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Designing a Platform for Video Training of Practical Courses in Physical Education and Sports Sciences (Corona Course)

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ABSTRACT

Background: COVID-19 caused significant damage to various sectors, and its impact on education, especially practical courses, cannot be ignored. Teaching practical courses was a serious challenge for many universities. On the other hand, the web space provided an opportunity for everyone to use this space for educational purposes. This study aimed to design a video training platform for practical courses in physical education and sports sciences (Corona course).
Methods: Due to the limitations of holding practical classes in this field of study, there was a great need for this program among sports science educators. First, by a field interview, the features of the platform were identified and then the initial work was done in two stages of database design and creation of user sections.
Results: The results of this study can facilitate providing specialized educational services in sports science.
Conclusions: We hope that by providing this practical solution, we can play an effective role in reducing the damage caused by the Corona virus in the education sector.

KEYWORDS
Video training, Sports sciences, Platform

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Introduction

The new Corona virus quickly spread to the rest of the world in 2019, starting with China [1]. Adapting to this type of life was very difficult even for those who were not infected with the virus [2], and many jobs that did not previously require the Internet had to adapt to this environment. Physical education was one of those occupations [3,4,5]. Online education is not new in education, but it is new in practical lessons that require more teacher-student interaction [6]. On the one hand, this change helped to develop educational content, but it cannot be a substitute for face-to-face training. In the sports management department of the country, instead of creating new solutions, they mainly resorted to the closure of educational environments. Some researchers have encouraged sports centers in Iran to use web-based automation so as not to be harmed by environmental changes [7,8]. New technologies, like manipulating genes in the life sciences [9] and developing cryptocurrencies in the financial sector, have their own threats and opportunities, but entry into these areas is inevitable. Therefore, at present there is no effective method to teach practical courses, and practical training through social networking space has limitations that waste the time of teachers and students. On the other hand, limited access to the Internet, especially in remote villages, is a big problem in teaching of practical lessons. Therefore, this program attempts to provide standard video content to professors and students. It is hoped that this program will be adopted as a necessity material and will be available to various universities. The review of the research literature shows that the designing web applications requires conditions to be more effectively. Therefore, it was necessary to review similar researches in this area.

Gholamnia Shirvani et al. (2015) studied the effectiveness of women's theory-based multimedia software and active living in sports behavior and health-related fitness indicators in Tehran. Their study showed that the use of novel communication technology such as multimedia software for women interaction and active life based on the TBP path analysis model developed by planning, principles of health education, valid sources of physical activity for different levels of the physical activity pyramid and principles of design and evaluation of multimedia, leads to improved and sustained sports behavior and health-related fitness indicators in women [10].

Mahyar and Habibi (2007) analyzed and designed a software based on business processes and concluded that the software development procedure based on FOOM methodology provides a new method for more successful analysis and design of the information system in business process management. They used the system process modeling diagram instead of the object-oriented data flow diagram and pseudocodes to explain class modes. They introduced the new model to the analysts and designers of these systems. The continuity of this diagram to the organization's processes as the destination for the installation of information systems is the advantage of this method, and the simplicity of this diagram makes it understandable. Its presence for users increases the success rate of these two main phases of software engineering [11].

Almasi (2009) also conducted a study on the feasibility of designing and implementing comprehensive banking software in Post Bank of Iran with the aim of conducting and studying and feasibility study of designing and implementing comprehensive banking software, considering various technical, economic, legal, organizational, operational and temporal aspects, and identifying the differences in the views of experts and managers of Post Bank about the capabilities and limitations of the plan based on the TELOS model[12].

The effective factors in promoting users' satisfaction with virtual web-based training were determined by Abbasian et al. (2010) using the Kano model. They showed that the most contributing factors in user satisfaction were "user interface and interaction" and the most important factor in user dissatisfaction was "infrastructure and content"[13].

Rouhi et al. (2016) compared learning of dentistry students in oral pathology course in traditional education and traditional-electronic (web-based) education and found out that web-based education

as a complementary educational method along with traditional education can have a greater impact on students' learning and can even replace face-to-face education [14].

