



Challenges of Online Education for Farmers: Lived Experiences of Trainers in Iran (A Phenomenological Approach)

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Abstract

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Digital technologies have affected all aspects of human life and have become an integral element of sustainable development, and rural and agricultural areas are no exception to this rule. Despite the high potential of online social networks (OSNs) in connecting rural communities and solving the challenge of accessing farmers due to the geographical dispersion of villages, with the epidemic of the Covid-19 disease, a good opportunity was provided to benefit from the capacity of these networks for training farmers. This research was conducted with a phenomenological approach and Colaizzi's method with the aim of investigating the lived experience of farmers' educators in Khuzestan province (in Iran) of virtual education for farmers. The results of the research showed that the advantages and disadvantages of this type of training for farmers can be classified into 8 main categories and 36 sub-categories. The main categories are infrastructures, economic dimension, education dimension, educational resources, communication, psychological dimension, evaluation and cultural dimension. The most frequency was assigned to the three sub-themes of lack of proper internet (speed, quality, platform), lack of comprehensive skills in using networks and not having a smartphone.

1. Introduction

Today, online social networks (OSNs) as the main driver of the evolution of modern society (Hosseini et al., 2021) and global revolution (Akbari et al., 2016), have been enthusiastically welcomed by society (Morris & James, 2017). OSNs allow the creation of online communities sharing interests and activities and a high socioeconomic value (Tang et al., 2023; Chalmeta et al., 2024). Currently, OSNs are among the most important communication platforms (Pang et al., 2022) with a high socioeconomic value. They are used by billions of people and many companies for collaborating, disseminating content and opinion, making recommendations, interacting with scouting, alerting, professional and social networking, and fostering stakeholder engagement (Saraite-Sariene et al., 2022).

Statistics such as the estimate of about 4.7 billion users of OSNs such as Facebook, Instagram, Twitter and so on around the world (Khan et al., 2023; Perez et al., 2023) and the report that about 72% of Americans presence in OSNs in 2021 (Hargis, 2023), all indicate the increasing growth and significant population of social network users in the world, and this has caused the need for the Internet as one of the main needs of society (Ginting et al., 2023) and Technology and social media are seen as an integral part of human life (Aduba & Mayowa-Adebara, 2022).

Therefore, the need to examine the attitude and issues related to the internet and social networks should be highlighted (Khan et al., 2023).

Digital technologies have affected all aspects of human life and have become an integral element of sustainable development, and rural and agricultural areas are no exception to this rule (Arion et al., 2024). Social media platforms, as one of the types of digital technologies, have revolutionized communication and information sharing in different sectors, and agriculture is no exception to this rule, and access to information for farmers to optimize productivity. Reducing risks and adapting to changing market dynamics has become critical (Panda & Sinha, 2023) and the impact of the use of information technology (IT) has recently gained importance in the way it can facilitate communication in the agricultural sector (Bagheri et al., 2023). In various studies, many benefits of social networks such as: sharing agricultural information and news, updating educational content and improving public agricultural literacy (Panda & Sinha, 2023), receiving consulting services, facilitating access to location data, the possibility of recording, analyzing, storing, accessing complex information and disseminating it in various ways (Ofori & El-Gayar, 2021), enabling farmers to learn and adopt new farming methods (Sevigny, 2020), practical knowledge sharing (Imam et al., 2017), improving access to results, knowledge exchange, communication as well as training, achieving efficient agricultural extension to connect remote farmers for constructive learning is mentioned (Kelly, 2017).

Researchers such as (Kipkurgat et al., 2016) believe that in the agricultural education system among new educational technologies, the use of OSNs as a means of transmitting educational messages is necessary. In fact, at the global level, OSNs are a powerful tool for learning and teaching (Odewumi et al., 2018), providing educational resources (Greenhow & Robelia, 2009), a learning platform (Hansen et al., 2015), creating and exchanging content and the ideas generated by the user, the development of social relations and communication, as well as the strengthening of global access and communication procedures (Odewumi et al., 2018) and can play an ever-increasing role in society and in agriculture (Mills et al., 2019). Internet-based educational programs for farmers can be seen as a means of increasing access to educational opportunities in rural areas and synchronized with the rapid changes in the agricultural sector (Vidanapathirana et al., 2015).

