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Developing Education Programs for Primary and Secondary Education Institutions of Journalism in Industry 4.0 Process[1]

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Abstract

The fourth industrial revolution, which will almost completely change all forms of production and the relationship between society and technology, is approaching with great speed. It is a fact that the field of communication, like many fields, will be affected by this change. Accordingly, it is predicted that there will be great changes and transformations in daily life of the society. It is in the interests of society to adapt quickly to this change and transformation. It is imperative that the society be informed and trained to adapt quickly and accurately to this process. Journalists who are tasked with informing society need to be fully prepared for this process In addition to informing the journalists working in the industry, it is necessary to receive training for the current generation industry 4.0 process, which will be future journalists. Beginning of the training to be taken at an early age is seen as an advantage in the new age adjustment race. In this study, a training program is proposed which can be applied in primary and secondary education institutions in order to train journalists for 4.0 period. In the first part, the conceptual framework is addressed. In the second part, the development stages of the industry are mentioned. In the same part, primary and secondary education programs are evaluated in the historical process. In the third part, journalism training programs are examined in general, and differences and deficiencies of these existing training programs are determined with industry 4.0 process. In the fourth part, suggestions on how to fix the deficiencies are made. In line with these proposals, a primary and secondary education curriculum is being developed to train industry 4.0 process journalists. Finally, the qualifications of the personnel who can give the training program and the targeted achievements are determined as a result of the program. Literature review and editing methods are used as methodology in the study.

Keywords: Industry 4.0 and Journalism, Primary and Secondary Education Program, Journalism Education

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1. INTRODUCTION

The forthcoming fourth industrial revolution is a messenger of many changes and transformations. The world's leading countries are rapidly preparing this revolution in every area. To adaptation this transformation, to which all sectors are affected, is an inevitable necessity.

The first industrial revolution (Industry 1.0) occurred in the second half of the 18th century with the discovery of steam power. The discovery of steam power, the machines that can operate with steam power, these machines also reveal the mechanized industry. In this respect, fundamental changes in the production structure and the economy have come to the fore. With the effect of this revolution, the population of the cities increased, the working class emerged and rivalries between the industrialized nations, the results of which could lead to the First World War. It is clear how an industrial revolution has transformed societies both in economic, social and political spheres.

About a hundred years later (1870) the Second Industrial Revolution (Industry 2.0) took place. This revolution means the introduction of electricity into production and the establishment of moving production lines. With this revolution, unionization, radio, photography, cinema; depending on them, new forms of consumption have entered our lives.

The third industrial revolution (Industry 3.0) is a process which started in the aftermath of theSecond World War and accelerated in the 1970s. This process is not electricity but electronics. Control systems, programming systems and sensor systems have found their place in production. As a result of this revolution, the industry has become globalized. While it is clear that all industrial revolutions have created such a powerful effect, it is imperative to adapt to the coming industrial revolution.

The fourth industrial revolution (Industry 4.0) was first mentioned at the Hannover Fair in 2011. In 2013, the German government has officially declared the Industry 4.0 roadmap. TheEuropean Union, the United States, and Japan also make preparations for the subject. A new era will come along with Industry 4.0 Turkey needs to adapt well in all areas. The FourthIndustrial Revolution will lead to the necessity of using high-tech products. The community must be trained to adapt to these great technological innovations. Journalists who play a major role in educating and informing society should know new technologies. To be absorbed at the point where they can be transferred to the collective, the education must start at a young age.

In this study, it is aimed to develop a basic education program in which journalists can be trained in accordance with Industry 4.0. The above-mentioned concept and forecast are explained in detail during the study.

2. INDUSTRY 4.0, JOURNALISM EDUCATION AND BASIC EDUCATION PROGRAMS

The fourth industrial revolution is not widely known in our country. Government policies and the work of large businesses will not be enough to ensure full compliance with the new turnaround. Society needs to be informed about this issue. Journalists, who are the primary sources of information of the society, need to have sufficient accumulation of relevant information. Without technological know-how, it is impossible to adapt to the high-tech revolution. In order for new technologies to be absorbed, it is thought that journalists should be trained for basic purposes starting from basic education. In this title; industry 4.0 concept, basic training programs and journalism training programs.

