American Journal of Science & Engineering (AJSE)

Volume 1 | Issue 4 Article 4

2024

A New Approach Model of e-Visual Career Application in Distance Education

Mustafa TUNAY
Istanbul Gelisim University, mtunay@gelisim.edu.tr

Follow this and additional works at: https://research.smartsociety.org/ajse

 Part of the Engineering Science and Materials Commons

Recommended Citation

TUNAY, Mustafa (2024) "A New Approach Model of e-Visual Career Application in Distance Education," *American Journal of Science & Engineering (AJSE)*: Vol. 1: Iss. 4, Article 4.
Available at: https://research.smartsociety.org/ajse/vol1/iss4/4

This Article is brought to you for free and open access by Society for Makers, Artists, Researchers and Technologists (SMART Society). It has been accepted for inclusion in American Journal of Science & Engineering (AJSE) by an authorized editor of Society for Makers, Artists, Researchers and Technologists (SMART Society). For more information, please contact souvik.chatterjee@iemlabs.com.

A New Approach Model of e-Visual Career Application in Distance Education

Mustafa TUNAY
Department of Computer Engineering
Istanbul Gelisim University
Istanbul, TURKEY
mtunay@gelisim.edu.tr

***Abstract*—A new approach for ranking visual career counselling based on distance measures is explained. In this paper, the traditional method of career counselling will be carried out by means of distance consulting services to make career counselling. Especially, professional education in the capacity limitation and professional working demand for education has led to a proliferation of virtual applications. Hence, e-Visual Career Application has been developed as a web-based program for clients who have taken professional counseling efficiently. With this application, it will help clients in the process of discovering and making decisions to their interests, abilities, personalities, skills and values. This paper relies on the implications of introducing online visual career consulting in the login sessions and how it affects the people (supervisor and client), the processes (consulting), and the organizations involved.**

Keywords—Visual Career Counselling, Traditional Method, Virtual Application, e - Visual Career Application

I. INTRODUCTION

This career application system is done with specially developed software for providing more fruitful advising system on career development by considering interests, capacities, personalities, abilities and values that are developed in order to help people while they are discovering the right track and making decisions on their career development in this paper.

Distance education [1-2] is not a new concept and "Distance education", which eliminates the obligation of the instructor and the student to be in the same place; it is an education system, it is an alternative system to today's formal education system and its success rate increases day by day with the developing technology. Although a definite starting date cannot be determined but the use of distance education applications in an organizational structure is encountered in the 19th century.

In recent years, information and educational technology in distance education [3-5] have developed, while more information has been produced than in the past. These developments in distance educatrion changed the lifestyles of people, their needs and thoughts in obtaining information. As a result of the changes that occur in parallel with the development of educational technology in distance education, the most educational institutions is affected from globalization. Technological tools [6-7], which are always with individuals, increase the importance of the use of e-learning tools [7-10] for institutions and individuals to have an effective and productive structure in their career development. Thus, developing educational technology, reaching the information from the reliable sources and stating the references of the sources correctly can be considered as an important element in the development of societies [11]. For this reason, internet and computer are the most of the important communication tools which help people in reaching the scientific information on the right time.

The online education [12-14] system is a very important education system in order to prevent formal education that cannot be processed fluently, especially as a result of the measures taken against global problems. Thanks to online education, students can continue their education without delaying their courses for lost opportunity in face-to-face learning [15-17] and time and can repeat the topics covered on the system. In this regard, online education are conducted in 2 ways; asynchronous and synchronous [18-19]. Although distance education is called asynchronous education, but universities have unique learning management system (LMS) that can reflect their own characteristics and meet the requirements of the distance education applications [20] in today's world, adapt rapidly to technological innovations will arise in the medium and will provides synchronous education opportunities integrated into this system for a long term. Thus, this system as educational programmings [21-22] provide an interactive communication between instructors and students. Thanks to such educational programmings, it will be a important tools [23-24] that help students especially their career development skills.

