A creative research proposal in citizenship education: Digital disaster literacy curriculum

Ömer Cem Karacaoğlu[1]

[1] *Associate professor, Izmir Turkey*
Email: cemkaracaoglu@gmail.com
Orcid Id=https://orcid.org/ 0000-0003-2474-5106

Abstract

The purpose of the research is to determine the necessary competencies and skills during, before and after the disaster, to develop the disaster literacy scale according to these skills and to design the disaster literacy digital curriculum. The research has both qualitative and quantitative features. The scale development process in the research will be carried out with quantitative analysis. Other techniques constitute the qualitative dimension of the research. Storage technique developed by Karacaoglu and Bayrakci (2020) will be used in the research. The storage application in the research will be carried out in four different study groups. The first group will consist of academics related to social sciences. The second group will include academics related to health sciences. The third group will consist of academics related to engineering and architecture. In the fourth working group of the research, relevant experts from civil defense organizations and non-governmental organizations will take place. In these groups, the storage technique will be used to determine the necessary skills to be acquired in the digital disaster literacy citizenship curriculum. In order to design the digital curriculum according to these skills, the focus group meeting will be held with experienced disaster educators. A disaster literacy digital curriculum and a disaster literacy scale will be designed based on the determined skill.

Keywords: Disaster literacy, skill-based creativity curriculum, interdisciplinary digital curriculum, lifelong citizenship education

Introduction

Events that form part of the broad "risk landscape" in which people have to learn to manage and live together are called disasters. These disasters include earthquakes, tsunamis, floods, forest fires, hurricanes, droughts and heat waves. Although the consequences of disasters are known as natural effects, in the twenty-first century, the effects of disasters have increased significantly in the twenty-first century, partly due to the exacerbating effects of climate change, but also due to the increasing complexity of socio-ecological systems in a highly interconnected and globalized world (Becken et al., 2014; Rosselló et al., 2020). It seems that what will be done is not only about the post-disaster, but also before and during the disaster, the human impact should not be ignored. Reducing or even preventing disasters and tragedies may be possible with the skills that all world citizen should have before, during and after disasters. It would be correct to consider the acquisition of these skills within the scope of citizenship education.

Natural forces such as earthquakes, hurricanes and extreme changes in weather conditions can trigger disasters, but in many Third World countries it is environmental degradation, poverty and rapid population growth that turn a natural disaster into a major disaster (Wijkman & Timberlake, 2021) and nearly 36 million people live like a slavery because of migration (Campina & Rodrigues, 2020). These people's need new skills to adjest to the World. Skills and competencies related to causes of death and injury, search and rescue, and types of disease caused by natural disasters are essential to identify the appropriate relief supplies, equipment, and personnel needed to respond effectively to such situations (Noji, 1991). Of course, citizenship skills related to disasters are not limited to what to do after disasters. There are some skills and competencies that every citizen should have regarding what to do before and during the disaster. For example, the choice of the house to live in as a citizen should be considered within the scope of disaster literacy skills even when there is no disaster.

The world's last major earthquake disaster occurred on February 6, 2023, in the south-east of Turkey, the country where the researcher lives. This massive 7.9 magnitude earthquake killed and injured many people as buildings collapsed and required search and rescue in the snowy region for those trapped under the debris. The earthquake predicted by experts in this region (Bohnhoff et al., 2016) occurred in the early hours of a winter morning. The

O. Titrek et al. (eds.), *International Conference on Lifelong Education and Leadership for All (ICLEL 2023)*,
Atlantis Highlights in Social Sciences, Education and Humanities 17,
https://doi.org/10.2991/978-94-6463-380-1_24

earthquake, which severely affected ten cities in Turkey and northern Syria, was even felt in Cyprus and Lebanon. The earthquake in Turkey, which affected nearly fifteen million people, caused more than fifty thousand casualties with the collapse of thousands of buildings. Around one hundred thousand citizens survived the earthquake with injuries. Nearly ten thousand people were rescued from the rubble with search and rescue activities. Citizens continued to struggle with concerns about the possibility and risk of continued aftershocks as we embarked on the long recovery process (GFZ, 2023; USG 2023). This major disaster showed that disaster literacy skills and awareness are vital for the preparation before the earthquake, the search and rescue efforts immediately after, and the long-term recovery process.

