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Digitalization in international and mass education: A model proposal for Turkey

Hikmet Salahaddin Gezici [a*], Selçuk University, Faculty of Economics and Administrative Sciences, Alaeddin Keykubat Campus, Selçuklu, Konya 42130, Turkey https://orcid.org/0000-0003-1573-2864

Yasin Taşpınar *[b], Selçuk University, Beyşehir Ali Akkanat Faculty of Management, Bademli St., Beyşehir, Konya 42700, Turkey; https://orcid.org/0000-0002-4116-9801

Mustafa Kocaoğlu [c], Necmettin Erbakan University, Academy of Applied Sciences, Yeni Meram Boulevard Kasım Halife St., Meram, Konya 42090, Turkey; https://orcid.org/0000-0002-9341-6341

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Abstract

There is a debate as to whether internationalization should be a target or a means to achieve goals with broader perspectives. Digitalization, on the other hand, is a de facto trend that permeates all communicative, economic and social areas. For this purpose, the study aimed to examine literature on the field and the findings of the researchers on the issue were included. The research also discussed the internationalization and digitalization efforts carried out in the world and in Turkey. An internationalization model proposal for the Turkish higher education system is presented in outline, taking the best practices around the world into account. Model involves a digitalization-oriented education approach that aims to increase the opportunities for students to get support from their families and to minimize their socio-economic difficulties. The contributions of a massification provided by digitalization to international education have been revealed in this study.

Keywords: digitalization; education; internationalization; massification; Turkey.

* ADDRESS OF CORRESPONDENCE: ikmet Salahaddin Gezici a, Selçuk University, Faculty of Economics and Administrative Sciences, Alaeddin Keykubat Campus, Selçuklu, Konya 42130, Turkey
Email address: yasintaspinar@selcuk.edu.tr

1. Introduction

The answer to the question of what is the most common language in the world today would be "English", which is almost unequivocally considered a "*lingua franca"*. On the other hand, it is possible to argue that the mathematical language is much more common than the English language. As a matter of fact, when a person from any nation living in any part of the world is asked about the solution of a problem in mathematical expression, he will be able to respond with a globally accepted numerical expression. Moreover, the person in question probably will also have no idea about al-Khwärizmi (van der Waerden, 1985: 4-9) who was one of the first people to use today's Arabic decimal number system effectively and added the field of algebra containing mathematical expressions and formulas to the studies carried out on the basis of geometry until that time (van der Waerden, 1985: 4-9). On the other hand, it is equally difficult for a learner of the English language to be unaware of Shakespeare or many other aspects of Anglo-American culture. Because language is an important cultural bearer (Göçer, 2013: 27-28) and English fulfills this task (Valcke, 2020: 265). It does not seem reasonable to talk about such a function of mathematical language and numerical expression form. Perhaps the flexibility of the digital structure, which is built on a mathematical basis, is due to its anonymity rather than a cultural bearer, despite its prevalence. The digital network streams information of all genres and languages in a multi-faceted, neutral, unbiased, and culture-independent manner.

This has elevated the digital network to an unrivaled position in data and information transfer. Now, the digital space built by numerical expressions has reached a gigantic virtual size. The economic equivalent of this size is like the proof of how great leaps the information age allows. The value of many companies, whose market value is over billions of dollars, is determined mainly by their information-based intangible assets (Çetindamar, Phaal & Probert, 2016: 95). A significant part of these assets is created, stored and shared in the digital space and is converted into added value. Although it is possible to liken that situation to tourism, which is also called "invisible export" or "flueless industry" (Bahar & Bozkurt, 2010: 258), virtual elements are at the forefront in the digital field, while tangible elements and services that require physical activity are at the same position in tourism. Therefore, the added value of the revenues obtained from digital assets without specific weight is much higher, and the relative infrastructure and investment expenses are generally much lower. Software companies that produce games or applications that can be downloaded for one dollar or even free for the mobile market can turn into billion-dollar companies in a short time and make significant contributions to individual and national economies. The most important investment item required to operate in this field is knowledge and education, which are also intangible capital elements.

Generally, education is seen as a means of accessing information they will need in their working life about the disciplines for children, adolescents, teachers and even the parents. While this belief is true, it is only one piece of the great educational puzzle. Obviously, the educational institution and the idea beyond it is much more than having twenty-five students in a classroom seven hours a day, five days a week, 180 days a year. Education is also a politically driven phenomenon. Indeed, standards for the framework and functioning of education and the curricula that make up the content are largely determined by policy. In this context, it can be stated that the use of a certain curriculum in education depends on the swing of the political pendulum (Farenga & Ness, 2005). One of the main consequences of the policy, and therefore the social agenda, being so influential on education is that it undergoes a coordinated transformation with social change. It is seen that the codes of traditional education have

been transmitted both orally and in writing for a long time. It is also seen that the formation of the education process and the instruments used have changed over time.

The main reason for the mentioned situation is that people have survived in different ages of time by using their different abilities. The knowledge and skills required for hunter-gatherer human beings, who lived before the spread of agriculture, on which human beings gained competence during 10,000 years, have lost their popularity in the agricultural age. At that time the power and agility required for hunting was replaced by the use of agricultural tools; the habit of feeding from nature left its place to the skill of planting and harvesting. The master-slave (lord-fief) relations, caused by the rooting of property relations and the formation of the modern pre-state administration style, also reshaped the survival teachings and they became the basic elements of obedience, respect and self-sacrifice education (Gray, 2008). As we approach today, an understanding that aims at competition and economic development rather than human values has dominated education, although it is possible to focus on personal development instead of value-based and economic development (Handa, 2018: 89). In the picture that emerged with the Industrial Revolution, the place of education has evolved from family to school, and the focus has evolved from obedience and respect to production and organization. The environment of the Information Age, which shook the centrist understandings, also led to the questioning of the logic based on formal education. It has also revolutionized the learning itself, along with the basic processes of communication, cognition, memory and identity construction, which form the basis of social life and knowledge creation today. In the Age of Digital Transformation, education policies are based on redefined goals, objectives and educational institutions (Tuomi & Miller, 2011: 1-2). The approach that incorporates the information and digital transformation periods into the industrial age, which is claimed to consist of four stages (Komara, 2020: 15), is more widely accepted. In the Industry 1.0 period (1760-1840), the dependency on animal power in production was eliminated thanks to the locomotive and steam engine, while in the industry 4.0 period, the beginning of which is thought to be today, smart, connected and autonomous machines built on the internet platform will affect education as well as the industrial and social field (Waghid, 2008). Waghid & Waghid, 2019: 2-3).

1.1. ***Conceptual Framework***

The main subject of this study is the relationship between internationalization and digitalization in education. This section is devoted to explaining the concepts of internationalization and digitalization, which are the main subjects of the study. The relationship between the aforementioned concepts will be dealt in this section as well.

1.1.1. Internationalization of Education

Internationalization of education may occur at home or abroad. Internationalization of education abroad include many forms beyond the limits of political borders such as: study abroad, joint and double degree programs, branch campuses, international research collaboration, and the spread of massive online learning courses (Larsen, 2016: 7). These activities include certain dimensions and components. Gao (2019: 91) listed the dimensions and components of internationalization in higher education as follows: (a) Governance: (1) Human resources for international activities, (2) Financial support for international initiatives, (3) Infrastructures and facilities, (4) Network and partnerships, (5) Institutional international presence; (b) Student: (1) International students, (2) Mobility of students, (3) Overseas opportunities for graduates; (c) Staff: (1) International profile of faculty, (2) International perspective of faculty; (d) Curriculum: (1) Courses with an international component, (2) Requirements for international studies, (3) Students' participation in international studies, (4) Joint degree programs; (e) Research: (1)

Internationally cooperative research programs, (2) Internationally focused research centers, (3) International research students, (4) Internationally acknowledged research achievements.

When defining internationalization, an activity, competency, ethos or process-oriented approach is generally adopted (Kireçci et al., 2016: 4). Internationalization in education, in which one of two methods is adopted, either a strategically planned or a completely open approach (Lääts et al. 2019: 9), is the transformation of the aims, functions and presentation style of the national education sector and institutional structure into an international, intercultural or global form (Knight, 2003: 3). In this process, students benefit from, contribute to and maintain the official institutions, non-governmental organizations, international education programs, networks and partnerships (Pestereva et al., 2019: 842). However, the concepts of internationalization and globalization -at least in terms of education- should not be considered as synonymous. While globalization in education (Kan & Xu, 2019: 51-52), which is fed from an economic-oriented understanding, has focuses such as welfare, earnings, workforce quality and growth; internationalization focuses on increasing the quality, opportunity and prevalence of education by taking advantage of the opportunities of globalization and the techniques such as e-learning (Altbach & Knight, 2007: 291). In other words, it is necessary to use the information communication developments offered by globalization in cross-border, online and satellite-based education activities such as e-learning, representative offices, satellite campuses (Knight, 2007: 210). The implementation of this approach depends on the effective use of four basic factors; leader support, a competent task force assigned with internationalization, external supports and application infrastructure, and accreditation/advanced training opportunities (Childress, 2009: 297-298).