Discovering the existence of new science, gaining new facts, and using that information in the right place and on the right time lead to new job areas (career development skills) for people in the world. It can be seen that most of the people from different profession needs to update themselves and their knowledge each passing day. Providing counselling services to the people who are in the working life actively will help them to address the need of the people around us and this will raise their activities in their profession. However in recent days, it can be seen that lack of counselling advisors cause the problems in the processing of the duties. For this reason, applying the use of “distance web-based advising career application” has a huge importance. This application is dealing with management of synchronous, asynchrony [19] and the mix of them when supervisor and client conducting the consulting service at the same time (synchronous), when the advisor and client learn and use the counselling material separately (asynchrony) and hence the application system as learning management system [25-29] that use both of them together is called as mixing. e-Visual Career Application (e-

Copyright © AJSE Publishers

VCA) System is a kind of distance web based for handling most of the career consulting activities as it can be done with face-to-face education. It is possible to have audio-visual communication with thorough independent career development advising career application system is also look like a face- to-face environment. Client may follow the notes of the counselling weekly, personal information forms, tests, measurements, inventory, technics and weekly research activities through this career application system, they may interact with their supervisors and they may communicate in login sessions. The scope of this career application system is to gather requirements, analyze, design, and develop the e-Visual Career Application website. The objective of this engagement creates e-Visual Career Application (e- VCA) for supervisors and clients that will achieve the following goal:

- Supervisors will be able to do the registration of the career application system on the internet.
- Clients will be able to attend lively meeting arranged before.
- A client registered in the system application will be able to access the counseling materials easily from their portal through this career application system.
- All the questions are raised by the client will be able to produce chain of discussion have a change to discuss with his/her supervisor through the career application system.
- Clients will get chance to ask for an extra meeting from their supervisors.
- This career application system consists 5 sessions and each session is 45-50 minutes in a week.
- Client will be able to do the personal information form, tests, measurements, inventories, techniques and weekly searching tasks on the career application system.
- The attendance of clients will be able to be followed by the advisors with the help of career application system. The supervisor will be able to arrange an extra meeting hourly and will be able to send the counseling materials on the web.
- This application system will be the center of most of the developmental areas related to teaching and learning with the raising application areas, with the harmony of the learning strategy, without any problem related to place and timeframe and with the flexible learning methods.
- With the scope of the career application system, the content of the counseling is prepared for five week and all the counseling materials will be open for supervisor during the year.

1.1 Executive Summary

Implementing the system application is using common internet technologies with PHP and Mysql as the backbone, provides staff with a tool to easily communicate, distribute information and facilitates collaboration across the entire organization.

1.1.1 Technologies Used

This career application system is a kind of web application and is developed as;

1. Database Design (MySql)
2. Coding (PHP)

1.1.2 Browser Compatibility Statement

We request you to use the career application system in the latest version of browsers and are available from the market. Because the older versions may not support and some design part of the career application system needs manual update or automatic update to keep up to date of web browser.

1.1.3 Software Interface

The purpose of this section is to define all online screens that are part of the career application system and their interdependencies and to provide details on the functionality of the screen based on a user's actions.

1. Web Server: .NET Framework, Web Browser.
2. Database Server : MySQL

1.1.4 Security of System

PHP (coding) is a fast and easy-to-learn language, for this reason, we can cause software-related security vulnerabilities. The proposed system data is protected with password-based logins by SSH key, or secure shell that is an encrypted protocol used to administer and communicate with servers. SSH Key is any kind of authentication, including password authentication and it is completely encrypted. Thus, SSH keys use encryption to provide a secure way of logging into your server and are recommended for all users. For SSH key authentication is showed in Figure 1. There is a important point for user must place your public SSH key on the server in its proper directory.

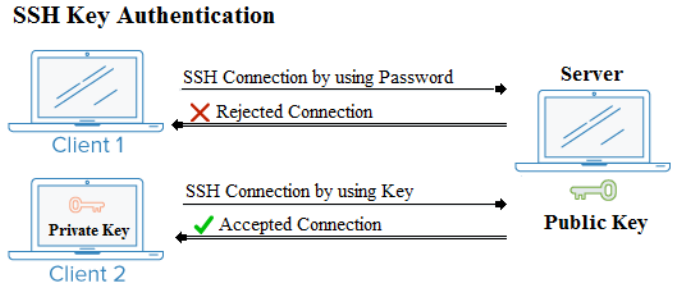

Fig. 1: Security of System by using SSH Key

According to SSH keys Authentication; a private and public key pair are created for the purpose of authentication. When password-based logins are allowed, malicious users can repeatedly attempt to access a server, especially if it has a public-facing IP address.

Copyright © AJSE Publishers

II. The Application System

In a distance education process, there are many Learning Management System (LMS) applications provide learning content presentation in a web based learning as web server software (MySQL, Apache, Oracle e.g.) for performing learning content that can be used in many different phases as career application systems. The significant time required to develop scales has also been a consistent finding in studies involving distance education in career and technical education career application system. For this reason, e -Visual Career Application (e-VCA) *System* is a kind of distance web based for handling most of the career consulting activities. In Figure 2 shows that the details regarding the e-Visual Career Application (e-VCA), scales (files) and web server software are used in a career application system.

