



An In-depth Analysis the Effectiveness of Innovative Tools for Entrepreneurial University

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Abstract

In terms of the world, the concepts of development and development and the road to these concepts undergo significant changes. In this process, in parallel with the increasing importance of regional potential, the importance of knowledge in global sense is increasing. Innovation-oriented initiatives and entrepreneurs are important to cope with unemployment and to increase employment power at the global level. For this reason, the need for change has arisen towards the organization of the university, only to carry out education and training or research activities. In this regard, universities are seen as places where knowledge is produced. In addition to the production of knowledge, universities are now becoming places where knowledge is commercialized, and has commercial roles as a result of patenting and branding. It is seen that universities are moving towards a model that tries to take a more place in the market, gain profit as a result of their activities, and take into account the demands of the market, in addition to their classical education, training and research roles. The "Entrepreneurial University Model", which enables the redefinition of the relationship between University-Industry and State in the Triple Helix model, was developed in line with this need.

In this study, besides the concept of entrepreneurial university, the main features of this model, as well as, platforms for innovative teaching technologies have been compared. At the same time, the effectiveness of innovative tools for the University of Entrepreneurship has been explored in different country approaches.

Keywords: *Innovative tools, entrepreneurial university, online platform, economic development, learning technologies*

Jel Code:O3

Introduction

Today, universities are trying to adapt to the global-information age under the pressure of multivariate, complex and intense change and transformation. In most of the developed Western world, it is known that transformations and changes, also known as the concept of "entrepreneurial university", have been made. In this context, it is clearly seen that universities also need structural changes and a renewal process. (Odabaşı,2005). The reasons that make this change in universities necessary can be listed as follows:

- The necessity for the higher education system to reach international standards as global reasons;
- As national factors, citizens from all walks of life expect to receive education at a developing rate, lack of resources and increasing population, asking universities to take an active role for regional development, productivity and industrialization, etc.

The existing systems, which have been preserved almost to the present, come from a structure dating back to the 17th century or even older in terms of infrastructure, protecting information and offering only drop by drop with tiny pieces. However, with the transition to the information society and the advancement of communication, everyone has found themselves in an ocean of information and data.

Indeed, the programs in some universities today offer almost exactly the same service (T. Yamamoto, 2018). This cannot provide a sufficient development in terms of neither learners nor social development. On the other hand, universities bear responsibility in terms of social development. Therefore, states, sectors and universities have directed the solution to an innovative and entrepreneurial university structure. In fact, this inquiry has become a faster priority in developed societies. Therefore, a descriptive study was conducted to examine the entrepreneurial and innovative university concept and structure.

To achieve this, entrepreneurial university models in developed western countries were emphasized, entrepreneurship, creativity and innovative university concepts were mentioned. Accordingly, the concept of entrepreneurial university has been examined a little more and the foundations of the entrepreneurial university model are emphasized.

The aim of this study is to identify the entrepreneurial tendencies of university students who are potential entrepreneur candidates, on the other hand, to study the development effects of the application of innovative tools in universities.

In the first-literature part of the study, the concept of entrepreneurship is defined and the stages of entrepreneurship up to the present are explained.

In the second part, for the purpose of the research, the necessary concepts of Economic Development, Entrepreneurship and University are explained.

In the third section, studies on the economic benefits of online learning technologies are examined under scope of research study.

The fourth section analyzes the levels of use of zoom and Teams as an innovative tools, the fifth section includes the structural plan of the business research and the survey study.

In the last section, research results are given and recommendations have been developed.

Literature review

Clark (1998), who deals with the issue of entrepreneurial universities from a European perspective, advocates the necessity of integrating entrepreneurship culture into universities and a related transformation by preserving the balance between academic culture and market culture under scope of education and scientific research. The five common elements of successful corporate transformation according to the model it defends are as follows. (Clark, 1998): (1) a reinforced driving force, (2) expanded development environment, (3) a diversified funding base, (4) a fostered academic foundation, and (5) an integrated entrepreneurial culture. Clark (1998), as an “Entrepreneur” in his own research, considers all universities and their internal departments, research centers, faculties and schools as social systems. He describes that an entrepreneurial university of this nature should be a university in its own right, actively trying to innovate in its business direction. In this context, the Entrepreneurial University is a modern university model that is not only innovative and cannot be limited to university-industry cooperation. Entrepreneurship and innovation are often intertwined. When talking about entrepreneurship, the following functions come to mind. (Güney, 2019):

