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DETERMINING THE TENDENCIES OF PRE-SERVICE TEACHERS TOWARDS USING INSTRUCTIONAL TECHNOLOGIES IN COURSES

Abstract:

The aim of this study is to determine pre-service teachers' tendencies towards the use of instructional technologies in courses and to examine the effect of courses supported by instructional technologies on these tendencies. A survey model was used to describe the existing situation. In this study, the instructional technology usage tendency scale developed by Günüş and Kuzu was used. After the scale was applied as a pretest and posttest, data analyses were conducted based on descriptive analyses. Findings will be interpreted holistically. The results are expected to contribute significantly to improving the quality of teacher education programs and disseminating the effective use of instructional technologies.

Keywords:

Pre-service teachers, Instructional technologies, Teacher education

JEL Classification: I20, I23

Introduction

The integration of instructional technologies into educational processes depends on teachers' ability to use technology effectively. This requires developing an awareness of preservice teachers' attitudes, knowledge, and practices toward technology (Ertmer & Ottenbreit-Leftwich, 2010). Preservice teachers' level of adoption of instructional technologies and their perceptions of these technologies will directly impact future classroom practices and student learning (Teo, 2011). The use of technology in an educational environment depends not only on the availability of tools but also on teachers' ability to use these tools effectively.

This trend will have a positive impact on students as teacher candidates gain a strong perspective on how to use technology as future educators. This study, based on these considerations, examines how preservice teachers' attitudes toward technology change after a semester-long course integrating technology. These changes are demonstrated through descriptive analysis.

Method

In this study, the survey model was used to describe the existing situation. In the survey model, the event, individual, or object under investigation is described within its own context and as it is. No effort is made to change or influence them in any way. (Creswell, 2012).

Participants

The participants of this study are students taking the course on artificial intelligence applications in education in the 2024-2025 spring semester. Some information about the participants is presented in Figure 1 and Figure 2.

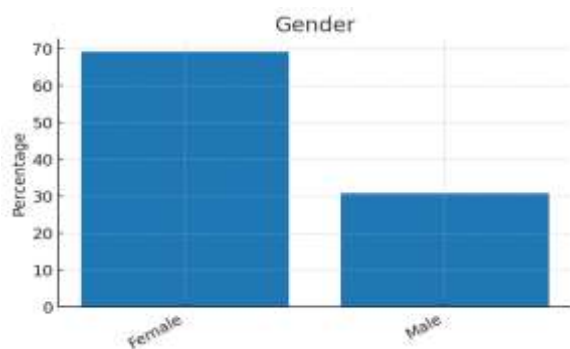


Figure 1. Gender of Participations'

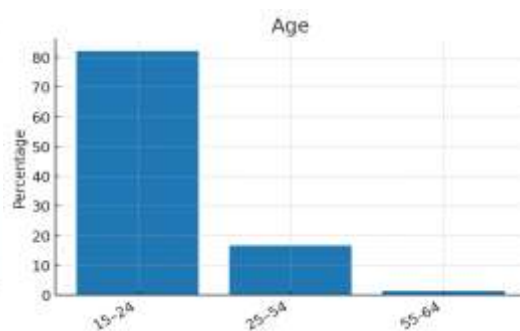


Figure 2. Age of Participations'

Data Collection Tool

In this study, the instructional technology usage tendency scale developed by Günüş and Kuzu (2014) was used. After the scale was applied as a pretest and posttest, data analyses were conducted based on descriptive analyses.

Practices Carried Out Throughout The Semester

Artificial intelligence-based instructional technologies were used throughout a semester period. The aim was to increase student interest in the course and enrich their learning outcomes through communication and interaction-oriented applications.

