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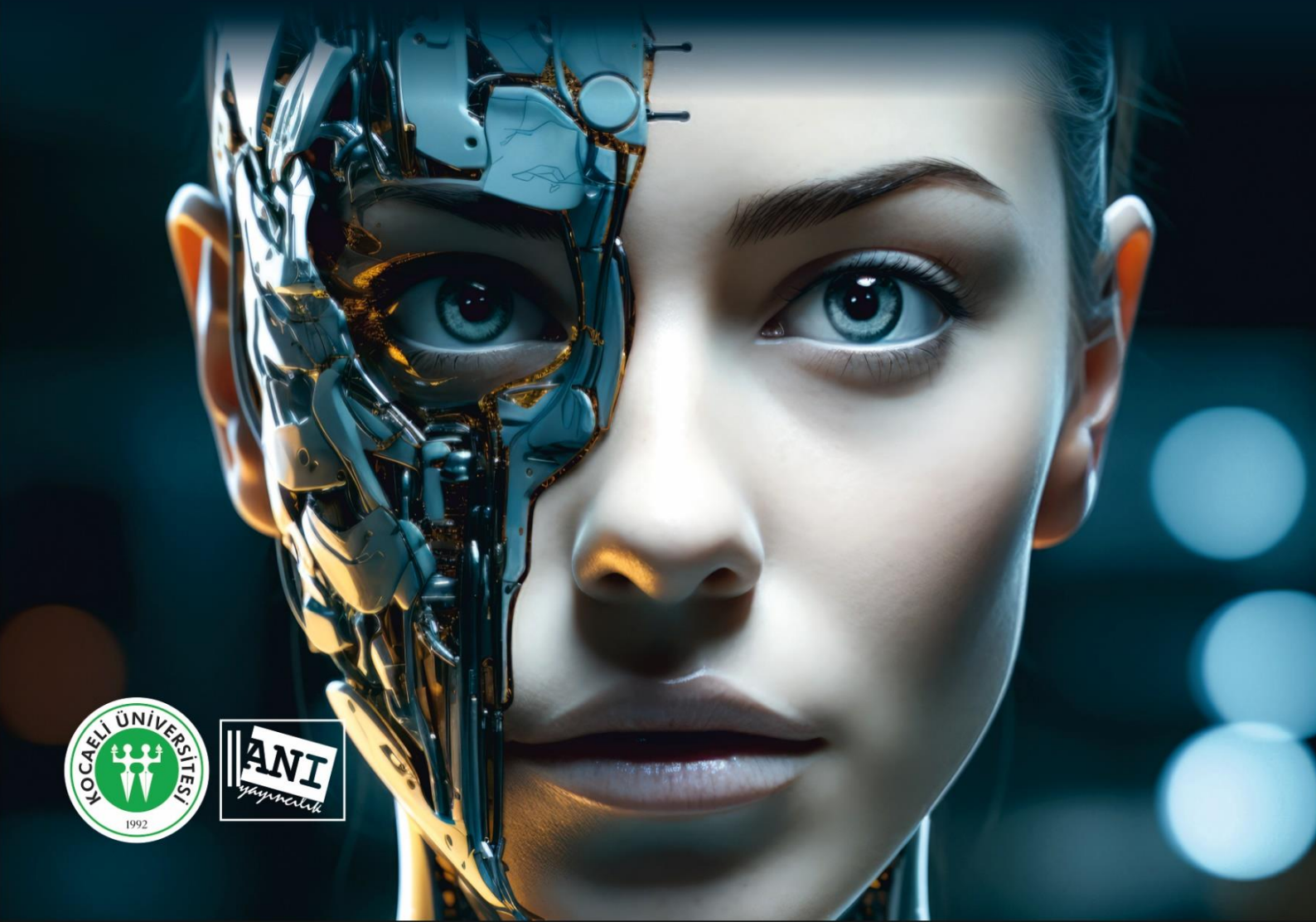

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Main Theme

"Designing the Future: Changing Paradigms and Transhumanism with Artificial Intelligence in Education"