- Production of new products or services or upgrading of existing products and services in terms of quality and / or quality.
- Developing or applying new production methods
- Establishing new organizations in the sector
- Establishing new markets

- Creating new resources or reaching new resources

Entrepreneurship is the art of seeing the possibilities around us, transforming these opportunities into projects and implementing projects. Entrepreneurial person aims to provide material and spiritual gain by producing products, providing services that society needs; taking action to establish his own business in this direction; conducting research, planning, organizing and coordination studies to realize the business idea; after all, the necessary knowledge and skills, workplace, staff, equipment, etc. He is a person who starts his own business by bringing together his inputs and financing resources. (Bozkurt, 2000,12).

According to Thurik and Wennekers (1999), entrepreneurship is the ability and willingness of individuals to perceive and create new economic opportunities (new products, new production methods, new organizational charts and new product-market combinations), on their own, in teams, or within or outside existing organizations.

Entrepreneurship requires the combination of talent, ideas, capital and knowledge. This merging process can be risky, uncertain, and sometimes haphazard, but it is always dynamic. Entrepreneurship has meant different things to different people. There is no consensus on the definition of "entrepreneurship" and "entrepreneur". (Sexton veSmilar, 1996).

Cristensen and Eyring (2011), in their book titled "Innovative University", consider how and why universities need to change to ensure future success. Indeed, in the past century, traditional universities have not faced serious competition other than other universities or higher education institutions with similar business models. However, today, as in other sectors, universities are faced with destructive for-profit competition and various attacks from different environments outside the university.

In order to better understand this concept, the conceptual definitions made for the entrepreneurial university are given in the literature below:

Universities that have social, entrepreneurial and innovative characteristics and that have the ability to commercialize knowledge are called entrepreneurial universities. (Montesinos vd., 2008).

Higher education institutions that carry out education, research, economic and social development activities together transform their institutional theoretical and practical knowledge into economic values and are accepted as a leading institution in the region and country in the society. (Etzkowitz, 2003).

The entrepreneurial university is associated with three different missions: education, research and service to society. Education and / or research activities can be carried out in

traditional universities. However, entrepreneurial universities incorporate all three missions as corporate identities, although their significant value differs. (Baldini, 2006).

Within the over viewing of the basics of the Entrepreneurial university model, one of the key models today is the implementation of the educational process using innovative tools. The pandemic we have experienced throughout the year highlights the importance of these tools. Thus, the Entrepreneurial University must also play a role in the formation of their students as professionals by instilling the necessary knowledge in the distance. At the same time, the basis of the Entrepreneurial university model is the ability to acquire the qualifications required by the market to learners during their education. In addition, it should include a systematic structure that can commercialize the knowledge it produces, diversify its sources of income, is dynamic, competitive, agile and cooperative, attracting the attention of successful academics and students. This situation also requires an entrepreneurial culture.

Research methodology

This study investigates the basic features, positive and negative aspects of the entrepreneurial university model, and what differentiates it from other universities and in general, the concept of entrepreneurial university in the higher education system aims to always be remembered by managers. At the same time, it is important to find out in detail how innovative tools are applied in entrepreneurial universities and what their impact is.

The research is a comparative study that examines the innovative education programs and paradigms of different countries. Qualitative data collection techniques such as document analysis and interviews were used in the research, and descriptive analysis based on document analysis and content analysis based on interviews were used.

In the research, questionnaire was preferred as a data collection tool among quantitative research methods. The reason why the survey is preferred in this study is that it is an economic data collection tool and provides fast access to data. The other reason for choosing this technique is that it is easier to analyze the data obtained by questionnaire in computer environment compared to other techniques.

Economic Development, Entrepreneurship and University

Investigating entrepreneurship trends in universities may produce results that will impose new identity and responsibility on universities. Thus, universities will get out of their traditional identities and gain an entrepreneurial identity.