2.1. Industry 4.0

The first industrial revolution occurred in England in the 18th century with the invention of the steam engine. By recognizing the forces of steam and water, mechanical production has emerged and hand labor has been replaced. Machines participating in the production process ensure that the capital accumulates in the countries. The bourgeoisie and the working class has emerged, and the working class has brought socialism with them.

The second industrial revolution, also called the technological revolution, covers the period from 1860 until the First World War. This term includes the use of electrical and chemical techniques. In 1882 Edison began to use electricity in factories and cities, and the transfer of electricity to machines revealed mass production. Moving production lines still in use are being used in this period.

The third industrial revolution gave its first signals at the end of the Second World War(1950's). Innovations that extend from the production of mechanical, electrically operated calculators to computers are the basic technologies of this period. Another important element is the development of communication technologies with computers. With the third revolution, machines have begun to be used not only in business but also in daily life.

For the first time in 2011, the Fourth Industrial Revolution was announced at Hannover Fair, the world's largest industry trade fair. Robert Bosch GmbH and the Kagermann working group presented the draft proposal for the Fourth Industrial Revolution to the German government in 2012. In 2013, industry 4.0 entered the theoretical framework, with the publication of the German National Academy of Sciences and Engineering (Acatech) as a manifesto.

Industry 4.0; In modular intelligent factories, physical processes are monitored with cyber-physical systems so that objects can communicate with each other and with people, thereby making decentralized decisions. The process, which is called the fourth industrial revolution, will completely change the forms of production and consumption. The process includes both personal production systems that adapt instantly to the changing needs of consumers and

automation systems in coordination with each other (A, Sinan, 2016, 19-30). In this process; smart machines that contain software will have an important place. However, the fourth industrial revolution does not include only intelligent machine systems. Many areas have different technologies; physical, digital and biological fields (Schwab, 2016: 17). Industry4.0; is used to mean the integration of technologies such as information, communication, internet, automation and data collection (Banger, 2016: 73-75). The Fourth Industrial Revolution; cloud computing system, large data, objects internet, cyber physical systems, smart factories, three-dimensional printers, autonomous robots, sensors and RFID technologies.

Cloud Computing System: Cloud computing technology can be used without any service infrastructure, software or data access; can be defined as the generic name given to Internet-based services whose resources can be shared among users. The system that greatly expand the storage space; speed data transfer and easy archiving of data. It also saves on backup costs.

Cloud systems; public, private, and hybrid. General cloud applications are mostly free, and they are made up of their own infrastructure resources from general cloud providers such as Microsoft and Google. The private cloud is the kind of cloud preferred by companies of great importance to information. The hybrid cloud is a combination of general and special cloud systems. This technology is used where security and confidentiality are important, and where it needs to be cautious (Kurtuldu, 2018).

Big Data: In recent years, advances in memory systems have made it possible to collect and store data in very large quantities. The amount of data generated in Sunny increases exponentially. For example, the data produced in one year in 2000, the data produced throughout the history of mankind had passed. (Cataltas, 2018).

Internet of Things (IoT): It is defined as the physical objects that provide access to theInternet and communicate with other devices. It is thought that there will be a relationship between object and object and object. All objects we use today as 'smart' (such as intelligenthome, smart city, smart stop) can be considered in this context.

Cyber Physical Systems: Systems that connect the virtual computing world and the physical world. Industry 4.0 based production processes are based on the fact that various systems are in communication with various services through various networks. Perhaps the most obviousand most understandable example of cyber physical systems is smart factories. Cyber physical systems, which create a wide communication network with the Internet of objects, aim to remove the boundary between real and virtual worlds (simulation) (Ghafory, 2018).

Smart Factories: Smart factories are thought to be the biggest cause of advent of damage caused by human errors. In short, it can be defined as a self-organizing factory. It is aimed to reduce the human error in the factories where all the devices are connected with each other and with the main office and accordingly the error margin is the least.

3D Printer: Three-dimensional printing is the process of printing anything solid in the virtual environment. Devices that perform this printing process are also given 3D printer names. Flexible (personalized) production is seen as one of the greatest advantages of this technology. Thanks to these printers, cloud-based production is also possible.