Hosseini et al. (2008) examined the obstacles to the development of e-learning in the Iranian educational system. The results indicate that the barriers to e-learning in the Iranian education system are (1) technological, (2) cultural/social, (3) pedagogical, (4) legal/administrative, (5) strategic and (6) economic barriers, respectively [15].

Identification of learning needs of faculty members in electronic higher education was reviewed by Narenji et al. (2014). The results demonstrated that teachers' learning needs include three categories: pre-teaching needs (motivation for e-learning, professional commitment and ethics, technical skills, updating resources and teaching methods, fostering creativity in e-learning environment), needs during teaching (time management, evaluation during the semester, providing feedback, interaction and communication in the e-learning environment, guiding students in research) and needs after teaching (final evaluation, communication with the student after the course), among which pre-teaching needs are the most important[16].

A survey was conducted in universities on e-learning in Iran by Seyed Naghavi (2008) to investigate the professors and students' attitudes toward e-learning. After analyzing the data, it was found that teachers had a positive attitude to e-learning as a teaching aid. In this regard, the feelings of usefulness and self-success of teachers have been the most important factor in their desire to use e-learning. In students' view, factors such as independence, faculty guidance and multimedia education are the most important variables affecting their attitude about the effectiveness of e-learning [17].

Yaghoubi et al. (2008) examined the desirable characteristics of students and faculty members in e-learning in Iranian higher education. The results showed that among the desirable characteristics for students of virtual courses, self-confidence and responsibility, participation and creativity, information technology skills and motivational factors have a higher priority. From the respondents' point of view, management and encouragement, virtual interaction, student support, e-commitment, providing an interactive environment and a positive attitude towards e-learning are the most important desirable characteristics of faculty members in e-learning. According to the results, the effective factors in the success of e-learning and e-learning system can be classified into two categories: support factors and educational content and tools [18].

In the present study, in addition to considering the suggestions of previous researches, a field study of users was conducted in the target community.

This study is designed to answer the following research questions:

What features are needed in order to design a video training platform for practical courses in physical education and sports sciences (Corona course) from the professors' point of view?

What are the features for designing a video training platform for practical courses in physical education and sports sciences (Corona course)?

Is it necessary from the point of view of female students?

Is it necessary from the point of view of male students?

How will be the design of user sections in a video training platform for practical courses in the field of physical education and sports sciences (Corona course)?

Material and Methods

The design was presented as a web-based software output. To create the design of the existing software in the field of service provision, the necessary software features were reviewed. In the second stage, it was essential to prepare the necessary features of the software based on field interviews with students and professors. After conducting field interviews and achieving theoretical saturation, the interviews were typed exactly and the central codes were selected using MAXQDA software. In the next step, the program protocol was documented. Finally, using the computer programming language, the initial form of the program was prepared and it was considered for

experimental use in the university. The matrix of software features and the groups in question are shown in Table 1.
User samples were selected from the professors and students as the main users and the necessary features for this software were prepared by theoretical saturation method.

Table 1- Important features from the perspective of video tutorial users

share ability	easy access	comment or question	downloadable	video content	
*	*	*	*	*	**female students**
*	*	*	*	*	**male students**
*	*	*	*	*	**professors**

Results

The results of this project are presented in the form of databases and user sections. The database contains tables that provide links to user sections for the data set. The first section is for students who can use the services provided by universities. They enter their information into this program (Figure 1).