Despite the benefits of using social networks in agriculture and bringing achievements such as transparency, interaction, trust and credibility for this industry, new relationships between farmers and consumers, better understanding of how food is produced, reducing the gap between producers and consumers (Hargis, 2023; Stanley, 2013; White et al., 2014; Allen et al., 2010), as well as other benefits such as the use of these networks for educational purposes and their potential especially to communicate the instructor and the remote learner (Adetimirin & Ayoola, 2020) and create learning opportunities for users, but researches show that their scientific and educational performance is still limited (Akbari et al., 2016) and unfortunately research for using of social media in education has not been sufficiently considered (Sabah, 2023). In fact, the use of these networks by farmers for agricultural development is a relatively unknown research area (Panda & Sinha, 2023). The evidences indicate that these goals are not fully achieved in the agricultural sector (Morris & James, 2017). With the spread of the Covid-19 disease, all the educational organizations being forced to hold online classes, the Agricultural Jihad Organization was not an exception and started to hold training courses in a virtual form for farmers, so this research has been conducted to investigate the views of the trainers on the challenges of farmers in using OSNs for education in Khuzestan province and it is hoped that the results of this research will be a practical guide for agricultural education planners and experts to strengthen the positive points and try to solve the challenges and negative points of this type of training, by empowering users to improve their productivity.

Here there are some examples of the results of the research which conducted in Iran by using the phenomenological method for investing challenges of online learning, so that the results of this research can be deduced with more insight before reporting the results of this research.

By using the phenomenology method (Ajam et al., 2022), considered viewpoints of parents and teachers of elementary school toward the challenges of online education and divided the challenges into four categories: social-cultural, ethical, technical and infrastructural challenges and educationally. Also, in the research (Nemati & Mokhtari Hesari, 2022) which was carried out in order to identify the challenges and solutions of using mobile learning in the training of farmers from the point of view of experts, the results of exploratory factor analysis showed that the most important challenges are: not recognizing the system mobile learning by agricultural training centers, infrastructure challenges, lack of skill and participation, psychological, technical, knowledge and information challenges and costs and lack of economic power. Sadeghi-Nasab et al. (2021) to investigate the experience of teachers and students of Ahvaz city about the role of social networks in education, they found the effect of this type of education and learning to be three themes of acquiring media literacy. They have introduced progress in academic affairs, entrepreneurship and employment as a sub-theme for the main theme of facilitating education and learning.

By using the phenomenology method, Bigdeli et al. (2023) identified the lived experience of Tehran's master of medical sciences students regarding virtual education with regard to the hidden curriculum, and they identified six main categories of motivational factors, reflective and interactive feedback, effective training and evaluation, the rules and regulations and the role of faculty members were extracted. The results of Qorbanpour Lafamajan's research (2021) in examining students' lived experience of virtual education during the Covid-19 pandemic showed that these experiences were divided into two main themes of learners' mood with sub-themes: low productivity, lack of motivation, time constraints, experience, learning opportunity, convenience, psychological security and stress and the main theme of the learning platform can be categorized with the sub-themes of low teaching quality, lack of variety of educational tools and lack of face-to-face interaction with students and access.

2. Materials and Methods

The current research is a qualitative and phenomenological research. Becker (1992) defined phenomenology as "the study of phenomena, things or events in the everyday world". Phenomenology is one of the qualitative approaches which its purpose is to explain and identify a phenomenon, in a way that in a specific situation it is understood (Momeni et al., 2018). Phenomenology is the study of lived experience in which the researcher tries to answer questions such as: "How is your everyday experience of this phenomenon? What does it mean? How is it experienced?" and through reflection, a deeper understanding of the nature of an experience emerges (Gharibpour et al., 2012, citing Van Manen, 1990).