There is also a political aspect to international education. Undoubtedly, one of the important factors in the dissemination of the approach is the attempts to soften the negative effects of the two world wars. Cooperation and exchange programs were launched in the USA (IIE) in 1919, Germany (DAAD) in 1925, and the United Kingdom (British Council) in 1937 in order to promote peace and mutual understanding. Later, Fulbright in the USA in 1934 and ERASMUS in the European Union in 1980 came to the fore as important initiatives in this field. ECTS (European Credit Transfer System) and Bologna processes have turned into significant advantages especially for those who benefit from ERASMUS and ERASMUS+ (de Wit & Altbach, 2021: 30-31). One of the promising application models for these international education programs supported by national and international organizations is the blended education model. In this method, where e-learning and face-to-face education applications are used together, digital education is the carrier element, mobility comes to the fore (Lazarou & Trifan, 2018: 205). As a matter of fact, internationalization abroad takes place through four basic movements. These four mobilities are (de Wit & Altbach, 2021: 38-42): (1) Student mobility, (2) Staff mobility, (3) Program mobility, (4) Online mobility. Bedenlier, Kondakcı & Richter (2018: 109) add the following elements to the list (cf Kehm & Teichler 2007: 264): (1) Mutual influences of higher education systems on each other, (2) Internationalization of the substance of teaching, learning, and research, (3) Institutional strategies of internationalization, (4) Knowledge transfer, (5) Cooperation and competition, (6) National and supranational policies as regarding the international dimension of higher education.

1.1.2. Digitalization of Education

In the relationship of information and education with the digital field, it is striking that the most effective carrier of these is the digital field. Education, which has an important role in the development of human capital, leads social change and development, and ensures the transfer of knowledge between generations and communities (Gezici, 2020: 193-195). Intergenerational transmission is the most

important element that plays a role in the construction of civilization, giving human beings the ability to sense right or wrong regardless of experience, and distinguishing them from other living things. In addition, inter-communal transmission has become a necessity of the competitive environment created by factors such as technical advances and globalization, as well (Verbytska & Nataliia, 2020). In this context, education methods and techniques that update themselves according to the opportunities and requirements of the age are experiencing the digital transformation process that expresses the use of modern information and communication opportunities (Gezici, 2020: 193-195). Inter-communal education has gained a new dimension thanks to digitalization and internationalization in education, which has been on the agenda since the 1980s, and Knight (2003: 2) states that it includes the terms of transnational, borderless and cross-border education.

Education, which has a long history as an international priority and was included in the Universal Declaration of Human Rights for the first time in 1948, is considered to have one of the longest terms of return on investment of all development goals (Didham & Ofei-Manu, 2015: 96-97). Education is closely related to growth, income inequality and the welfare level of the society (Rehme, 2007). The critical role of education in securing the future of the country and the quality of life of the population is recognized by academic circles. It is widely accepted that there is a positive relationship between education and other dimensions of development. General education has a positive role in achieving the environmental goals of sustainable development, which supports the claim that investing in good education is the key to sustainable development (IIASA, 2018). In the global economy, the development and dissemination of digital technologies is one of the main elements of the competitive environment (Bogoviz et al., 2018: 27). That is a result of information being one of the most fundamental things provided by digital technologies. In this context, information and communication technologies are the driving force of globalization, the determinant of competition between states, and the key actor in accessing, using and transforming information. It is the human being who accesses and uses information or creates new tools (artificial intelligence, internet of things, etc.) that can use information. It is the phenomenon of education that matures, changes and shapes people mentally, cognitively, behaviorally and emotionally. Therefore, it is possible to argue that education is the main determinant of globalization and competition.

Historically, the development of mass education has been coordinated with the evolution of the nation-state. Since the eighteenth century, education has been seen as a national issue economically, socially and culturally. Today, education is increasingly becoming an area of investment and profit in the interests of philanthropic organizations, education businesses and technology companies on a global scale. Education-related goods and services produced by numerous actors in the field of education are often exchanged and consumed for profit (Amaral & Fossum, 2021). Traditional education in the form of face-to-face interaction can also include non-digital and digital education aids. Digital education, on the other hand, can be defined as the act of teaching and learning through digital technologies. There is also a form of education conceptualized as blended education. Blended education is the act of teaching and learning that integrates various aspects of traditional and digital education. Blended education can take a variety of formats, depending on the type and the share of digital and traditional education used in the blended education approach. However, education delivered through face-to-face human interaction supported by digital education aids is considered traditional education, not blended education (WHO, 2020: 11). Educational technologies used in digital education are not individual technologies, but complex combinations of hardware and software. These technologies can use some combination of text, audio, video and computer codes, and the resulting content can be transmitted over close or long distances. Although technological applications are often characterized in terms of the

most obvious hardware features, from an educational point of view, it is the nature of the instruction given and the learning obtained that is more important than the equipment that provides it (Brovey & Brovey, 2005: 175).

With the invention of the World Wide Web in 1990 unpredictable advancement of it that permeated almost all aspects of society through computer-based education (CBT), it initially evolved into web-based education (WBT). However, new information and communication technologies soon spurred the ideas of intelligent education systems (ITS), simulation systems and serious games, virtual (VR), augmented (AR) and mixed reality (MR) in the education sector. With the advent of truly mobile devices such as smartphones and tablet computers, mobile learning is booming after a somewhat bumpy start with laptop computers at the beginning of this century (Niegemann, 2020: 15). The increase in learning opportunities in digital environments as a requirement of both cost and time and modern education process that was a result of the rise of personal education with the spread of personal computers and then the introduction of the Internet into our lives, illustrated the digital transformation in education. The transformation of education has inevitably led to the concept of learning gaining a new format and transforming into e-learning (Welsh et al., 2003). Terms with this focus are; e-learning, online learning, distance education, computer-assisted instruction, computer-based instruction, technology-based training, technology-based instruction, computer-based simulation and simulation games, etc. One explanation for this excess of terms is the seemingly endless combinations and variants of technologies being able to create different e-learning models. Therefore, it is possible to say that e-learning has a constantly evolving nature, with new terms accompanying the introduction of new e-learning technologies or applications. Finally, it can be stated that the umbrella term “e-learning” is used to refer to all forms of electronically supported education (Bradford & Federman, 2013: 167-168).

1.1.3. The Relationship between Digitalization and International Education

The process of reconstructing all business and operations related to the requirements of this age, which we stand by, can be expressed as digital transformation. In other words, digital transformation involves “rethinking and radically redesigning systems and processes in order to noticeably improve business performance, service quality and capacity utilization through the effective and intelligent application of management skills through modern information and communication technology” (Kocaoğlu & Gezici, 2017: 243). Transformation is about change, but it's more than change. Transformation refers to a degree of change that makes a significant difference. In the context of government, the transformation can take the form of a new way of working, a significant new service, or a major shift in a level of performance (Bannister & Connolly, 2011). Terms such as digitization (download forms online), digitalization (fill online forms), and digital transformation (online full-service delivery) appear to be used interchangeably in the literature (Bannister & Connolly, 2014: 119). Digital transformation is the efficient and effective implementation of modern information and communication technology and management skills. Thus, it is aimed to dramatically improve business performance, service quality and capacity utilization. For this, institutions also envisage fundamental rethinking and radical redesign of systems and processes. With a broader perspective, digital transformation causes social, economic, institutional, etc. transformation. This trend of change, which can also be expressed as a technological revolution, points to a paradigm shift (Perez, 2010; Toprak et al., 2019: 70). In addition, digital transformation affects the whole world by integrating all physical, digital and biological

fields and has a different meaning from the previous transformation parameters (Brennen & Kreiss, 2014).

These elements that shape the digital transformation process are in a coherent structure with social change. It is seen that social life has undergone a change both in business and transaction processes, in value judgments and in relation to the materials used in the process of sustaining life. These changes in society also transform learning and teaching practices. It is expected that there will be changes in the education system in direct proportion to these radical changes. It is not possible to take the digital transformation in education as based on technology alone. At the same time, the changing value system and people's lifestyles play a critical role in this transformation (Baumöl & Bockshecker, 2017). Internationalization, like digitalization, rises on a social basis. An international education that focuses only on economic gains will be deprived of social support just like digitalization. At this point, international education supported by digitalization should be massified by focusing on the social outcomes of international education (Bruhn, 2020: 39). As education flows from elite to mass to universal (Laurance, 2018: 23), all stakeholders, from institutions to teachers and even students, must accept digitalization as the new normal and keep up with it (Mattila, 2015: 214). Thus, while international education will benefit from digital communication, a new form of communication, a new way in social communication will be gained, and international networks will be strengthened (Volchenkova, Evsina & Batina, 2019: 649; Castaldi et al., 2019: 11; Bikalenko et al., 2021: 5-6).