Entrepreneurship is considered as one of the most important mechanisms of economic development. (Bunyasrie, 2010). There are quite a number of studies that emphasize entrepreneurship, which is one of the most important factors in terms of social growth, development and development, and the search for solutions. According to Özer, universities not only serve in the field of education, but have come to the forefront in the transfer of technology and knowledge, taking into account the demands and expectations of the market and have become one of the main elements of cooperation in the development process (Özer, 2018). In the 2000s, Etzkowitz and Leydesdorff reviewed the issue of economic development, which they mentioned in the 1990s, and evaluated it as a triangular trivet and discussed state, industry and university collaborations. (Etzkowitz and Leydesdorff, 1998) Accordingly, according to Erdoğan, in the knowledge-based economic system, universities become key institutions and become an indispensable element both in the production of human capital and in the development of new enterprises and in directing the industry to high value-added production. (Erdoğan, 2013). The sources of growth in the labor force have recently been seen as human capital (dependent on education), entrepreneurship (in various scales) and creative class (associated with worker professions). (Faggian, Malecki and Partridge, 2016).

Entrepreneurial universities are capable of producing innovation, evaluating opportunities, prone to teamwork, changing their organizational structure to be successful, playing a pioneering role in generating knowledge, finding resources other than resources transferred from the state, establishing relationships between the university and the state industry, and making economic contributions. (Odabaşı, 2008). The entrepreneurial universities is aimed to gain competitive advantage and increase profitability. (Özdemir Sarı, 2008). The entrepreneurial university model is an approach based on universities entering the market directly and operating for profit.

When evaluating entrepreneurial universities, it is necessary to evaluate the different legal systems, different structures, regional features and development of the countries. (Schulte, 2004). In fact, it is necessary to take into account the differences and variations in each university's own conditions and practices. At this point, the important thing is the strategic orientation towards becoming an entrepreneurial university.

Some obstacles to the transformation to an entrepreneurial university are shown as the structure of relations, hierarchical structure, and adherence to control needs and rules, conservatism in corporate culture, time dimension and the need to reach results quickly, lack of entrepreneurial structure and inappropriate compensation methods. In addition to these traditional obstacles, jury memberships, referees, consultants and bureaucratic work negatively affect academics and make the transformation towards becoming an entrepreneurial university difficult. In addition, it would be appropriate to say that the speed of

transformation in becoming an entrepreneurial university varies depending on each unit, university and external factors (Kwiek, 2008).

Economic expectations from online learning technologies

Distance education, as a form of education, has been defined according to different theoretical models and ideological approaches. The conditions of both the individual and the social group in which students live, the content, management, cost, basic principles of distance education, whether this method is useful for generating knowledge or transferring knowledge in a rote-like manner, and how student-centered this can be are among the discussed topics. With the development and spread of internet technologies in different sectors, there have been rapid changes in educational technologies in the last thirty years.

From a political economy perspective, we see that education technologies are one of the fastest growing industries at the global level. According to July 2020 data, the global growth rate of the Advanced Learning Technology sector is 22.8%. The same analysis predicts that the profits of the industry will triple to reach 129.7 billion USD by 2025. Again, according to the same analysis, the growth rate of the industry in the Middle East is 20.2% and the earnings by 2025 are expected to reach 7.4 billion USD. This gain, respectively, Egypt, Turkey, United Arab Emirates and Israel intensifies. When the source of technological changes in education is examined since the 1990s, it is possible to observe many factors.

https://www.sivilsayfalar.org/wpcontent/uploads/2020/10/pandemi_sureci_yuksekogretim_ra_por.pdf

Reviewing of usage level of innovative tools for university

Modern innovative learning technologies, business relationships, collaborative activities, and all kinds of distance learning and management applications (Skype, Webex, Facebook, Google meet, Google classroom, Module, Teams, and zoom) are widely used. Some of them (Skype, Facebook, Google classroom) are simpler and regulate the participation of small groups and events. Large platforms such as Teams and Zoom allow not only small group meetings, but also classes in large groups of students. The Pandemic Age introduced a type of platform that had special value for Zoom and Microsoft Teams. Thus, since January 2020, they have become a major source of knowledge delivery in many leading educational institutions around the world.