If the goal is to describe the real experience of online learning, so that these experiences can be shared with other novices, the phenomenological method is the most appropriate approach (Becker & Schad, 2022). Since phenomenology explores and describes the essence of human experiences, it has the potential to provide valuable insights into the use of technology in teaching and learning. The increasing use of studying experiences of working with technology has the potential to both develop existing research areas and help create new lines of research (Becker & Schad, 2022). From the point of view of (Gharibpour et al., 2012), the Colaizzi's method is a suitable method to focus on finding the nature and meaning of the experience of being a member of social networks. The steps of this method are (Colaizzi, 1978): 1) Each interview was transcribed verbatim and then reread 2) We returned to each interview transcript and extracted significant statements 3) We formulated meaning of each significant statement 4) Meanings were clustered together in themes, and then themes were compared to the original transcription 5) Themes were integrated into an exhaustive description 6) The exhaustive description was reviewed to identify the essence of the experience 7) Findings were validated by returning to participants for confirmation.

In order to determine the accuracy of the data, Guba's criterion (1985) was used. This was done through the long-term interaction of the researcher, the use of member review, quick note taking, external checker, time triangulation, and ignoring the researchers' presuppositions in the process of data collection and analysis. In addition, verifiability was obtained through neutrality and consensus regarding interviews, concepts and conceptual categories extracted by two other researchers. Transferability or appropriateness was obtained through interviews with different participants and providing direct quotes and examples, rich explanation of data and sharing scientific opinions with expert experts.

First, participants were selected through purposive sampling and data were extracted through in-depth semi-structured interviews. The purpose of the interview and research was explained to the participant and the person was assured that the trustworthiness would be used in recording and publishing the results of the interview with the assurance of his approval. The interview time was between 60 minutes and 150 minutes, depending on the person's willingness to discuss his experiences. Further, the interviews were simultaneously transcribed and immediately analyzed until the conclusion was reached that theoretical saturation was achieved and further interviews would not lead to more or new results. Then, the experiences of all participants were read several times until a sense of the whole content was obtained, sentences and words, important expressions and expressions related to their experiences were extracted.

To analyze the data, a specific meaning was attributed to each of the extracted sentences and noted down. Subsequently, the common concepts were grouped and categorized in a special way and in such a way that each category included all the related concepts. After that, some categories, conceptual themes that reflect a specific concept, were put together to form a distinct concept. In the next step, the extracted codes and concepts were categorized in a specific category and the main concepts of the research were explained with a combination of conceptual subsets.

The extracted codes from the interview were confirmed with the help of two other researchers to ensure their accuracy and after extracting the codes according to Colaizzi (1978), these codes were given to the participants to confirm the accuracy of the information with their feedback and some things that needed to be corrected, was done.

A sample size of 3 to 10 participants is appropriate for a phenomenological study (Dukes, 1984). The statistical population of this research was the trainers of Khuzestan Province Agricultural Jihad (in Iran), which was a targeted sampling and 21 people were selected from the list of people introduced by Khuzestan Province Agricultural Jihad, who since the beginning of the Covid-19 period have seriously taught in the virtual education sector. It should be noted that after the interview with the 17th expert, theoretical saturation was achieved and the interview process was stopped.

3. Results and Discussion

The characteristics of the trainers who participating in the interview can be seen in the table 1. Among the t trainers, 1 of them had the associate degree, 4 trainers (24%) had the bachelor's degree, 6 trainers had the master's degree (35%), and 6 trainers had the PhD degree. Their minimum work experience was 6 years and maximum 29 years.

Table 1. Characteristics of the trainers who participating in the interview

Code	Degree	work experience (year)	Code	Degree	work experience (year)
X1	Bachelor	17	X10	PhD	18
X2	Master	13	X11	Master	22
X3	Bachelor	25	X12	PhD	8
X4	Associate	27	X13	Master	8
X5	Master	10	X14	Master	12
X6	PhD	5	X15	Master	29
X7	PhD	18	X16	PhD	27
X8	Bachelor	14	X17	Bachelor	6
X9	PhD	15			

The results of the interview were categorized into 8 main themes: infrastructure, economic dimension, education dimension, educational resources, communication, psychological dimension, evaluation and cultural dimension. The total sub-themes of these 8 themes were 36 themes, the most frequent were the three sub-themes of lack of suitable internet (speed, quality, platform) with a frequency of 100%, lack of general skills of using networks with a frequency of 76.5%. The sub-themes of not having a smartphone was assigned with a frequency of 70.6 percent. These results can be seen in Table 2.