Citizenship education, which should include disaster literacy, is central to curriculum and education, as evidenced by the proliferation of research and writings around the world in recent years (Tupper & Cappello, 2012). Disaster literacy requires that citizenship education, which is defined as a basic purpose of social studies, should be universal and values-oriented. Tupper emphasized years ago in 2005 that it was time to rethink both the curriculum and the concept of citizenship as key goals. It is clear that in social studies and citizenship education, skill-based education in accordance with today's education understanding should be adopted instead of theoretical and non-functional gains in the program. Global citizenship education should help everyone develop the knowledge, skills and values needed to secure a just and sustainable world where they can realize their potential (Mikander, 2016). There is a need more than ever for a disaster literacy curriculum that will provide the necessary knowledge, skills and values, especially in the face of events that change the natural flow of life, beyond being a fact of life, such as disasters. Today, where educational opportunities are developed to prepare citizens for disasters, popular culture such as family and community learning, adult education and social media, and personal blocks should be included in the citizenship education process instead of only school and curriculum-based education (Preston, 2012). It is clear that disaster education is a new but necessary field of study within the scope of lifelong education. Many countries seek to educate their citizens for disasters to contribute to safety as well as reduce potential damage and loss of life. It is controversial whether these educations and efforts are considered as disaster pedagogy or civil defense pedagogy (Chadderton, 2015).

Disaster education seems to be a relatively new field of research in education, which has been studied in various disciplines such as disaster risk management and environmental studies, and the literature in education is quite scarce. However, disaster education should be a pedagogical lifelong learning subject (Kitagawa, 2021; Preston, 2012). Perhaps it is time to abandon the understanding that limits disaster education to earthquake drills and public information campaigns in schools and institutions. For this reason, the preparation of a functional disaster literacy curriculum that includes international values and skills and the implementation of it by the authorities should be considered as an emergency action plan. The disaster literacy curriculum, which will be organized with an inquiring and productive citizenship education approach, will respond to social and even universal needs.

While numerous governments and nonprofits strive to educate the public and prepare for disasters, adults with physical, mental and educational disabilities continue to be among the most vulnerable and unprepared subgroups of the population. The lack of alignment between the literacy demands of current disaster preparedness and recovery materials and the literacy skills of many vulnerable subgroups limits their ability to understand and effectively use potentially life-saving information. Disaster literacy is defined as a person's ability to read, understand and use information to make informed decisions and follow directions in the context of mitigation, preparedness, response and recovery. It includes the routine use of pilot testing and assessment to inform the choice of media type, message and touchpoint to meet and improve the disaster literacy of vulnerable populations (Brown et al., 2014).

Problems related to natural disasters are increasing day by day and in the world. It is seen that the main source of these problems is the inadequacies in natural disaster education. It is thought that the acquisitions related to natural disasters in all curricula in Turkey do not contribute to natural disaster literacy in terms of quality and quantity. Therefore, disaster literacy course curriculum should be developed. In a study (Sözcü, 2020), the basic philosophy and general objectives of the natural disaster literacy course curriculum were determined. Acquisitions that are suitable for the dimensions of natural disaster literacy (knowledge-attitude-behavior) in the curriculum; Skills and values related to these acquisitions and units are also included. The natural disaster literacy course, which is

planned to be 2 hours per week at the 9th grade level, consists of 5 units and 49 acquisitions. Examining and applying the study as an exemplary curriculum will contribute to the field. It is thought that the increase in the number of individuals who are natural disaster literate will reduce the material and moral damages caused by natural disasters. On the other hand, it is striking that there is still no such course, and that these gains have not been placed in other courses. At least, disaster literacy topics that should be taught in the citizenship education will provide national and international gains in the long run.

Citizens' knowledge and attitudes are important in reducing the effects of disasters. In a study aiming to determine the disaster literacy levels of individuals between the ages of 18-60 and the factors affecting these levels, the average disaster literacy score of the participants was 35.00; 28.4% scored inadequate, 24.3% moderate, 24.5% adequate and 22.8% excellent. It has been determined that more than 50% of the participants have insufficient/moderate level of disaster literacy. The number of initiatives needs to be increased to increase awareness and preparedness for disaster reduction and management (Genc et al., 2022). It seems that increasing awareness and preparedness for disaster reduction and management will only be possible with a skill-based disaster literacy citizenship curriculum. For this, first of all, basic disaster literacy skills should be determined, and a skill-based citizenship curriculum should be prepared in accordance with the determined skills. The fact that this curriculum has been developed to provide modern life skills that every citizen should have should not be ignored.

