of Traditional Education

The results of an experimental study of the horizontal education model at SALAM Yogyakarta provide strong empirical validation of various criticisms of the traditional education system. As noted by Mamanova (2021) and Perez & Vásquez (2021), education that focuses on memorization without practical context can hinder students' potential to face challenges outside the classroom. The findings of this study indicate that the horizontal model, implemented for three months, significantly improved academic achievement (Cohen's d=1.63), demonstrating that learning that does not rely on lectures and memorization can actually lead to higher academic achievement.

The dramatic increase in creativity and collaboration (effect size d=2.27) specifically addresses Pandya et al.'s (2024) concerns about the lack of student engagement in conventional learning, which employs a uniform approach without considering diverse learning styles. The data show that the experimental group experienced an 18.7-point increase in creativity and collaboration, compared to only 2.1 points in the control group. This suggests that a non-hierarchical, project-based learning structure provides greater space for creative exploration and active student participation, addressing the often-criticized lack of active engagement in traditional education systems.

The finding of a strong correlation between creativity-collaboration and learning independence (r=0.698, p<0.001) provides a response to Teschers et al.'s (2024) criticism of the lack of development of life skills such as problem-solving and decision-making in traditional education. The research data shows that in the horizontal model, collaborative learning actually strengthens individual independence, contrary to the assumption that collaboration can reduce student independence. The 15.3-point increase in learning independence in the experimental group indicates that this model successfully overcomes students' dependence on external instruction that is characteristic of the traditional system.

### 2. Implementation of the Principles of Alternative Learning Communities

The results of this study provide concrete evidence regarding the effectiveness of the principles of alternative learning communities identified in the literature. Vermeire et al. (2024) emphasized that alternative learning communities focus on experiential learning, freedom to experiment, and greater control for students. The implementation of the horizontal model at SALAM, which includes morning circles, project-based learning, and peer teaching, has been shown to significantly increase learning satisfaction (19.4 points increase with an effect size of

d=2.15). This high level of learning satisfaction reflects that children feel more engaged and enjoy the learning process when given greater freedom and control over their learning.

The concept of project-based learning relevant to students' lives, as proposed by Yasmin (2024), has proven effective in the SALAM context. Analysis by age group shows that all age groups (7-15 years) responded positively to the horizontal learning model, but with different patterns. The 7-9 age group showed the greatest response in the creativity and collaboration aspects (gain score of 21.3 points), while the 13-15 age group responded more in the aspects of learning independence (18.4 points) and learning satisfaction (22.1 points). This differential pattern indicates that the horizontal model can adapt to the different developmental needs at each age stage, in accordance with the principle of flexibility emphasized in alternative education.

Participatory educational models such as Montessori and Waldorf, mentioned by Hansen (2021) and Donnelly (2021), share fundamental similarities with the horizontal model implemented at SALAM[6]. Both approaches emphasize active learning and the development of social-emotional skills. The study found a very strong correlation between creativity and collaboration and learning satisfaction (r=0.784, p<0.001), indicating that developing social-emotional skills through collaboration contributes to increased motivation and enjoyment in learning.

### 3. Manifestation of Equality in Horizontal Education

The principle of equality, which is at the heart of the horizontal education model, as proposed by Korac & Đermanov (2023) and Suleimenov et al. (2021), is clearly manifested in the research findings. Significant improvements in all measured aspects demonstrate that eliminating traditional hierarchies and encouraging more egalitarian interactions have a comprehensive positive impact. The multi-age learning implemented at SALAM has been shown to provide dual benefits: younger children learn from their older classmates, while older children develop teaching skills and empathy.

The advantages of the horizontal model in enhancing dialogue and cooperation, as mentioned in the literature, are evident through a significant increase in collaboration capabilities. Şener (2024) stated that the horizontal model provides flexibility and adaptability in the learning process. This was confirmed through an ANCOVA analysis, which showed that after controlling for pre-test scores, the treatment effect remained highly significant, with 60.2% of the variance in creativity and collaboration explained by the horizontal learning model.

