

Ministry of Education and Science of the Republic of Kazakhstan
Suleyman Demirel University



Nogay Nursultan
Zhappar Nurdaulet
Zhumatay Azamat
Nagashbayev Zhansultan

Fiery
(Cyber-sports E-learning platform)

A thesis submitted for the degree of
Bachelor in Information Systems
(degree code: 5B070300)

Kaskelen, 2021

Ministry of Education and Science of the Republic of Kazakhstan
Suleyman Demirel University
Faculty of Engineering and Natural Sciences

**Fiery
(Cyber-sports E-learning platform)**

A thesis submitted for the degree of
Bachelor in Information Systems
(degree code: 5B070300)

Author: **Nogay Nursultan
Zhappar Nurdaulet
Zhumatay Azamat
Nagashybayev Zhansultan**

Supervisor: **Ardak Shalkarbayuly**

Dean of the faculty:
PhD Andrey Bogdanchikov

Kaskelen, 2021

Abstract

Experiments in distance learning since 2010 world universities under the pilot approach. Therefore, it seems to us that a strategy must be developed to ensure this choice of education; Its role in training and providing it with the means necessary to achieve these objectives. The purpose of this article is, on the one hand, to present typologies of e-learning system, e-learning platform and e-learning standardization on cyber-sports education. And, on the other hand, provide an overview of free and private property e-learning platforms for teaching and learning, their functional architecture, as well as the types of e-learning devices that can be created from these learning platforms.

Андалпа

Пилоттық тәсілмен 2010 жылдан бастап әлемдік университеттерден бастап қашықтықтан оқыту тәжірибелері. Сондықтан, бізге білім берудің осы таңдауын қамтамасыз ететін стратегия жасалуы керек сияқты; Оқытудағы рөлі және оны осы мақсаттарға жету үшін қажетті құралдармен қамтамасыз етуі. Бұл мақаланың мақсаты, бір жағынан, электронды оқыту жүйесінің типологияларын, электрондық оқыту платформасын және кибер-спорттық білім беруде электрондық оқытууды стандарттауды ұсыну. Екінші жағынан, оқыту мен оқуға арналған электрондық және жеке меншік электрондық оқыту платформаларына, олардың функционалдық архитектурасына, сондай-ақ осы оқыту платформаларынан жасауға болатын электрондық оқыту құрылғыларының түрлеріне шолу жасаңыз.

Аннотация

Эксперименты в дистанционном обучении, проводимые с 2010 года мировыми университетами в рамках экспериментального подхода. Поэтому нам представляется, что необходимо разработать стратегию для обеспечения такого выбора образования; его роль в подготовке и предоставлении ему средств, необходимых для достижения этих целей. Цель этой статьи заключается, с одной стороны, в представлении топологии системы электронного обучения, платформы электронного обучения и стандартизации электронного обучения в области киберспорта. И, с другой стороны, предоставьте обзор бесплатных и частных платформ электронного обучения для преподавания и обучения, их функциональной архитектуры, а также типов устройств электронного обучения, которые могут быть созданы на этих платформах обучения.

Contents

1	Introduction	6
1.1	Motivation	6
1.2	Aims and Objectives	7
2	Methodology	8
2.1	Agile Project Management	8
3	Development	10
3.1	Creating platform	10
3.2	Used software	11
4	Cyber Sport	14
4.1	About Cybersport	14
4.2	Advantages of becoming an esports player	15
4.3	About Cybersport in Kazakhstan	16
5	Teaching	17
5.1	Teaching	17
5.2	Personal Learning Environment	17
6	Website content and functions	18
7	Conclusion	23

Chapter 1

Introduction

1.1 Motivation

What do you know about cyber-sports and what do you think that word is? For some people it is just a game, some people have cyber sports associated with guys, behind screens and fanatically clicking the mouse button, but today we would like to tell you about another cyber sport.

During COVID-19, e-Learning has proven to be the most reliable solution to numerous problems rising with the global lockdown. Therefore, building an online learning platform can answer many challenges if it is done right and by the right people.

School closures across 188 countries due to the COVID-19 outbreak made remote learning a necessity. No wonder more people begin to see eLearning software development as an appealing business opportunity and a winning solution, which can meet the growing educational needs of the nations. And EdTech will not be a quickly passing trend. Even when the pandemic dies down, accessible, effective, and flexible education is here to stay.