Gaining the necessary skills in contemporary life has brought a skill-based education approach instead of knowledge-based education in education, and it has become important to develop skills and abilities instead of storing information. Internationally accepted skill-based education, which helps individuals to gain economically and socially, contributes to the development of the country (Lerman et al., 2008). The basic and key skills necessary in life enable a more functional and qualified performance of life. Employing and using information in a real-life situation, on a problem or in a similar situation refers to the concept of skill (Karacaoglu, 2020; Kutlu et al., 2008). As can be seen, disaster literacy is not among these skills. After the increase in natural disasters, perhaps disaster literacy should be among the basic skills that should be in the 21st century. Disaster literacy should be accepted as a part of civic knowledge within the scope of basic content information literacy. It is clear that in countries where earthquake disasters are common, disaster literacy and light search and rescue skills should be in every citizen of the world.

It is clear that some basic skills should be acquired by all citizens of the world and that a skill-based disaster literacy digital curriculum should be designed according to the determined skills. The disaster curriculum research to be designed will identify basic skills for making emergency, disaster management, and post-disaster relief decisions, as well as designing for harsh climates and decision-making in participatory design processes, including low-income communities. In this context, basic skills related to disaster risk reduction, housing and urbanization, urban morphology and transformations, transitional urbanism, design, geography, social sciences, environmental science and sensitivity, human rights, aesthetics, disaster preparedness will also form the basis for the skills aimed to be gained in disaster literacy. Thus, this curriculum will include not only search and rescue skills during disasters and recovery after disasters, but also skills related to pre-disaster measures. In addition, digital teaching of the content of the training program to be designed as a result of this research should be carried out by expert trainers in the field. The design and implementation of such an curriculum can only be achieved through interdisciplinary cooperation. Such a study should be conducted by an educational scientist, such as a researcher, and a curriculum development specialist, at an appropriate university with departments and programs where this cooperation can be achieved. Such a contemporary and functional digital curriculum, which is skill-based, interdisciplinary and international, requires an innovative academic study that brings together disciplines that have perhaps never come together.

It is useful to explain the function and importance of working with different faculties, civil defense teams and non-governmental organizations for the design of the disaster literacy digital citizenship curriculum, which should be skill-based, interdisciplinary, global, contemporary and functional. When the disaster literacy curriculum is considered within the scope of an international citizenship education, it is directly related to social sciences and the content of this program requires working with social science academics to determine geography, disaster areas, education of people in business life, disaster law and policies, culture, media and communication skills. Pre-

disaster health measures, post-disaster interventions, medical and psychological support services require working with health sciences for the disaster literacy curriculum that requires health-related skills. Disaster risk reduction requires working with academics in basic sciences, engineering and architecture, including earth and environmental science, computer science and informatics, civil engineering, mathematics and physics, to identify skills and competencies related to housing and urbanization, urban morphology and transformations, and transitional urbanism. In order to determine first response, search and rescue skills during and after disasters, it is of particular importance for research to work with civil defense stakeholders such as the fire brigade, police force and local units, as well as experts in non-governmental organizations such as the Red Crescent, search and rescue teams, and miners.

Gaining some skills and competencies by individuals will change the future of humanity and the world (Helin, 2021; Howells, 2018; OECD, 2019; Xiaomin & Auld, 2020). When the studies on the life skills of the individual, which are necessary not only in the learning life but also in the adult life, are examined, it is seen that these skills have not only cognitive but also social, affective and even psychomotor dimensions. Basic life skills, which are expected to be acquired in educational institutions and required in the whole life of the individual, have an individual and social function. For this reason, literacy key skills that every citizen of the world should have created the problem of this research. In line with the determined skills, how the disaster literacy digital curriculum should be as a basic citizenship education is seen as another problem area in the research.

Explaining the innovative and creative aspect of designing the digital disaster literacy curriculum within the scope of citizenship education will benefit the field. A digital education platform can be created by going beyond traditional teaching methods. This platform allows users to access educational materials interactively. For example, materials such as video lectures, animations, simulations and interactive games can be used. In this way, participants can learn interactively and access necessary knowledge and skills in disaster situations. Virtual reality technology will enable users to experience disaster situations in a realistic environment. It will be able to create scenarios related to disaster situations with virtual reality technology and encourage participants to experience these scenarios. For example, in an earthquake scenario, users will be able to learn how post-earthquake damages are evaluated and their processes in a virtual environment. This will enable the participants to be better prepared. Mobile applications will make it easier for citizens to obtain information on insurance and disaster issues and to access up-to-date information. For example, a mobile application will be developed that will show which insurance policies will come into play and what kind of assistance will be provided in the event of a disaster. By integrating data analytics and artificial intelligence technologies into the curriculum, participants will be able to make damage forecasts, perform risk analyzes and make more informed decisions in disaster situations. In addition, an artificial intelligence-supported consultancy system will be able to advise users about disasters and provide personalized solutions. It will be able to cooperate with other stakeholders to be prepared for disasters and encourage social participation. For example, joint projects will be carried out with local governments, non-governmental organizations and academic institutions. In addition, the curriculum will be a platform to encourage citizens to share their experiences and knowledge about disasters. These innovative approaches will enable the digital disaster literacy citizenship education program to be more effective and participant-oriented. At the same time, it will encourage citizens to be better prepared by increasing their knowledge about disasters and to participate more actively in disaster management processes.

