

## INTEGRATING DIFFERENTIATED INSTRUCTION AND ARTIFICIAL INTELLIGENCE IN DEVELOPING STUDENTS’ ENGLISH READING AND WRITING SKILLS

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<https://doi.org/10.5281/zenodo.18926796>

**Abstract.** This thesis examines the integration of differentiated instruction with artificial intelligence (AI) and digital technologies in developing university students’ reading and writing skills in English. Differentiated instruction addresses learners’ individual needs, proficiency levels, and learning styles, enabling more inclusive and effective language instruction. The study emphasizes that technological integration alone is insufficient without a strong pedagogical foundation. Therefore, motivational, identity-based, and learner-centered approaches are incorporated to enhance students’ engagement and investment in language learning. AI-supported digital tools provide personalized feedback, adaptive learning pathways, and opportunities for autonomous practice. The findings suggest that combining differentiated instruction with AI and motivational pedagogical approaches significantly improves students’ academic performance, self-confidence, and active participation in English reading and writing tasks.

**Keywords:** differentiated instruction, artificial intelligence in education, digital learning, reading and writing skills, learner motivation, learner identity

**Annotatsiya.** Ushbu tezisdagi oliy ta’lim muassasalarida talabalarning ingliz tilida o’qish va yozish ko’nikmalarini rivojlantirishda differensial yondashuvni sun’iy intellekt (AI) va raqamli ta’lim texnologiyalari bilan integratsiya qilish masalalari yoritiladi. Differensial yondashuv talabalarning individual ehtiyojlari, bilim darajasi va o’rganish uslublarini hisobga olgan holda ta’lim jarayonini tashkil etishga imkon beradi. Tadqiqotda faqat metod emas, balki motivatsion va shaxsga yo’naltirilgan pedagogik yondashuv muhimligi asoslanadi. AI asosidagi raqamli vositalar individual fikr-mulohaza berish, moslashuvchan o’quv yo’nalishlarini yaratish va mustaqil ta’limni rivojlantirishga xizmat qiladi. Natijalar differensial yondashuv va AI integratsiyasi talabalarning o’qish va yozish kompetensiyasini, ishonchini hamda ta’lim jarayonidagi faolligini oshirishini ko’rsatadi.

**Kalit so’zlar:** differensial yondashuv, sun’iy intellekt, raqamli ta’lim, o’qish va yozish ko’nikmalari, o’quvchi motivatsiyasi, o’zlikni anglash

**Аннотация.** В данной тезисе рассматривается интеграция дифференцированного обучения с искусственным интеллектом (AI) и цифровыми образовательными технологиями в развитии навыков чтения и письма на английском языке у студентов высших учебных заведений. Дифференцированный подход позволяет учитывать индивидуальные особенности, уровень подготовки и учебные потребности обучающихся. В работе подчеркивается, что эффективность обучения определяется не только методами и технологиями, но и педагогическими подходами, направленными на мотивацию и формирование учебной идентичности студентов. Использование AI-инструментов обеспечивает персонализированную обратную связь, адаптивные учебные траектории и поддержку автономного обучения. Результаты свидетельствуют о положительном влиянии интеграции дифференцированного подхода и цифровых технологий на учебную активность и коммуникативную компетенцию студентов.

**Ключевые слова:** дифференцированное обучение, искусственный интеллект в образовании, цифровое обучение, навыки чтения и письма, учебная мотивация, учебная идентичность.

### 1. Introduction

Second language learning is not solely a cognitive or linguistic process; rather, it is deeply embedded within social, cultural, and ideological contexts. Learners bring to the classroom diverse identities shaped by region, gender, family background, and prior linguistic experience. In multilingual societies such as Uzbekistan, these differences become particularly salient in English language

classrooms, where students’ dialectal backgrounds and social positioning influence their access to linguistic capital. Recent research in applied linguistics emphasizes that successful language learning requires pedagogical approaches that recognize learner diversity and promote equity (Norton, 2013; Darvin & Norton, 2015). Differentiated instruction, which adapts teaching strategies to learners’ individual needs and profiles, has been widely advocated as an effective response to heterogeneous classrooms. However, empirical studies examining how specific socio-demographic factors shape L2 learning in Central Asian higher education contexts remain limited. This study aims to address this gap by investigating student learning profiles in an undergraduate English classroom at Fergana State University. It seeks to answer the following research questions:

- How do regional, gender, and family-related factors influence students’ engagement in L2 learning?
- In what ways do dialectal and social identities affect classroom participation and language development?
- What pedagogical implications can be drawn for differentiated and inclusive L2 instruction?

