ARTIFICIAL INTELLIGENCE–BASED PERSONALIZED LEARNING AS A TOOL FOR ENHANCING INTRINSIC MOTIVATION IN ENGLISH LANGUAGE TEACHING

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Abstract. This article explores the role of artificial intelligence (AI)–based personalized learning in enhancing intrinsic motivation in English language teaching. Drawing upon Self-Determination Theory and contemporary educational technology frameworks, the study investigates how adaptive AI systems influence learners' autonomy, competence, and engagement. The research follows the IMRAD structure and presents theoretical analysis alongside experimental findings obtained from A2–B1 level learners. The results indicate that AI-supported personalized instruction significantly increases students' intrinsic motivation and academic performance. The study contributes to the integration of motivational pedagogy and artificial intelligence in modern language education.

Keywords: artificial intelligence, intrinsic motivation, personalized learning, English language teaching, Self-Determination Theory, learner autonomy, adaptive learning systems.

INTRODUCTION

The rapid development of artificial intelligence has transformed educational paradigms worldwide. Language education, particularly English language teaching (ELT), has increasingly incorporated digital tools to enhance learner engagement. However, technological integration alone does not guarantee effective learning outcomes. Motivation remains a decisive factor in language acquisition.

Intrinsic motivation, defined as engaging in learning for inherent satisfaction rather than external rewards, plays a crucial role in second language development. According to Deci and Ryan, intrinsic motivation flourishes when learners experience autonomy, competence, and relatedness[1]. Traditional teacher-centered instruction often limits learner autonomy, reducing intrinsic engagement.

AI-based personalized learning systems provide adaptive content, immediate feedback, and individualized pacing. Such systems potentially satisfy psychological needs outlined in Self-Determination Theory. Therefore, the present study investigates whether AI-supported personalized instruction can enhance intrinsic motivation among A2–B1 English learners.

There are following questions will be focused on in this article:

1. Does AI-based personalized learning significantly increase intrinsic motivation?

2. How does AI influence learner autonomy and perceived competence?

3. What impact does personalized AI instruction have on academic performance?

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[1] Deci, E. L., & Ryan, R. M. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation. American Psychologist, 55(1), p. 68.

METHODS

In our research we have used experimental, comparative, observative, questionnaire and interviewing methods.

Research Design: The study employed a quasi-experimental design with control and experimental groups over 12 weeks.

Participants: 60 English learners (A2–B1 level) were divided into:

- Control group (n=30): traditional instruction

- Experimental group (n=30): AI-based personalized learning

Instruments:

1. Intrinsic Motivation Inventory (IMI)

2. Pre- and post-language proficiency tests

3. Autonomy perception questionnaire

Procedure: The experimental group used AI-powered adaptive learning platforms providing:

- Personalized vocabulary tasks

- Speaking simulations with AI chatbots

- Automated feedback on writing

The control group followed a standard curriculum without AI personalization.

Statistical analysis was conducted using paired t-tests and comparative mean analysis.

RESULTS

The experiments which we conducted gave following results:

1. Motivation Growth: Experimental group intrinsic motivation scores increased by 32%, while control group showed 11% growth.

2. Autonomy Perception: Learners using AI reported higher autonomy (Mean = 4.3/5) compared to control group (Mean = 3.1/5).

3. Academic Achievement: Post-test results indicated a statistically significant improvement ($p < 0.05$) in experimental group performance.

These findings confirm that AI-based personalized learning significantly impacts intrinsic motivation and achievement.

DISCUSSION

The results align with Self-Determination Theory. AI-supported systems enhanced:

- Autonomy through self-paced learning.

- Competence via immediate feedback.

- Engagement through adaptive challenges.

Unlike traditional methods, AI personalization minimized frustration and optimized task difficulty. Keller emphasizes that attention and relevance are critical for sustaining motivation; adaptive systems effectively address both dimensions[2].

Furthermore, AI reduces anxiety in speaking practice by providing a non-judgmental environment. This finding corresponds with Gardner's socio-educational model highlighting affective factors in language acquisition[3].

CONCLUSION

AI-based personalized learning significantly enhances intrinsic motivation in English language teaching. By fostering autonomy and competence, adaptive systems create psychologically supportive learning environments. The integration of artificial intelligence into motivational pedagogy represents a promising direction for modern ELT.

Future research should explore long-term impacts and broader demographic samples.

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