Autonomous Robots: It is defined as robots that combine the sensor characteristic of the fourth industrial revolution with artificial intelligence. These robots, which can self-governed, identify their own problems, follow and solve them, can communicate with each other. It is an indication of the importance of these robots that they can be used in virtually every field of production, transport, storage, etc. in smart factories.

Sensors: Intelligent factories, one of the most important components of Industry 4.0, are a possible component. All devices supported by intelligent sensors (machines, robots etc.) are able to control and manage themselves. Intelligent sensor systems; user, manufacturer, maintainer. This communication system removes the necessity of stopping production. Communication and maintenance costs are also expected to decrease significantly.

RFID Technologies: It takes its name from the initials of the definition of "Radio FrequencyIdentification" and is being translated into Turkish as a radio frequency identification method. It is defined as an electronic device with small circuits containing a small chip and an antenna. RFID technologies can also be carried out with sensors, like other components. Reduction of human power cost, automation of inventory control and product follow-up are seen as advantages of this technology.

Industry 4.0 general lines; almost all of the robots will take over the production, the reduction of the error margin of the human and the human, and the products made in the factory goes into the houses.

2.2. Structure and Scope of Training Programs

The beginning of education can be traced back to the beginning of human history. Even Though it is not institutionalized, even in Egypt it is a school organization (3000-530 BC). This organization is designed in a day-to-day fashion as part of primary school and secondary and higher education.

In China, it is seen that in 220 BC an educational system was mentioned in the sacred books of Chung-yung. The place of education in Ancient Greek history is known to almost everybody. It is necessary to come to the second half of the Middle Ages (13th and 14th centuries) to talk about an institutionalized educational organization.

This study will examine the development of training programs in place in Turkey because it is intended for educational programs to Turkey.

The institutionalization of education in the Republic of Turkey in 1924 was realized with the introduction of the Uniform-i Education Law. According to this law, all education institutions

seem to be gathered within the Ministry of National Education. Until 1950, the list of lessons and subjects called 'curriculum' started to be referred to as 'educational program' after 1950s. 1924 invited Turkey to an American philosopher and educational theorist John Dewey's report prepared in accordance with the development of more elementary curriculum weights are given. The development of secondary education programs in the years 1953-1954 was also the foreground.The experimental school program developed by the program commission of the Istanbul Atatürk Girls' Vocational High School in 1954-1955 academic year also has the quality of being the pioneer of the program development activities in secondary education (Varis, 1996: 70-83).

Selahattin Ertürk defines the education program as "all of the regular educational situations aimed at training certain students within a certain period of time" (Erturk, 1998: 14).

Within the framework of the new understanding that comes with the declaration of theRepublic; education has been seen as a fundamental tool for liberating and modernizing society. 'Basic Purposes of Education and Instruction' was expressed in the general of theEducation Minister Vasıf Cinar (8 September 1924) as follows:

1- Education is based on national principles and methods of Western civilization,

2- Schools have human relations, social life rules, cleanliness, order, etc. to conduct a civilized and exemplary education,

3- In the hearts and souls of the children, to be sacrificed for the republic,

4- Schools' freedom of thought and conscience and a conscious responsibility suggestion, 5- Making the teaching practical and useful,

6- Schools to give the knowledge and reading pleasure,

7- The schools teach the public the value of health and ways of being healthy,

8- Schools, the body and the idea to provide balanced development,

9- To listen to and keep in mind the needs of schools, society and the family,

10- Schools to give ideas for saving, cooperation and economics,

11- Schools have a free and reasonable discipline in their children (Akyuz, 2007: 331).

As seen in the articles, the development of the individual is central. It is also aimed at training individuals who are thinking and producing, not memorizing.

Educational programs as a field of study are not only important for schools. It is also important for the whole society to function in a healthy way.

The reasons for the criticism of the programs in the Turkish education system are generally; the development of a questioning point of view; (Ozdemir, 2005; Erzan, 2005).

2.3. Historical Process Journalism Training Programs

Journalism education in contemporary sense in the world began in 1908 at the school of journalism founded at the University of Missouri, USA (Mutlu, 1992: 119-142). To speak of the need to go to journalism education in Turkey in 1930. "The single party administration has added to the press law of 1931 the necessity of finishing high school or college for responsible editorial directors, believing journalists should be educated at least as much as teachers" (Alemdar and Erdogan, 1998: 1-10).