Some of the applications used are as follows:

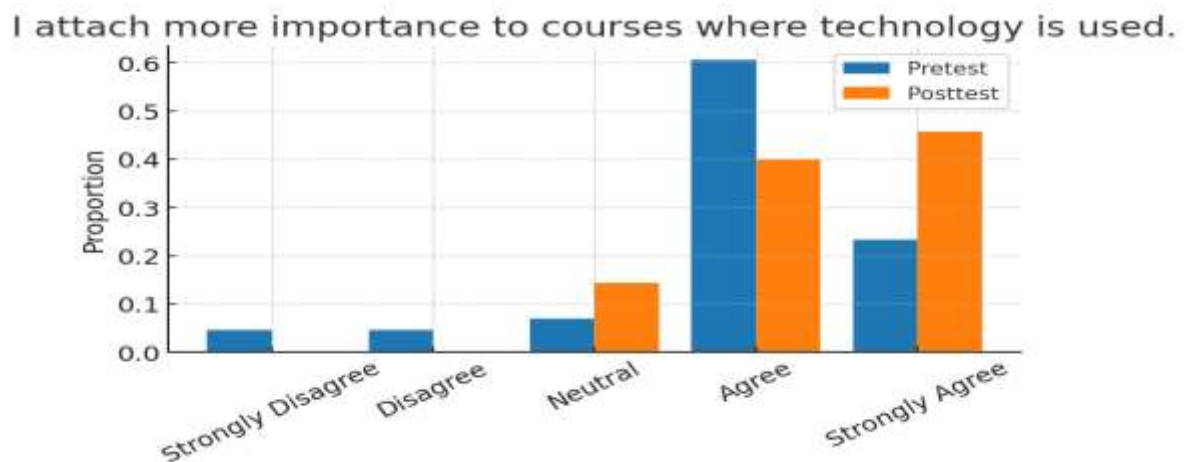
- Curipod
- Magicschool
- Eddpuzzle
- Nearpod



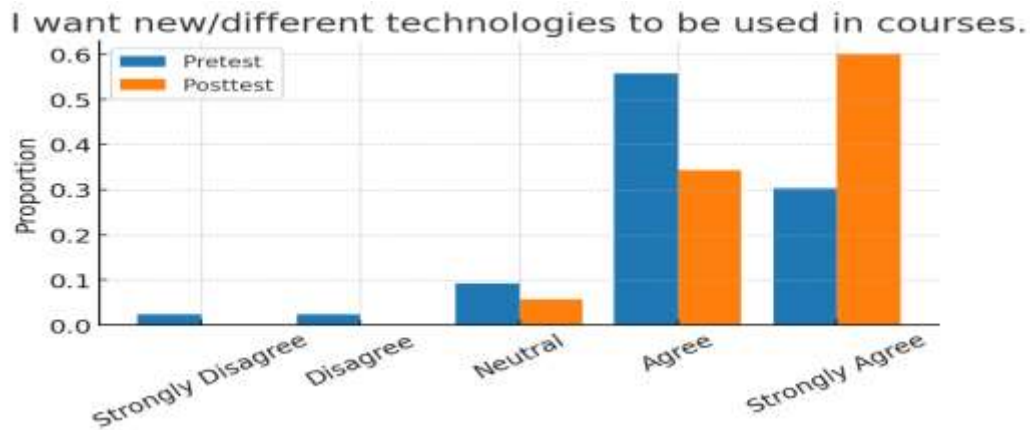
Figure 3. Some of the applications used

Findings

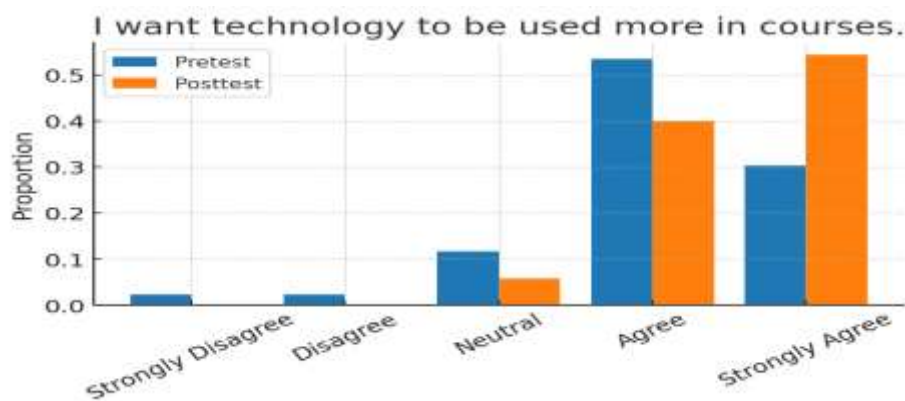
Analyses of the responses to the items in the scale used.