The peak of the popularity of cyber sports can't be overlooked. Betters and hundreds of gamers participate in events every day and make a lot of money from it. PwC experts say that by 2021, the number of spectators in cyber sports will increase to 400 million. This calls for a serious approach to the organization of events. Cyber sports are considered a major event. Cash prizes reach several million US dollars, and hundreds of thousands of people watch the game on on-line broadcasts. Judges are needed for transparency and integrity. Currently, specialized academies do not produce certified cyber trainers and judges.

We created an E-learning platform that is based on videos created by teachers and professional gamers(cyber athletes).

1.2 Aims and Objectives

Establishment of cyber sports development programmes and a methodological plan for cybersports education.

Develop and promote a sustainable cyber-sport ecosystem that benefits all stakeholders in the industry.

We aim to raise Kazakhstan's cyber sport to new heights and to make Kazakhstan the most active and attractive cyber sports centre in the CIS and Central Asia.

Creation of conditions for the establishment of free-of-charge cyber sports academies in Kazakhstan.

Create conditions for training and increase the number of cyber sports managers.

Create conditions for training and increase the number of certified cyber sports referees and coaches.

Promoting the development of cybersport in the regions of Kazakhstan. The widespread establishment of regional cyber-sports federations in the regional centres of the Republic of Kazakhstan. Joint regional competitions, regional championships

At the community level: In order to ensure that all Kazakhs have a better understanding of and participate in cybersport, building a healthy and cohesive community that can fully enjoy the benefits of cybersport in harmony with its peers.

On a competitive level: Allow cyber athletes to perform in different cyber sports disciplines at different levels, from amateurs to professionals. For Kazakh cyber athletes to succeed at international level cyber sports tournaments and demonstrate that Kazakhstan is indeed a serious rival in cyber sports.

At the sectoral level: For the cybersport industry as a whole, to have a positive impact on the economy of Kazakhstan and to stimulate employment at various levels.

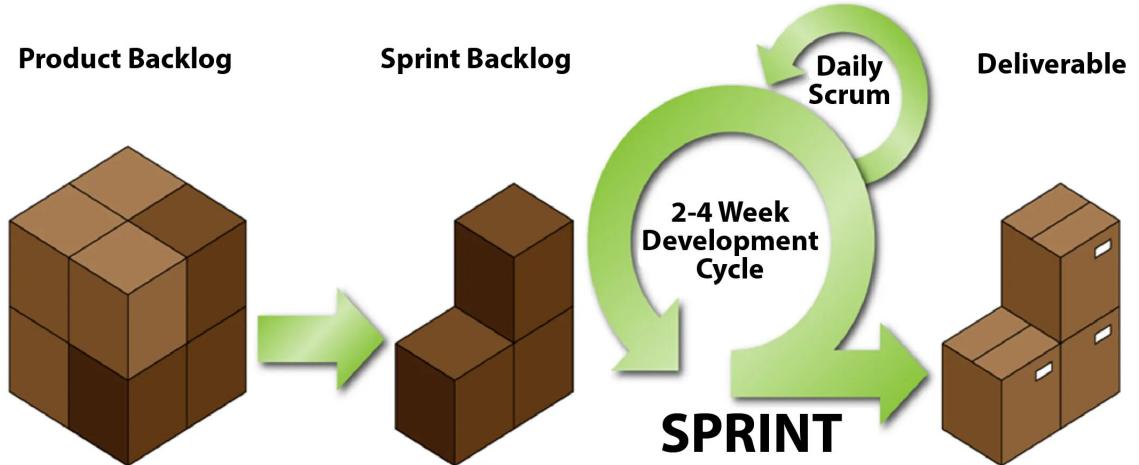
Chapter 2

Methodology

2.1 Agile Project Management

Agile project management is an iterative approach to product development that builds incrementally from the beginning of the project rather than attempting to deliver the whole product near the end. The methodology is based on the Agile Manifesto (2001).

Agile breaks down projects into small chunks of user features, prioritizes them,



and then delivers them in 2-4 week cycles known as iterations or sprints.

Teams work in short cycles in order to progress continuously and create just what the users want. Before each cycle begins, the team establishes work goals. If the customer has any concerns about the function, the team interacts directly with them. The Product Owner analyzes the customer's priorities and communicates them to the team so that they can focus on the most important tasks. In each iteration, the team estimates how long it will take and how it will be completed.

High Product Quality

Throughout the production process, regular testing to ensure that the product is working is carried out.

Just-in-time definition and elaboration of specifications

Continuous integration and regular monitoring are being incorporated into the production process.