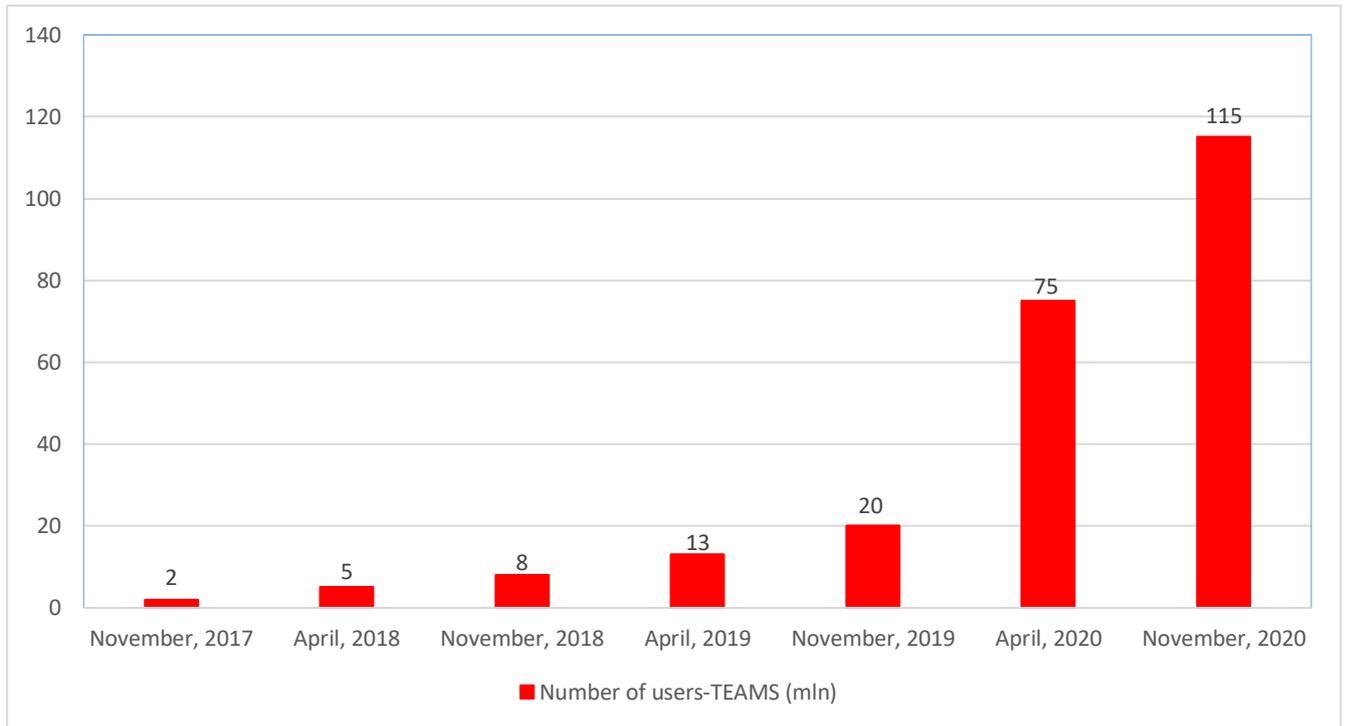


Chart 1. Numbers of users of TEAMS for last 3 years

It is no coincidence that according to Teams' last 3-year user number schedule, if in November 2017 this number was 2 million; in November 2020 it reached 115 million. (Chart 1)