Community-based learning, which strengthens a sense of togetherness and collective responsibility, as proposed by Korac & Đermanov (2023), is reflected in the high correlation between all measured variables. No single aspect develops in isolation; all aspects reinforce each other within the horizontal learning ecosystem. This demonstrates that the horizontal model successfully creates holistic learning that integrates cognitive, social, and emotional development.

### 4. Developing Independence in a Collaborative Context

One of the most interesting findings of this study is how the horizontal model successfully fosters independent learning in a collaborative context. Morssink-Santing et al. (2024) stated that alternative education systems such as Montessori and Dalton encourage the development of self-regulated learning (SRL) and strengthen students' readiness to face more

complex challenges. The results showed a significant increase in independent learning (d=1.87) with a strong correlation to academic achievement (r=0.672, p<0.001).

This finding is highly relevant to the concept of experiential learning proposed by Nurfadhilah et al. (2025), who stated that an experience-based approach improves students' problem-solving skills, decision-making, and responsibility for their own learning. The implementation of project-based learning at SALAM provides a space for students to experience an authentic learning process, where they are responsible for their own learning outcomes while still collaborating with peers of various ages.

Innovations in alternative learning communities, such as learning through play, open dialogue with facilitators, nature exploration, and community-based projects, have been shown to improve social-emotional skills, as reflected in high learning satisfaction scores. The learning satisfaction gain score in the 13-15 age group (22.1 points) indicates that early adolescents highly value the freedom and responsibility in the learning process offered by the horizontal model.

## 5. Implications for Global Education Reform

The results of this study provide strong empirical support for the global educational transition towards more flexible and student-centered learning, as recommended by Bhinder (2023) and Gopalan et al. (2020). Causal evidence obtained through a quasi-experimental design suggests that the horizontal education model can be adopted effectively to improve various aspects of student development.

The significance of this research in the context of more inclusive, progressive, and sustainable education reform is evident in the large effect sizes across all measured variables. The significant improvement in academic achievement demonstrates that the alternative model does not compromise academic achievement but rather enhances it through a more holistic and meaningful approach.

The findings regarding differential patterns by age indicate that the horizontal model is highly adaptable to various developmental stages. This is important for broader implementation, as it demonstrates that the model can be adapted to the specific needs of different age groups without losing its effectiveness.

The research results also show that the horizontal education model successfully integrates cognitive and socio-emotional development, as demonstrated by the strong correlation between all variables. This integration is crucial for preparing students to face 21st-century challenges, which require not only academic abilities but also collaboration, creativity, and independence.

Although this research was conducted in the specific context of SALAM Yogyakarta, the principles proven effective can be adapted to various educational contexts. Project-based learning, non-hierarchical structures, and cross-age learning are elements that can be integrated into conventional education systems as a first step toward more comprehensive reform.

## Conclusion

This study provides strong empirical evidence regarding the effectiveness of the horizontal education model in alternative learning communities, specifically in the context of SALAM Yogyakarta. The experimental results show that this model significantly improves students' academic achievement, creativity, collaboration, and learning independence, addressing various criticisms of traditional

education that tends to prioritize memorization and lacks active student engagement. The horizontal model implemented at SALAM, with its principles of project-based learning, collaboration, and cross-age interaction, has been shown to increase learning satisfaction and build essential social-emotional skills. These findings also demonstrate that the horizontal model can be adapted to various stages of student development, relevant to the increasingly dynamic challenges of global education. Furthermore, the integration of cognitive, social, and emotional development through this approach demonstrates that this model can support more inclusive, progressive, and sustainable educational reforms. Thus, this study confirms that horizontal education can make a significant contribution to establishing a more flexible, relevant, and student-centered education system, and can be adapted on a broader scale in the context of global education

## Bibliography

Bhinder, N. (2023). Challenges of experimental research in education. EIKI Journal of Effective Teaching Methods.https://doi.org/10.59652/jetm.v1i1.5.