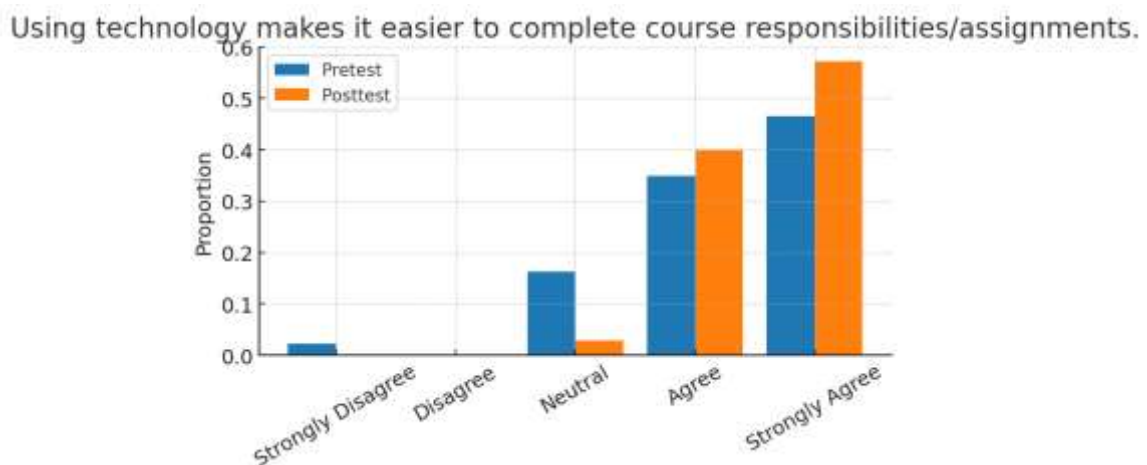
When we look at the first item, it is seen that the participants showed sensitivity at the end of the semester in terms of giving importance to the use of technology in the lessons.



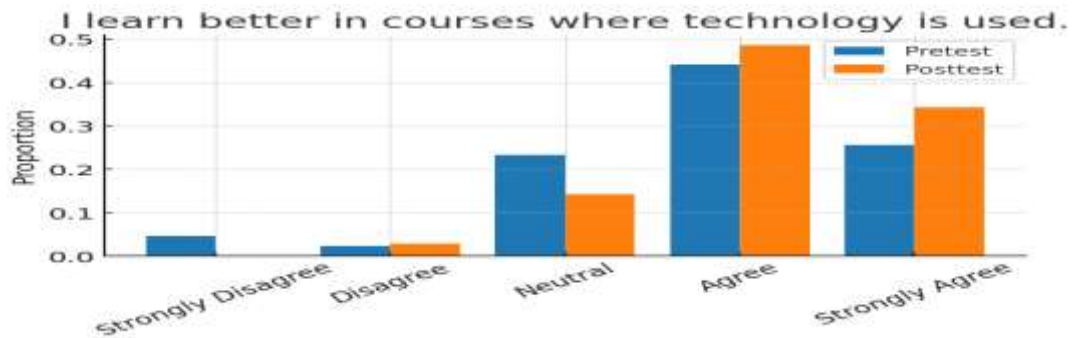
Students' tendency to use technologies in classes has increased visibly compared to their pre-test scores. Students who had negative thoughts about this issue during the pre-test phase changed their minds by the end of the semester.



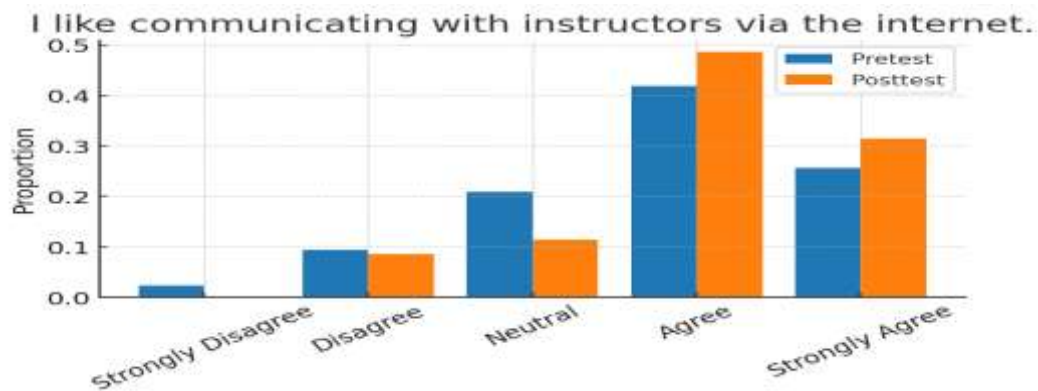
Posttest responses show a clear shift from neutrality toward endorsement, with a noticeable rise in Strongly Agree and a contraction of Neutral. This pattern suggests the semester-long use of technology strengthened students' convictions on this dimension rather than simply shifting marginal preferences.