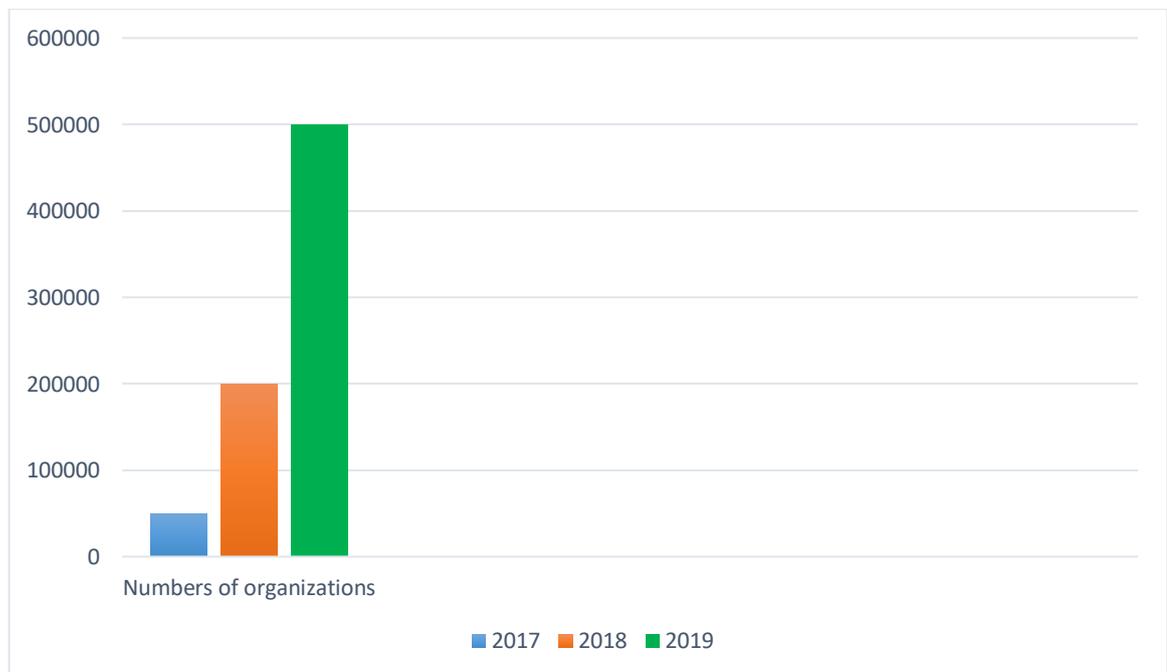


Chart 2. Number of user organizations of TEAMS by year

The increase in the number of users also has a high impact on productivity. In Chart 2, in 2017, users were concentrated in 50,000 organizations, and in 2019, this number reached 500,000. (Chart 2)