Table 2. The main and sub-themes resulting from the interviews with trainers

No	sub-themes	Main themes	f	%	Priority
1	Not having a smartphone		12	70.6	3
2	Lack of proper internet (speed, quality, platform)	Infrastructure	17	100	1
3	Filtering problem		10	58.9	5
4	Improvement and upgrading of infrastructure		3	17.6	12
5	The high cost of buying a smartphone		5	29.4	10
6	The cost of providing the Internet	Economic Dimension	8	47	7
7	Reduce the cost of transportation		5	29.4	10
8	Reducing the cost of preparing educational content		3	17.6	12
9	Home as a same place for education & interference of roles		3	17.6	12
10	Inadequate training environment	Education Dimension	2	11.8	13
11	Need to devote more time to teaching and learning		7	41.2	8
12	Rigorous operation training and ensuring inclusive learning		11	64.7	4
13	Lack of comprehensive skills in using networks		13	76.5	2
13	Limited number of proficient teachers		4	23.5	11
15	Failure to adapt the contents to the needs of the users	Educational Resources	7	41.2	8
16	Lack of suitable content for this teaching method		8	47	7
17	Ease of access to educational resources		5	29.4	10

18	Respecting the copyright of educational content		3	17.6	12
19	Limiting the communication between experts and farmers	Communication	6	35.3	9
20	Expanding the circle of personal communication		8	47	7
21	Increasing the isolation of introverted exploiters		3	17.6	12
22	The difficulty of distributing class participation		2	11.8	13
23	An opportunity to deceive		5	29.4	10
24	Decreased life satisfaction	Psychological	6	35.3	9
25	An opportunity to express yourself for the less fortunate	Dimension	3	17.6	12
26	Internet addiction and aimless surfing		5	29.4	10
27	Difficulty receiving feedback and evaluation		8	47	7
28	Risk of misunderstanding and not understanding the message correctly	Evaluation	9	52.9	6
29	The difficulty of identifying the training needs of users		4	23.5	11
30	Abandonment of model and pattern users		3	17.6	12
31	Neglecting hidden curriculum dimensions	Cultural Dimension	7	41.2	8
32	Reducing the gap in society		2	11.8	13
33	Increasing gap in society		4	23.5	11
34	Risk of information hacking		6	35.3	9
35	Risk of exposure		2	11.8	13
36	Non-compliance with privacy principles		9	52.9	6

The Internet and its quality: Due to infrastructure deficiencies, in some rural areas, it is impossible for farmers to participate in the courses because of interruptions and disconnections in internet service, lack of support for high-speed internet for transmitting large educational materials, and even mobile signal coverage. This issue also affects trainers, as they have experienced constant internet disruptions during classes, which have often left them frustrated and sometimes unable to continue teaching.

"I have never been able to hold a class at home because the internet there is really unreliable. Whenever I have a class, I have to go to the office and conduct it from there. Even if I want to send a video file, the office internet doesn't respond either. It seems the authorities need to seriously consider this issue."(X15)

The problem of internet and its quality, despite decades since its inception, persists as a challenge, not only in developing countries but also in developed ones. Park and colleagues have pointed out the disparity between urban and rural areas, internet speed in rural areas lags behind urban areas, and rural residents suffer as a result (Park et al., 2019). Even in the United States, rural areas lag behind in terms of bandwidth and accessibility compared to cities, attributed to the high cost of expanding fiber optic networks in sparsely populated areas (Kuteesa et al., 2014).

"A kind of contradiction is evident here. You know, we believe in free education for all sectors of society, but this type of education somewhat violates this principle because only farmers and landowners can benefit from these courses, who have more facilities like smartphones, higher literacy, high-speed and unlimited internet. This naturally makes less privileged landowners more deprived, and this issue exacerbates social gap." (X12)

The issue here is that this inequality in internet service ultimately leads to a digital divide. The digital divide refers to inequality and lack of accessibility of people to digital technology, and factors such as a combination of these contribute to the deprivation of individuals in using digital technologies (Roberts et al., 2017). Inequality in access to information and communication technologies can lead to significant disparities and marginalization of disadvantaged communities, hindering their full participation (Kuteesa et al., 2014). Therefore, this study also highlights the widening gap in society as one of the problems of this type of education, because not everyone has equal access. This disparity results in further deprivation and marginalization of disadvantaged communities, while the increasing capabilities of those with greater access and utilization of opportunities in the virtual space deepen this gap day by day.