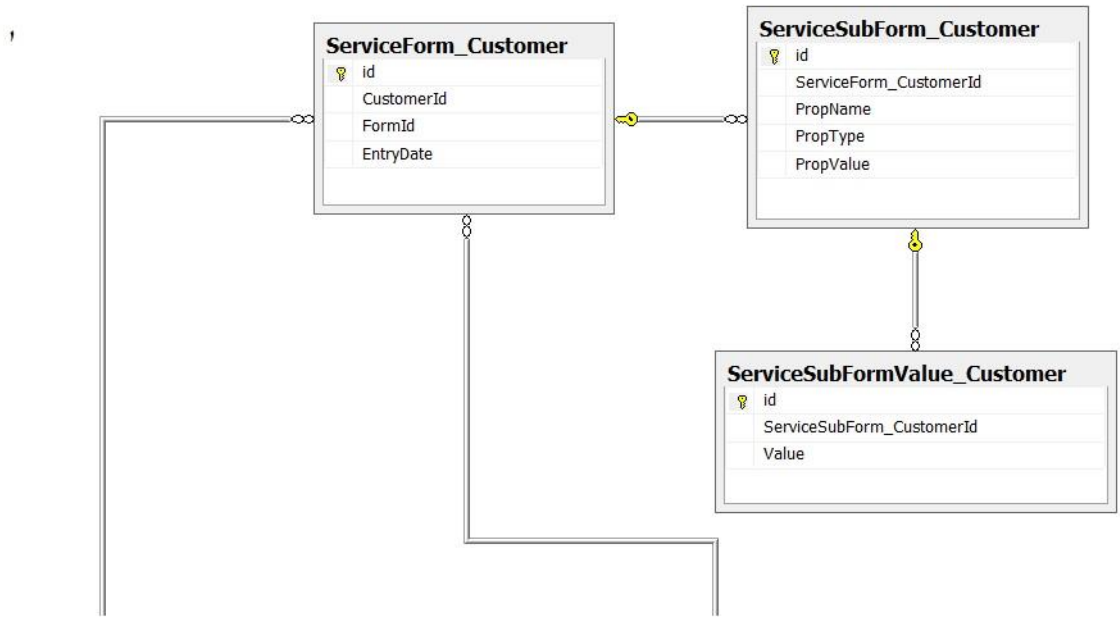

Figure 1- Student database diagram in the curriculum

The second part is for the educators who could choose the category for their education and registered their classes in this field (Figure 2).