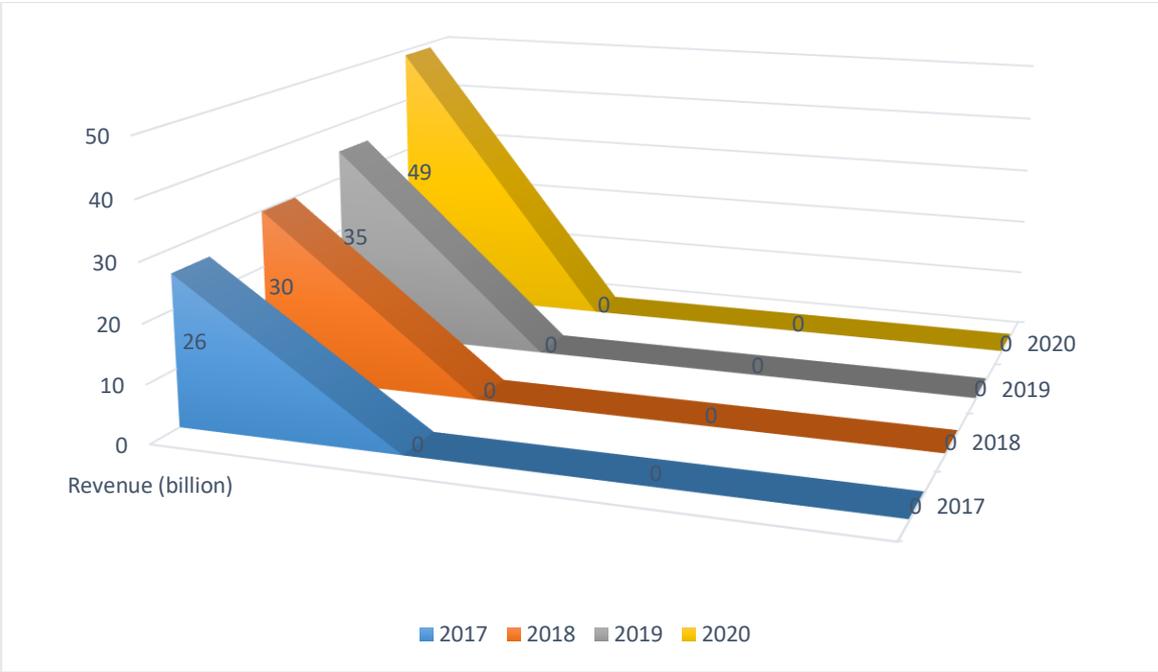


Chart 3.Revenue of TEAMS by year

During the pandemic, the profits of the Teams platform increased almost 20 times, depending on the number of users and the number of organizations. So, if in 2017 Teams earned 26 million USD, in 2020 this figure reached 49 billion USD. (Chart 3).

Interesting statistics about Teams include Teams in 44 languages in 181 countries. Today, about 183,000 educational institutions use the Teams platform. Microsoft Teams has grown by 894 percent since COVID-19 lockdown began. That’s a higher percentage growth than Zoom, which achieved 667 percent growth in the same span of time.

Survey analysis on effectiveness of innovative tools for entrepreneurial university

A survey was conducted among various university representatives and students to analyze the effectiveness of innovative tools in industrial universities. Total number of 145 people took part in the survey. 145 people took part in the survey. 87 of the participants were university staff and teachers, and the other 58 were students. The results of the survey can be seen more clearly in the following form.

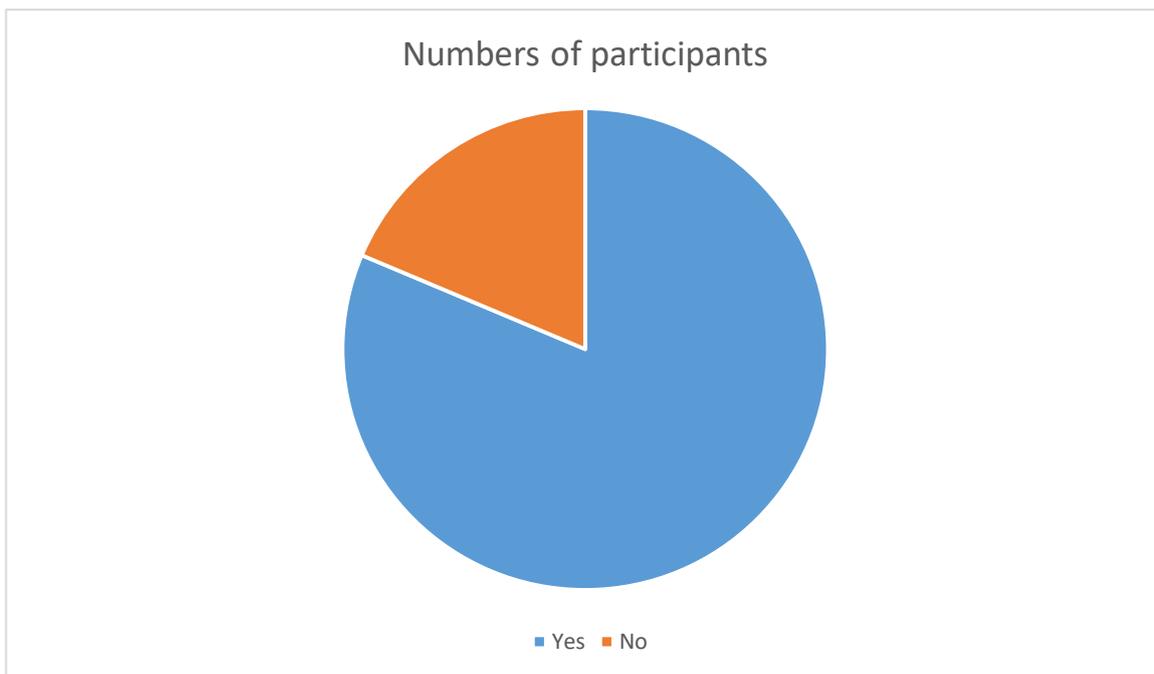


Chart 4. Does your education meet the requirements of the business world?