Researchers from various fields studying on digitalization and internationalization have placed more emphasis on the relationship between these two fields in the last decade. The change caused by digitalization on the structures and processes of organizations promises success and dominance in new markets (Bergamaschi et al., 2020: 7). The first texts that refer to the relationship between digitalization and internationalization in education do not belong to very old dates. Although there was no text that discussed digitalization as a tool of internationalization in education until 2003, Knight (1999) mentioned that distance education can be a tool of internationalization and then again Knight (2003: 2) stated that e-learning does not promise a very important change in education beyond geographical borders. However, a year later, Knight (2004: 20) wrote about e-learning as a tool in cross-border education, while Altbach and Knight (2007: 303) had hesitations about sustainability, they foresaw a widespread for distance education thanks to the use of e-learning opportunities and the recognition of academic degrees obtained in this field. It is possible to explain these variable attitudes towards digitalization in international education considering low prevalence of e-learning at that time and the lack of access to the early results of the applications developed for the first time. The situation changed when it was understood that the internationalization of universities through digitalization would both increase the quality of service and provide a cost-effective tool set at this point (Lääts et al. 2019: 12). As a matter of fact, within a few years, Edmonds (2012) stated that the use of tools such as e-technology and social media in international education has increased the attractiveness of developed Western countries in the field of education, allowing these countries to gain talented people. On the other hand, Jibeen & Khan (2015: 197) stated that this situation also contributed to the benefit of those who do not have the opportunity to access this education. The four factors that Kreber (2009: 7) deem necessary for that benefit are: the inclusion of international students in the system; content, presentation (including information and communication technologies), student mobility and a common language

structure inclusion of the educational process; benefiting from international educators and course materials; and making spatial updates such as teaching abroad and establishing campuses.

1.2. Purpose of study

The new era promises cyber-physical systems that can integrate different digital technologies into physical, digital and biological fields, and the change is expected to include education (Pollitzer, 2019: 76). Although the economy and profit orientation, which are the popular goals of the era, are also at the center of digitalized education (Huo, 2020: 4), education that has reached a digitalization level of 5% does not seem to have caught the popular transformation of the age. The way of this transformation goes through considering education not as a commercial product but as a service (Mata & Militaru, 2020: 2). Providing digital education to those who need it most, not to those who pay the most, has the potential to remove barriers to transformation. The study aimed to examine literature on the field and the findings of the researchers on the issue were included

2. Method

The research was a discussion paper which started with a review of past literature, drew logical meaning from them and then applied to the Turkish academic community. The current situation regarding digitalization of Turkey and the world are discussed. Thereafter, the research proposes an internationalization model for the Turkish higher education system, presented in an outline, taking the best practices around the world into account.The presented model involves a digitalization-oriented education approach that aims to increase the opportunities for students to get support from their families and to minimize their socio-economic difficulties.

3. Findings

3.1. ***Digitalization and International Education in the World and Turkey***

Although it was a premium resource in the past, today a large amount of information can be easily accessed, and the main difference can be formed in the processing of the obtained information (Bremer, 2018: 74-75). In most cases, those who will fulfil this function are trained, competent and entrepreneurial individuals. In this context, it is human talent rather than natural resources that creates competitive advantage in the world economy, which is increasingly dependent on knowledge and innovation. International and competitive universities with a high capacity to produce and incorporate this resource are at the forefront (Caberra & Le Lenard, 2015: 11). The main areas of development that such universities should consider in their activities are as follows (de Wit, 2016: 17): (1) Enhancing the quality and diversity in programs involving the mobility of students and academic and administrative staff; (2) Increasing focus on the internationalization of the curriculum and of related learning outcomes; (3) Gaining commitment on a global basis to equal and ethical higher education partnerships. The higher education system also continues its initiatives to ensure these developments in the world and in Turkey.

3.2. Application Examples from the World

IIE, DAAD, British Council, Fullbright, ECTS and Bologna processes, ERASMUS and ERASMUS+, which were discussed in the previous part of the study, will not be mentioned separately in this section. In many parts of the world, efforts are carried out for different focus groups on digital transformation in

education, as well. With the Magellan Project, which was implemented in Portugal in 2008, trainings for the use of technology appropriate for their age were planned for students in the 6-11 age group. Trainings on technological transformation in education were given to 850 teachers and the partners of the Portuguese Ministry of Education. Equipped with information on hardware and software, these teachers also trained approximately 30,000 teachers, students and parents. In Finland, a wide range of technological transformation efforts were realized, from the production of e-content to the delivery of tablets to a number of students through the projects carried out. In line with the studies carried out in Australia in 2007, laptop computers were donated to high school students, the course curricula were updated, the bandwidth was increased and the teachers were given training in the field of IT. All schools in Malaysia have access to 4G technology and e-learning environments have been established. In addition, e-contents were produced and a video library was established for these contents produced (Tekin & Polat, 2014: 1260-1262).

The unplanned face-to-face closure of schools due to COVID-19 (Jack & Glover, 2021: 294), which was declared a pandemic by WHO in March, 2020, and affected millions despite the extraordinary efforts to prevent it, has produced obvious results having impact on the education sector and its policies globally. Efforts to control COVID-19 have resulted in unplanned school closures in more than 100 countries around the world. School closures due to COVID-19 have left more than a billion students out of school. The unplanned closure of schools around the world has strongly brought to the fore the need to adopt and use the latest technologies in education. The COVID-19 pandemic has dramatically increased global demand for online education. Technology has the potential to facilitate education from anywhere, including at home. Therefore, as the world struggles to control COVID-19 or any future epidemic, the use of educational technology platforms will become the new routine for educational institutions, educators and students. Technology has become an integral part of student-teacher connection and communication, especially in times of isolation, quarantine and lockdown due to health crises and other emergencies. Technology has become an essential tool to provide educational, psychological, spiritual and medical advice or support to parents, educators and students during and after the pandemic. Educational institutions that integrated new technologies into their systems before the outbreak of COVID-19 had a comparative advantage over those that had not adopted the technology then. The transition to online education has posed a major challenge for students in countries where there is no relevant infrastructure and facilities that support online education. The problem of the digital divide has also become a major problem for students, especially in rural areas. Technological change and the conditions imposed by time lead to the use of appropriate educational technologies. Access to learning resources such as MOOCs offers multiple learning opportunities to meet students' needs (Onyema et al., 2020).

Despite the colonial period experiences and many negativities, with the political independence of various countries in Africa, the focus has been on maintaining and developing indigenous practices in order to develop a problem-solving education system that is more suitable to respond to social needs, in order to instill moral and ethical values in learners (Omolewa, 2008). 2007). Although the importance attributed to traditional education in Africa has not lost its value, it is seen that some studies have been accelerated in terms of keeping up with technology in education with insufficient opportunities, especially during the COVID 19 pandemic. It is seen that African countries generally have a fragmented education system that needs restructuring and transformation. The COVID 19 process has triggered new formations at this point. As in other countries around the world, countries such as Tanzania, Kenya, South Africa and Uganda have closed their educational institutions due to cases in Africa. While online learning is flourishing in some countries in Africa, this does not appear to be the case for the entire

African continent. It is known that many African countries face many difficulties due to insufficient infrastructure facilities such as networks and computers. With the closure of educational institutions, millions of students in Africa, especially in higher education, continued their education through digital platforms (Paschal & Mkulu, 2020). Progress in the adoption of digital transformation in Africa presents an uneven picture. Some universities and colleges that have the funds to build digital capabilities can create corporate IT departments, while others that don't have the resources have taken a piecemeal add-on approach. At most universities in Africa, ICT has remained a mess of computers and networks with islands of low-bandwidth connections that work poorly or are often interrupted. African higher education institutions are at a stage where they strive to develop their ICT infrastructure, content and skills (Adam, 2003). For these purposes, many African universities are developing collaborations on open educational resources, distance education, and e-learning (Jowi, Knight & Sehoole, 2013: 20).