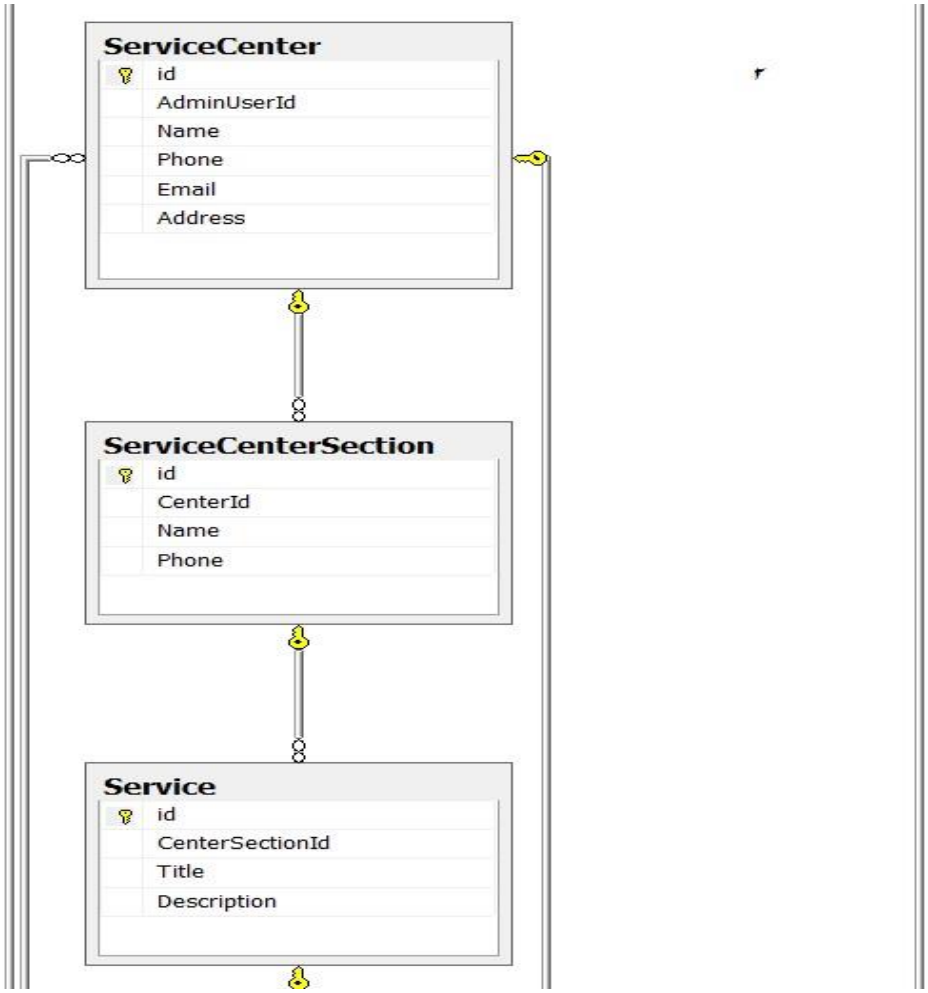

Figure 2- Teacher database diagram for teaching in the curriculum

The communication model of this system is such that the user can receive the required training through video training and the management can upload useful training, including exercise program, nutritional considerations, etc. This section is available for everyone.
After registering on the site and confirming the user account, the customer can enter the website by entering his user information and password.

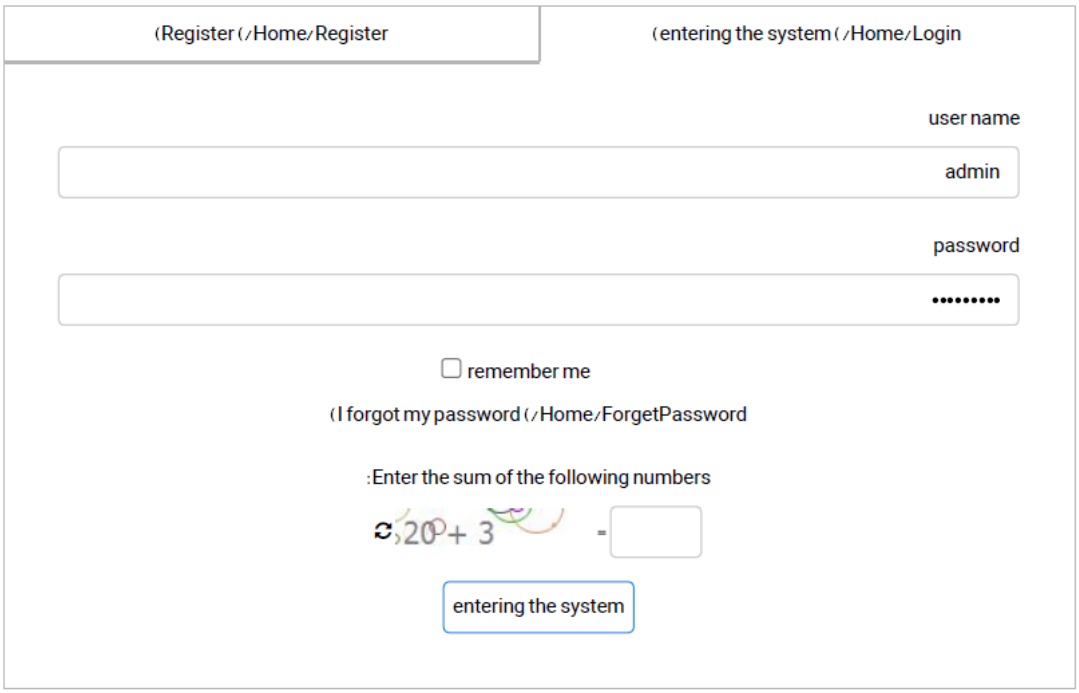

Figure 3. User login

User profiles such as main details, password changes, addresses and help information are available on this page. Each professor and student can have several activity addresses. Students can visit the video education content.

