

## Exploring the Transformative Intersection of Artificial Intelligence and Educational Research: K-12 Principals Supporting English Learners

**Belinda Gimbert**

The Ohio State University, Columbus Ohio, USA

**Dustin Miller**

The Ohio State University, Columbus Ohio, USA

**Raeal Moore**

Evaluation Data Solutions LLC, Columbus Ohio, USA

**Dean Cristol**

The Ohio State University, Columbus Ohio, USA

**Nick Giester**

Evaluation Data Solutions LLC, Columbus Ohio, USA

The integration of artificial intelligence (AI) into educational research marks a significant paradigm shift where AI intersects with educational research from diverse perspectives, emphasizing its transformative potential. By leveraging AI technologies, researchers can transcend traditional limitations, thereby enhancing their capabilities to pose more incisive questions, analyze vast datasets, and refine research methodologies, ultimately leading to more impactful outcomes. Within the context of a research endeavor focused on K-12 principals supporting classroom teachers serving English Learners in the United States, we explore how AI algorithms can refine research questions and augment research methodologies, leading to deeper insights and more informed decisions in educational studies. Innovative techniques for optimizing survey questions and methodologies are discussed, showcasing AI's analytical prowess in unlocking new avenues of understanding and leading to deeper insights and more informed decisions in educational research studies. Through advanced data processing techniques, AI unveils patterns, correlations, and insights that may elude traditional analysis methods. This analytical prowess not only facilitates deeper understanding but also empowers researchers to make more informed decisions. Moreover, AI augments research methodologies by offering innovative techniques for optimizing research questions and methodologies. By harnessing AI's analytical capabilities, researchers unlock new avenues of understanding, leading to more comprehensive and nuanced studies. The realm of AI-driven skill enhancement for researchers is addressed by illustrating the process in the context of a study that seeks to gain a deeper understanding of the strategies principals employ to develop teachers working with English learners. This collaborative approach enriches individual research endeavors and contributes to the collective advancement of research methodologies within the educational landscape. We highlight the transformative potential of AI in revolutionizing educational research practices and enhancing outcomes for English learners in the K-12 education system. By leveraging AI, researchers can improve their interviewing techniques, refine performance, and foster a culture of continuous improvement. AI-powered tools provide real-time feedback and facilitate iterative refinement of practices. This collaborative approach can enrich individual research endeavors and contribute to the collective advancement of research methodologies within the educational landscape.

**Keywords:** Artificial Intelligence (AI), Educational Evaluation, Transformative Potential, K-12 Principals, English/Multilingual Learners