The global refugee crisis that the world community has faced recently also led to the use of digitalization as a practical solution for internationalization in education. In Germany, a non-governmental organization, Kiron is running a digital project called INTEGRAL for the inclusion of asylum seekers in higher education. INTEGRAL was developed on the basis of the MOOCs (Massive Open Online Courses) (Finardi & Tyler, 2015: 13) model, which was first launched in 2008 and reached 160,000 people in 2011, providing them with accessible, quality and free education through stakeholder institutions. Within the scope of the project, asylum seekers from any part of the world can complete their language education and the first two years of undergraduate education from the system they apply with a document showing their status, and complete their education as registered at a university included in the system, depending on their success. In this way, while contributing to the education of asylum seekers, it is aimed to provide successful international students to universities that support the system (Suter & Rampelt, 2017: 4640-4641).

3.3. Digital Education in Turkey

The rapid transformation of technology into a part of human life has forced countries to harmonize all policy areas with technology. Countries have focused on realizing realistic and result-producing projects regarding digital transformation in every field in order to survive in the ongoing competition among them. Many projects have been carried out in Turkey to keep up with technological developments, as well. In the axis of education policies, it is seen that different projects have come to life since the 1980s. With the FATIH (Movement to Increase Opportunities and Improve Technology) Project, which was initiated in 2010, it was aimed to catch up with the technological developments in the field of education. With this project, it is envisaged that a radical digital transformation will be experienced in the field of education. The main goal is to integrate the education system with technology (Ekici & Yılmaz, 2013). The elements of this project can be grouped under five headings. These are (Yılmaz, 2013); (1) Providing hardware and software infrastructure, (2) Producing e-content and managing the produced content, (3) Making use of the opportunities offered by technology in teaching programs, (4) Providing in-service training to teachers for the use of educational technologies in lessons, (5) Conscious, secure, manageable and measurable information technologies and internet usage.

Here, it would be appropriate to briefly mention the Education Informatics Network (EBA), which ensures the continuity of the Turkish education system in the ongoing COVID 19 pandemic as of today and has made significant contributions to the technological transformation in education since its emergence. EBA, implemented by the General Directorate of Innovation and Educational Technologies, is an online social education platform offered free of charge to individuals. There are many and various

training services in the content of EBA. It is seen that it has been an important tool in providing education services to primary and secondary school students for about ten years, especially during the COVID 19 pandemic. EBA is a platform that was launched in 2012. It has been updated to respond to the changing needs and demands during and before the pandemic, and its scope and content has been expanded. EBA is one of the largest content services in the world. The EBA system allows the realization of many educational services, especially the live lesson used by teachers and students. EBA includes many digital materials such as text, sound, picture video recordings, educational games and activities, tests, etc. (Aktay & Keskin, 2016: 28). FATIH Project and EBA play a key role in the digital transformation of the Turkish education system with their qualifications, contents and opportunities (Bolat, 2016).

The digital transformation carried out in universities is another important development for the younger generation in Turkey. As a matter of fact, today's university students are technology users almost from the moment they are born. The daily life and practices of this audience are shaped by the use of social media, smartphones, tablets and the Internet. It is seen that digital technology deeply affects the living and learning behaviors and methods of this age group. It is possible to say that the beginning of digital transformation in education has become a necessity with today's university students, which is called the "Z" generation. It is inevitable for this social group, which constitutes a significant part of the population in Turkey, to use digital media and tools in education and training. The importance and necessity of digital transformation in higher education is better understood with the rapid spread of the COVID-19 disease worldwide, leading to a pandemic. In order to ensure digitalization in higher education, the "Digital Transformation Project in Higher Education" has been started to be implemented with the slogan of "Digitalizing YOK". The project in question was implemented in eight pilot universities in November 2018 as part of the national digitalization offensive. The scope of this project continues to be expanded (Kocaoğlu & Gezici, 2021). Such as other higher education institutions in various parts of the world Turkey, which has started to work in the field of digital transformation, is now reaping the fruits of these studies. Universities that develop and market MOOCs in particular seem to make significant gains. On the other hand, distance education, open education, etc. web-based education opportunities also offer significant opportunities to higher education institutions.

3.4. International Education in Turkey

Turkey is a country with a high potential for international students due to people of Turkish origin and related nationalities living in various countries of the world. There is a significant population size that has migrated from Turkey to different countries of the world and continues to live in those countries. It was stated in 2020 that, more than 5 million people of Turkish origin lived in 152 countries, primarily European countries (Turkish Ministry of Foreign Affairs, mfa.com.tr). In this situation, although they are tied to the countries they live in by citizenship, the number of people of Turkish origin who are in a relationship with Turkey is close to or higher than the total number of citizens of some countries. This points to a significant potential for international education when related communities are also included. Being aware of this potential, Turkey organized a YÖS (Foreign Student Examination) for the first time in 1981 and accepted international students to Turkey. It was envisaged that students who come to Turkey with this exam would receive education at the universities in the country with their own means (Şahin & Demirtaş, 2014: 89). This examination, which was carried out with the central system until 2010, has been carried out by universities individually every year since 2012 in order to determine the students who will receive education within those universities.

Another internationalization initiative is the Great Student Project, which was initiated in 1992. Within the scope of the project, TCS (Turkish and Related Communities Exam) was held from 1992 to

2008, and a scholarship was provided to two-thirds of the targeted number in this process. About half of the scholarships of the students studying in Turkey were terminated for various reasons, and only half of the students whose scholarships continued were able to graduate. In short, 27122 of the 37817 scholarship quotas could be used, and the number of students who graduated until 2008 was 7391 (Bazarbayeva, 2018: 5-6). Even though they are from kin and related communities, these students, who were included in the Turkish higher education system within the scope of the project, experienced adaptation problems. Thus, it was not possible to reach the targeted level of success (Kılıçlar, Sarı & Seçmiş, 2012: 158-159). The aforementioned project was terminated with the activation of Turkey scholarships initiated in 2012 (Şahin & Demirtaş, 2014: 89). Türkiye Scholarships program is carried out by YTB (Presidency for Turks Abroad and Related Communities) established in 2010 (Bolat, 2017: 8). The number of applications for Turkey Scholarships in 2020 was 158168 and 3680 students benefited from the scholarships (YTB, 2021 25). It is seen that three-quarters of the students who apply are from South Asia, the Middle East and Sub-Saharan Africa, 10% from North Africa and 6.5% from Central Asia and the Caucasus. The rate of students coming from Europe, America and the Balkans is 2.7% in total (YTB, 2021: 34).

The Bologna Process, which was started in 1999 and to which Turkey was involved in 2001, is also important for the internationalization of the Turkish higher education system. In this way, mutual student and academic staff mobility with Europe, quality and harmony in higher education are aimed. Activities such as the active use of the Erasmus+ Program, which has 57 members representing Turkey in the European University Association (EUA), are also signs that Turkey has achieved gains in this regard. More than 500 thousand Turkish citizens went to Europe from 2014 to 2019 within the scope of the Erasmus+ Program, which is carried out by the European Union Education and Youth Programs Center (Turkish National Agency). Within the scope of the program, 251 higher education projects were accepted from Turkey in 2018, and 21,445 people benefited from them with a budget of approximately 50 million Euros (TGSP, 2021: 25). It is possible to describe the Mevlana Exchange Program, which was launched in 2013, as a version of the Erasmus+ Program financed by Turkey. Within the scope of this program, 3071 foreign students received education in Turkey and 2107 Turkish students abroad between 2013-2020, and a total of 2555 academic personnel exchange programs in Turkey and abroad benefited from it (YÖK, 2021: 49-50). Only in the 2018-2019 academic year, 6753 foreign students and 1585 lecturers visited Turkey within the scope of Erasmus+ and Mevlana programs; 19556 Turkish students and 2227 lecturers went abroad (YÖK, 2020: 79-85).

3.5. ***The Potential of Digitalization to Contribute to International Education in Turkey***

The relationship between education and development points to the possibility of solving the problem at its source in order to prevent people from having serious problems such as becoming refugees. While education supports development on the one hand, it is also affected by the level of welfare, income justice and development (Gezici, 2020: 199). There is a similar cycle for digitization. The realization of internationalization in education through digitalization has the potential to cause the digital divide to deepen the existing educational divide. People living in areas that are victims of socio-economic and scientific backwardness, such as African countries, may miss this opportunity as they are deprived of the infrastructure and equipment to benefit from this opportunity (Akinwamide & Adedara, 2012: 40). This raises one of the most fundamental questions to be asked about international education. It is likely that the determination of the success of the activities carried out in this field in meeting the expectations and realizing its potential (Knight & de Wit, 2018: 3) will be the focus of future efforts. The answers to

the question from various views will reveal the situation. At present, international and digital education initiatives in developed countries have become important brands in this regard. However, it is clear that there are measures to be taken to enable those with the least limited opportunities to benefit from the opportunities in this field. In this respect, digitalization should be used as an effective, accessible and equalizing tool within the framework of this goal.

