

Сурет 1. Әріптері бар пернелер жиынтығын шығарып пайдалануға мүмкіндік береді

Осылайша, интерактивті тапсырмалар жасау түрлері білім алушылардың қызығушылығын тудырады, қосымша сұрақтар қоюға ынталандырады, білім алушыларға оқу үдерісіне белсенді қатысуға және өз білімдерімен бір бірімен алмасуға мүмкіндік береді.

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## CASE AR AND VR. EVOLUTION OF AUGMENTED REALITY

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Аннотация: В этой статье повествуется о дополненной и виртуальной реальности, первых возможных их реализаций. В начале статьи дается краткое описание технологий виртуальной и дополненной реальности. Далее описывается история становление указанных технологий. Ключевые слова: Дополненная реальность, AR, VR, смартфон, очки.

Annotation: This article is about augmented and virtual reality, the first possible implementations of them. The article begins with a brief description of virtual and augmented reality technologies. The history of the development of these technologies is described below.

Key words: Augmented reality, AR, VR, smartphone, glasse

Аннотация: Бұл мақалада қосымша және Виртуалды шындық, олардың алғашқы мүмкіншілігі туралы баяндалады. Мақаланың басында виртуалды және толықтырылған нақтылық технологияларының қысқаша сипаттамасы беріледі. Бұдан әрі аталған технологиялардың қалыптасу тарихы сипатталады.

Түйінсөздер: қосымша шындық, AR, VR, смартфон, көзілдірік.

Augmented reality - is the environment in real time complements the physical world, as we see it, the digital data using any devices - tablets, smartphones, or other, and software. sighting system in modern combat aircraft - is also augmented reality [1].

That is, to create an augmented reality in the ordinary life of the real-time objects are placed using a special software and gadgets, such as:

augmented reality glasses ("smart glasses"), tablets, smartphones and gadgets AR function.

Augmented reality - this is the best marketing tool to bring people surprise, remembering and cause WOW-effect [2].

Augmented reality (augmented reality, AR) must be distinguished from VR (virtual reality, VR). The augmented reality virtual objects projected onto real objects.

Virtual reality - a world created by technical means, transmitted to humans through the senses. That is, virtual reality creates his own world, where people can dive, and supplemented adds virtual elements in the real world. Virtual reality interacts only with the users, and augmented reality - with all around the world.

But the history of augmented reality as it is now originates from research relating to virtual reality. Discoverer of virtual reality considered Morton Heilig. He received the title of the research and inventions made in the 1950s and 60s, which is shown in Figure 1. 28 August 1962 he patented Sensorama simulator. Heilig himself even called it a theater immersion [3].

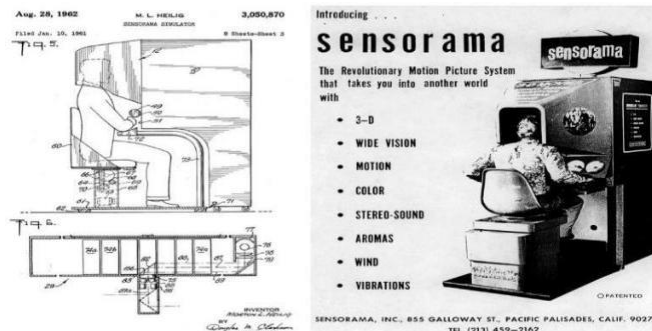


Figure 1 device a virtual reality.

Simulator Sensorama describes VR, in which visual images are complemented by air movement and vibration.

It was an early version of the device of virtual reality, but not augmented, but that it gave impetus to the development of both directions. Heilig also invented a special 3D camera to shoot movies for Sensorama.

But in 1968, computer scientist and Harvard professor Ivan Sutherland with his student Bob Sproull developed a device, called the "sword of Damocles" which is shown in Figure 2. It was the first system is already augmented reality-based head of the display [3] .

Due to the complex design of the glasses were so heavy that they were attached to the ceiling. Design hanging over subjects on the ceiling, hence the name. The glasses stereoscopic display broadcast a simple picture of a computer. The prospect of observing an object changes depending on the user's head movements, so needed a mechanism to track the direction of gaze. For that time it was a fantastic breakthrough.

