# Which Techno-Pedagogical Approaches in Teacher Professional Development in Virtual Worlds Can Transform Learning Processes and Promote Teacher Agency?
## (Poster)

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# אילו גישות טכנו-פדגוגיות בפיתוח מקצועי של מורים בעולמות וירטואליים יכולות לשנות תהליכי למידה ולהפוך מורים לסוכני שינוי?
## (פוסטר)

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## Abstract

This research explores the integration of techno-pedagogical principles and the manifestation of teacher agency in teacher professional development (TPD) for AI utilization in education. This study seeks to investigate how educators harmoniously integrate technology and pedagogy (Sentürk, 2021) and therefore enable effective and engaging usage within their educational environments.

To bring education up to date, it's crucial to fully utilize digital technologies for learning, necessitating systemic changes (Sentürk, 2021). In order to address the level of technology and pedagogy integration, the SAMR (Substitution, Augmentation, Modification and Redefinition; Puentedura, 2006) framework will be used. The SAMR framework will assist in delineating four techno-pedagogical levels as either minor revisions or substantial transformations. Central to this discussion is the concept of teacher agency, highlighting educators' autonomy and empowerment in directing their professional development paths (Imants, 2020, Uştuk & Çomoğlu, 2021). Our study explores the ability of educators to exercise their professional autonomy within educational frameworks while using AI (Imants, 2020, Uştuk & Çomoğlu, 2021). This aspect underscores the importance of educators as proactive

participants in their learning processes, able to navigate their educational experiences toward transformative results (Calvert, 2016). This approach encourages educators to participate in thoughtful conversations, confront established norms, and together develop educational strategies that align with and adapt to diverse educational environments (Engeström & Sannino, 2010). In short, this research seeks to uncover how educators navigate successfully within TPDs on effectively utilizing AI for education, emphasizing the interconnection between teacher autonomy, innovative learning approaches, and the seamless integration of technology and pedagogy.

This mixed-method study employs non-participant observations and semi-structured interviews with 25 Hebrew-speaking techno-pedagogical coordinators who teach a variety of subjects. Training led by the Ministry of Education involves implementing AI skills in various fields of education. Research tools include interviews, teaching materials collection, and observation of virtual TPDs. Interviews will explore teacher agency, while teaching materials will be analyzed for techno-pedagogical principles using the SAMR (Puentedura, 2006) framework. Observations aim to capture teacher autonomy and reflective practices, employing "netnography" for a deep understanding of online community dynamics (Bowler, 2010). Triangulation of interviews, content analysis, and observational data seeks to provide a rich understanding of techno-pedagogical integration in TPD. The study aims to contribute to the understanding of teacher agency and the use AI in the educational landscape, offering insights for educational policy and practice.

**Keywords:** Teacher Agency, Expansive Learning, Techno-Pedagogical Principles, Virtual Teacher Professional Development (TPD).

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