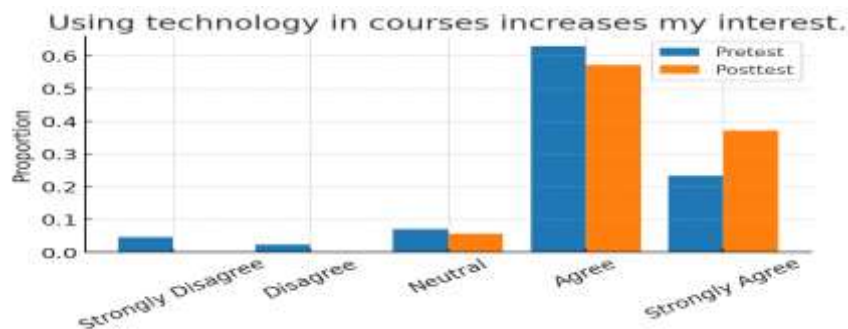
Teaching courses in a technology-based environment for a semester had a significant impact on participants' ability to fulfill their course responsibilities.



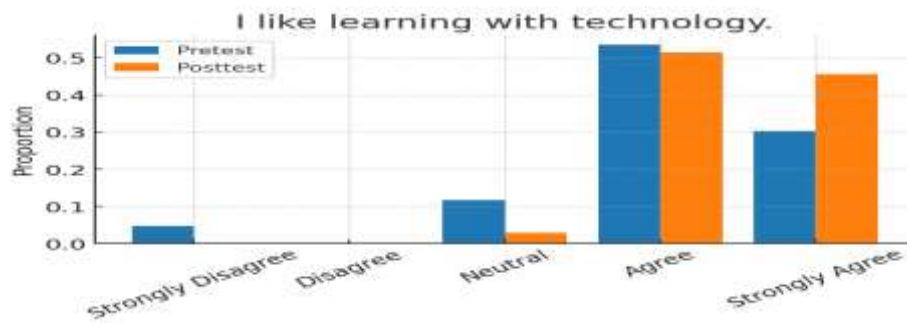
Compared to the pretest, students showed a stronger tendency in the posttest regarding this item. This indicates that throughout the semester, the integration of technology into courses positively influenced students' attitudes, making them more likely to endorse the statement by the end of the term.



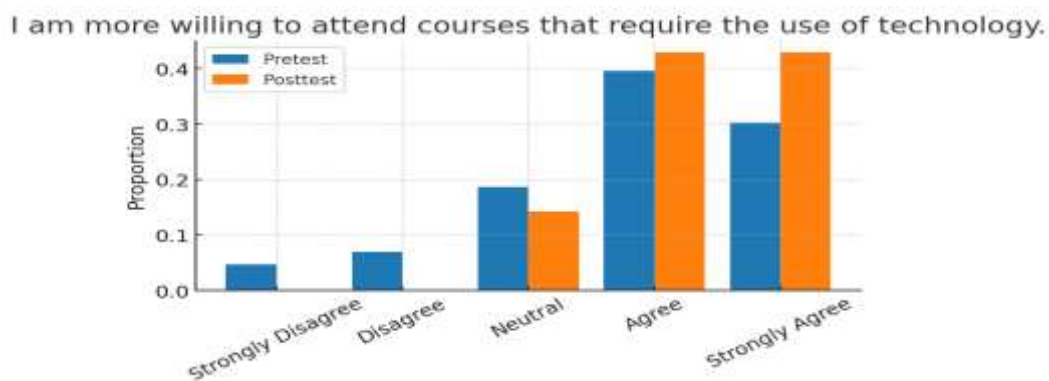
Throughout the semester, we've seen a growing desire among students to connect with instructors via internet. This is also important for interaction.