Charitas, R., Prahmana, I., Hartanto, D., Kusumaningtyas, D., & Ali, M. (2021). Community radio-based blended learning model: A promising learning model in remote areas during the pandemic era. Heliyon, 7.https://doi.org/10.1016/j.heliyon.2021.e07511.

Gopalan, M., Rosinger, K., & Ahn, J. (2020). Use of Quasi-Experimental Research Designs in Education Research: Growth, Promise, and Challenges. Review of Research in Education, 44, 218 - 243.https://doi.org/10.3102/0091732X20903302.

Hansen, C. (2021). Alternative Education; is someone crazy about your young people?. Academia Letters.https://doi.org/10.20935/al2766.

Korac, I., & Đermanov, J. (2023). Horizontal Learning: Challenges for Changes in the Professional Development of School Teachers and Preschool Teachers. Društvene i humanističke studije (Online).https://doi.org/10.51558/2490-3647.2023.8.2.523.

Mamanova, M. (2021). Advantages and disadvantages of the traditional education system. ОҚМПУ ХАБАРШЫСЫ – ВЕСТНИК ЮКГПУ.https://doi.org/10.47751/skspu-1937-0028.

Morssink-Santing, V., Van Der Zee, S., Klaver, L., De Brouwer, J., & Sins, P. (2024). The long-term effects of alternative education on self-regulated learning: A comparison between Montessori, Dalton, and traditional education. Studies in Educational Evaluation.https://doi.org/10.1016/j.stueduc.2024.101380.

Nurfadhilah, A., Ningsih, E., Nurrohmawati, N., Wilujeng, V., Nazakia, A., & Muhtarom, T. (2025). Literature Study on the Implementation of Experiential Learning to Improve Student Independence. Indo-MathEdu Intellectuals Journal.https://doi.org/10.54373/imeij.v6i1.2348.

Pandya, V., Monani, D., Aahuja, D., & Chotai, U. (2024). Traditional vs. Modern Education: A Comparative Analysis. SSRN Electronic Journal.https://doi.org/10.2139/ssrn.4876084.

Perez, I., & Vásquez, L. (2021). PROHIBITED EDUCATION A PATHOLOGY OF CAPITALISM. .https://doi.org/10.31234/OSF.IO/Z4XQU.

Protsenko, I. (2025). EXPERIMENTAL STUDY OF THE FORMATION OF STUDENTS' INTEREST IN THE LEARNING PROCESS. Modern Information Technologies and Innovation Methodologies of Education in Professional Training Methodology Theory Experience Problems.https://doi.org/10.31652/2412-1142-2024-74-100-107.

Şener, G. (2024). HORİZONTAL LEARNİNG MODEL İN KEMANE EDUCATİON. ZEITSCHRIFT FÜR DIE WELT DER TÜRKEN / JOURNAL OF WORLD OF TURKS / TÜRKLERİN DÜNYASI DERGİSİ.https://doi.org/10.46291/zfwt/160115.

Suleimenov, I., Bakirov, A., Niyazova, G., & Shaltykova, D. (2021). University as an analogue of the neural network. E3S Web of Conferences.https://doi.org/10.1051/E3SCONF/202125807056.

Teschers, C., Neuhaus, T., & Vogt, M. (2024). Troubling the boundaries of traditional schooling for a rapidly changing future – Looking back and looking forward. Educational uhPhilosophy and Theory, 56, 873 - 884.https://doi.org/10.1080/00131857.2024.2321932.

Vermeire, Z., De Haan, M., Sefton-Green, J., & Akkerman, S. (2024). The desire to learn: the alienation and reimagining of pedagogy on YouTube, Twitch and TikTok. Critical Studies in Education.https://doi.org/10.1080/17508487.2024.2365805.

Yasmin, S. (2024). Exploring Innovative Approaches for Quality Enhancement in Teacher Education: A Systematic Review. International Journal For Multidisciplinary Research.https://doi.org/10.36948/ijfmr.2024.v06i01.12925..