



# Policy Brief

## Edu-Tech in Kazakhstan

Blended Learning through Flipped Classrooms in the CAREC Region

Designing a Data-Driven Flipped Classroom Program

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## **Policy Brief: Edu-Tech in Kazakhstan**

### **Blended Learning through Flipped Classrooms in the CAREC Region Designing a Data-Driven Flipped Classroom Program**

**Asif Razzaq and Rabia Nazir**

#### **Background**

High levels of learning poverty, defined as the inability of children to read and understand a simple text by age 10, pose a significant challenge to developing regions. The learning poverty rate increased to 71% during COVID-19, specifically in low—and middle-income countries. This issue, already severe due to insufficient resources, unqualified teachers, and outdated curricula, was further exacerbated by the COVID-19 pandemic, with learning poverty rates rising to 71% in low- and middle-income countries. Blended Learning (BL) and the Flipped Classroom Model (FCM) are novel strategies that have the potential to cut the learning poverty rates sharply by fostering critical thinking, personalized instruction, and engagement. However, barriers such as limited digital infrastructure, insufficient IT skills, and high costs persist. This study intends to design a BL model using the FCM framework tailored to the CAREC region with the following objectives:

1. Identifying requirements for implementing FCM in CAREC countries.
2. Evaluating the feasibility of FCM across diverse contexts.
3. Providing policy recommendations for effective integration of blended learning.

The study examines public schools in districts with medium Human Development Index (HDI) scores in four CAREC nations: Kazakhstan, Pakistan, Tajikistan, and Uzbekistan. It focuses on schools with limited digital infrastructure. For Kazakhstan, the sample includes 70 students, 12 teachers, and four administrators. The focus is on gender and socio-economic factors influencing FCM implementation.

#### **The Education Context of Kazakhstan**

Kazakhstan is advancing rapidly in ICT and digital transformation, supported by initiatives like *Digital Kazakhstan*, which aims to improve internet access, 5G deployment, and ICT skills. However, challenges remain:

- **Digital Skills Gap:** Despite ranking 24th in the E-Government Development Index, Kazakhstan ranks 76th in the Digital Skills Gap Index.

- **Infrastructure Restrictions:** Schools are not given the same high-speed internet access and contemporary digital tools.
- **Divide Exacerbated by the Pandemic:** COVID-19 exposed deficiencies in the capacities of distant learning, digital literacy, and teacher preparedness.
- **Ongoing Initiatives:** Kazakhstan has launched initiatives such as AstanaHub and Affordable Internet to make the country a regional technology hub and develop digital infrastructure. Nevertheless, additional funding is necessary to ensure that all individuals have equal access to education.

### **Education Sector Challenges in Kazakhstan**

1. **Underutilized Digital Platforms:** While platforms like *Daryn Online* and *Bilimland* exist, a unified, customized LMS tailored to the Kazakh context is lacking.
2. **Teacher Training Gaps:** Schools hold 9–10 training sessions annually, yet specialized IT training for educators remains insufficient.
3. **Infrastructure Needs:** The country still needs reliable internet connectivity, fully working computer labs, and online libraries for effective FCM integration.
4. **Digital Content Creation:** Localized, curriculum-aligned resources in Kazakh and Russian are needed to enhance accessibility and relevance.

### **Key Findings**

1. **High Potential for FCM Integration:** Kazakhstan's advancements in ICT provide a favorable environment for FCM.
2. **Ideal Devices and Internet Access:** Nearly all respondents have home smart devices and internet access.
3. **Current Infrastructure:** Schools are equipped with multimedia tools, smart boards, and computer labs, though gaps in internet quality persist.
4. **Preferred Tools:** Teachers and students use platforms like *YouTube*, *Messenger*, and *USB drives* to share and access content.
5. **Content Preferences:** Students prefer concise videos (5–20 minutes), animated content, and audio lectures. Teachers favor classroom usage for VLs to minimize distractions.
6. **Content Accessibility:** Teachers prefer VLs to be available before class for pre-learning, while students prefer during or after class, requiring a balanced delivery approach.

7. Language and Engagement: Digital content in Kazakh and Russian enhances comprehension. Feedback-driven course planning and rewards for engagement motivate students.
8. Digital Platforms: Teachers favor school-controlled platforms for content quality and supervision, while students value easily accessible tools like YouTube.

## **Policy Recommendations for Kazakhstan**

### ***Short-Term Priorities***

1. Faculty and Student Training: Conduct regular, specialized IT training for teachers and students on platforms like *Google Classroom*, *Daryn Online*, and *Bilimland*.
2. Localized Content: The country should develop digital resources, including video lessons and quizzes in Kazakh and Russian, that are aligned with national curricula.
3. Unified LMS: Further, designing a standardized platform by integrating existing tools (*Bilimland*) and ensuring compatibility with local languages and access for all schools is also crucial.

### ***Medium-Term Goals***

1. Infrastructure Investment: Expand internet quality and coverage in schools while upgrading IT equipment like smart boards and digital libraries.
2. Sustainable Financing: Providing uninterrupted funding for upgrading IT infrastructure, online resource creation, and teacher incentive plans is crucial.
3. Balanced Workload: It is crucial to balance students' and teachers' online and in-person workloads to avoid burnout.

### ***Long-Term Measures***

1. Scalable EdTech Solutions: Expand digital platforms and tools to ensure equitable access for all individuals in urban and rural areas.
2. Teacher Motivation: To maintain teacher engagement in FCM, provision of financial incentives, advancement opportunities, and institutional support is necessary.
3. Engaging Stakeholders: An ideal collaboration between parents, schools, and government is crucial for a sustainable adoption of the FCM framework.

## **Suggestions for the CAREC Region**

1. ICT Investments: Equip schools with essential IT resources and provide offline FCM options for areas with limited connectivity.

2. **Teacher Training and Development:** Standardized modules for FCM training must be designed and shared for teacher's support.
3. **Flexible Digital Strategies:** Design adaptable FCM models to cater to local needs while ensuring data security and privacy.
4. **Community Engagement:** Involve parents, administrators, and local stakeholders in FCM planning to enhance resource management and support.

### **Call for action**

Kazakhstan is the leading country in digital integration and is ready to implement FCM with minimal corrective actions. However, a limited digital divide exists in the country that policy stakeholders must urgently abolish. To ensure equitable outcomes for all, the country must upgrade and reform FCM through gradual feedback from the system.