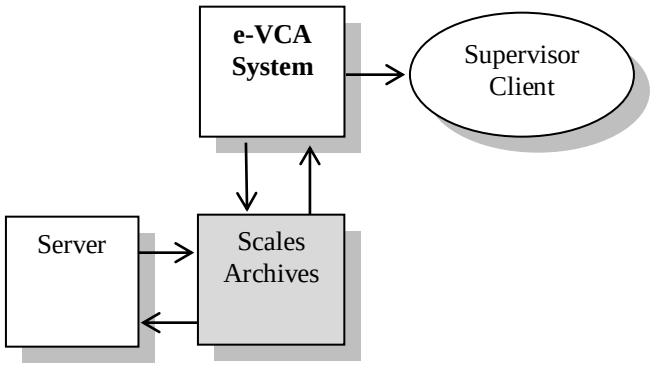

Fig. 2: e-Visual Career Application (e-VCA) and Web Server Software

The career application system is designed and represented the general scope with a contextual boundary of e-VCA System. It describes the main objective of the system and its entities involved functionality. This career application system is designed totally five steps to show how it is easy to start using its organization functionality such as; Login, the page of Home, Archives and Scales, Clients' Information and Sessions.

2.1 Login

The first stage function is designed the page of login that is expected to play an important role in the conducting of online career counseling. The purpose of the login page is first required to register by from clients on the online website. This page also has access of the system that is secured by the login/password mechanism (by using private e-mail address) for the login id is created an account from the clients at the time of registration and provided it from their supervisors. Figure 3 shows that the details regarding the page of login in a career application system.

2.2 The Page of Home

The second stage function is designed about view of registration information. The purpose of the home page has demonstrated views of total approved and unapproved clients are available. It has included how many total/active topics as personal information form, tests, scales, inventories, and research techniques weekly that are presented. In Figure 4 shows that the details regarding the page of home in career application system.

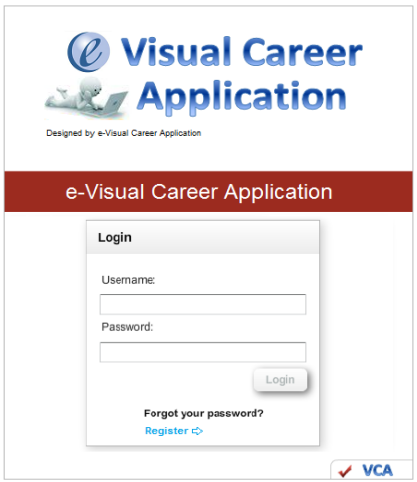

Fig. 3: The page of Login

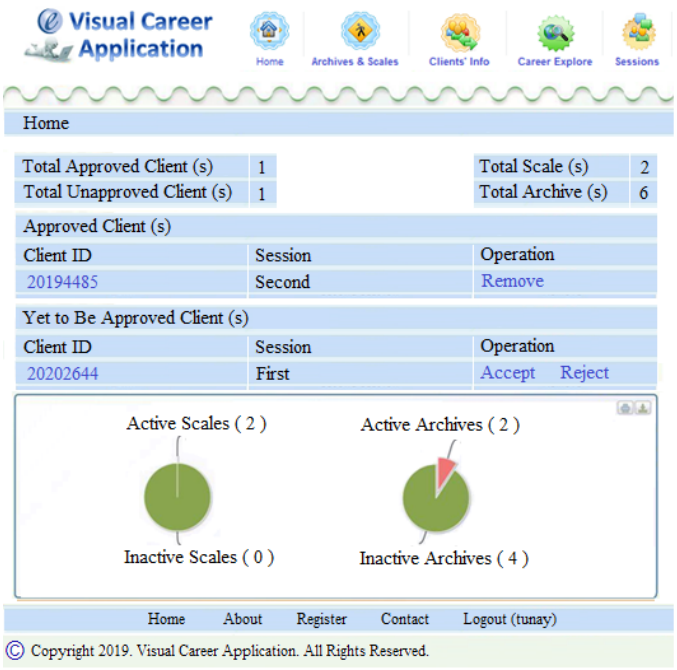

Fig. 4: The page of Home

Next one is about the lists of approved clients; it has been viewed with their information and supervisors can manage the client's information such as their control by hitting of remove link, the listing their information that are showed. Secondly, this part has two important roles as print option; it is about print out of summary for active and inactive documents. And next one is about chart; it also has option to download and view in various formats about clients' information. The detail regarding the page of Home is given in Figure 4.