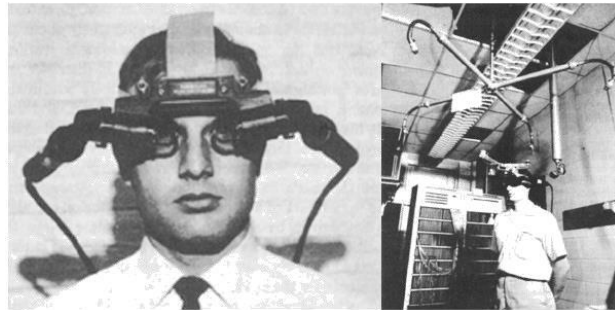


Figure 2 Sword of Damocles.

The next step was the creation of Myron Krueger laboratory with artificial reality Videoplace in 1974 [3].

The main aim was to save users from having to wear special helmets, goggles and other devices to communicate with an artificial reality. People who are in different rooms, can interact with each other. Their movements were recorded on video, analyzed and translated into silhouettes of artificial reality. Members saw their silhouettes interact with objects on the screen and it gave the impression that they are part of an artificial reality.

The first mass use of augmented reality was made possible thanks to Dan Reiton, who in 1982 used radar and cameras in space in order to show the movement of air masses, cyclones and

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The first mass use of augmented reality was made possible thanks to Dan Reiton, who in 1982 used radar and cameras in space in order to show the movement of air masses, cyclones and winds in television- forecasts weather. There's augmented reality is still used in this way.

In 1998, the NFL first used augmented reality, developed by Sport Vision, televised live sports games. During the match the picture with the camera surveillance showing the playing field, added the technical line and account information. There is an old story about the “magic yellow line” [4].

In 99, NASA has used a system of augmented reality in the X-38 space vehicle instrument panel, which has learned to display the objects on the ground, regardless of the weather conditions and the actual visibility.

And in the same year, Hirokazu Kato has created an open library for writing applications with the AR-functional ARToolKit. It used recognition system position and orientation of the camera in real time. It allows you to connect a picture of real and virtual cameras, making it possible to precisely apply a layer of computer graphics on real-world markers.

The highest progress augmented reality past years have been released in 2013, the year Google Glass glasses depicted in Figure 3.



Figure 3 Google Glass glasses.

These points can take photos and shoot video of the team and is synchronized with the cloud. But the data points are not in contact with the environment and had some flaws. This does not become a mass experiment yet done his job: has launched a wave, making it clear to other companies that can be taken seriously for the development of augmented reality devices for the masses.

Currently, the augmented reality technology is being promoted in various spheres of life. Particular attention is paid to education. In connection with the situation in the world, where students are engaged in remotely. Augmented reality is as relevant as ever in use today.

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## **ИСПОЛЬЗОВАНИЕ ТЕХНОЛОГИИ СОТРУДНИЧЕСТВА НА УРОКАХ ИНФОРМАТИКИ В СТАРШИХ КЛАССАХ КАК СРЕДСТВО ПОВЫШЕНИЯ ЭФФЕКТИВНОСТИ ОБУЧЕНИЯ**

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Аннотация. В статье рассматриваются вопросы использования технологии сотрудничества на уроках информатики в старших классах, с применением Интернет – сервисов.

Ключевые слова: Технология сотрудничества, интернет- сервисы, учебный процесс.

Annotation. The article discusses the use of technology cooperation in computer science lessons in high school with the use of internet services.

Keywords: Collaboration technology, internet services, studying process.

Аннотация. Мақалада Интернет қызметтерін қолдана отырып орта мектепке информатика сабақтарында ынтымақтастық технологиясын қолдану туралы айтылады.

Түйінді сөздер: ынтымақтастық технологиясы, интернет қызметтері, оқу процесі.

В настоящее время становится актуальным использование в учебном процессе методов и приемов, которые формируют у обучающихся способности к саморазвитию, самосовершенствованию, умение самостоятельно принимать решения, добывать новые знания, обладать коммуникабельностью, уметь применять приобретенные знания в практической ситуации и повседневной жизни, выдвигать гипотезы, делать выводы и умозаключения, другими словами – уметь учиться.