The first press law of the Republican era, the 1931 Printing Law, gives ideas about approach to journalism education. Article 12 of the Law specifies the qualifications to be held in newspapers and magazines, and it is a requirement to be registered as 'a city of high schools or other high schools and other related municipalities'. Article 15 of the Law stipulates that"the person who manages the newspapers and magazines must have the skills and the skills written in the twelfth article" (İskit, 1939: 449-470) .

For what purpose and how it is given to issues of journalism education in Turkey as it is in Western countries has also been an issue that can not be fully reconciled. There is no consensus on values and beliefs about journalism and journalism education in the western world (French, 2006). On the basis of this, there is no decision on what journalism is. This is the discussion; whether journalism is a public service or a commercial enterprise. These different approaches to the journalism profession are, of course, also reflected in journalism education. This reflects itself as a separation of theory and practice in other words.

Journalism education issues in Turkey; The First Press Congress, which was convened in 1935 after the Law on Printing, also came to the agenda. One of the goals of the Congress is to 'investigate ways of progress and advancement of journalism profession and journalists and to establish the Press Union' (İskit, 1939: 177). As a result of this congress, in 1938 the Lawon Press Union No. 3511 was issued. In Article 5 of the Law, the objectives of the establishment of the Press Union included the 'opening of journalism schools or vocational courses' (Uzun, 2011: 122).

The first private school of journalism in Turkey, founded in 1948 by Fehmi Müderris Yahya Istanbul Special Journalism School. The school was established to educate employees in the press and business life. It consists of two circuits, three years on secondary school and one year of high school. The education of the school was interrupted in 1963 (İnugur, 1988: 155-157).

The first vocational education institution that was granted diplomas to journalists was the Journalism Institute, which was decided to establish in 1949 at the Faculty of Economics of Istanbul University. The name of the institution, which started to receive students in 1950, was later changed to Istanbul University Journalism Public Relations Higher School. In the year of 1965, No. 625 on the Law on Private Education Institutions in Turkey were allowed to open

private high school. Thus, it is seen that the period of private high schools in journalism education is beginning. Başkent Private Journalism High School in Ankara in 1967 and İzmir Karataş Private Journalism High School in 1968 were opened in 1966 (Altun, 1995: 110). Upon complaints, these schools were taken to be examined and they were nationalized and connected to the academies by a law issued in 1971 (Tokgoz, 2003: 23).

In 1982, the organization of higher education institutions was regulated by the decree of law numbered 41 and the schools that provided journalism education with this decree; Ankara, Istanbul, Marmara, Aegean and Gazi Universities are connected to the rectorates of the relevant universities under the name of Press Higher Schools. In 1992, Law No. 3837 changed the law of Higher Education Institutions No. 2908, thus transforming it into fiveCommunication Schools and Communication Faculties (Uzun, 2011: 122).

If we look at today's journalism education; According to OHM's 2010 Quota Guide, 49 of the 161 universities in the guide are provided with communication training. Journalismeducation is on 24 of these 49 universities. Journalism education is also given in all faculties where communication education is given abroad.

Despite the fact that journalism education has a long history, discussions on the way of education and its contents are still going on. These discussions have been ongoing since the beginning of educational-industry or theory-practice dilemmas. The developments in technology and the changes in the journalism sector are naturally reflected in journalism education. The journalism sector operates very differently from the beginning. An education based on the foundation that will be provided without teaching the requirements of the technology is not enough for the current situation of the industry, it will not be enough for the future situation. While the training provided in the historical process is considered to be contributing to the journalism profession, it is thought that these trainings will not be sufficient for the industry 4.0 journalism sector.

3 POSSIBLE CHANGE AND TRANSFORMATION OF JOURNALISM IN INDUSTRY 4.0 PROCESS

It is envisaged that the fourth industrial revolution will abolish many existing professions and create new professions. It is inevitable that the professions that will continue to live next to these radical changes will also be transformed. As after every industrial revolution, societies after this revolution; social, cultural, economic areas, and the communication field will have to change. The transformation of the communication field will also affect all mass media. How journalists and journalism, one of the major news sources of the society, can be influenced by the Industry 4.0 process is discussed in this section.