It is essential to mention that some educators have highlighted the reduction of societal gaps as one of the benefits of using social networks. From their perspective, individuals can easily and cost-effectively stay connected worldwide every day through these networks, particularly in education. Access to educational content from various professors and participating in nationwide virtual courses has made individuals feel less disparity in accessing educational resources. Furthermore, some educators pointed out that today, more educated and younger farmers can

even promote and sell their products through social networks, by passing intermediaries and maximizing profits. This helps reduce the gap compared to other farmers who have greater geographical access to markets.

Internet addiction and aimless web browsing: Addiction to the internet and the time wasted by users on social networks are among the drawbacks and challenges of these platforms, as reported by various researchers across different target groups. In this study, educators also pointed out this issue, considering it one of the problems that even during class sessions, pervasive internet use encourages students to browse aimlessly on other networks. This leads to distraction and reduces the effectiveness of the teaching process.

"It's interesting to know that many rural farmers who resisted using the internet and social networks before the COVID-19 pandemic, when they initially joined these networks for their children's education, are now active and habitual users of the virtual space. What's more interesting is that we observe them participating virtually in classes while simultaneously messaging in other groups, effectively not benefiting from the educational courses they are enrolled in". (X17)

According to John Grohol's theory (Grohol, 2003), excessive internet use is not just a unique and new disorder, but rather a different way of coping with life pressures and stresses. Most individuals who believe they are addicted to the internet are seeking to escape from their problems (Mokhtari & Malek Ahmadi, 2017).

Reduced life satisfaction and opportunities for deception and fraud: Knowing and being aware does not always come with positive outcomes. Sometimes awareness can create new needs in individuals that may be false and unattainable, leading to a loss of peace and satisfaction. Daily, individuals are bombarded through social networks with thousands of advertisements, some of which they may unwittingly desire, only to realize in the end that they were misled. The basis of the book "Economism", which is one of the most important economic books published in 2017, is that knowing is not always better than not knowing, and sometimes knowing less may be worse than not knowing. Limited information and decision-making based on it can sometimes have disastrous consequences. At times, an individual may be peacefully and contentedly navigating through life, but comparing one's life with the published information of others on social networks can reverse this flow and initiate dissatisfaction with life.

The results of studying the lived experiences of participants born in the 1980s on social networks and efforts to identify the principal component of social ethics indicate that in the main index of "dispersion-based social ethics," the primary characteristics include "combined social identity", "feeling social frustration, confusion and perplexity", "constant comparison with those born in the 1990s," and "glamorizing of virtual social networks". Furthermore, the results show that social ethics among individuals born in the 1980s is a combination of ethical practices stemming from the economic, social, cultural, political, and historical conditions and experiences of individuals born and living in this decade (Zolfalifam et al., 2018).

Expanding the circle of personal communication and opportunity for self-expression for less outgoing individuals: According to the Uses and Gratifications theory (Katz et al., 1973), people on social media seek content that maximizes their satisfaction, which depends on their needs and interests (Eginli & Tas, 2018). These needs fall into four categories: cognitive needs (information acquisition, awareness, knowledge), affective needs (emotional experiences, pleasure-seeking, aesthetic appreciation), personal integrative needs (enhancement of credibility, trust, stability, and identity), and tension avoidance needs. (leisure and comfort).

Virtual space provides an environment where individuals can break free from the defined and rigid framework of the external world. This space allows individuals to express themselves more freely, unburdened by constraints, and operate in a significantly more expansive realm than the physical world (Babaei Fard & Khodakarmian Gilan, 2017). One of the advantages of social networks is that they afford individuals, particularly those who are introverted or lack self-confidence an opportunity to participate without the pressures of physical presence. Virtual groups provide a platform for them to voice their opinions and practice overcoming social anxieties. This advantage is very valuable in the virtual educational space that is guided by the trainer, and it is especially important for the users who are adults and have special emotional and personality sensitivities.