Some of the world countries has to lag behind the others in terms of the digital transformation process in education. In addition to these obligations experienced by countries and societies, it can be said that there are some obstacles to the realization of digital transformation in education. First one is reluctance to adopt new technology and systems. People tend to get used to doing things a certain way and are quite reluctant to leave their comfort zone. When a new technology or system has to be adopted, possible failure is feared and reluctant to learn new skills or processes. The first step is to ensure that individuals clearly understand the benefits of such changes. The second hurdle is the skill gap. Skills are at the heart of innovation. The biggest challenge to digital transformation is the lack of sufficient resources and/or experts. Educational institutions must compete for increasingly hard-to-find talent in areas ranging from user experience to security to the cloud. On the other hand, it is a basic requirement that educational institutions that take an active role in digital transformation contribute to the training of such experts. The third concerns legacy integration. Existing legacy systems are often crucial to processes in organizations; however, modern web-based business applications cannot guarantee compatibility with them. This is where organizations run into a snag and have to spend more on an upgrade or custom integration. As a matter of fact, digital transformation includes the radical transformation of existing systems. The fourth obstacle can be called the starting point. When it comes to transforming the developed strategy into a concrete action plan, the most important challenge is; "Where to start?" to find the right answer to the question.

The starting point and how it's done is the key to success. It is essential to define a business process that is not too simple or too complex, and of reasonable volume. The time and effort required to digitally transform this designed business process is to be determined accurately and the starting point is determined. The fifth is about the accuracy of the data. Like most organizations, data in educational institutions is in a pile. It is important to get the appropriate information from the data pile. The questions of accuracy and reliability come into play here. What data was used to implement new processes designed for the future? Which dataset is used to make an effective business decision? It is inevitable that remarkable, timely and precise data are needed to make informed decisions (Deshpande, 2018).

The facts listed above involve valuable opportunities for the countries to serve those people, who do not have the chance to have a quality education. They can do their best to benefit from the chance they will have. For the countries such as Turkey, who is close to those people geographically and culturally, that is also an opportunity to change the "*zeit geist*". The destiny of the underdeveloped countries may be changed by the well-educated international students. They also become cultural envoys of Turkey in their countries.

4. Proposed model

With the widespread use of the Internet, the ability to transmit instant audio, video and text has led to the rapid abandonment of traditional communication tools and the transformation of communication. The field of education and training is one of the areas most affected by this change.

Especially with the COVID 19 epidemic affecting the whole world, as a continuation of the transformation that is already being experienced, the act of teaching/learning has left the physical classroom environments and has become performed in virtual environments through new technologies and the Internet. Online trainings are being developed rapidly in both pedagogical and technical context (Sarıtaş & Barutçu, 2020: 5-6). Change brings with it the transformation of existing concepts in their content and the production of new concepts. In this context, e-content, which plays a critical role in providing e-education, is one of the most focused concepts in the last period. It can be argued that the production and management of e-content has become very important. Because the format of information is rapidly changing, the methods of providing access to information are diversifying, and most importantly, the ability of those who demand information, especially the young generation, to use information technologies skillfully increases.

The knowledge and skills needed to keep up with the age can be accessed through digital platforms as well as physical classrooms. The fact that individuals use technological tools such as computer, internet, smart phone, etc. closely and benefit from digital tools and environments with the intention of learning triggers a great transformation in education. It is now seen as a necessity to build the useful platforms for the provision of e-learning and to increase the competence of students in using digital tools. E-education and e-learning trigger a radical transformation in the materials to be used in this process, as well as changing the methodology, environment and conditions regarding education and training (Yılmaz, 2013; Bayramdurdyyeva, 2019).

Modern information technology, which constitutes the basic infrastructure of digital education, is based on microelectronics, which is rapidly turning into nanoelectronics. Addiction to smart technology is changing the brain wiring diagram and redefining nervous systems. Intelligent technologies not only unravel human knowledge schemas and invalidate humans emotionally, but also reconfigure their neurons to prefer technology to real human interaction (Peters, 2020). This situation evokes the situation that the phenomenon of education can transform with all its dynamics. Because it is possible that digital technologies will be used in medical education in the near future (Şahin, 2003) or that a self-learning machine with artificial intelligence will be included in the education system as a teacher. Being aware of this situation, it is important to perceive digitalization as the contemporary key to the massification of education. Developed in line with this goal and prominent with applications such as Mendeley, Coursera, iTunes U, Hopscotch, Duolingo, Photomath, Khan Academy, TED Conferences, EdX, MOOCs are compatible with the student's learning as they desire, wherever and whenever they need it (Bright 2019: 90-91). It has a flexible and sensitive digital education potential that is accessible and provides support in the fields it is demanded (Sanborn & Polacek, 2015: 97). On the other hand, MOOSs also have their own limitations. As of today, it has been understood that in addition to basic accessibility, differentiated barriers to entry and participation targeting both income generation and learning outcomes need to be taken into account (Kögler, Egloffstein & Schönberger, 2020; Yuan & Powell, 2013).

The level of internationalization, which has an important place in the success rankings of educational organizations, is generally determined by quantitative rather than qualitative measurements. This approach ignores the possibility that qualitative assessments may indicate very different results when compared to these measures. Knight (2011) lists the myths of internationalization in higher education in this context as follows: (1) Foreign students as internationalization agents, (2) International reputation as a proxy for quality, (3) International institutional agreements, (4) International accreditation, (5) Global branding Among the mentioned myths, especially "foreign students are seen as internationalization agents" and "international reputation as a proxy for quality" draw attention to

important problems. The first of these is related to the fact that foreign students who are exposed to behaviors such as racism, discrimination or exclusion may turn into a bad advertising individual rather than a cultural agent. The second element is that international reputation, which is not accompanied by quality, may not be very successful in reflecting the truth about an institution. In particular, achieving a certain level of success for foreign students requires a significant amount of effort and real quality (Knight, 2011).

There is no single way to become a center of attraction in international education or to ensure continuity in high achievement. Appropriate strategies and policies should be established by taking into account the contingency, which is important in this regard (Levent & Karaevli, 2013: 115). Myths accepted without question cause misunderstanding and waste of resources. In this context, the misconceptions about internationalization in higher education pointed out by De Wit (2017) draw attention. These misconceptions are; (1) insistence on English as the language of instruction, (2) the idea that mobility alone will meet internationalization, (3) overemphasis on international content, (4) overemphasis on the quantity of students, (5) matching the quality expectation with a small number of students, (6) intercultural and international capabilities being overlooked, (7) the belief that collaborations alone will lead to more internationalization, (8) the idea that higher education is international in nature, (9) internationalization is seen as a sensitive target rather than a tool (Leask, 2015: 17 ;Cabrera and Le Renard, 2015 ; de Wit, 2017; Knight & de Wit, 2018).

5. Conclusion

International education is no longer a marginal element of the field, given all the experience, progress and opportunities gained in the field of internationalization in education. Institutional plans, regional initiatives, national strategies and international efforts in the field indicate that this approach should not be at the edge, but at the center of the educational activity. Developments in information and communication technologies show that initiatives on this subject can be significantly supported by making use of digitalization. Thanks to technology, education, like knowledge, has become easily distributable in a “liquid ideospace”. Therefore, taking the advantages of the benefits of digitalization by Turkey, which invests heavily in this field, will help support the potential of disadvantaged people and regions. However, it is necessary to learn from examples with low success levels such as the Great Student Project. For instance, in the model to be created, factors that affect student success such as socio-economic status and family support should be considered.

At the same time, the situation of potential countries that will provide resources for students who want to study in Turkey should also be considered. The demand for international education generally moves from an underdeveloped focus to a developed one, from east to west, from south to north. Considering this and the demand data of the past period, the fact that the countries of origin with high international student potential in terms of Turkey are located in the Middle East, Africa and Asia, should be faced. It is possible to add a new dimension to the internationalization efforts in education by developing the experiences of MOOCs and INTEGRAL for the countries within this scope. For example, through the development of cooperation models and satellite campuses to be established in underdeveloped countries, it is possible to enable students of higher education age in these countries to receive language education and their first one or two years of education in their own countries with digital opportunities. The trainings to be given in this period, the integration to be implemented and the linguistic and cultural adaptation studies will minimize situations such as culture shock that students may experience while preparing them for their continuing education if they are found successful. Thus,

the burden of students and organizations supporting their education within this scope will be reduced. In addition, their possibility of success will be evaluated before they reach the host country, thanks to the entitlement to continuing education according to the gains of those included in the program. In this way, after reaching the host country in international education, the number of unsuccessful students and the level of failure will be reduced and the opportunities offered will be used effectively. It will be possible to use the additional resource created in this way to establish the necessary infrastructure in target countries with weak digital infrastructure. Finally, adding the views of the stakeholders to the aforementioned system is another element that will be needed at every stage to increase this efficiency and positive outputs.