3.1 Possible Effects of Industry 4.0 on Journalism

Before the use of the internet, which has become a very ordinary phenomenon in today'sworld, the journalism sector operates in a very different structure. The newspaper said technology was in Turkey until 1994 to come to mind developments in the printing process. After 1994, this concept started to bring internet and electronic publishing to mind. With the publication of newspapers on the internet, the concepts of 'newspaper', 'journalist' and 'reader' have also been transformed. The use of the Internet has created new concepts such as 'alternative media' and 'internet journalism'. It is unthinkable that a radical technological change like the industry 4.0 process will not make a difference in the journalism sector.

In the current situation, newspapers are rapidly losing readership. Many newspapers are shifting to digital platforms by discontinuing paper use. The convenience of transportation provided by the technology makes it unnecessary to buy newspapers. In addition, the fact that not all the news is verified reveals a trust problem in the reader. This trust issue raises the need for people to turn to validation platforms. From the platforms, the number of people benefiting from direct confirmation from the confirmation is increasing day by day. As mentioned at the beginning of the chapter, the entrance of the internet into the lives of the societies has caused great changes in the sector. Technological innovations that we will face in the near future will lead to much greater transformations.

It is clear that in industry 4.0, journalism will operate in digital environments. In addition, due to the increased factor of reality that will become widespread in this process, it is predicted that the news will become a phenomenon that is not only readable and experienced. Thanks to the new devices (such as 3D glasses, drones) that are going to be used, it is thought that it will be possible to experience simultaneously in many different directions.

With the introduction of autonomous robots; the technical processes such as news verification, text editing, publishing, made by people today will probably become the task of robots.

One of the outstanding features of the fourth industrial revolution is the special production of the person, as mentioned before. In smart factories, it is aimed to make personal products without stopping the production band thanks to communication devices. In reporting, it seems that private production is possible. In the current situation, private advertisements that are possible with data mining are antagonized in every enterprise. Industry 4.0 is among the predictions of working with news that is similar to these advertisements. Personalized news; it is thought that the readers will be delivered according to the topics they are interested in, the place where they lived and the appropriate time, and the risk of not attracting the attention of the reader.

Another way to attract attention is to offer options. Preparing the same story in different formats will give the right to choose a reader / advisor. For example, the preparation of a story as a 3D

animated, simulated version, video and written text will give the reader the freedom to follow the story as he or she chooses.

Another predicted change is that the need to translate will diminish and disappear after a while. The fact that more than half of the news and information sources on the Internet is English, restricts the reception of news and information by many communities. Follow-up and translation of foreign agency news leads to time loss for those who do not speak the language. Translation programs that are currently in use are not sufficient. Text translation and video subtitles will be a problem thanks to the translation applications that are expected to be developed in Industry 4.0.

3.2. Possible Expectations of Employees of Journalism Sector in Industry 4.0 Process

As mentioned in the previous section, newspapers are expected to pass on paper and say goodbye to the digital platform. This transition will naturally also make a difference in the tasks journalists are expected to perform. In the current situation, newspapers are expected to collect news / compilation, edit texts, design them to be printed on paper.

In Industry 4.0, it would not be enough to do them. Digitized newspapers are supposed to take on these 'traditional' tasks robots. For journalists, it will be up to the journalists to make arrangements for the news that the robots are preparing for raw to be presented in different formats. It is imperative to have technical knowledge to make arrangements. To be able to prepare 3D animation, to be able to use simulation programs, to use drones, to be able to do personalized data analysis; industry 4.0 is among the possible anticipation of the journalist's period. Being familiar with data analysis, having at least basic knowledge and skills in program development and algorithms will be a desirable feature for personalized news production by the 4.0 process. Employees will be expected to be able to create multimedia content (using audio, video, animation, or graphics together) as well as basic journalistic skills. Being able to prepare an article for different readers in different formats will be one of the basic requirements of this process.The issue of how the possible anticipations identified during our work can be met is discussed in the next section.