"Virtual education also has a number of advantages, for example, I knew users who I always thought that these were passive people and only to benefit from the benefits of the certificate of participation in the course, in face-to-face classes, but with the virtualization of the class, I saw how much these people have valuable knowledge and experience and even have a high political insight, but because they don't have the experience of expressing their opinion in public and in the presence of an official group, or one of them said because of having an accent and shyness, because of this, they were silent and in virtual education, which is not face-to-face communication, they talk easily." (X13)

The mentioned items were some of the sub-themes of the main themes along with the direct quotes of the trainers who participated in the interview, which shows the trainers' lived experience of the advantages and disadvantages of training farmers in a virtual way.

4. Conclusion and Recommendations

With the advent of information and communication technologies, societies accepted changes in all aspects of life as an integral part of affairs, and this process is supported by the high capabilities of the internet and related technologies, including online social networks such as WhatsApp, Telegram, Instagram and so on. The resistance of societies in moving in line with global changes will have no other result than the elimination of weaker societies that are left behind by technology. It has been many years since the acceptance of virtual education in the world, and in our country, with the beginning of the epidemic of the Covid-19 disease, this type of education was seriously considered, although it must be accepted that it is generally used in formal education and in adult education, especially agricultural education, it is not yet recognized as much as formal education. In this research, the lived experience of the agricultural training instructors of the Khuzestan Agricultural Jihad Organization showed that the lack of sufficient infrastructure, including the high speed of the internet and its appropriate quality, is the biggest challenge and obstacle in training farmers in a virtual way, and the widening of the gap in society, which as one of the disadvantages mentioned is as a result of this deficiency. Limited access hinders the implementation of e-learning initiatives, and this causes aggravation of educational inequality. For example, despite the adoption of digital education in America, learners in areas with limited access to the internet face challenges and gaps in education in completing assignments (Kuteesa et al., 2014).

Therefore, it is suggested:

- By building, equipping and improving the infrastructure needed to establish virtual communication in the less privileged rural areas, the preparations for the provision of internet with speed and quality in these areas will be provided.

- If it is not possible to upgrade the infrastructure in some rural areas, it is suggested to provide virtual training on platforms and applications where the internet is free, or even for agricultural training courses, the cost of purchasing packages internet by farmers in order to benefit from the course, with the participation of the Agricultural Jihad Organization, and the organization will bear part of the cost.

- Jihad Agriculture organization should equip the accessible space so that the farmers can benefit from the course and class by attending the courses. This requires the participation of other institutions active in the villages, such as village councils, health centers and mosques. For example, numbers of computer systems are available in some mosques and in Agricultural Jihad Organization, by providing the internet to this systems, can provide the possibility for several farmers to use the same system at the same time and participate in the training course.

-The possibility of establishing more interaction for introverted people and expanding the scope of people's communication was mentioned as one of the advantages of this type of education which is mentioned by students of Hormozgan University (Danesh & Zahiri Nia, 2018). In this context, it is suggested that the trainers provide the discussion space and exchange of opinions in the groups that these farmers are members of in the social networks, and the trainers themselves take charge of the management of the meeting in order to distribute the discussion and discussion time fairly. By expanding the range of people and members of the groups and introducing them to other members of the group, expand the range of communication of the farmers so that people can share their experiences in this space and benefit from the benefits of social learning.

-Providing an opportunity for deception in virtual social networks and reducing people's life satisfaction as results and one of the disadvantages of using networks mentioned by trainers. Farasatkah (2015) has also introduced the secretiveness and lack of transparency of Iranians as one of the characteristics of Iranians. Unfortunately, when users are on social networks with an onslaught of advertising messages from companies for products or from individuals to show their lives, all the messages are not true and in the long run, users compare these evidences with their current situation, so they feel desperate and disappointed with the current situation and their dissatisfaction has increased and the result will be stress, depression, consumerism and mental-psychological problems for them.

-In this context, it is suggested that holding media literacy courses should be prioritized in educational programs. Although teaching the culture of using any technology must be institutionalized before the introduction of that technology, raising media literacy is one of the necessities of society in this era at all levels. With the increase in media literacy, the problems of lack of mastery and sufficient skills of educators and learners in using educational technologies related to virtual networks, the problem of spreading fake information and bad advertisements in networks and the ability of network users to recognize correct from fake messages, the ability to manage emotions and effects caused by receiving messages in networks will be resolved.

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