Purpose of the research

The general purpose of the research was to determine the necessary competencies and skills during, before and after the disaster, to develop a scale according to these skills, and to design a disaster literacy digital education program according to the determined skills. In line with this general purpose, the research will seek answers to the following questions:

1. What are the required geographic, humanitarian, business and civic basic disaster literacy skills and competencies, in the opinion of social science academics?
2. According to the views of health sciences academicians, what are the basic skills and competencies of disaster literacy on causes of death and injuries caused by natural disasters, search and rescue, types of diseases, effective intervention, appropriate aid materials, equipment before, during and after disasters?

3. According to the views of engineering and science academics, what are the basic skills and competencies of disaster literacy related to earth and environmental science, computer science and informatics, civil engineering, mathematics, physics and astronomy during, before and after a disaster?
4. According to the views of architecture and urban planning academics, what are the basic skills and competencies of disaster literacy related to disaster risk reduction, housing and urbanization, urban morphology and transformations, and transitional urbanism during, before and after a disaster?
5. According to experts from civil defense units and non-governmental organizations, what are the necessary disaster literacy basic skills and competencies during, before and after a disaster?
6. How will a valid and reliable disaster literacy scale be developed?
7. What should be the targeted acquisitions, content, learning-teaching process and evaluation dimensions of the digital education program, which will be prepared according to the determined skills and competencies?
8. How will the disaster education program to be prepared be transferred to digital media and how will this training program be presented on the digital platform?

Method

This research, which aims to determine the basic disaster literacy skills, to develop the disaster literacy scale and digital citizenship education program according to the determined skills, and to prepare the theoretical design of the developed program, was designed in accordance with the qualitative research method. In addition, quantitative methods will be used in the development process of the disaster literacy scale.

Study groups

The research will be carried out in four different study groups. The first group will consist of social science academics. The second group will include academics in health sciences. The third group will consist of academicians of engineering, architecture and basic sciences. In the fourth study group of the research, expertise in wider civil society (e.g. the Fire Service, Mountain Rescue, Police Service and civil defense stakeholders such as local councils) and non-governmental organizations experts (e.g the White Helmets, Red Crescent, Medicines Sans Frontiere etc.) will take place. After the implementations with the storage groups, instructors who provide disaster education at universities and city schools will be reached for focus group discussion. Cooperation will be made with Education and Training Centers or Disaster Research Centers in organizing the focus group meeting and determining the participants.

Data collecting

Both qualitative and quantitative data collection methods will be used in the research. Storage, focus group interview, design research are techniques suitable for qualitative research methods to be used. The development process of the disaster literacy scale constitutes the quantitative dimension of the research. The storage and focus group discussion developed by Karacaoğlu and Bayrakçı (2020) will be used to collect the necessary data in the research. In determining disaster literacy skills, four different storage group studies will be conducted with relevant experts in social sciences, health sciences, engineering and architectural sciences, civil defense and non-governmental organizations. As a result of storage practices, basic skills of disaster literacy will be determined.

Focus group interview, which is a qualitative method, will be used in this research, which aims to design a digital citizenship curriculum in the light of the determined skills. The focus group discussion will be applied to determine the elements of the disaster literacy citizenship curriculum. The targeted achievements, content, teaching and evaluation methods of the training program will be determined according to the skills determined in the focus group meeting with 6-8 participants consisting of experts in the field of disaster education. In the title of data collection here, the qualitative methods of storage and focus group discussion are emphasized. How to do qualitative analysis in digital curriculum development design and which quantitative analyzes will be used in scale development are explained in the data analysis section.