Copyright © AJSE Publishers

2.3 Archives and Scales

The third one is designed the page of Achives and Scales; it has all privileges to edit/delete all the files /directories created by supervisor who uploads topics (personal information form, tests, scales, inventories, and research techniques) and clients can view all the files uploaded by supervisor according to their sessions. The detail regarding the page of Archives and Scales is given in Figure 5. Supervisor can manage all of information as sending new tests, scales, inventories and new sources for special member clients. They also can search any member of client and take information about searched the member client.

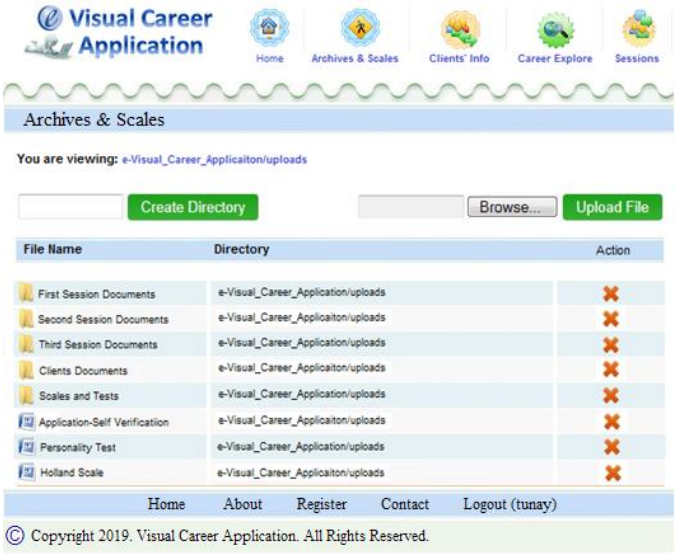

Fig. 5: The page of Archives and Sclaes

2.4 Client's Information

The fourth stage is designed for the page of Client info; it allows view of clients' situation (personality information, address, attending session and other information). It has two important roles as adding clients and editing clients.

2.4.1 Adding Clients

To add a client, go to the clients tab and fill in the form and click the add client button at the bottom of the page. Newly-added clients are automatically given active status, allowing them to sign-in to e-Visual Career Application immediately. However, newly-added clients must be told how to access e-Visual Career Application System that sent info feature to approved e- mail by using the activation with client information as username, password, and URL to sign-in.

2.4.2 Editing Clients

To edit a single client, click on his/her row, update their information, and click on the save changes button at the bottom of the page. To edit alter multiple clients at once by clicking on the checkbox next to their name (or select all by clicking on the checkbox in the header) in combination with the button at the bottom of the page.

Moreover, it gives change to supervisor can manage to keep certain clients from signing- in to e-Visual Career Application sets their account status as active or inactive. The detail regarding the page of Search is given in Figure 6.

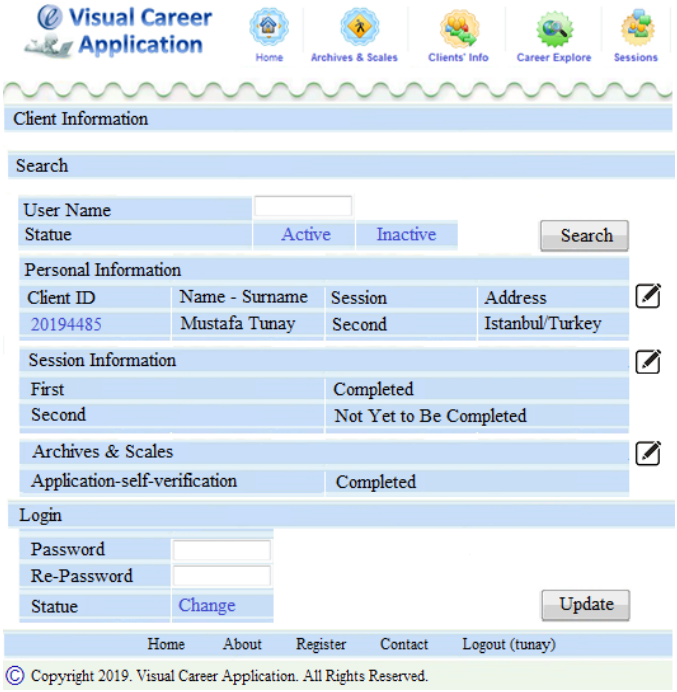

Fig. 6: The page of Search

2.5 Session

The last one is designed for the page of Session. Career Counselling consult with scales determined by the consultant to implement the system for the distance career education of the necessary personal information, forums, testing, inventory, and make appointment online interviews with five sessions and each session is determined as 45-50 minutes. In this context, e-Visual Career Application system offers online consultations that are relevant to the topic, inventory, scales (Holland or MBS), activities and the session on the techniques during last for five weeks. These sessions are as follows;

1. Session: Configuration and discovery.

2. Session: Scale and tests, and provide information about the application.

3. Session: Transmission of test results, and review of the advisory tasks.

4. Session: Duties discussion, brainstorming, information, research, and deal with the action plan.

5. Session: progress review, and if necessary to determine new goals.

At the same time, the client requests extra appointments to take any time from their supervisor by means of e-Visual Career Application system, session on the topic which is applicable to the person receiving vocational career education, carried out sharing inventories with supervisor electronically.