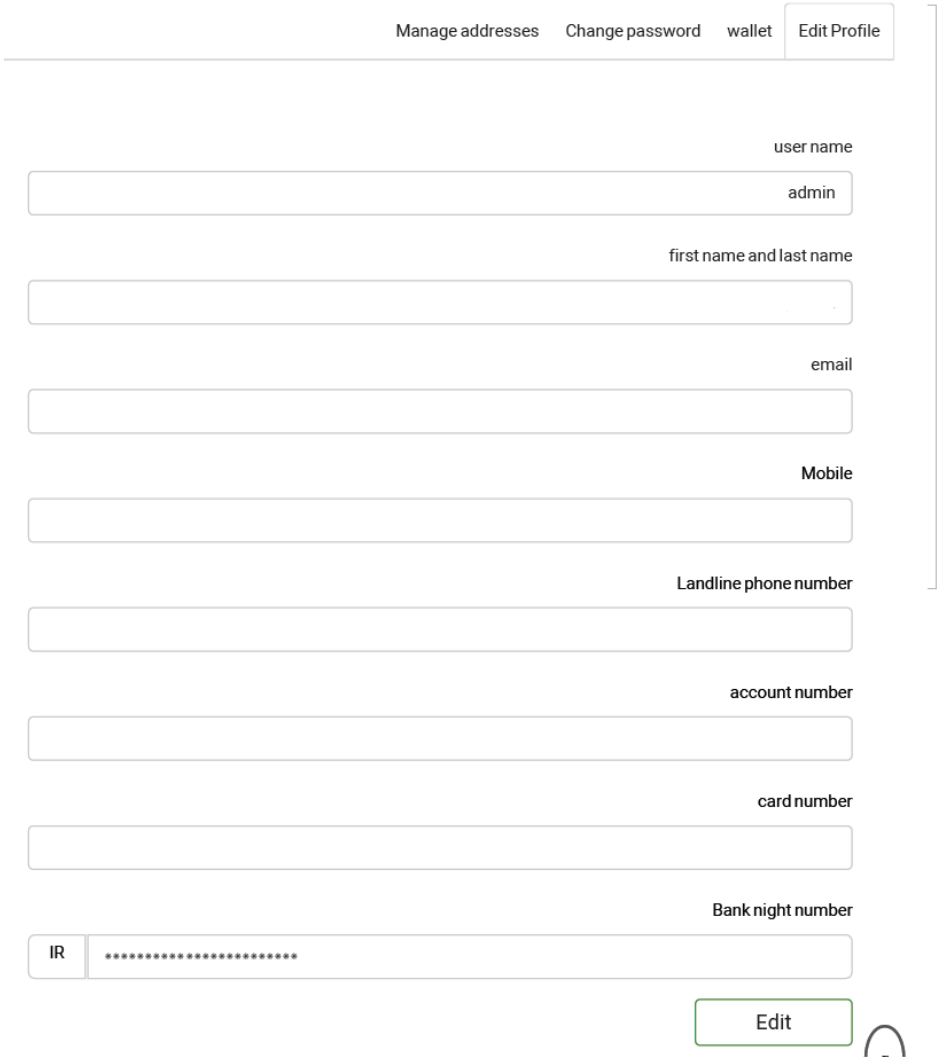

Figure 4. Profile settings

Video tutorial content can be uploaded in a categorized manner by the site management. Although in the future, professors will be able to upload the videos, in the first stage the site management will do this for all students. The educational content should be checked before sending it for uploading.