Storage technique. It is aimed to share the knowledge by ensuring the interaction of the participants. The storage technique is accomplished by individually answering a series of questions asked to the group. Conclusions are drawn by the group's evaluation of the answers given individually without being affected by each other. To

implement the storage technique, a glass jar and six different colored papers are required. The application is carried out sequentially in accordance with the following stages:
1. Participants are informed about the purpose and application stages of the technique.
2. A copy of six different colored cards prepared previously is distributed to each participant.
3. Each participant is asked to write the most important first information that comes to mind about the subject on the paper.
4. After the writing process is completed, the participants fold the papers and put them in the glass jar. While doing this application, the participants are told to keep in mind what color paper they are writing on.
5. Then, each participant is asked to take a paper of a different color from the glass jar, other than the color of the paper they wrote before.
6. Each participant opens the paper they received and reads silently what is written. Each participant writes down the third important information they deem important (apart from what is written on the paper and what has been written before). Participants refold the paper and put it in the glass jar.
7. Ask the group to take a piece of paper from the glass jar for the third time. They are asked to take paper of a color other than the colors of the papers they wrote in the previous two rounds and read silently the two items written. Then, besides the two information they read and the two information they wrote, they write another information they consider important under the paper. Then they put all the papers in the glass jar.
8. In the evaluation phase, all papers are taken out of the glass jar one by one and read in a way that the whole group can hear. Each item is individually discussed, evaluated and written. Opinions are grouped and frequency extracted. Thus, all information is brought together and the common product of the group is listed.

Focus group interview. This research, which aims to determine the basic skills required for the curriculum and to design the curriculum, is a qualitative research since focus group interview, which is a qualitative method, is used. A qualitative method with a case study pattern was used, which provides a lot of information about the opinion of academicians in the field. Focus groups are used to identify common views. Focus group interviews are a qualitative data collection process in which a group of experts in the field respond to the questions asked in an interactive discussion environment (Cresell, 2012; Hejres et al., 2017; Krueger & Casey, 2002; Rabiee, 2004). The purpose of the focus group interview used in this research is to analyze the perspectives, experiences, interests, desires, expectations, emotions, attitudes and habits of social sciences, health sciences, engineering and architecture faculty scientists. It is to obtain in-depth, detailed and multidimensional qualitative information about the subject (Cokluk et al., 2011). For this purpose, a series of focus group discussions will be held. Before starting the focus group interview application, a small purpose-oriented explanation is made and a warm and friendly atmosphere is created (Krueger & Casey, 2002). An interactive and positive group communication between the participants is ensured. Then the following operations are performed (Cresell, 2012):
1. Implementation is carried out in line with a flexible plan.
2. The interviewees are introduced.
3. During the interview, questions and answers are recorded and notes are taken.
4. After the main questions, the end questions are used to learn more.
5. The interview is concluded in a courteous and professional manner.

After the disaster literacy basic skills determined as a result of storage practices are presented to the participants who are experts in disaster education in the focus group interview, the following questions will be asked:
1. Who should the disaster education citizenship curriculum be for?
2. What should the participants of the disaster education citizenship curriculum know after the program is completed?
3. What skills and values should participants in the disaster education citizenship curriculum possess after the program is completed?
4. Which digital methods, technologies and tools should be used in the teaching process of the disaster education citizenship curriculum?
5. How long should the duration of the disaster education citizenship curriculum be?
6. How should the evaluation processes of the disaster education citizenship curriculum be? Which digital methods can be evaluated?
7. Is there anything else you would like to mention about the disaster education citizenship curriculum?

Qualitative data analysis

The data obtained in the storage technique is analyzed qualitatively. The point that makes the storage technique objective is that an important part of the qualitative analysis of the data is done with the group while evaluating the data. In the evaluation phase, removing all the papers from the glass jar one by one and discussing each item one by one is an important step in the analysis of the data. At this stage, opinions are grouped and frequency is extracted. The papers written afterwards are also interpreted by the content analysis method. The data obtained by the storage technique is classified after being recorded, and then the information is organized to make the data clearer. Descriptive analysis is used when interpreting the data. As a result of the analysis, basic skills can be classified as primary, secondary and tertiary skills (Karacaoglu, 2022). The storage technique allows the grouping of skills, competencies, problems or qualifications for the purpose of the research. The questions asked about the needs, objectives, content, teaching and evaluation process of the curriculum, which are asked in the focus group interviews to be held for the design of the curriculum, are analyzed by the content analysis method.

While deciphering the records, the themes will be determined and titled by the researcher. In the analysis of the data, the perceptions determined according to the themes will be given by paying attention to the fact that the spoken language remains as it is. By analyzing the data, the target audience of the digital disaster education citizenship curriculum, targeted cognitive gains, targeted affective gains, targeted skills, learning-teaching process, duration, evaluation process will be determined. The digital design will be carried out by focusing on the answers to two of the questions in the focus group interview. “Which digital methods, technologies and tools should be used in the teaching process of the disaster education citizenship curriculum?” and “Which digital methods can be evaluated?” The answers to the questions will be parsed for further analysis. This separation will allow the disaster literacy citizenship curriculum to be designed in a digital environment.