4 DEVELOPING EDUCATION PROGRAMS FOR JOURNALISM'S PRIMARY AND SECONDARY EDUCATION INSTITUTIONS IN INDUSTRY 4.0

In almost all societies, educated aimed individuals are to make the society they live in and theage they are in harmony with. With basic education, children are aimed to become individuals who have the knowledge and skills required by the age. For this reason, there is not a training for vocational education in primary education but a common program which is not divided into branches is being implemented. Any kind of vocational training should be started; to be literate,

to behave in accordance with social life rules, to have a basic knowledge of mathematics, to act as a member of a group. The place where these skills are acquired is the primary and the equivalent schools in all the countries of the world. It is not possible for individuals who do not have the basic skills mentioned to attend vocational schools. For this reason, it is thought that the training program that can train industry journalists in the study should be secondary education oriented. In the primary education phase, it will suffice to give some technical training to facilitate the adjustment to the 4.0 process. It is considered that students should be able to do coding in primary school level, to use 3D animation program and to give lessons for effective use of technology in general terms. The current journalistic training programs being offered at this level will be reviewed prior to the proposed program for secondary education.

The number of secondary schools offering education in journalism in Turkey in 2017, thirty-five (35) respectively. All institutions are vocational and technical anatolian high schools. When the contents of the training programs are examined, it is seen that the 10th class is devoted to general journalism education. In the 11th grade, education is divided into professional branches under the field of journalism. In some schools only general education is based on four (4) different branches, while education is provided only in the field of print media correspondence. These; print correspondent, television correspondent, page secretary and photo correspondent. There are design workshops for daily newspapers in the professional high schools with a journalism department. The equipment found in the workshops are; a computer, a printer, a projection device and a camera.

As it is seen in the data, the journalism education given in secondary education is an application for 'traditional journalism'. Some private educational institutions offer courses that are appropriate for the 4th period, such as robotic clubs, coding courses, three-dimensional (3D) production applications, and critical thinking skills. Among state schools there is no secondary education programs to train journalists for the industry 4.0 process. In the Field of Journalism Field Teaching Program published by the Ministry of National Education, the aim of the field is "occupations under the field of journalism; to educate qualified professionals who give the necessary professional qualifications in line with the needs of the sector and in the direction of technological and social developments ". In the process of preparation of educational contents; cooperation with organizations in the sector whereTurkey in the survey are expressed as determined with the help of the media industry needs. In the program development process, it is stated that communication is made with the written press agencies and news agencies. It is aimed to create a program that can meet the expectations of the sector. As can be seen, the role of the current state of the industry is great in determining the content of the training. For this reason, the training program that will train the4.0 period journalist needs to be prepared in line with the innovations that will take place in the sector 4.0. It is thought that it would be useful to examine the journalism training program at the secondary level in the current situation before moving on to the education program intended to be developed in the study.

When the weekly course schedules of high school students in the field of journalism are examined, it seems that the courses are directed towards "traditional journalism" practices. A small part of the lessons are oriented towards practice; basic photography, news photography, news editing, skill training in enterprises and page design. Only twenty-four (24) courses for the field / data are processed in practice (five). It is not possible to prepare without application lessons in a process that includes high technology such as Industry 4.0.

Equipment of journalistic workshops in high school; a few computers with internet access, a printer, a projector, a camera and a camera. These tools are insufficient to provide efficiency even in traditional journalistic applications.

Preparing the contents of the training program applied in the present situation in line with the expectations in the sector is seen as a right move to train the employees in the sector. For the proposal of the training program according to the 4.0 process, it is considered that the innovations anticipated to be experienced in the journalism sector should be considered in 4.0.

Expected changes in newspapers;

- Switching to digital platforms by discontinuing paper use,
- The news can be experienced,
- The tasks to be performed by the robots,
- Personalized news,
- A news story is presented in many formats.

Switching to digital platforms should not be confused with the concept of virtual journalism being applied in the current situation. The news here is the use of high-tech tools. The Availability of raw news texts via cloud computing systems will enable a storage area to be reached without the need for a storage space. Enriched with simulations and three-dimensional animations, it is thought that not only the reading but also the experience that can be experienced at the same time will emerge. With the introduction of autonomous robots, it is thought that the journalists will not be responsible for the technical processes such as newsgathering, verification, text editing and news release, which are currently being done by journalists. Another task that the robots are supposed to undertake is to analyze personal data and make them ready for use. It is thought that the personalized production which is one of the important features of the process will also be active in the journalism sector.With the introduction of data mining, which is currently used in advertising, personal information will be conveyed to the neighborhoods, groups of friends, according to their demographic characteristics, and the risk that the reader will not be interested in the content will be reduced. It is anticipated that journalists will prepare and present the news that the robots prepare raw materials in different forms. It is thought that preparing the same news, written, video, 3D animated and simulated contents will interest the reader because he will give preference to the reader.