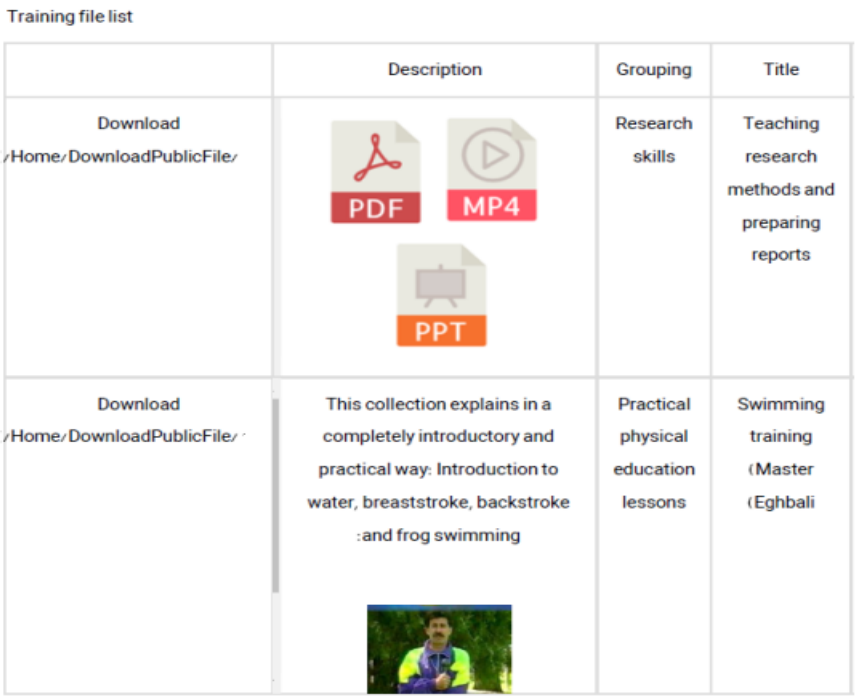

Figure 5. Educational content list for student

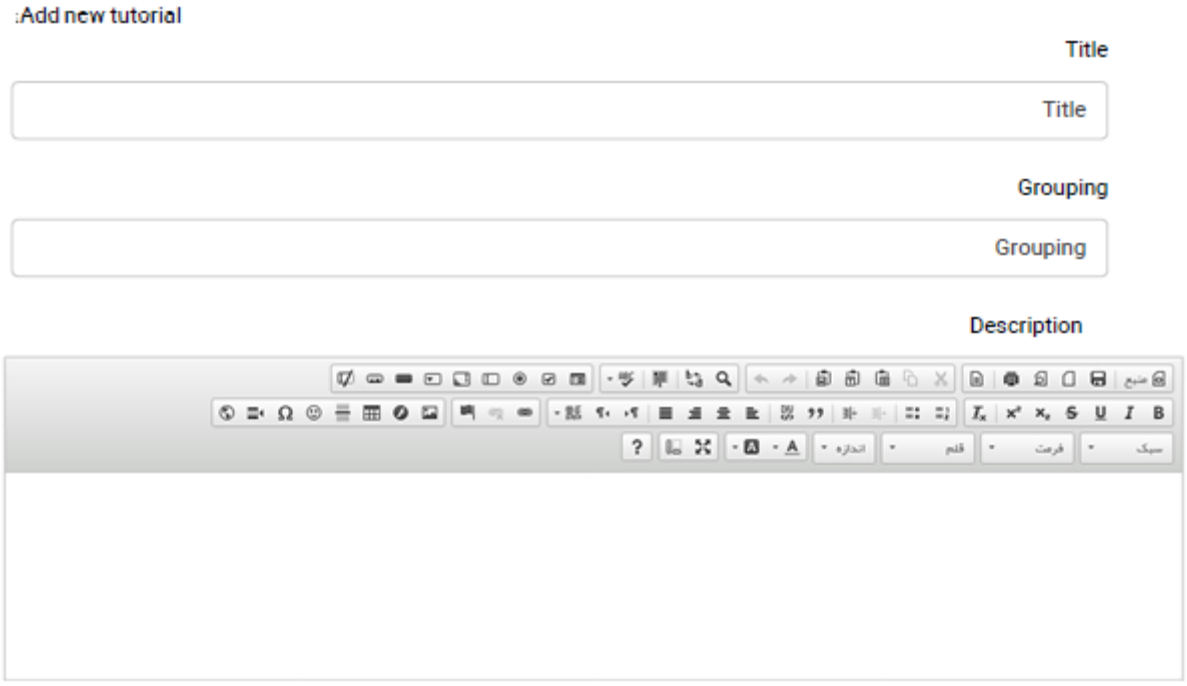

Figure 6. Educational content creating by admin

Discussion

This program is a solution to the targeted problem. Hence, software features are adjusted to the desires and wants of students and professors who are the main users to minimize inconsistencies. In previous researches, such as Abbasian et al. (2010), it was found that the most influential factors in user satisfaction were "user interface and interaction dimension" and the most effective factors in user dissatisfaction were "infrastructure and content dimension". It is supposed that there is no particular problem in theoretical courses, but in practical courses, according to Rouhi et al. (2016), web-based education can be used as a complementary educational method along with traditional education to have a greater impact on students' learning. Although the effectiveness of multimedia programs has

been reported in previous research, such as Gholamnia Shirvani et al. (2015), it seems that other possibilities such as the use of standard practical training and live programs by considerations of health protocols in the designated spaces can minimize the educational deficit in practical courses. Therefore, one of the important features of this platform is its ability to link to other addresses. The general shape of this platform is given in the form of a simplified chart.