Sub-Themes

- Academic freedom, autonomy, and social responsibility in education
- Artificial intelligence and educational applications
- Augmented reality applications
- Barriers to learning
- Blended learning
- Computer-assisted measurement and evaluation
- Core skill sets for students and teachers
- Design of school buildings in the future
- Designing and delivering a digital strategy
- Digital competence
- Digital parenting
- Distance Education
- Earthquake Education
- Post Earthquake Trauma Training
- Earthquake and Effective Psychosocial Intervention Methods
- Earthquake and Trauma
- The Impact of Earthquakes on School Staff
- Education and society
- Education for healthy living and healthy communities
- Education for a sustainable life
- Education in the digital age: Primary, secondary, high school, higher education, and application examples
- Educational leadership in the digital age
- Effects of regional differences on education
- Equity, Diversity, and Inclusion Related to Marginalized Groups
- Emergency Management at Schools
- Evidence-Based School Counseling Services for Refugees and Marginalized Groups
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This book has been compiled with contributions from 61 authors representing 35 different universities in Turkiye, the United States, and Iran, as well as Turkiye's Ministry of National Education. Among the contributors, there are 51 authors from 31 universities 6 authors from education institutions in Turkey, 3 authors from 2 universities in the United States, and 1 author from a university in Iran.

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Contemporary Methods in Medical Education: Video-Supported Flipped Learning in Clinical Skills

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Abstract

Flipped Learning is a teaching method that gives learners the opportunity to learn both online and face-to-face. In the Flipped Classroom, students learn the basic content independently before class and then have the opportunity to discuss, solve problems, and develop skills in class. This study aimed to evaluate the effectiveness of the Flipped Learning model in enhancing suturing skills among third-year medical students at Uşak University. A quasi-experimental design was utilized, involving 108 third-year medical students who were randomly assigned to either the control group (n=34) or the experimental group (n=74). The experimental group engaged with video-based content demonstrating suturing techniques before attending hands-on practice sessions, while the control group received traditional face-to-face lectures followed by practical sessions. Data were collected through a Likert scale survey and written feedback and analyzed using statistical software. The study found that 83.8% of students in the experimental group reported that the video content facilitated their understanding of suturing techniques. Additionally, 94.59% of participants indicated that the Flipped Learning model enhanced in-class discussions and interactions, and 97.3% felt that practical exercises following video lessons reinforced their learning and skill development. The control group also showed positive outcomes, but the Flipped Learning model provided additional benefits in student engagement and practical skill acquisition. The Flipped Learning model significantly improves suturing skill acquisition, student engagement, and confidence compared to traditional teaching methods. Its ability to support diverse learning styles and provide personalized learning experiences makes it a valuable addition to medical education curricula. Future research should explore the long-term impact of this model on student performance and professional development across various medical disciplines.

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Keywords: *Flipped Classroom, Educational Technology, Medical Training, Video Learning, Teaching Methods, Learning Strategies.*

Introduction

The expansion of medical curricula and a reduction in faculty numbers have limited the time available for practical training in medical faculties. Traditional education methods often fall short of developing essential skills such as teamwork, clinical reasoning, and problem-solving, which are critical for medical students (Chae, 2021). The introduction of computer-assisted learning environments is replacing traditional lectures, promoting more active learning experiences (Nichat et al., 2023). Flipped Learning, introduced in the early 2000s, is an innovative teaching approach where students engage with course content online independently before class and participate in interactive discussions during class sessions (Arya et al., 2020). Unlike traditional education, where basic content is learned in a classroom, Flipped Learning allows students to learn at their own pace outside the classroom, facilitating in-class tasks supported by teacher guidance (Zheng & Zhang, 2020). This method encourages deeper comprehension and more effective application of knowledge during interactive class sessions.

In Turkey, undergraduate medical education comprises three main areas: basic, clinical, and internal sciences. Medical students receive foundational knowledge in basic sciences during their first two semesters, with clinical reflections introduced in the third semester. The integration of video-based content with flipped learning in clinical skills training provides several advantages, including active participation in practical exercises, case discussions, and collaborative learning (Istanbul University, n.d.). These strategies indicate attempts to adjust Turkey's medical curriculum to structural changes aimed at improving clinical skill development.

This study aims to assess the overall effects of this learning method by examining student participation, instructor-student interaction, student motivation, and achievement in medical education.

Material and Method

Research Design

The research utilized a quasi-experimental design to compare the effectiveness of the flipped learning method with traditional teaching techniques in enhancing suturing skills within a medical practice course. The study was conducted with third-year medical students at Uşak University. A total of

108 students participated, randomly assigned into two groups: the control group (n=34) and the experimental group (n=74).