Copyright © AJSE Publishers

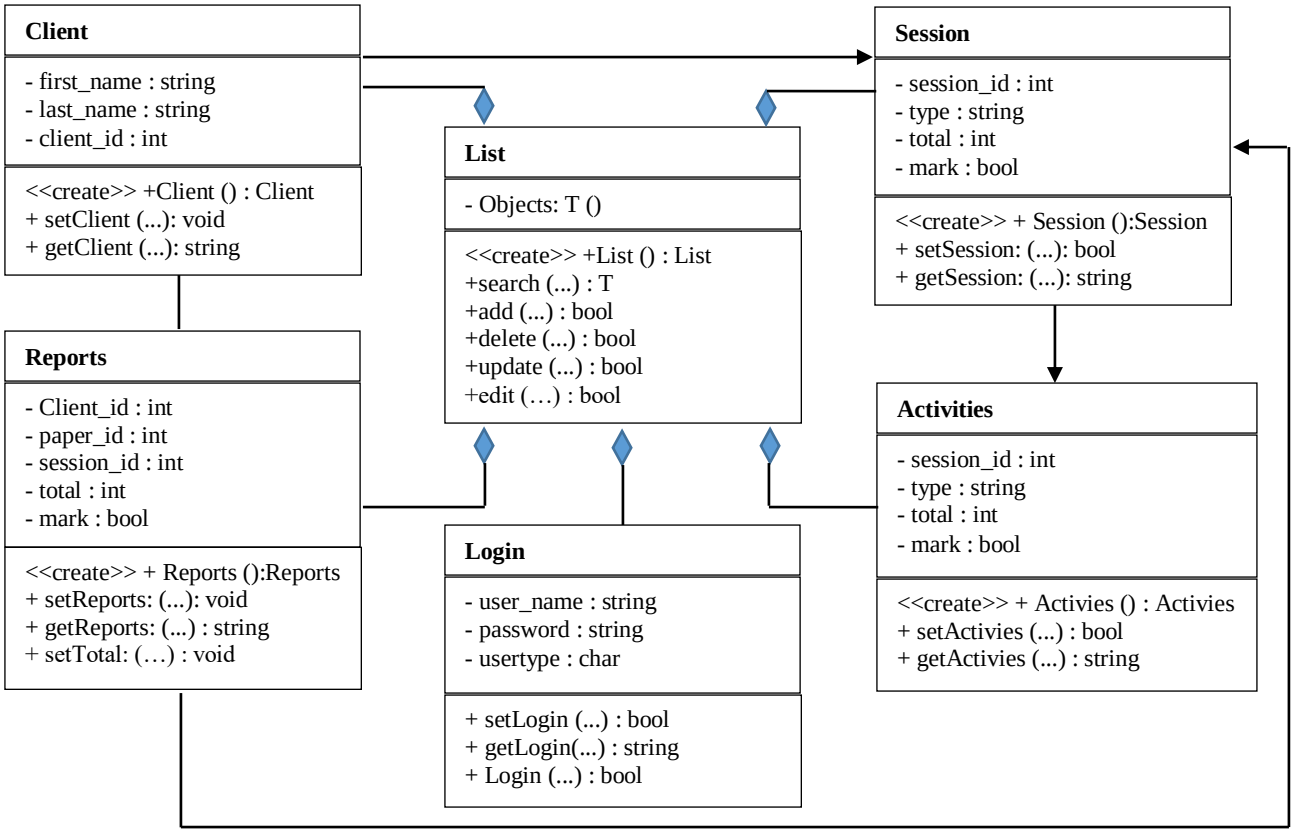

Fig. 10: The diagram model of the proposed system

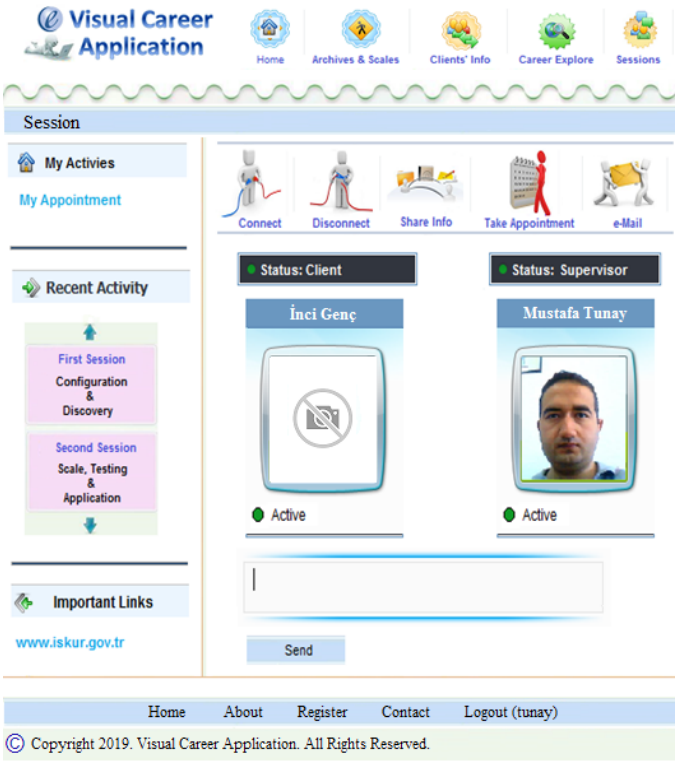

Fig. 7: The page of Session

This application system is applied on a blind student's İnci GENÇ at Eastern Mediterranean University in TRNC. She got the necessary personal information, forums, testing; inventory on the application system by using record voice, and make appointment online interviews with five sessions and each session was as 45-50 minutes with his supervisor. She got a great achievement at the end of five sessions. The detail regarding the page of Session is given in Figure 7.

This application system is ready to apply on close to graduate students (this semester) at Istanbul Gelisim University in Turkey for improving their career skills.

III. The Model Application System

The model of career application system is designed with supervisor, client and functional activities are described. In Figure 8 represents what are the bounders and scope of e-Visual Career Application system. It describes the main objective of the system and is entities involved. Moreover, the diagram represents the general scope with a contextual boundary of e-Visual Career Application (e-VCA) system describes the main objective of the system and its entities involved. All details regarding the context diagram of proposed system is given in Figure 9.

This career application system is done with specially developed software for providing more fruitful advising system on career development by considering interests, capacities, personalities, abilities and values that are developed in order to

Copyright © AJSE Publishers

help people for improving career skills in their future life and is figured out the overall system with its entities.

The model of e-Visual Career Application used sequence diagram generally and figure out the overall system. This model of diagram are interactions between a system's clients-system and supervisor-system with among objects in the system when relations occur with whole application system in Figure 10.