Based on the changes that are expected to be experienced in the sector, it is thought that changes should be made in the training program applied in the current situation and program lessons and workshop / practice studies should be added for the training program to be applied in the secondary education that the journalist can train in industry 4.0.

Continue to practice suggested courses:

Professional development, basic communication, effective speaking and writing techniques, media organization, media history and specialized journalism courses; it is thought to be the basis of journalism. Taking these trainings will also be necessary in the 4.0 process.

Lessons thought to change in content:

It is thought that the contents of basic photography, news gathering and writing, professional computer, news writing techniques, news photography, use of photography at the beginning, news shooting, news editing and page design are included in the tasks to be carried out by robots. It is envisaged that there will no longer be a need to memorize technical information in the process of photographing. Thanks to the machines that will detect the comparative image

and pass it to the most suitable shooting mode; it will become unnecessary to have technical knowledge of diaphragm (aperture), shutter speed (shutter speed) and ISO (light sensitivity level). The process of collecting, writing and editing the news will also become the task of robots. It is thought that communication law course will change shape by entering into the scope of cyber security with transforming communication technologies.

Suggested additions:

3D animation: In the future it is thought that the news is not just to be viewed / read but can be experienced at different angles with 3D glasses. In order to produce such news contents, only the lessons to be taken in higher education will not be enough. It is thought that it will be beneficial to set up 3D animation workshops and to give compulsory application courses in groups to the students.

Introduction to simulation applications: Experimental news applications are thought to include simulation technologies. Although there is currently no expectation of a qualification at this level from the secondary school students, it is recommended to create a course content to transfer technical information about the simulation. This course is aimed to provide the educational infrastructure expected to be seen as an application course in higher education.

Data analysis: In order to prepare for a process that is thought to be widespread for personalized (flexible) news production, data analysis methods, it is considered necessary to include verbal fields as well as numerical fields.

Multimedia content: The content of the course thought to be possible to create the same news in different formats. Technological developments have always led to the creation of new expectations and different demands. Offering options in news content is thought to be the reason for preference. When a variety of written, video content, simulated applications of a news story is created, the mass appeal will increase exponentially. In order to have the ability to prepare the news on these forms, a course on multimedia content aimed at teaching the use of different media types together seems necessary.

Algorithm: Industry 4.0 Reduction of process error margin is a targeted process. Reducing the human factor will reduce the error margin, but it does not seem possible for the person to be completely disabled. Mandatory algorithm training should be given in order to decrease the error margin in the process of human inclusion. The algorithm, which is defined as a way to solve a specific problem or to achieve a specific purpose, also includes the step by step stepping through the actions that will solve a single problem, the basic tasks or phrases, and taking care of the ordering of these steps.

Taking into account the changes made in the current program and adding the suggested courses, it is considered that the content of the training will have the capacity to train journalists appropriate to the 4.0 process.

CONCLUSION

The world is preparing for the industry 4.0 process. It is clear that the fourth industrial revolution will affect the lives of societies in social, political and economic spheres. It is not expected that the communication field will undergo transformation when radical changes are experienced. It is imperative that society be informed about the issue in order to adapt to the process. The journalists who are the main sources of information of the society have greatduty. In order to convey the requirements of the Industry 4.0 process to the public, journalists need to be knowledgeable about the process. The aim of the study was to develop a training program to

train journalists in accordance with the 4.0 process. Throughout the study, the literature was searched and the application forms of journalism education were examined. As a result of the investigations, it was seen that there was no educational program for journalism in primary education. It has been found that education for vocational secondary education is developed for "traditional journalism" applications. Findings and recommendations in the light of current journalism education program applied in secondary education. For the journalistic training program to be applied in secondary education in accordance with Industry 4.0, the existing programs were utilized, the expected changes in the sector were explained and the recommended courses were added. It is thought that an education program to be formed by adding the recommended courses, journalists of the future, will be able to keep up with the process of 4.0.

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