References

Adam, L. (2003). Information and communication technologies in higher education in africa: initiatives and challenges, *Journal of Higher Education in Africa / Revue de l'enseignement supérieur en Afrique, 1*(1), 195-221. https://www.jstor.org/stable/24486119

Akinwamide, T. K. & Adedara, O. G. (2012). Facilitating autonomy and creativity in second language learning through cyber-tasks, hyperlinks and net-surfing, *English Language Teaching, 5*(6), 36-42. https://eric.ed.gov/?id=EJ1079499

Aktay, S. & Keskin, T. (2016). Educational Information Network (Eba) Review. Journal of Educational Theory and Practice Research , 2 (3), 27-44. https://dergipark.org.tr/en/pub/ekuad/issue/28248/300311

Altbach, P. G. & Knight, J. (2007). The internationalization of higher education: Motivations and realities, *Journal of Studies in International Education, 11*(3/4), 290-305. https://journals.sagepub.com/doi/abs/10.1177/1028315307303542

Amaral, M. P. do & Fossum, P. R. (2021). Education gone global: Economization, commodification, privatization and standardization, international perspectives on school settings, In A. Wilmers & S. Jornitz (Eds.), *Education policy and digital strategies* (pp. 301-309). Verlag Barbara Budrich.

Bahar, O. & Bozkurt, K. (2010). Gelişmekte olan ülkelerde turizm-ekonomik büyüme ilişkisi: Dinamik panel veri analiz, *Anatolia: Turizm Araştırmaları Dergisi, 21*(2), 255-265. https://dergipark.org.tr/en/pub/atad/issue/16800/174511

Bannister, F. & Connolly, R. (2011). Trust and transformation: A proposed framework for research, *Government Information Quarterly, 28*(2), 137-147. https://www.sciencedirect.com/science/article/pii/S0740624X11000062

Bannister, F. & Connolly, R. (2014). ICT, public values and transformative government: A framework and programme for research, *Government Information Quarterly, 31*, 119-128. http://dx.doi.org/10.1016/j.giq.2013.06.002

Baumöl, U. ve Bockshecker, A. (2017). Evolutionary change of higher education driven by digitalization. *Proceedings of 16th International Conference on Information Technology Based Higher Education and Training (ITHET)*, (pp. 1-5), *Ohrid, Macedonia.* https://doi.org/10.1109/ITHET.2017.8067811

Bayramdurdyyeva, G. (2019). Uluslararası öğrencilerin başarılarını etkileyen faktörler, *International Journal of Humanities and Education (IJHE), 5*(11). 509-524.

Bazarbayeva, L. (2018). *Türkiye'nin uluslararası öğrenci politikası*, https://www.udef.org.tr/media/academic/pdf/2ae7baa7fe0f4a96b3ce0f1e08781ca0.pdf

Bedenlier, S, Kondakci, Y. & Richter, O. Z. (2018) Two decades of research into the internationalization of higher education: major themes in the journal of studies in international education (1997-2016), *Journal of Studies in International Education, 22*(2) 108-135. https://doi.org/10.1177/1028315317710093

Bergamaschi, M., Bettinelli, C., Lissana, E. & Picone, P. M. (2020). Past, ongoing, and future debate on the interplay between internationalization and digitalization. *Journal of Management and Governance.* https://doi.org/10.1007/s10997-020-09544-8

Bikalenko, M, Vekua, S., Telegina, M. & Khabdaev, G. (2021). *New challenges of modern digital society*, Paper Presented at SAHD 2021 - 5th International Scientific and Practical Conference 2021 "Modern Science: Problems and Development Prospects (Social and Humanitarian Directions)". https://doi.org/10.1051/shsconf/202110102030

Bogovız, A. V., Gımelshteyn, A. V., Shvakov, E. E., Maslova, E. V. & Kolosova, A. A. (2018). Digitalization of the Russian education system: Opportunities and perspectives, *Quality-Access to Success*, *19*(2), 27-32. http://case.asu.ru/files/form_312-31738.pdf

Bolat, M. A. (2017). Turkey's international student policy: due diligence and recommendations. International Student Social, Economic and Cultural Perspectives (pp. 8-19), Istanbul: Harf Yayın İletişim .https://www.researchgate.net/profile/MehmetBolat/publication/329935947_Turkiye'nin_Uluslararasi_Ogrenci_Politikasi_Durum_Tespiti_ve_Oneriler/links/5c249f63a6fdccfc706b6832/Tuerkiyenin-Uluslararasi-Oegrenci-Politikasi-Durum-Tespiti-ve-Oeneriler.pdf

Bolat, Y. (2016). Ters yüz edilmiş sınıflar ve eğitim bilişim ağı (EBA), *Journal of Human Sciences, 13*(2), 3373-3388. https://doi.org/10.14687/jhs.v13i2.3952

Bradford, S. B. & Federman, J. E. (2013). E-learning in postsecondary education, *The Future of Children, 23*(1), 165-185. https://www.jstor.org/stable/23409493

Bremer, U. (2018). *Internationalization strategies of German universities*, Springer Gabler.

Brennen, S. & Kreiss, D. (2014). Digitalization and digitization. http://culturedigitally.org/2014/09/digitalization-and-digitization/

Brovey, A. J. & Brovey, D. J. (2005). Technologies in education, In S. J. Farenga & D. Ness (Eds.), *Encyclopedia of education and human development* (pp. 175-180). M.E. Sharpe, Inc.

Bruhn, E. (2020). *Virtual internationalization in higher education*. Wbv Media GMBH & Co. KG.

Cabrera, Á. and Le Renard, C. (2015). Internationalization, higher education, and competitiveness, In E. Ulberg (Ed.), *New perspectives on internationalization and competitiveness: Integrating economics, innovation and higher education* (pp. 11-16). Springer. https://ideas.repec.org/h/spr/sprchp/978-3-319-11979-3_2.html

Castaldi, L., Iscaro, V., Maresca, P & Mazzoni, C. (2019). *Digital transformation and internationalization: A complexity approach*. Paper Presented at Digital Transformation and Internationalization of Firms: Prospects, Challenges and Future Agenda Conference, Palermo Italy. is.gd/GZn06h

Çetindamar, D., Phaal, R. & Probert, D. (2016). *Technology management: activities & tools* (2nd ed), Palgrave Macmillan Publishers Limited. t.ly/UGX3

Childress, L. K. (2009). Internationalization plans for higher education institutions, *Journal of Studies in International Education, 13*(3), 289-309. https://journals.sagepub.com/doi/abs/10.1177/1028315308329804

de Wit, H. & Altbach, P. G. (2021) Internationalization in higher education: global trends and recommendations for its future, *Policy Reviews in Higher Education, 5*(1), 28-46, https://doi.org/10.1080/23322969.2020.1820898

de Wit, H. (2016). Misconceptions about (the End of) internationalisation: The current state of play, In E. Jones, R. Coelen, J. Beelen & H. de Wit (Eds.), *Global and local internationalization* (pp. 15-22). Sense Publishers. https://brill.com/downloadpdf/book/edcoll/9789463003018/BP000004.pdf

de Wit, H. (2017). Global: Internationalization of higher education: Nine misconceptions, In G. Mihut, P. G. Altbach & H. de Wit (Eds.), *Global and local internationalization* (pp. 9-12). Sense Publishers. https://brill.com/view/book/edcoll/9789463511612/BP000004.xml

Deshpande, A. (2018), How to bring digital transformation to education. https://goo.gl/TfexYh

Didham, R. J. & Ofei-Manu, P. (2015). The role of education in the sustainable development agenda: Achieving the sustainable development goals report, Institute for Global Environmental Strategies. http://www.jstor.com/stable/resrep00786.12. https://doi.org/10.22158/grhe.v3n3p

Edmonds, L. J. (2012). What internationalization should really be about?. http://www.universityaffairs.ca/what-internationalization-should really-be-about.aspx

Ekici, S. & Yılmaz, B. (2013). FATİH projesi üzerine bir değerlendirme, *Türk Kütüphaneciliği, 27*(2), 317-339.