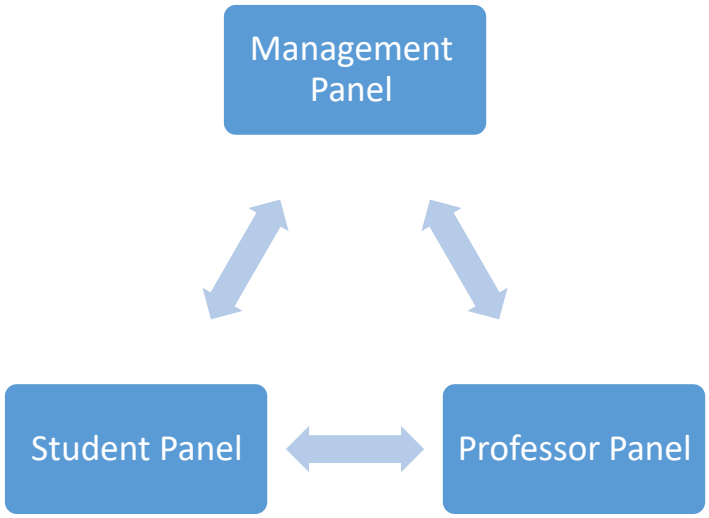

Figure 3- Simplified educational platform chart.

In this study, the necessary features for designing this platform were determined based on previous studies and field interviews. Three main sections, including professors, students and management panels are included in the platform. Educational materials are presented in the form of demos and text files.

This plan is highly suitable for the needs of different universities and the limitations of organizing sports classes. So during an initial poll on the validation of this idea, more than 90% confirmed the need for such software and the rest of the respondents had no opinion. On the other hand, according to the latest correspondence of the Institute of Physical Education and Sports Sciences, no acceptable practical solution has been provided and only the educational affairs have been left to the professors. Continuation of this situation can cause a lot of damage to sports science and practical classes. This program can be used by physical education conservatories, sports science classes and even various federations in the field of professional sports.

Conclusion

This study clearly shows that video tutorials can play a key role as standard educational content in university courses, and these innovative methods can be used to teach physical education courses with the aid of technology. The methods reviewed in this report and the educational collected videos can be applied in a practical way to help teachers and leaners achieve educational academic goals.

Ethical Considerations:

Compliance with ethical guidelines

Funding

University of Mohaghegh Ardabili

Conflict of Interest

Acknowledgment

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«مقاله پژوهشی»

طراحی بستر آموزش تصویری دوره های عملی تربیت بدنی و علوم ورزشی (دوره کرونا)

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چکیده

هدف: کووید-۱۹ آسیب قابل توجهی به بخش‌های مختلف وارد کرد و تأثیر آن بر آموزش، به‌ویژه دوره‌های عملی را نمی‌توان نادیده گرفت. تدریس دروس عملی برای بسیاری از دانشگاه ها یک چالش جدی بود. از طرفی فضای وب این فرصت را برای همگان فراهم کرد تا از این فضا برای مقاصد آموزشی استفاده کنند.

روش شناسی: این مطالعه با هدف طراحی بستر آموزشی ویدئویی برای دوره های عملی تربیت بدنی و علوم ورزشی (دوره کرونا) انجام شد. با توجه به محدودیت های برگزاری کلاس های عملی در این رشته تحصیلی، نیاز شدیدی به این برنامه در بین مربیان علوم ورزشی احساس شد. ابتدا با مصاحبه میدانی، ویژگی های پلتفرم شناسایی و سپس در دو مرحله طراحی پایگاه داده و ایجاد بخش های کاربری، کار اولیه انجام شد.

نتیجه گیری: نتایج این مطالعه می تواند ارائه خدمات آموزشی تخصصی در علوم ورزشی را تسهیل کند. امیدواریم با ارائه این راهکار کاربردی بتوانیم نقش موثری در کاهش آسیب های ناشی از ویروس کرونا در حوزه آموزش داشته باشیم.

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واژه‌های کلیدی
آموزش تصویری، علوم ورزشی، پلتفرم

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