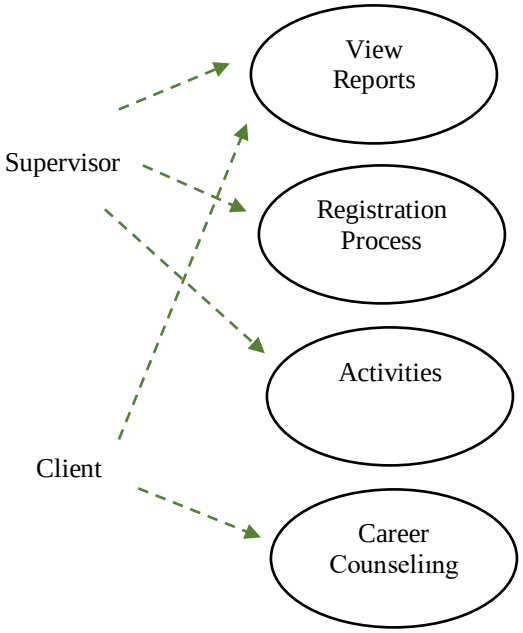

Fig. 8: The Model of e-Visual Career Application (e-VCA) System

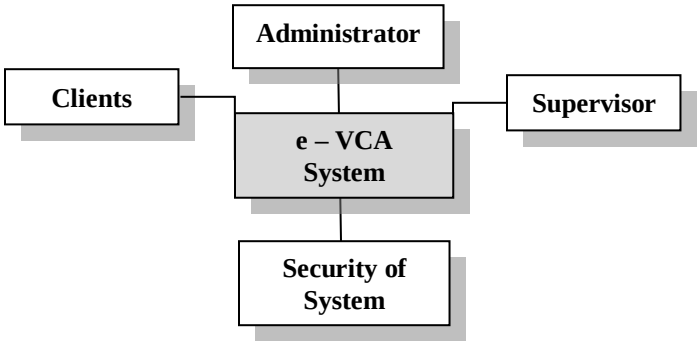

Fig. 9: The context diagram of e-Visual Career Application System

IV. CONCLUSION

This paper proposes the e-visual career application system is designed for clients in helping to take professional career counseling efficiently and will help clients in the process of discovering and making decisions to their interests, abilities, personalities, skills and values. The designed career application system is included many features that improves pedagogical scales, inventory and many needed tools for of the academic disciplines, developing career in distance education programs utilize technology to a high degree. In addition, we can say that it is a system which is very useful and using time period for the specialists in terms of their distance, for the use of disabled people and new graduated students to improve their career skills in future life.

In the future, this study will need to be conducted to determine the most effective ways to utilize distance education in the delivery of professional career counselling.

ACKNOWLEDGMENT

The author would like to thank Faculty of Engineering and Architecture, Department of Computer Engineering, Istanbul Gelisim University, Turkey.

REFERENCES

[1] Distance Learning Resource Network. What is distance education? Retrieved April 23, 2003 from www.dlrn.org/library/dl/whatis.html.

[2] Oliveira, W. and Do Amaral, L. A. M. (2019). "Distance Education as a Service System," 2019 IEEE World Conference on Engineering Education (EDUNINE), Lima, Peru, 2019, pp. 1-6, doi: 10.1109/EDUNINE.2019.8875822.

[3] Flowers, J., (2001). Online learning needs in technology education. Journal of Technology Education, 13 (1), 17-30.

[4] Hillesheim, G. (1998). Distance learning: Barriers and strategies for students and faculty. Internet and Higher Education 1 (1), 31-44.

[5] Kanakana-Katumba, M. G. and Maladzhi, R. (2019). "Online Learning Approaches for Science, Engineering and Technology in Distance Education," 2019 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Macao, Macao, 2019, pp. 930-934, doi: 10.1109/IEEM44572.2019.8978892.

[6] Tesone,D. V., Kelsey,R. L., Gibson, J. W. and Blackwell, C. W. (2002). "Using multimedia tools to enhance communication in the online classroom," *Proceedings. IEEE International Professional Communication Conference*, Portland, OR, USA, 2002, pp. 199-206, doi: 10.1109/IPCC.2002.1049103.

[7] Eroglu, M. A. (2009). "Academic document sharing at IAU members and distance education tools (samples of Turkish language)," *2009 International Conference on Application of Information and Communication Technologies*, Baku, 2009, pp. 1-5, doi: 10.1109/ICAICT.2009.5372589.

[8] Paulsen, M. F.; Keegan, D.; Dias, A.; Dias, P.; Pimenta, P.; Fritsch, H.; Föllmer, H.; Micincova, M. & Olsen, G., 2002. Web-Education Systems in Europe, Hagen: Zentrales Institut für Fernstudienforschung, Fern Universität.

[9] Vargas, R. P., Hortelano,M. R., Abad, L. T., Carrillo J. C., and Berlinches, R. H. (2018). "Teaching cloud computing using Web of Things devices," *2018 IEEE Global Engineering Education Conference (*EDUCON), Tenerife, 2018, pp. 1738-1745, doi: 10.1109/EDUCON.2018.8363444.

[10] Angles,R., Silvestre, L. and Pincheira, G. (2019). "Edutrivias: Web support system based on trivia for the teaching-learning process," *2019 38th International Conference of the Chilean Computer Science Society (SCCC)*, Concepcion, Chile, 2019, pp. 1-8, doi: 10.1109/SCCC49216.2019.8966392.

[11] Paloff, R., & Pratt, K. (1999). Building Learning Communities in Cyberspace. San Francisco: Jossey-Bass.

[12] Kanakana-Katumba, M. G. and Maladzhi, R. (2019). "Online Learning Approaches for Science, Engineering and Technology in Distance Education," *2019 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Macao, 2019, pp. 930-934, doi: 10.1109/IEEM44572.2019.8978892.

[13] Shadmanova, G., Mirzaev S. and Karimova, X. (2019). "Upgrading Higher Education through Open Online Courses," *2019 International Conference on Information Science and Communications Technologies (ICISCT)*, Tashkent, Uzbekistan, 2019, pp. 1-3, doi: 10.1109/ICISCT47635.2019.9012019.

Copyright © AJSE Publishers

[14] Zhu, J. (2010). "A hybrid online-education strategy for delivering engineering and technology courses," *2010 International Conference on Networking and Digital Society*, Wenzhou, 2010, pp. 448-451, doi: 10.1109/ICNDS.2010.5479464.