## **2. Theoretical Framework**

### **2.1 Learner Identity and Investment**

Learner identity refers to how individuals perceive themselves in relation to language, society, and power structures. Norton (1997) introduced the concept of investment to explain why learners may be motivated yet reluctant to participate in certain contexts. Investment highlights the connection between language learning and learners’ aspirations for social recognition, mobility, and legitimacy. In this study, identity is viewed as dynamic and socially constructed, shaped through interaction and institutional practices. Students’ willingness to participate in English lessons is influenced by how their linguistic backgrounds are valued or marginalized within the classroom.

### **2.2 Differentiated Instruction in L2 Education**

Differentiated instruction involves modifying content, process, and assessment to accommodate learners’ readiness levels, interests, and learning profiles (Tomlinson, 2014). In L2 contexts, differentiation allows teachers to address variations in proficiency, confidence, and communicative styles. When combined with sociolinguistic awareness, differentiated instruction can foster inclusive environments that validate learners’ identities and reduce linguistic anxiety.

## **3. Methodology**

### **3.1 Participants**

The participants consisted of 15 second-year undergraduate students (9 female, 6 male), aged between 18 and 22, enrolled in an English language program at Fergana State University. All participants identified as ethnically Uzbek but represented diverse regional backgrounds, including Fergana, Namangan, and Sirdarya regions. Two participants were married, while the remaining students were single.

### **3.2 Data Collection Instruments**

Data were collected using a mixed qualitative approach:

- Questionnaires to gather socio-demographic and linguistic background information
- Semi-structured interviews to explore learners’ perceptions of English learning and classroom participation
- Classroom observations to document interaction patterns, participation frequency, and language use

### **3.3 Data Analysis**

The data were analyzed using qualitative content analysis. Students were grouped according to region, gender, and family status. Emerging themes related to motivation, identity negotiation, and participation were interpreted through the lens of sociolinguistic theory and investment models.

## **4. Findings and Discussion**

### **4.1 Regional Dialects and Classroom Participation**

Students from the Fergana region demonstrated higher levels of confidence and oral participation. Their dialectal proximity to Standard Uzbek appeared to facilitate linguistic adaptation and classroom interaction. In contrast, students from Namangan and Sirdarya regions experienced phonological interference and exhibited hesitation in speaking activities. These findings suggest that dialect prestige influences learners’ perceived legitimacy and willingness to participate.

### **4.2 Family Status and Learning Investment**

## “Ilmiy tadqiqotlarni amaliyotga joriy qilishning muammo va yechimlari” mavzusidagi onlayn xalqaro ilmiy-amaliy anjuman materiallar to‘plami. NamDU - 2026-yil 20-21-fevral

Married students displayed stronger pragmatic language use and goal-oriented motivation, despite limited study time. Their investment in English learning was linked to professional aspirations and family responsibilities. Single students, while more flexible in terms of time, demonstrated less depth in discourse and pragmatic awareness.

### 4.3 Gendered Patterns of Engagement

Female students were generally diligent and academically consistent but less vocal during discussions. Cultural norms surrounding modesty and public speech influenced their participation. Male students, on the other hand, showed greater confidence in speaking but inconsistent academic engagement. These patterns highlight the gendered nature of classroom interaction.

### 4.4 Implications for Linguistic Equity

Although the participants shared a common ethnic background, subtle forms of linguistic inequality were observed. Students from non-prestigious dialect regions reported feelings of insecurity, indicating the need for dialect-sensitive pedagogy that values linguistic diversity.

### 5. Pedagogical Implications

The findings underscore the importance of integrating learner identity into instructional design. Teachers should:

- implement dialect-aware teaching practices to reduce linguistic stigma;
- apply differentiated tasks that accommodate students’ social responsibilities;
- adopt gender-sensitive participation strategies, such as small-group discussions;
- foster inclusive classroom discourse that legitimizes diverse linguistic identities.

### 6. Conclusion

This study demonstrates that socio-demographic and linguistic learning profiles play a critical role in shaping L2 learning experiences. Differentiated and identity-affirming pedagogy is essential for promoting equitable participation and maximizing learning outcomes. Future research should expand the sample size and explore longitudinal effects of differentiated instruction in diverse educational contexts.

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