Research Sample

Experimental Group

The flipped learning method was introduced to the experimental group. Before the practical sessions, students were required to watch a comprehensive video demonstrating various suturing techniques. This video provided a step-by-step guide on performing different suturing methods, explaining the rationale behind each technique and highlighting best practices. The students were expected to review this material thoroughly before attending class, along with any additional resources provided. The aim was to equip them with foundational knowledge and skills, allowing them to maximize their learning during the practical sessions.

In the classroom, the experimental group participated in hands-on suturing practice under the supervision of experienced tutors. This approach allowed for immediate feedback and reinforcement of concepts learned, enabling students to refine their techniques effectively and efficiently.

Control Group

The control group was taught using a conventional teaching approach. Students received theoretical instruction through face-to-face lectures delivered by an instructor. These lectures covered the same content as the video used in the experimental group, focusing on suturing principles, techniques, and best practices.

Following the theoretical instruction, the control group engaged in practical sessions similar to those of the experimental group. This provided an opportunity for students to apply the knowledge acquired during the lectures in a practical setting.

Research Instrument and Procedure

To evaluate the effectiveness of the teaching methods and measure student satisfaction, several data collection instruments were employed:

Likert Scale Survey: After completing the practical sessions, a Likert scale survey was administered to both groups. The survey assessed students' satisfaction with the teaching method, clarity of instructions, comprehension of learning outcomes, level of suturing skills acquired, and overall quality of education. Students were given instructions on how to complete the survey, which included specific questions regarding these aspects.

Written Feedback: In addition to the Likert scale survey, students provided written feedback on their experiences. This open-ended feedback aimed to capture qualitative insights into the strengths and weaknesses of each teaching method, as well as suggestions for improvement.

Data Analysis

Quantitative data obtained from the Likert scale survey were analyzed using statistical software. Descriptive statistics, such as means and standard deviations, were computed for each survey item. Inferential statistics, including t-tests and ANOVA, were employed to compare satisfaction levels between the experimental and control groups.

The qualitative data from the written feedback were analyzed using thematic analysis. This process involved coding the feedback to identify recurring themes and patterns, providing insights into student perceptions and experiences. The thematic analysis highlighted common strengths and areas needing improvement for both teaching methods, contextualizing and enriching the quantitative results. This comprehensive analysis provided a more nuanced assessment of the effectiveness of the flipped learning approach in teaching suturing skills.

Results

This study applied the Flipped Learning model to a group of 74 participants to evaluate its impact on improving suturing skills. The average age of the participants was 21.13 years, with 66.22% (n=49) being female. Additionally, 87.84% (n=65) of participants had no prior experience with Flipped Learning. At the end of the education program, participants were surveyed for satisfaction, and written feedback was obtained.

Flipped Learning Group Results

Video Content Effectiveness: A significant majority of 83.8% (n=61) found that the video content delivered through Flipped Learning facilitated their understanding of suturing techniques. A small percentage, 12.16% (n=9), were undecided, and 4.05% (n=3) disagreed with this view.

Practical Application Confidence: 71.62% (n=53) of participants felt that the demonstrations in the video content provided sufficient information and confidence for practical application.

Classroom Interaction: A notable 94.59% (n=70) of participants stated that the Flipped classroom model enhanced suturing skills by increasing in-class discussions and interactions.

Learning and Skill Development: According to survey results, 97.3% (n=72) of participants indicated that practical exercises following video lessons reinforced their learning and skill development, while 2.7% (n=2) disagreed.

Individual Learning Styles: 82.43% (n=61) agreed that the Flipped Learning methodology supported individual learning paces and styles, with 12.16% (n=9) undecided, and 5.4% (n=4) disagreeing.

Video Content Adequacy: Regarding the length and detail of the videos, 79.73% (n=59) found them sufficient to meet their learning needs, 6.75% (n=5) found them inadequate, and 13.51% (n=10) were undecided.

Progress Tracking: 85.14% (n=63) acknowledged that Flipped Learning allowed them to track their progress and identify

their shortcomings, while 8.11% (n=6) did not support this view.

Performance in Practical Classes: 83.78% (n=62) believed that Flipped Learning improved their performance in practical applied classes.

Confidence in Future Applications: 86.48% (n=64) felt that Flipped Learning increased their confidence in using suturing skills in future medical applications, whereas 6.75% (n=5) did not share this view.