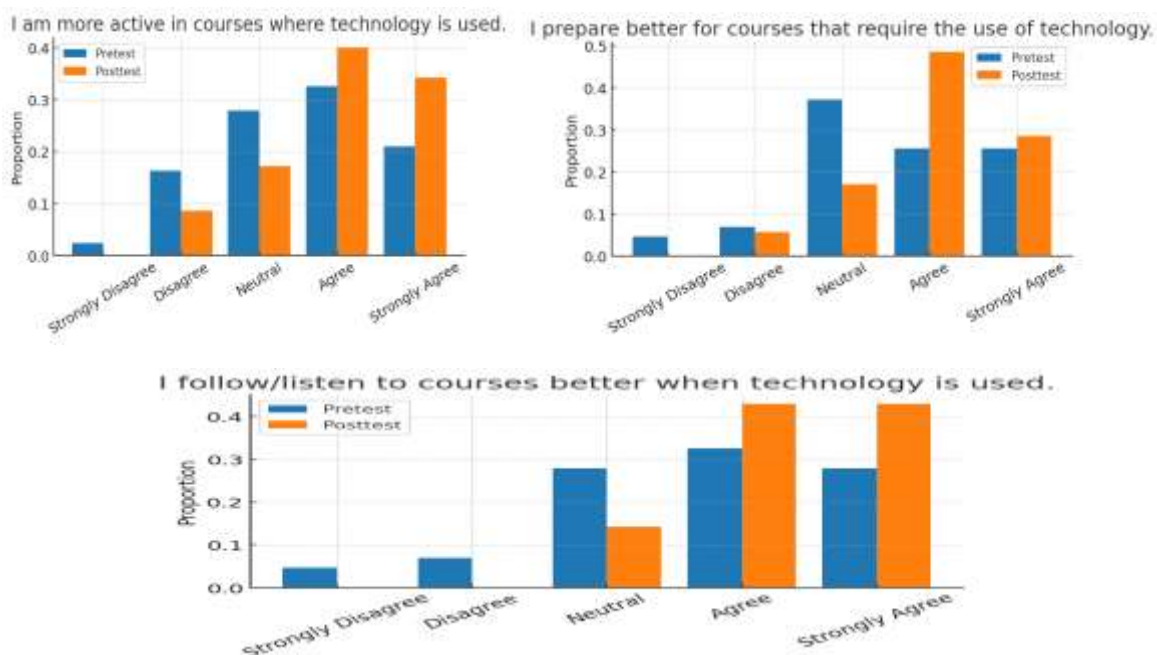
There is a modest drift away from Neutral toward agreement. Although the magnitude is limited, the direction is consistent with the hypothesis that semester-long technology use gradually consolidates positive attitudes.



By the end of the semester, students appear to have become more interested in learning through technology. The number of students who were neutral at the beginning of the semester has decreased significantly by the end.



Some students who were hesitant about attending other technology-based courses at the beginning of the semester had an increased intention to take other technology-based courses at the end of the semester.



Again, similar to other items, it is possible to say that students showed more interest in technology-focused courses at the end of the semester.

Conclusion and Discussion

The overall findings demonstrate that students' tendencies toward technology use in courses improved over the course of the semester. For many items, there was a clear shift from Neutral responses toward Agree and Strongly Agree, indicating that continuous exposure to educational technologies positively shaped attitudes. In particular, items related to attentiveness, active participation, and enjoyment showed notable increases in endorsement, suggesting that technology contributed to both motivation and engagement.

Some items exhibited stability rather than change. In several of these cases, pretest responses were already highly favorable, pointing to a ceiling effect that limited the possibility of further improvement. These nuances highlight that while the overall path was positive, the effects of technology integration are not uniformly distributed across all dimensions of student perception.

Taken together, the evidence supports the conclusion that a semester-long structured integration of technology exerts a broadly positive influence on students' dispositions toward technology-enhanced learning. Based on this, it can be recommended that instructors implement more technology-based processes in their courses. This will generally enrich learning outcomes.

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