Sprint retrospectives are used to enhance procedures and function over time.
Software is created in rapid, gradual cycles.

Higher Customer Satisfaction

Customers are shown how to use these features.

With each edition, we're bringing goods to market faster and more frequently.
Maintaining customer involvement and engagement

Increased Project control

Sprint meetings are held every day.

Transparency is achieved by the use of information radiators.

Reduced Risks

Sprint implementation ensures a short period between feature development.

When it comes to implementing recent improvements, Agile gives you a lot of leeway.

During the planning process, the client's desires and priorities are taken into account.

Faster ROI

Putting a premium on business value allowing the customer to choose the features that are most important to them

After a few iterations, you'll have a working "ready to market" product.

Agile refers to the ability to release products quickly and gauge consumer reaction.

Chapter 3

Development

3.1 Creating platform

COVID-19 Comes Into Play: Why You Should Create An e-Learning App There is overwhelming evidence from search engines all over the web that online education is becoming more popular. Just when the lockdown began, there were four times as many searches for terms like online learning, e-Learning, and Massive Online Open Courses (MOOCs) in Canada, France, Italy, the United Kingdom, and the United States.

The development of an e-learning platform has the same constraints as the creation of a website, but it also has some unique characteristics due to its use for learning. The following are the most important factors to consider:

- On a technical level, they primarily concern computer and communication hardware and software, such as platform users' hardware and operating systems, as well as multimedia tools, Internet access (type, speed, etc.), download, and messaging tools at the server level.
- On a teaching and learning level, they include taking into account the teacher's distance and probably the pedagogical location on the one side, and the uniqueness of the training on the other, and defining the pedagogical contents and standard courses in order to keep the platform interesting and motivating. We also describe the modules, lessons, and planned courses within this structure.
- At the administrative level: They pertain to the administration of learners' education (registration, transcripts of grades, etc.), the administration of trainers (recruitment, remuneration, etc.), the assignment of learners to classes, and the assignment of trainers to groups, among other things.

What were we looking at first?

- Adaptability

You can easily combine work and studies with e-Learning, and you are not confined to a school, region, or even your country.

- Learning at your own rate

Log in whenever it is convenient for you. To explain something you missed, go back to previous lectures, measures, or lessons.

- Production of time

According to Brandon Hall, e-Learning usually allows a student to spend 40-60% less time than traditional learning.

What is the type of platform?

- Video-based learning

What features are needed to satisfy your future users? Tracking and reports

Evaluation

Virtual classroom

User-friendly UI/UX design

Social learning tools

High-quality learning resources

The following are the key characteristics of a platform:

Courses, assessments, and standard courses are all developed. Document management for educational purposes (indexing, classification, updates, etc.).

Organizing a collaborative workspace for students and/or instructors.

Evaluation and monitoring of the learner's progress.

The management of a student's education.

The learner is provided with job equipment (specific editors, download tools, T.P simulation tools, etc.).

Making contact methods and procedures for their management available to different actors (forums, messaging, chat, videoconferencing, etc.)

kerek kara [1]. Let's cite Einstein's paper [2] and Knuth's website [3]. Knuth has also a book on algorithms [4].

3.2 Used software

Java Spring

Java is a general-purpose programming language that can serve a broad range of applications. Not to mention that Java is being constantly developed and improved on a daily basis.

Furthermore, there are a plethora of open source and proprietary libraries available to assist Java in this regard.

In and of itself, Spring offers a convenient and safe way to manage Forms and Logins.

Spring manages all of the dependencies you might want or need to create your app.

Spring excels at handling Autowiring, which can be a nightmare when developing complex web apps in Java.

In Spring, the context creates the objects for you, so you don't have to. Without the developer having to worry about putting an instance of one bean into the desired field in an instance of another bean to autowire, the container finds each injection point and sets an instance there by itself.

Spring has a number of design patterns in its core concepts, including Factory, which allows you to construct bean objects using the Application context reference. For AOP and MVC, Spring uses the Proxy pattern. By default, all Spring beans are only generated once, and subsequent calls to `getBean()` return the same object, effectively implementing the Singleton design pattern.

Using POJOs, Spring allows developers to build enterprise-class applications. The advantage of using just POJOs is that you don't need an EJB container like an application server; instead, you can use a stable servlet container like Tomcat or a commercial product.

Spring is set up in a modular format. Despite the large number of packages and classes available, you just need to think about the ones you require and disregard the rest.

