

MODERN TECHNOLOGIES FOR THE DEVELOPMENT AND IMPLEMENTATION OF EDUCATIONAL MOBILE APPLICATIONS

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Annotation: *This article brings modern technologies for creating educational programs and their introduction into practice, which are used in the organization of mobile education.*

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One of the new forms of modern education is mobile education, this form of education entered social life under the term m-learning and became popular. The development of mobile technologies and the creation of many software opportunities, at the same time, the availability of working in the 24/7 mode of mobile education is further increasing the reach of users. As the demand for mobile applications and mobile technologies increases, the competitive environment in market relations has been formed and is developing. This article presents a classification of modern technologies for creating mobile applications for education.

The following broad groups of mobile applications are currently being developed for education:

Programs for language learning

Learning a foreign language can be a difficult and time-consuming process. However, more and more people are turning to language learning programs to ease this process. This app category performed very well in 2022, growing 31% year-over-year after borders reopened. Other key market drivers include the influx of immigrants. Today, about 84.8 million US citizens were born abroad, accounting for one-fifth of the world's immigrants. In addition, the rapid adoption of virtual reality in language learning is also driving the maturity of the market. For example, mixed reality enhances immersive language learning, which leads to faster academic progress.

Duolingo is the unanimous leader in the category with over 500 million total users and 56 million monthly active users. In 2022, the app generated

\$369.5 million, representing +47% annual revenue growth. To generate revenue, Duolingo offers premium subscriptions, ads, and language tests.

Applications for online courses

Mobile learning platforms are a great way to learn new skills or increase experience. Online course applications can vary, but they generally offer similar features, including access to high-quality course materials and the ability to learn at your own pace. In addition, the trend towards skills development is also increasing the popularity of marketable online training for employees in the context of a developing economy and recruitment methods.

Coursera is usually among the best online education apps offering massive open online courses (MOOCs), specializations and even university degrees. The company reported annual revenue growth of 26% to \$523.8 million in 2022. Coursera's monetization model includes subscriptions and paid programs.

Educational programs for children

Learning solutions for kids inspire a love of learning through game mechanics and interactivity. Preschool mobile apps can also be used in classrooms to help children develop. In 2022, most early childhood education programs in the U.S. saw year-over-year revenue declines due to the impact of the return to private schooling, but some managed to make a big impact.

Kiddopia, an award-winning app for preschoolers, will bring in \$22.7 million in revenue in 2022. With over 17 million users, Kiddopia offers your child a simple and fun way to practice math, science and problem solving skills. Users can try the app for a 7-day trial or purchase a subscription for \$7.99 per month.

Mobile applications based on virtual and augmented reality (VR and AR).

The global VR and AR market is estimated to reach \$451.5 billion by 2030, with a CAGR of 38.5 percent. Augmented reality is bringing changes to both physical and online education. For example, AR supports personalized learning through scannable content analysis and visual placement of learning material.

As for VR, it enhances visualization and creates engaging experiences for learners. For example, the Merge EDU app relies on augmented technologies so that users can learn STEM through 3D navigation and simulation.

Mobile applications based on artificial intelligence (AI).

Intelligent algorithms have taken over almost all areas of our lives, including education. In 2022, the artificial intelligence in education market was estimated at 2.1 million dollars, and by 2030, the estimated size will be 25.8 million dollars. In educational programs, AI algorithms can automate scoring and grading, generate personalized recommendations, and answer questions through bots. For example, ELSA Speak is a program that focuses on speech recognition using artificial intelligence. Based on the audio input, the app assesses the user's English pronunciation and fluency and gives them instant detailed feedback.

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