Participants were asked "Does your education meet the requirements of the business world?" addressed with the question and the vast majority (118) said their education was in line with business requirements. (Chart 4.)

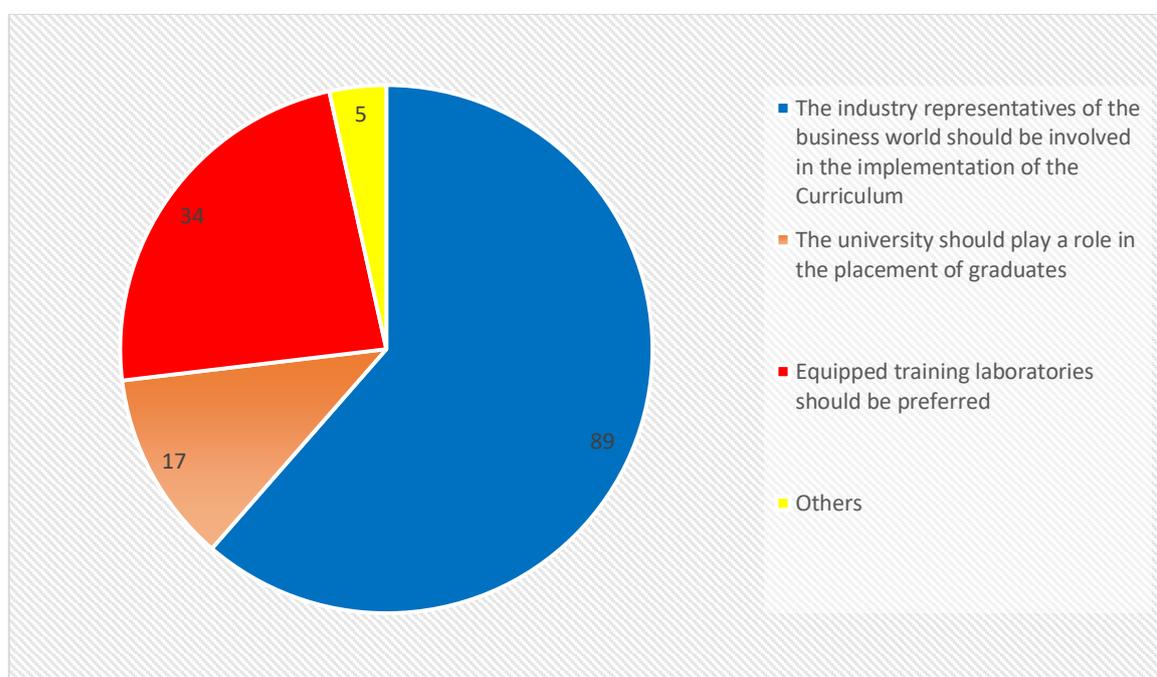


Chart 5. What steps do you think entrepreneurial universities should take to get a positive result?

Participants were asked "What steps do you think entrepreneurial universities should take to get a positive result?" addressed with the question and 89 of them stressed that the industry representatives of the business world should be involved in the implementation of the Curriculum, and number of 34 people think that equipped training laboratories should be preferred. (Chart 5.)