Quantitative data analysis

Items determined by storage practices will be sorted to be converted into scale items. For the scale development process, the following processes will be carried out during the data collection phase:

- The scale structure will be defined.
- Scale directive will be prepared.
- To be reviewed by a panel of experts in educational research.
- Pre-test application will be made.

The pre-test results for the development of the disaster literacy scale will be analyzed. Validity and reliability analyzes of the scale will be made. With the analysis of scale items, features such as the internal consistency of the scale, factor structure, the power of scale scores to rank the scale, and the relationship of scale factors with each other will be evaluated. Whether the scale items measure correctly and whether the items are related to each other will be checked by factor analysis and the reliability level of the scale will be determined (DeVellis & Thorpe, 2021). The scale will be finalized by taking into account the results of the analysis in order to determine the relationships between different measures and features of the disaster literacy scale and whether the scale can be used for all citizens.

Expected Effects of the Study

The most important effect of the research will be to ensure that citizens become conscious and prepared individuals against disasters, thus minimizing the effects of disasters and increasing the resilience of the society against disasters. One of the main objectives of the research proposal is to make citizens aware of and prepared for disasters. It is aimed that citizens understand disaster risks, disaster measures and emergency response. In the research proposal, it is aimed to present interactive and interactive educational materials using digital technologies. Education supported by technological tools such as mobile applications, virtual reality experiences, e-learning platforms will provide a more effective learning experience. The research proposal encourages the active participation of citizens and stakeholders. By working in cooperation, partnerships are formed with local governments, insurance companies, non-governmental organizations and it is aimed to spread disaster literacy throughout the society. The ultimate goal of the project is to measure and evaluate the effectiveness of the training program. It is aimed to document the improvements in the knowledge and behavior levels of citizens against

disasters with measurable results. Thus, the training program can be continuously improved with the data and feedback obtained throughout the research process. Digital disaster literacy curriculum development research will have many outputs. If it is necessary to list the four most important outputs, first of all, basic disaster literacy skills will be determined. Second, a disaster literacy scale will be developed. Third, a skills-based disaster literacy citizenship curriculum will be developed. Fourth, disaster literacy digital curriculum design will be designed theoretically.

In the light of the findings obtained in this research, which will be carried out in order to determine the competencies and skills to be possessed during, before and after the disaster, and to design a skill-based disaster literacy digital citizenship curriculum according to the determined skills; It is aimed to achieve the following results:

- Identification of geographical, humanitarian, business and basic disaster literacy civic skills and competencies.
- Determining the basic citizenship skills and competencies of disaster literacy on the causes of death and injury caused by natural disasters during and after the disaster, search and rescue, types of diseases, effective response, appropriate aid materials, equipment.
- Determination of necessary disaster literacy citizenship skills and competencies during, before and after disasters related to earth and environmental sciences, computer science and informatics, civil engineering, mathematics, physics and astronomy.
- Determination of necessary disaster literacy citizenship skills and competencies during, before and after disaster related to disaster risk reduction, housing and urbanization, urban morphology and transformations, transition urbanism.
- Determination of first response, search and rescue basic skills during and after disasters.
- Developing the disaster literacy citizenship scale according to the determined skills and competencies.
- To design the disaster literacy international citizenship curriculum according to the determined skills and competencies.
- Transferring the prepared disaster literacy international citizenship curriculum to digital media.
- Pilot implementation of the prepared disaster literacy international digital citizenship curriculum.
- Eliminating the deficiencies of the disaster literacy international digital citizenship curriculum with the feedback obtained as a result of the trial application.
- To launch the disaster literacy international digital curriculum for citizenship education all over the world.
- Maybe hundreds of thousands of lives will be saved with the developed international disaster literacy digital citizenship curriculum. Through this training program, citizens will be conscious, resourceful and sensitive before, during and after disasters. Thus, loss of life will be prevented by being prudent before disasters, conscious during disasters, and proficiency after disasters.