Farenga, S. J. & Ness, D. (2005). Introduction, In S. J. Farenga & D. Ness (Eds.) *Encyclopedia of education and human development* (pp. xxiii- xxvi), M.E. Sharpe, Inc. https://books.google.com/books?hl=en&lr=&id=gBt_v5EP-1EC&oi=fnd&pg=PA161&ots=IH8abJRb-E&sig=WfZkIB_hlmtgexh0cYOc5LXGDQo

Finardi, K. R. & Tyler, J. (2015). *The role of English and technology in the internationalization of education: Insights from the analysis of MOOCs*, Paper Presented at the 7th International Conference on Education and New Learning Technologies, Barcelona, Spain. t.ly/Xrlj

Gao C. Y. (2019). *Measuring university internationalization: Indicators across national contexts*, Palgrave Macmillan. t.ly/YalQ

Gezici, H. S. (2021), E-Education, In Y. Taşpınar (Ed.) Digitalization: A Multidisciplinary Perspective (pp. 193-214), Nobel Academic Publishing. https://dosyalar.nevsehir.edu.tr/56e85c73ffb12280ac84d4844f057e38/egitimde-dijitallesme-cagi-3-pdf.pdf

Göçer, A (2013). Türkçe öğretmeni adaylarının dil kültür ilişkisi üzerine görüşleri: Fenomenolojik bir araştırma, *Erzincan Üniversitesi Eğitim Fakültesi Dergisi, 15*(2), 25-38. https://www.academia.edu/download/63826467/aligocer_erzincan_ef_dergisi20200704-20646-hqkfyg.pdf

Gray, P. (2008). A brief history of education. https://www.psychologytoday.com/intl/blog/freedom-learn/200808/brief-history-education

Handa, N. (2018). *Education for sustainability through internationalisation: Transnational knowledge exchange and global citizenship*, Palgrave Macmillan. https://www.palgrave.com/gp/book/9781137502964

Huo, X. (2020). *Higher education internationalization and English language instruction: Intersectionality of race and language in Canadian universities*, Springer. t.ly/Au8z

International Institute for Applied Systems Analysis (IIASA) (2018). Education and the sustainable development agenda. http://www.jstor.com/stable/resrep24554

Jack, T. & Glover, A. (2021). Online conferencing in the midst of COVID-19: an "already existing experiment" in academic internationalization without air travel, *Sustainability: Science, Practice and Policy, 17*(1), 292-304. https://doi.org/10.1080/15487733.2021.1946297

Jibeen, T., Khan, M. A. (2015). Internationalization of higher education: Potential benefits and costs, *International Journal of Evaluation and Research in Education (IJERE), 4*(4), 196-199. https://eric.ed.gov/?id=EJ1091722

Jowi, J. O., Knight, J. & Sehoole, C. (2013). Internationalisation of African higher education: Status, challenges and issues, In D. E. Neubauer, K. H. Mok & S. Edwards (Eds.), *Contesting globalization and internationalization of*

higher education: Discourse and responses in the Asia Pacific regions (pp. 49-64), Palgrave Macmillan. https://brill.com/downloadpdf/book/edcoll/9789462093119/BP000003.pdf

Kan, Y. & Xu, B. (2019). The third road beyond nationalism and globalization? China's belt and road initiative and its implications for higher education, In S. J. Farenga & D. Ness (Eds.), Encyclopedia of education and human development (pp. 175-180). M.E. Sharpe, Inc. https://link.springer.com/chapter/10.1007/978-3-030-26230-3_5

Kehm, B. M., & Teichler, U. (2007). Research on internationalisation in higher education, *Journal of Studies in International Education, 11*, 260-273. https://doi.org/10.1177/1028315307303534

Kılıçlar, A, Sarı, Y & Seçilmiş, C. (2012). Türk dünyasından gelen öğrencilerin yaşadıkları sorunların akademik başarılarına etkisi: Turizm öğrencileri örneği, *Bilig / Türk Dünyası Sosyal Bilimler Dergisi, 14*(6), 157 – 172. https://app.trdizin.gov.tr/publication/paper/detail/TWpBeU9UazRPQT09

Kireçci, M.A., Bacanlı, H., Erişen, Y., Karadağ, E., Çeliköz, N., Dombaycı, M. A., Toprak, M., Şahin, M. (2016). The internationalization of higher education in Turkey: Creating an index, *Education and Science, 41*(87), 1-28. https://doi.org/10.15390/EB.2016.6223

Knight, J. & de Wit, H. (2018). Internationalization of higher education: Past and future, *International Higher Education, 95*(Fall), 2-4. https://www.voced.edu.au/content/ngv:59001

Knight, J. (1999). *Quality and internationalisation in higher education*, Organisation for Economic Co-operation and Development. https://www.voced.edu.au/content/ngv:59001

Knight, J. (2003). Updating the definition of internationalization, *International Higher Education, 33*(Fall), 2-3.

Knight, J. (2004). Internationalization remodelled: definitions, rationales and approaches, *Journal for Studies in International Education, 8*(1), 5-31. https://journals.sagepub.com/doi/abs/10.1177/1028315303260832

Knight, J. (2007). Internationalization: Concepts, complexities and challenges, In J. J. F. Forest & P. G. Altbach (Eds.), *International handbook of higher education - part one: Global themes and contemporary challenges* (pp. 207-228), Springer. https://link.springer.com/chapter/10.1007/978-1-4020-4012-2_11

Knight, J. (2011). Five myths about internationalization, *International Higher Education, 62*(Winter), 14-15.

Kocaoğlu, M. & Gezici, H. S. (2017). Bir dijital dönüşüm uygulaması olarak yükseköğretimde dijital dönüşüm projesi, *Proceedings of KAY-FOR 17*, (pp. 239-251), *Karaman, Turkey*. http://psychologyandeducation.net/pae/index.php/pae/article/view/4362

Kocaoğlu, M. & Gezici, H. S. (2021). Digital transformation applications in higher education in COVID-19 pandemic process, *Psychology and Education, 58*(3), 2774-2788. http://psychologyandeducation.net/pae/index.php/pae/article/view/4362

Kögler, K., Egloffstein, M. & Schönberger, B. (2020). Openness in MOOCs for training and professional development: An exploration of entry and participation barriers, In E. Wuttke, J. Seifried & H. Niegemann (Eds.), *Vocational education and training in the age of digitization: Challenges and opportunities* (pp. 205-223), Verlag Barbara Budrich. https://madoc.bib.uni-mannheim.de/57384/?rs=true&

Komara, E. (2020). The challenges of higher education institutions in facing the industrial revolution 4.0, *HONAI: International Journal for Educational, Social, Political & Cultural Studies, 3*(1), 15-26. https://www.journals.mindamas.com/index.php/honai/article/view/1313

Kreber, C. (2009). Different perspectives on internationalization in higher education, *New Directions for Teaching and Learning*, *118*, 1-14. https://onlinelibrary.wiley.com/doi/abs/10.1002/tl.348

Lääts, K., Kask, K., Täks, V., Alexandr, T., Tomáš, L. & Kleinheyer, B. (2019). *White paper on digital transformation of universities' internationalization process*, Collaboration in Higher Education for Digital Transformation on European Business (CHEDTEB). https://www.igi-global.com/viewtitle.aspx?titleid=290631

Larsen, M. A. (2016). *Internationalization of higher education: An analysis through spatial, network, and mobilities theories,* Palgrave Macmillan. https://link.springer.com/content/pdf/10.1057/978-1-137-53345-6.pdf

Laurence, D. (2018). Trends in access to higher education in Japan: One institution's responses, In E. Stigger, M. Wang, D. Laurence & A. Bordilovskaya (Eds.), *Internationalization within higher education: Perspectives from Japan* (pp. 21-36), Springer. https://link.springer.com/chapter/10.1007/978-981-10-8255-9_2

Lazarou, E & Trifan, L. (2018). Opportunities and challenges of digitalization for international academic cooperation using the example of the german higher education, *Proceedings of the 14th International Scientific Conference eLearning and Software for Education* (pp. 201-208)*, Bucharest, Romania*. https://doi.org/10.12753/2066-026X-18-098.

Leask, B. (2015). *Internationalizing the curriculum*, Routledge.