Spring may not reinvent the wheel; rather, it allows extensive use of established technologies such as ORM frameworks, logging frameworks, JEE, Quartz, and JDK timers, as well as other view technologies.

Since environment-dependent code is moved into this framework, testing an application written with Spring is easy. Furthermore, using JavaBeanstyle POJOs makes dependency injection for injecting test data much simpler.

Spring's web framework is a well-designed web MVC framework that is a great alternative to over-engineered or less common web frameworks like Struts.

Spring offers a simple API for converting technology-specific exceptions (such as those thrown by JDBC, Hibernate, or JDO) into unchecked, consistent exceptions.

IoC containers are typically light, particularly when compared to EJB containers, for example. This is useful when designing and deploying software on computers with limited memory and processing power.

Spring offers a consistent transaction management interface that can scale up to global transactions and down to local transactions (using a single database, for example) (using JTA, for example).

PostgreSQL

PostgreSQL includes a number of features aimed at assisting developers in the development of applications, administrators in the protection of data integrity and the creation of fault-tolerant environments, and you in the management of your data, regardless of the size of the dataset. PostgreSQL is highly extensible, in addition to being free and open source. You can, for example, define your own data types, create custom functions, and even write code in multiple programming languages without having to recompile your database!

When conforming to the SQL standard does not conflict with conventional features or contribute to bad design decisions, PostgreSQL does so. Many of the SQL standard's features are supported, though with slightly different syntax or functionality in some cases.

Over time, further progress toward conformity can be expected. PostgreSQL conforms to at least 160 of the 179 required features for SQL:2011 Core conformance as of the version 10 release in October 2017, while no relational database reaches complete conformance with this requirement as of this writing.”

FreeMarker

Apache FreeMarker is a template mechanism: a Java library for the generation of text output (HTML pages, xml, configuration files, source code, etc. The input is a template, for example html, which has special expressions, prepares the data corresponding to that expression, a Freemarker dynamically inserts these data and produces a dynamically filled document.

Chapter 4

Cyber Sport

4.1 About Cybersport

Esports is a virtual space competition in which the game is an interaction of control objects that provides equal conditions for the competition of an individual against another person or a team against another team. Simply put, this is a competition for video or computer games, but one that is taken seriously. Three-dimensional shooters (3D shooters), which simulate a war between teams of players using modern or fantastic weapons, sports simulators (a series of FIFA games), real-time strategy games (StarCraft), and team role-playing games with tactical and strategic elements are among the most common esports disciplines (League of Legends, Dota 2).

Why we need Cyber-sports in Schools

Esports isn't going anywhere anytime soon. Both as a spectator sport and as a company. In high schools and universities. And not in a minor way. Competitive gaming has developed into a multibillion-dollar industry that is expected to continue to expand exponentially. Similarly, the popularity of esports in schools is increasingly increasing.

The Benefits of Esports in Schools

Educators are well aware that participation in extracurricular programs improves student achievement. Quite a bit. It doesn't matter what you're doing. It doesn't matter whether it's a comedy club or a softball team. A get-together for movie buffs or tech enthusiasts. Students who participate in extracurricular activities are more active in a variety of ways, according to studies.

4.2 Advantages of becoming an esports player

Popular disciplines have good prize money, and if a young esports man has been practicing since childhood, he has a good chance of earning a good wage. Sponsors have now invested a significant amount of money in esports and will continue to do so in the future. The only stipulation is that a competitor must be 16 years old at the start of the competition to compete in the world tournament.

Furthermore, do not be concerned if the esports player does not achieve the necessary level of ability. Esports has now developed into a multibillion-dollar industry in which money can be made not just from the game, but also from organizational expertise, commentating, and streaming.

Another advantage is the growth of mental processes. Attention improves and critical reasoning evolves as a result of esports. Intelligence improves over time. Even if you do not achieve great heights, preparation would always have a positive impact. Video games assist in the creation of reasoning, as well as the ability to accurately interpret situations, depending on the circumstances. Esports increases reaction time and focus. An esports player would not struggle with decision-making speed because everything must be done quickly in the game.



This table shows the prize money of different tournaments and different disciplines.

4.3 About Cybersport in Kazakhstan

Kazakhstan's involvement in esports dates back to the national team's participation in WCG 2002 in Seoul in 2002. The formation of the first esports team, k23 (Kazakhstan 2030), in 2004 was also a significant event. Several esports teams are currently competing in major tournaments in the genres of Dota 2, Counter-Strike: Global Offensive, and PlayerUnknown's Battlegrounds.