REFERENCES

Becken, S., Mahon, R., Rennie, H. G., & Shakeela, A. (2014). The tourism disaster vulnerability framework: An application to tourism in small island destinations. *Natural hazards*, 71,955-972. https://link.springer.com/article/10.1007/s11069-013-0946-x

Bohnhoff, M., Martínez-Garzón, P., Bulut, F., Stierle, E., & Ben-Zion, Y. (2016). Maximum earthquake magnitudes along different sections of the North Anatolian fault zone. *Tectonophysics,* 674, 147-165. https://doi.org/10.1016/j.tecto.2016.02.028

Brown, L. M., Haun, J.N., & Peterson, L. (2014). A proposed disaster literacy model. *Disaster medicine and public health preparedness*, 8 (3), 267-275. https://doi.org/10.1017/dmp.2014.43

Campina, A. & Rodrigues, C. (2020). Migration, multiculturalism, human rights and the paradigm in the actual international politics (re)action. International Journal on Lifelong Education and Leadership, 6 (2) , 44-55 . DOI: 10.25233/ijlel.786063

Chadderton, C. (2015). Civil defence pedagogies and narratives of democracy: disaster education in Germany. *International Journal of Lifelong Education*, 34(5), 589-606. https://doi.org/10.1080/02601370.2015.1073186

Creswell, J.W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4nd ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.

Cokluk, O., Yılmaz, K. & Oguz, E. (2011). A qualitative interview method: Focus group interview. *Theoretical Educational Science*, 4(1), 95-107. https://dergipark.org.tr/en/pub/akukeg/issue/29342/313994

DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications*. Sage publications

Genc, F. Z., Yildiz., S., Kaya, E., & Bilgili, N. (2022). Disaster literate levels of individuals aged 18–60 years and factors affecting these levels: A web- based cross-sectional study. *International Journal of Disaster Risk Reduction,* 76, 102991. https://doi.org/10.1016/j.ijdrr.2022.102991

GFZ (2023). The maximum earthquake magnitude for North Turkey. https://www.gfz-potsdam.de/en/press/news/details/the-maximum-earthquake-magnitude-for-north-turkey

Hejres, S., Braganza, A., & Aldabi, T. (2017). Investigating the effect of leadership styles on instructional leadership and teachers job expectancy in Kingdom of Bahrain. *American Journal of Education Research*, 5(7), 694-709. http://pubs.sciepub.com/education/5/7/2/index.html

Helin, J. (2021). Transformative competencies. https://bridge47.org/sites/default/files/2021-07/5_competencies.pdf

Howells, K. (2018). The future of education and skills: education 2030: the future we want.https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

Karacaoglu, O. (2008). *Teacher competencies in the European Union harmonization process* [Doctoral thesis]. Ankara University.

Karacaoglu, O. C. (2020). *Curriculum development in education.* Nobel Publishing House.

Karacaoglu, O. C. (2022). Basic skills that a 21st century person should have. In Karacagil, Z. & Bulut, M. (Ed.) *Current debates in social sciences 10 (ISBN:978-625-7799-72-0, 33-46)*. Bilgin Culture and Art Publications.

Karacaoglu, O. C. & Bayrakci, M. (2020). Introducing a new data collection tool in education: The storage technique. *International Online Journal of Education and Teaching*, 7(4), 1439-1451. https://files.eric.ed.gov/fulltext/EJ1271024.pdf

Kitagawa, K. (2021). Conceptualising 'disaster education'. *Education Sciences*, 11(5), 233. https://doi.org/10.3390/educsci11050233

Krueger, R. A. & Casey, M. A. (2002). *Designing and conduct focus group interviews.* Social Development Department, The World Bank. https://www.eiu.edu/ihec/Krueger-FocusGroupInterviews.pdf

Kutlu, Ö., Doğan, C.D. & Karakaya, İ. (2008). *Determining student success.* Ankara: Pegem Academy

Lerman, R.I., Heckman, J. & Masterov, D. (2008). *A Future of Good Jobs?* America's Challenge in the Global Economy, 17.

Mikander, P. (2016). Globalization as continuing colonialism–Critical global citizenship education in an unequal world. *JSSE-Journal of Social Science Education*, 70-79. https://doi.org/10.4119/jsse-794

Noji, E.K. (1991). Natural disasters. *Critical care clinics*, 7(2), 271-292. https://www.sciencedirect.com/science/article/abs/pii/S0749070418303063

OECD (2019). Future of education and skills 2030: OECD learning compass 2030. https://www.oecd.org/education/2030-project/

Preston, J. (2012). What is disaster education?. *Disaster education: 'race', equity and pedagogy*, 1-10. https://link.springer.com/chapter/10.1007/978-94-6091-873-5_1

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the nutrition society*, 63(4), 655-660. https://doi.org/10.1079/PNS2004399

Rosselló, J., Becken, S., & Santana-Gallego, M. (2020). The effects of natural disasters on international tourism: a global analysis. *Tourism management*, 79, 104080. https://doi.org/10.1016/j.tourman.2020.104080

Sözcü, U. (2020). Natural disaster literacy curriculum proposal. *Afet ve Risk Dergisi*, 3(1), 70-79. https://doi.org/10.35341/afet.708183