Levent, F & Karaevli, Ö. (2013). Uluslararası öğrencilerin eğitimine yönelik politikalar ve Türkiye için öneriler, *Eğitim Bilimleri*, 38, https://doi.org/10.15285/EBD.2013385569

Manta, O. & Militaru, J. (2020). Artificial intelligence in the context of digitalization and internationalization of the higher education system, *TEM, 1*(2). https://doi.org/10.6897/IETITEM.202010_1(2).0001

Mattila, A. (2015). The future educator skills in the digitization era Effects of technological development on Higher Education, *Proceedings of the 2015 Fifth International Conference on e-Learning* (pp. 212-215), *Manama, UAE*. https://ieeexplore.ieee.org/abstract/document/7478233/

McAuley, A., Stewart, B., Siemens, G. & Cormier, D. (2010). *Massive open online courses: The MOOC model for digital practice*, University of Prince Edward Island. https://www.academia.edu/download/43171365/MOOC_Final.pdf

Niegemann, H. M. (2020). Introduction: A look back ahead, In E. Wuttke, J. Seifried & H. Niegemann (Eds), *Vocational education and training in the age of digitization* (pp. 15-20), Verlag Barbara Budrich. https://library.oapen.org/bitstream/20.500.12657/42706/1/9783847413356.pdf

Omolewa, M. (2007). Traditional African modes of education: Their relevance in the modern world, *International Review of Education, 53*, 593-612. https://doi.org/10.1007/s11159-007-9060-1

Onyema, E. M., Eucheria, N. C., Obafemi, F. A., Sen, S., Atonye, F. G., Sharma, A. & Alsayed, A. O. (2020). Impact of Coronavirus pandemic on education, *Journal of Education and Practice, 11*(13), 108-121. https://genbase.iiep.unesco.org/workspace/applis/epidoc/fichiers/EPIDOC/38698_52821_56584_1_PB.pdf

Organisation For Economic Cooperation and Development (OECD). (2004). *Internationalisation and trade in higher education: Opportunities and challenges*, Organisation for Economic Cooperation and Development. https://www.oecd-ilibrary.org/education/internationalisation-and-trade-in-higher-education_9789264015067-en

Parlak, B. (2019). Bir kamu hizmeti ve politikası alanı olarak eğitimde teknolojik gelişimin izlerini sürmek ve dijital eğitim, *Tesam Akademi Dergisi, 6*(1), 77-95. https://dergipark.org.tr/en/pub/tesamakademi/article/528000

Paschal, M. J. & Mkulu, D. G. (2020). Online classes during COVID-19 pandemic in higher learning institutions in Africa, *Global Research in Higher Education, 3*(3), 1-21. https://www.ijods.com/article/evaluating-the-challenges-in-online-learning-during-the-covid-19-pandemic-in-a-middle-secondary-10970

Perez, C. (2010). Technological revolutions and techno-economic paradigms, *Cambridge Journal of Economics, 34*(1), 185-202. https://doi.org/10.1093/cje/bep051

Pestereva, N., Yuhua, S., Belyakova, M. & Jgin, F. (2019). The formation of the Eurasian research-and-education ecosystem and the internationalization of educational platforms: The case of Russia and China, *European Journal of Contemporary Education, 8*(4): 841-854. https://doi.org/10.13187/ejced.2019.4.841

Peters, M. A. (2020). Critical philosophy of technological convergence: Education and the nano-bio-info-cogno paradigm, In M. Stocchetti (Ed.), *The digital age and its discontents: Critical reflections in education* (pp. 235-252), Helsinki University Press. https://doi.org/10.33134/HUP-4-12

Petrusevich, D. A. (2020). Modern trends in the digitalization of education, *Journal of Physics: Conference Series, 1691*, 012223, http://dx.doi.org/10.1088/1742-6596/1691/1/012223

Pollitzer, E. (2019). Creating a better future, *Journal of International Affairs, 72*(1), 75-90.

Sahin, I. (2003). Globalization, Digital Technology And New Approaches In Education. Turkish Journal of Educational Sciences , 1 (4). https://dergipark.org.tr/en/pub/tebd/issue/26130/275240

Şahin, M. & Demirtaş H. (2014). Academic success levels of foreign students at universities, the problems they experience and solution suggestions. Journal of National Education , 44 (204), 88-113. https://dergipark.org.tr/en/pub/milliegitim/issue/36160/406467

Sanborn, L. & Polacek, K. M. (2015). The future of academic librarianship: MOOCs and the robot revolution, *Reference & User Services Quarterly, 55*(2), 97-101. https://www.jstor.org/stable/pdf/refuseserq.55.2.97.pdf

Sarıtaş, E. & Barutçu, S. (2020). Digital transformation in teaching and students' readiness for online learning: A study on Pamukkale University students during the pandemic period. Journal of Internet Applications and Management , 11 (1), 5-22. https://dergipark.org.tr/en/pub/iuyd/issue/54593/706397

Suter, R. & Rampelt, F. (2017). Digital solutions for alternative routes into higher education - possibilities and challenges of digital teaching and learning scenarios for refugees: First results from the INTEGRAL project, *Proceedings of EDULEARN17 Conference* (pp. 4640-4645)*, Barcelona, Spain*. t.ly/aeg1

Tekin, A., & Polat, E. (2014). Technology Policies In Education: Turkey And Several Other CountrieS. Journal of Theory & Practice in Education (JTPE), 10(5). https://tgsp.org.tr/

TGSP (Turkish Youth NGOs Platform). (2021). A guide for non-governmental organizations: International students in Turkey, Turkish Youth NGOs Platform. https://tinyurl.com/hah8pj5c

Toprak, M., Bayraktar, Y., Erdoğan, A., Kolat, D. & Şengül, M. (2019). Developing a tool for quality and accreditation of a new generation university in the digitalized society: The case of a thematic-technical university, *Economics, 7*(2), 69-89. https://doi/.org10.2478/eoik-2019-0017

Tuomi, I. & Miller, R. (2011). Learning and education after the industrial age. http://www.meaningprocessing.com/personalPages/tuomi/articles/LearningAndEducationAfterTheIndustrialAge.pdf

Turkish Ministry of Foreign Affairs (2020). Turkish citizens living abroad, Ministry of Foreign Affairs. https://www.mfa.gov.tr/the-expatriate-turkish-citizens.en.mfa

Valcke, J. (2020). Beyond English-medium education: from internationalization to sustainable education, In H. Bowles & A. C. Murphy (Eds*), English-medium instruction and the internationalization of universities* (pp. 259-280), Palgrave Macmillan. https://link.springer.com/chapter/10.1007/978-3-030-47860-5_11

van der Waerden, B. L. (1985). *A history of algebra from al-Khwärizmi to Emmy Noether*, Springer-Verlag Berlin Heidelberg GmbH. https://www.springer.com/gp/book/9783642516016

Verbytska. A & Nataliia, K. (2020). Competitiveness of higher education system: International dimension, *Economics & Education, 5*(1), 7-14.

Volchenkova, K. N., Evsina, E. V., Elsakova, R. Z., Serebrennikova, E. V., & Batina, E. V. (2019). Mastering interpersonal and virtual communication skills of the education process participants in E-learning. *Proceedings of the 2019 IEEE International Conference Quality Management, Transport and Information Security, Information Technologies IT and QM and IS 2019* (pp 648-652), *Sochi, Russia*. htpps://doi.org/10.1109/ITQMIS.2019.8928453

Waghid, Y., Waghid, Z. & Waghid, F. (2019). The fourth industrial revolution reconsidered: On advancing cosmopolitan education, *South African Journal of Higher Education, 33*(6), 1-9. https://doi.org/10.20853/33-6-3777

Welsh, E. T., Wanberg, C. R., Brown, K. G. & Simmering, M. J. (2003). E-learning: Emerging uses, empirical results and future directions, *International Journal of Training and Development, 7*(4), 245-258. https://onlinelibrary.wiley.com/doi/abs/10.1046/j.1360-3736.2003.00184.x

World Health Organization (WHO) (2020). *Digital education for health workforce: Evidence, potential role and future trends digital education for building health workforce capacity report*, World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/331524/9789240000476-eng.pdf

Yılmaz, B. A. (2013). *Eğitimde FATİH projesi ve eğitim bilişim ağı (EBA)*. Paper Presented at the Akademik Bilişim 2013 – XV. Akademik Bilişim Conference, Akdeniz Üniversitesi, Antalya. https://ab.org.tr/ab13/kitap/eski/319.pdf

YÖK (Higher Education Institution). (2020). University monitoring and evaluation general report 2020, Higher Education Institution. https://www.yok.gov.tr/Documents/Yayinlar/Yayinlarimiz/2021/universite-izleme-ve-degerlendirme-genel-raporu-2020.pdf

YÖK (Higher Education Institution). (2021). New YÖK projects in higher education: Target-oriented internationalization in higher education, Higher Education Institution. https://www.yok.gov.tr/Sayfalar/Haberler/2021/yuksekogretimde-hedef-odakli-uluslararasilasma-raporu-yayimlandi.aspx

YTB (Presidency for Turks Abroad and Related Communities). (2021). Turkey scholarships 2020 annual report, Presidency for Turks Abroad and Related Communities . https://www.ytb.gov.tr/uluslararasi-ogrenciler/turkiye-burslari

Yuan, L. & Powell, S. (2013). *MOOCs and open education: Implications for higher education. A white paper*, CETIS. https://e-space.mmu.ac.uk/619735/1/MOOCs-and-Open-Education.pdf