[15] Swan, M., & Jackman, D. (2000). Comparing the success of students enrolled in distance education courses vs. face-to-face classrooms. Journal of Technology Studies, 24 (1). Retrieved March 11, 2003 from http://scholar.lib.vt.edu/ejournals/JTS/Winter-Spring-2000/swan.html.

[16] Merenkov, D. V., Shirinskii, S. V., Korkin, V. S., Zhokhova, M. P., Osipkin, S. V. and Dergachev, P. A. (2020). "E-Learning Resource for Electric Machine Design," 2020 V International Conference on Information Technologies in Engineering Education (Inforino), Moscow, Russia, 2020, pp. 1-4, doi: 10.1109/Inforino48376.2020.9111745.

[17] Talib, A. M. and Alomary, F. O. (2018). "An Interactive Distance Education and E-Learning System Based on Multi Agent System Architecture," 2018 1st International Conference on Computer Applications & Information Security (ICCAIS), Riyadh, 2018, pp. 1-6, doi: 10.1109/CAIS.2018.8441984.

[18] Miller, W.W., & Webster, J. K. (1997). A comparison of interaction needs and performance of distance learners in synchronous and asynchronous classes. Paper presented at the American Vocational Association Convention, Las Vegas, NV . (ERIC Document Reproduction No. 415 411).

[19] Timofeev, A. V., Tokarev, N. V. and Petrova, K. A. (2017). "Implementation of additional training profiles «LETI minor»: Using online courses," 2017 IEEE VI Forum Strategic Partnership of Universities and Enterprises of Hi-Tech Branches (Science. Education. Innovations) (SPUE), St. Petersburg, 2017, pp. 147-148, doi: 10.1109/IVForum.2017.8246076.

[20] R. D. Costa, G. F. Souza, T. B. Castro, R. A. M. Valentim and A. P. Dias, (2020). "Identification of Learning Styles in Distance Education Through the Interaction of the Student with a Learning Management System," in IEEE Revista Iberoamericana de Tecnologias del Aprendizaje, doi: 10.1109/RITA.2020.3008131.

[21] Alexandrovna, S. T. (2018). "The Role of Distance Educational Technologies in the Development of Educational Programmes in a Network Form: Experience and Relevant Problems," 2018 IV International Conference on Information Technologies in Engineering Education (Inforino), Moscow, 2018, pp. 1-4, doi: 10.1109/INFORINO.2018.8581847.

[22] Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2003). Teaching and learning at a distance (2nd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

[23] Zirkle, C., & Shoemaker, H. (1999). Indiana State's multiple delivery approach: Integrating industrial technology education with educational technology. The Technology Source. Retrieved March 27, 2003, from http://www.mivu.org/teaching/techsource/

[24] Zirkle, C. (2000). Preparing technical instructors through multiple delivery systems: A working model. T.H.E. Journal 28, (4), 62-68.

[25] Aydın, C., C.; Tirkes, G. (2010). Open Source Learning Management Systems in E-Learning and Moodle, Atilim University, Ankara: Turkey.

[26] Perales, M., Pedraza, L. and Moreno-Ger, P. (2019). "Work-In-Progress: Improving Online Higher Education with Virtual and Remote Labs," 2019 IEEE Global Engineering Education Conference (EDUCON), Dubai, United Arab Emirates, 2019, pp. 1136-1139, doi: 10.1109/EDUCON.2019.8725272.

[27] Szőke, J. and Kecskés, P. (2017). "Virtual proximity in distance education — The usage of a three-dimensional software," 2017 8th IEEE International Conference on Cognitive Infocommunications (CogInfoCom), Debrecen, 2017, pp. 000529-000529, doi: 10.1109/CogInfoCom.2017.8268291.

[28] M. Maravanyika, N. Dlodlo and N. Jere, "An adaptive recommender-system based framework for personalised teaching and learning on e-learning platforms," 2017 IST-Africa Week Conference (IST-Africa), Windhoek, 2017, pp. 1-9, doi: 10.23919/ISTAFRICA.2017.8102297.

[29] Yun Wu, W., Weng, K., Wen, M., You, B. and Lian, J. (2017). "The Construction of Web-Learning System and Learning Performance Based on Online Interaction and Self-Regulation Theories-Architectural Design Curriculum," 2017 *International Conference on Information, Communication and Engineering (ICICE)*, Xiamen, 2017, pp. 288-291, doi: 10.1109/ICICE.2017.8479001.

Copyright © AJSE Publishers