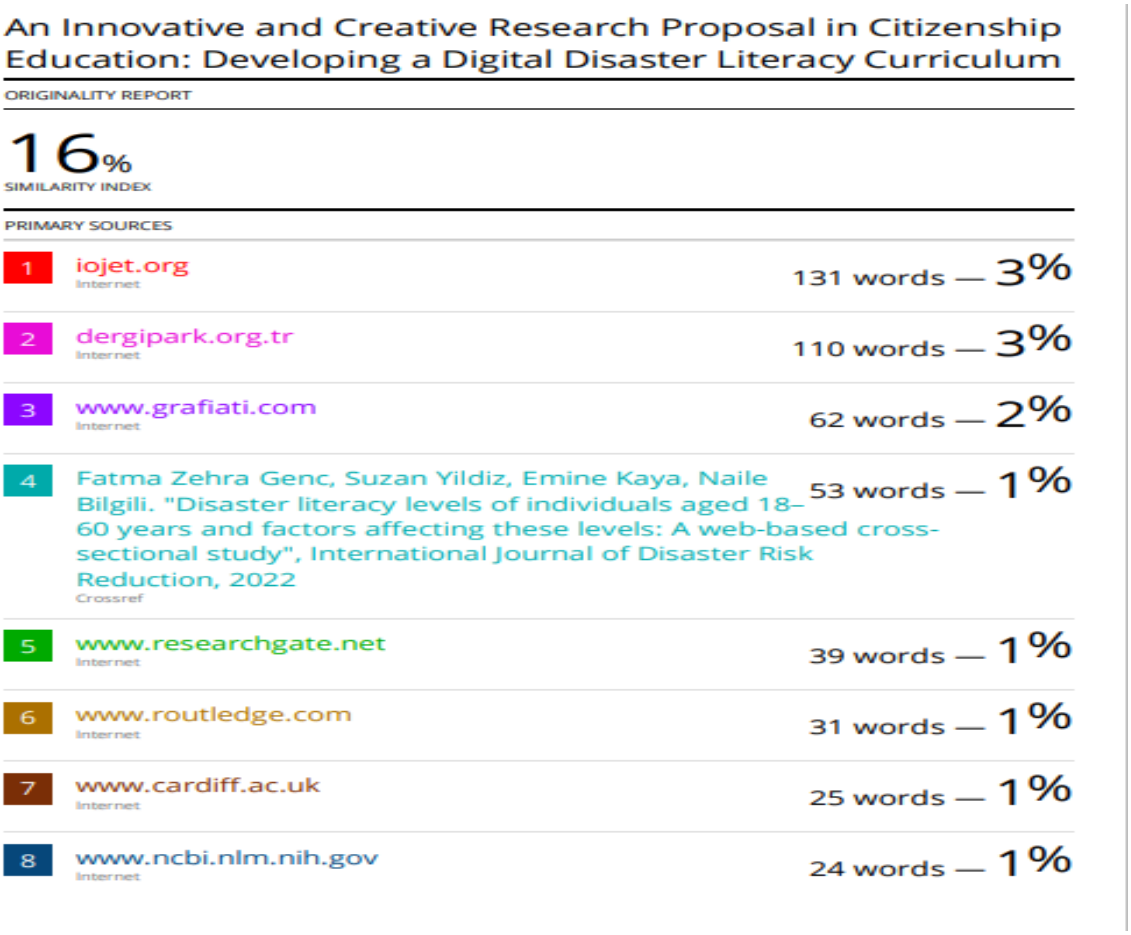
Tupper, J. A. (2005). *Searching citizenship: Social studies and the tensions of teaching* [Doctoral thesis]. University of Alberta.

Tupper, J.A. & Cappello, M.P. (2012). (Re)creating citizenship: Saskatchewan high school students' understandings of the 'good' citizen. *Journal of Curriculum Studies*, 44(1), 37-59. https://doi.org/10.1080/00220272.2011.618951

USGS (2023). The M7.8 and M7.5 Kahramanmaraş Earthquake Sequence struck near Nurdağı, Turkey (Türkiye) on February 6, 2023. https://www.usgs.gov/news/featured-story/m78-and-m75-kahramanmaras-earthquake-sequence-near-nurdagi-turkey-turkiye

Wijkman, A. & Timberlake, L. (2021). *Natural disasters: acts of God or acts of man?*. Routledge.

Xiaomin, L. & Auld, E. (2020). A historical perspective on the OECD's 'humanitarian turn': PISA for Development and the Learning Framework 2030. *Comparative Education*, 56(4), 503-521. https://doi.org/10.1080/03050068.2020.1781397



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