Kazakhstan has acknowledged esports as an official sport since June 25, 2018. According to Zakon.kz, this was announced on Facebook by Kuanyshbek Bakhytbekovich Yessekeyev, Chairman of the Management Board of JSC "Kazakhtelecom." In Kazakhstan, the non-profit Qazaq Cybersport Federation is also involved.

The biggest victory of the Kazakh teams at esports events is the victory at the Krakow Major in the CS discipline:GO which was played by the Gambit team, which included 3 Kazakhstani players Dauren " AdreN "Kystaubayev, Abay" Hobbit "Khasenov, Rustem" mou " Telepov.

Chapter 5

Teaching

5.1 Teaching

It is an integrated whole consisting of resources (material and human), strategies, methods and actors working together in this context to achieve the objective ". He states that: "A learning device is designed to allow someone to learn something with a technological tool.

We propose that the role of the teacher be integrated into the teaching device. CEHL(Computer Environments for Human Learning) research examines the means of providing assistance to learners and advocates (teacher, trainer, mentor, peers, etc.).

5.2 Personal Learning Environment

PLE is a system, a set of tools, or an ecosystem, which helps learners organize their learning. Personal learning is learning in which the student controls his learning process, the resources he has access to, and the other people with whom he interacts.

Chapter 6

Website content and functions

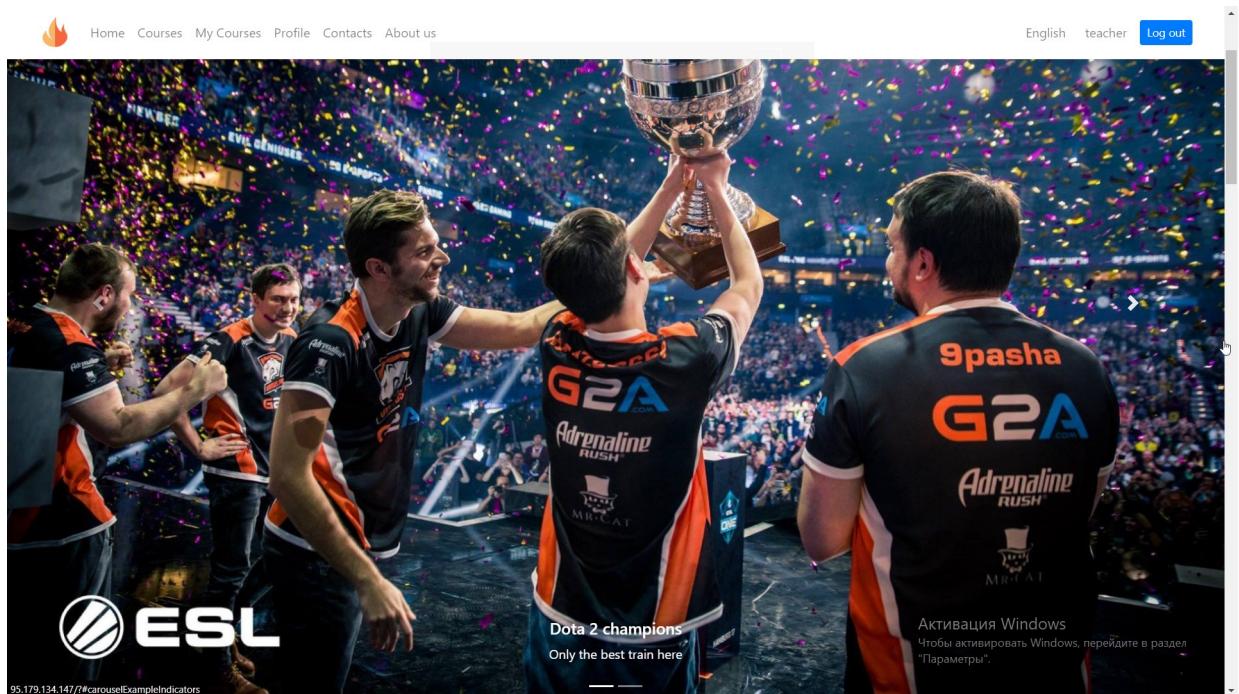


Figure 6.1: Everyone can check the news

The screenshot shows a web-based course management system. At the top right, there's a navigation bar with links for English, teacher, and Log out. Below the navigation, there are two main sections: "Strategy" and "Shooter".