Survey Insights: The statement with the highest average score was, "The practical exercises we conducted after video lessons allowed me to reinforce what I learned and improve my skills."

Demographic Analysis

Table 1 presents the results of ANOVA tests evaluating survey items by age, gender, and experience. It is evident that gender significantly influenced several items (Items 3, 4, 5, 8, and 10), indicating the importance of gender-responsive teaching strategies. Age showed significant effects on Items 5 and 7, while experience did not exhibit significant effects on any item. These results underscore the importance of specific demographic factors in certain survey items, with gender having a significant impact on several items, age being significant for only two items, and experience having no significant impact.

Table 1

Evaluation of Survey Items on Video-Supported Flipped Learning for Suturing Skills Training by Age, Gender, and Experience (ANOVA Results)

Items	Age (p)	Gender (p)	Experience (p)
1. The quality of video content delivered through Flipped Learning facilitated my understanding of suturing techniques.	0.353	0.315	0.453
2. Demonstrations and example cases in video content provided sufficient information and confidence to apply suturing skills practically.	0.175	0.624	0.793
3. The Flipped classroom model helped enhance my suturing skills by increasing classroom discussions and interactions.	0.178	0.030*	0.164
4. Practical applications conducted after video lessons allowed me to reinforce my learning and improve my skills.	0.655	0.010**	0.606
5. The Flipped Learning methodology supported my individual learning pace and style for suturing techniques.	0.028*	0.003*	0.206
6. The length and detail level of the presented video content were adequate for meeting my learning needs.	0.287	0.070	0.697
7. Flipped Learning enabled me to track my progress and recognize my deficiency in suturing skills.	0.030*	0.089	0.799
8. I believe this learning method enhanced my performance in in-class practical sessions.	0.114	0.003*	0.288
9. The flipped classroom model provided adequate resources and support to solve problems encountered during the learning process.	0.149	0.302	0.759
10. This learning method gave me more confidence about using suturing skills in future medical applications.	0.333	0.000**	0.995

Feedback and Key Observations

Education Materials and Content: Participants highlighted the need for demonstrating theoretical knowledge through practical applications and suggested incorporating video content from diverse sources.

Teaching Environment and Conditions: There was a call for quieter environments and increased opportunities for practical exercises.

Overall Satisfaction: Many participants expressed satisfaction with the current education, with several stating it was sufficient without needing improvement. Specific requests included enhancing practical exercise opportunities and providing materials for students to use at home.

Traditional Learning Group Comparison

To compare with the Flipped Learning model, a control group of 34 participants underwent the same course using a traditional education model. The average age of participants was 21.15 years, with 67.64% (n=23) being female. Evaluation at the end of the study showed:

Education Announcement Timing: High scores from both genders indicated that the educational announcements were timely and effective.

General Satisfaction: Participants showed overall satisfaction with the education, indicating it met their expectations.

Use of Educational Materials: Educational materials used during the course were rated positively, with women slightly favoring them more.

Post-Education Application: Both genders expressed a strong willingness to apply learned information, indicating the practical applicability of the education provided.

Skill Development and Confidence: Both genders reported increased skills and confidence, highlighting the effectiveness of education in enhancing skills and self-assurance.

Overall, the results suggest that both educational models effectively taught suturing skills, with Flipped Learning providing additional benefits in engagement and interactive learning.

Discussion

Basic surgical skills such as suturing and knot tying are essential competencies for medical students, yet these skills

are often inadequately taught in many institutions (Chae, 2021). To address this gap, our institution implemented the Flipped Learning model in a "Good Medical Practices" course for third-year medical students, focusing on suturing techniques. This study aimed to evaluate the impact of the Flipped Learning model on the development of suturing skills among 74 students, consisting of 66.22% female and 33.78% male participants.

Our findings reveal that the quality of video content delivered through Flipped Learning significantly enhanced students' understanding of suturing techniques. This model facilitated better in-class interactions and skill development through practical applications, consistent with the benefits of active learning environments highlighted in previous studies (Nichat et al., 2023; Oudbier et al., 2022). Chae's research supports our findings, showing increased student satisfaction and engagement in online flipped learning environments (Chae, 2021).