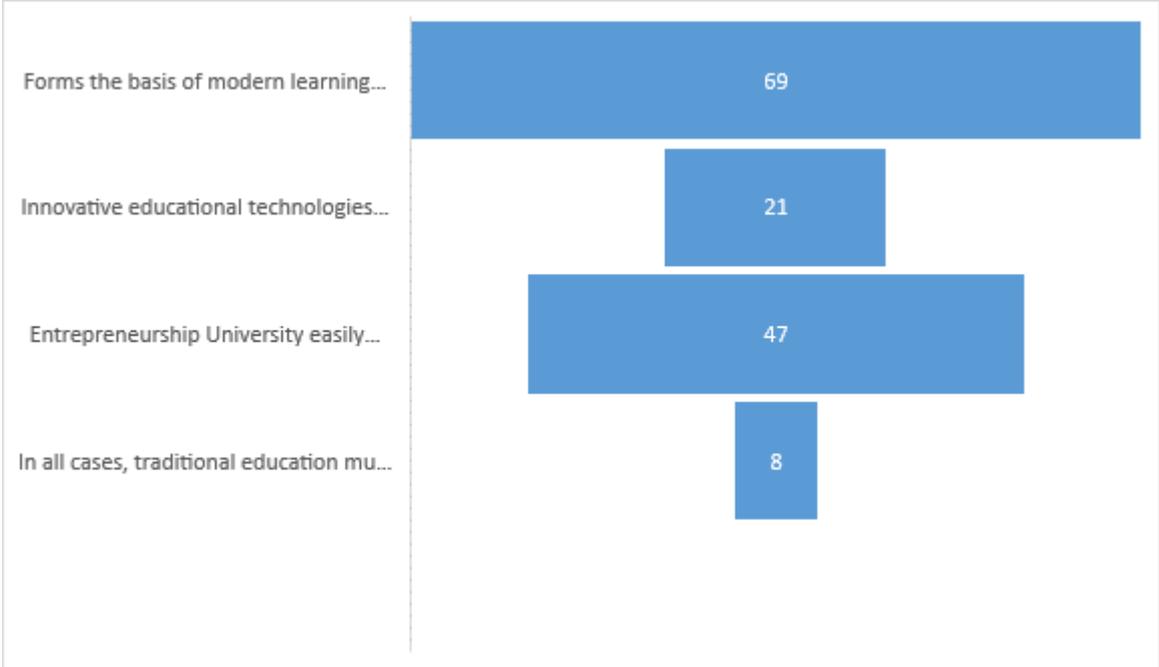


Chart 6.How do you assess the role of innovative tools in the educational process?

Participants were asked "How do you assess the role of innovative tools in the educational process?" addressed with the question and 69 of them prefer the forms of the basis of modern learning technologies, while 47 respondents think that Entrepreneurship University easily creates an education-student-business triangle using innovative tools. Only 21 people mentioned that Innovative educational technologies are one of the main tools to meet the requirements of modern times. (Chart 6)

Conclusion

In order to become an entrepreneurial university, it is necessary for universities to develop an entrepreneurial culture, especially the academic community, and university administrators must have determined and willing practices on this issue. Entrepreneurial university applications can take place at multiple and different levels.

These studies can be carried out as individual initiatives at the lower level, and large-scale R&D and planning studies for social and social issues can be carried out in a multi-disciplinary manner. In addition, strategic cooperation with the relevant institution and the state can also be considered. The entrepreneurial university enables the development of academicians, students, employees and researchers in terms of entrepreneurship, innovation or creativity. In this context, with new models and applications that can be developed, the development of the demand in the market can be followed and the necessary research and application-oriented simulation (simulation) studies infrastructure can be provided to determine the needed issues. In order to ensure entrepreneurship, academics, students or employees can be helped to establish their own start-ups. In the areas of finding new markets or creating new resources, it is necessary to support the relevant institutions and organizations of the state and provide basic research, as well as to determine the strategies that will ensure the establishment of both infrastructure and practices and systems in the studies of the private sector. In addition to this, entrepreneurial universities should be seen as the institutions that direct the efforts to create added value for the creative class regarding new professions and practices, as well as creating human capital and manpower with the necessary qualifications to trigger economic development.

Countries that want to implement the entrepreneurial university model should first provide an environment that allows universities to cooperate freely. This is essential primarily for universities to generate third-type income. In other words, the foundation of the entrepreneurial university model should be found in cooperation and a legal and administrative basis on which third-type revenues can be freely provided. This is a “must” for the entrepreneurial university model. Another important element of the entrepreneurial university model is academicians. Academicians play an intermediary role especially in the cooperation activities to be carried out by universities. Academicians must have the culture required by the entrepreneurial university and the graduates they have trained must be in this entrepreneurial culture.

The use of innovative tools, especially programs such as Teams and Zoom, not only in the pandemic period, but also always builds a business-student-university model of

entrepreneurial universities, both automating and developing the work of universities, and fully meets the educational needs of students.

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