Strategy Section:

- Dota:** Dota description. Created 3 months ago. Register button.
- CS:** CS description. Created 2 months ago. Register button.
- Overwatch:** Overwatch description. Created 1 month ago. Register button.
- CS:** CS description. Created 2 months ago. Register button.

Shooter Section:

- Dota:** Dota description. Created 3 months ago. Register button.
- CS:** CS description. Created 2 months ago. Register button.
- Mortal Combat:** MC description. Created 1 month ago. Register button.
- CS:** CS description. Created 2 months ago. Register button.

Figure 6.2: Students have access to every course

The screenshot shows a course part page. At the top right, there's a navigation bar with links for English, teacher, and Log out. On the left, there's a sidebar with a "Course" section and a "Course part" section.

Course Part 1: Tutorial

1) Tutorial
Begin
Course duration: 7
Course limit time: 7

Course Part 2: Is THIS the best gun in PUBG right now?

Бомба лактыру
Course duration: 5
Course limit time: 7

Aktivatsiya Windows
Чтобы активировать Windows, перейдите в раздел "Параметры".

Figure 6.3: These are course parts

"Емтихан 1" емтиханы

Алғашқы емтихан

#	Question in Kazakh	Question in Russian	Question in English	Full score
1	CS GO-да неше карта бар	Сколько карты в CS GO	How many maps in CS GO	0

Add question Edit quiz Delete quiz

Активация Windows
Чтобы активировать Windows, перейдите в раздел "Параметры".

Figure 6.4: Students can take the quizzes

Our teachers

different teachers with more than 3 years of experience in the

	Zhappar Nurdyndaulet "Dota" Course Teacher
	Nogay Nursultan "CS GO" Course Teacher
	Zhansultan Nagashybayev "CS GO" Course Teacher

Активация Windows
Чтобы активировать Windows, перейдите в раздел "Параметры".

Figure 6.5: Everyone can see list of teachers

Contact us

Get in touch

Name

E-mail

Phone

Message

Get connected with us on social networks!

FIERY

Your one and only source into the scandalous life of cybersport's elite

PRODUCTS

[My Courses](#)

[All Courses](#)

USEFUL LINKS

[Contacts](#)

[About Us](#)

QASKELEN, ABYLAI KHAN
1/1

Активация Windows

FIERY.QAZ@GMAIL.COM

+7 747 130 12 00

Figure 6.6: Every user can send feedback or questions

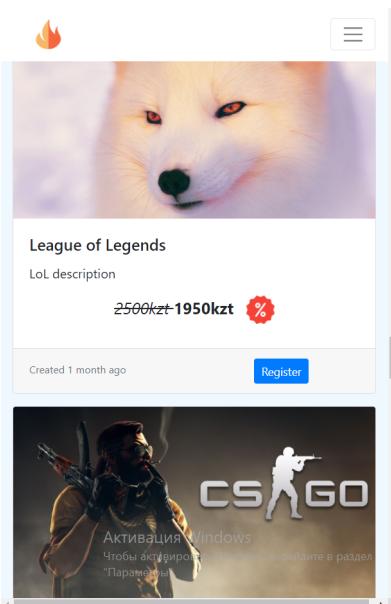


Figure 6.7: Website has mobile version

The screenshot shows a user interface for managing course parts. On the left, there are two dropdown menus: "Course" and "Course part". To the right, a form titled "Add new section" contains fields for "Kazakh name" (必填), "Russian name", "English name", and "Description" in both Kazakh and Russian. A note at the bottom right indicates that Windows activation can be found in the "Parameters" section.

Figure 6.8: Teachers can edit course parts

The screenshot shows a user interface for editing course details. A dropdown menu on the left lists "Course". To the right, a form titled "Change the course 'CS GO'" contains fields for "Kazakh name" (必填), "Russian name", "English name", and "Description" in both Kazakh and Russian. The "Description" field for "Kazakh" contains a detailed description of the game. A note at the bottom right indicates that Windows activation can be found in the "Parameters" section.

Figure 6.9: Teachers can edit courses

Chapter 7

Conclusion

Recent decades have seen a dramatically accelerating pace in the development of new technologies, even though various gaps persist in terms of adoption in different parts of the world, especially in the least developed countries. This rapid technological change is affecting almost every area of the economy, society and culture. And also it affected to education and eSports. We are willing to make everything to be as good as it must be. In this perspective, a comparison between online learning devices in Kazakhstan and those of Europe and America will be the same in future work.