A study by Nichat et al. demonstrated that the Flipped Classroom model improved learning outcomes and engaged students in critical thinking skills, aligning with our observations of increased confidence and competence in surgical skills (Nichat et al., 2023). Additionally, Zheng and Zhang emphasized the role of self-regulated learning in flipped classrooms, which may contribute to our students' improved performance (Zheng & Zhang, 2020). The control group, which received traditional instruction, effectively conveyed theoretical knowledge. However, the Flipped Learning model offered distinct advantages in engaging students and enhancing practical skill acquisition, as supported by Arya et al., who found flipped classrooms more effective than traditional lectures in medical education (Arya et al., 2020). This aligns with Wu et al.'s findings that the Flipped Classroom model supports cognitive, affective, and psychomotor learning in suturing skills acquisition (Wu et al., 2018).

Overall, while both educational models are effective, the Flipped Learning model provides additional benefits in enhancing student engagement and interaction. This study suggests that integrating Flipped Learning into medical curricula can facilitate the development of essential surgical skills, thereby better preparing students for clinical practice. Future research should explore the long-term impact of this model on student performance and its application across different medical disciplines.

Conclusion

This study demonstrates the effectiveness of the Flipped Learning model in enhancing suturing skills among third-year medical students. By providing pre-class video content and emphasizing hands-on practice during class sessions, this educational approach facilitates a deeper understanding of surgical techniques and fosters active learning. The results indicate that the Flipped Learning model not only improves skill acquisition but also increases student engagement and confidence, as students benefit from interactive learning opportunities and immediate feedback during practical sessions. While traditional teaching methods remain effective in delivering theoretical content, the Flipped Learning model offers distinct advantages in engaging students and enhancing practical skill development. Its ability to accommodate diverse learning styles and provide personalized learning experiences makes it a valuable addition to medical curricula.

This study also highlights that demographic factors such as gender may be significant in certain areas, while prior experience had a limited effect. Therefore, it is recommended that educational strategies focus on adapting to students' learning styles and needs rather than their experience levels. In conclusion, the Flipped Learning model is a promising approach to medical education, particularly in teaching essential surgical skills. Its adaptability and focus on active learning can help address the challenges posed by increasing student numbers and limited faculty resources. Future research should explore the long-term impact of this model on student performance and professional development across various medical disciplines, as well as its application in diverse educational contexts.

Recommendations

Given the study's beneficial findings, it is recommended that the Flipped Learning approach be implemented more generally in medical courses. Institutions ought to focus on creating engaging and customized online materials, as well as offering educators training in this instructional approach. Students should provide regular feedback and continuing evaluations to help enhance and improve the model. Furthermore, investigating the long-term consequences of Flipped Learning and comparing it to other teaching approaches can provide additional insights into its efficacy and help improve medical education methods.

References

Arya, V., Gehlawat, V. K., Rana, R., & Kaushik, J. (2020). Flipped classroom versus traditional lecture in training undergraduates in pediatric epilepsy. *Journal of Family Medicine and Primary Care, 9*(9), 4805–4808. https://doi.org/10.4103/jfmpc.jfmpc_816_20

Chae, S. J. (2021). Medical students' satisfaction with online flipped learning by learning styles. *Korean Journal of Medical Education, 33*(4), 405–409. https://doi.org/10.3946/kjme.2021.208

İstanbul University. (n.d.). İstanbul Faculty of Medicine. Retrieved from https://istanbultiptanitim.istanbul.edu.tr/index.php/istanbul-tip-fakultesi-turkce-tip-bolumu/

Oudbier, J., Spaai, G., Timmermans, K., & Boerboom, T. (2022). Enhancing the effectiveness of flipped classroom in health science education: A state-of-the-art review. *BMC Medical Education, 22*(1), 34. https://doi.org/10.1186/s12909-021-03052-5

Nichat, A., Gajbe, U., Bankar, N. J., Singh, B. R., & Badge, A. K. (2023). Flipped classrooms in medical education:

Improving learning outcomes and engaging students in critical thinking skills. *Cureus, 15* (11), e48199. https://doi.org/10.7759/cureus.48199

Wu, J. C., Chi, S. C., Wu, C. C., & Kang, Y. N. (2018). Helps from the flipped classroom in learning suturing skill: The medical students' perspective. *PLoS One, 13*(10), e0204698. https://doi.org/10.1371/journal.pone.0204698

Zheng, B., & Zhang, Y. (2020). Self-regulated learning: The effect on medical student learning outcomes in a flipped classroom environment. *BMC Medical Education, 20*, 100. https://doi.org/10.1186/s12909-020-02023-6