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Presenting a Model for Virtual Education Considering Educational Equity with a Phenomenological Approach in Schools of Golestan Province

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A r t i c l e I n f o	A B S T R A C T
Article type: *Original Research* **How to cite this article:** Shariati, F., Niazazari, K., & Jabbary, N. (2024). Presenting a Model for Virtual Education Considering Educational Equity with a Phenomenological Approach in Schools of Golestan Province. *Iranian Journal of Educational Sociology, 7*(1), 66-78. http://dx.doi.org/10.61838/kman.ijes.7.1.7 	**Purpose:** The use of virtual education has seen significant growth compared to the past, making it essential to consider it within the context of educational equity. Consequently, this study aimed to present a model for virtual education considering educational equity with a phenomenological approach in schools of Golestan province. **Methodology:** This study was applied in terms of its objectives and qualitative in its implementation. The research population consisted of experts and professionals in the field of education in Golestan province, from which 11 individuals were selected as the sample using a purposive sampling method based on the principle of theoretical saturation. The research instruments included a demographic information form and semi-structured interviews, the validity and reliability of which were confirmed. Data were analyzed using thematic analysis. **Findings:** The findings revealed that virtual education, considering educational equity with a phenomenological approach in schools of Golestan province, comprises 49 sub-categories within 10 main categories including equity-focused virtual education, development of virtual education in rural areas, enhancement of teachers' digital skills, equity in social media, improvement of students' technological skills, culture building for virtual education, a comprehensive monitoring system for virtual education, virtual education performance assessment system, understanding the gaps related to electronic education infrastructure facilities, and strategic planning for virtual education. Eventually, a model for virtual education considering educational equity with a phenomenological approach was designed for schools in Golestan province. **Conclusion:** The designed model of virtual education, considering educational equity with a phenomenological approach, can have significant practical implications for specialists and educational planners. By focusing on its main and sub-categories, they can create an environment conducive to improving virtual education with an emphasis on educational equity. ***Keywords:*** *Virtual education, educational equity, phenomenological approach, schools*

1. Introduction

Following the outbreak of the coronavirus, China was the first country where the government issued a directive to close schools to reduce and combat the spread of this disease (Tang et al., 2023). Higher education and education systems faced challenging conditions due to the COVID-19 pandemic and the declaration of a state of emergency in the country. In Iran, from late February and after the spread of the coronavirus, the Ministry of Science, Research and Technology, and the Ministry of Education sequentially ordered the closure of universities and schools hoping that the disease's spread would decrease after the New Year (Nowruz) holidays, and they could reopen schools and universities (Salimi & Fardin, 2020). During the COVID-19 pandemic, students and teachers were suddenly forced to adapt to new teaching methods and social isolation, which interfered with their emotions and feelings (Dias et al., 2021). Social isolation caused by the epidemic affected not only the health of students and teachers but also the health of schools (Karademir et al., 2020). Despite the challenges encountered during the COVID-19 pandemic, schools and universities continued their operations (Pavlíková et al., 2021). In this context, the use of technologies in education and virtual learning was a solution that authorities found to compensate for the lack of in-person education (McGill, 2020). The use of technology in education and virtual learning is becoming the new normal (Lee et al., 2021).

The word "virtual" is derived from the Latin Virtualis or the French Virtuel, meaning potential; that is, something that is not real but can be realized. A virtual object is not physically real but has the characteristics of the desired material, or in other words, represents that object. Thus, a virtual object exists but is intangible. Similarly, virtual education represents electronic education in real life with the same characteristics and features. These characteristics are realized through computers and information technology tools, so they exist but are intangible (de Melo Ghisi et al., 2023). Virtual education benefits from the power of computer networks, internet technologies, satellite networks, and new digital sciences and is essentially the art of using network technology to design, select, transform, and manage the educational process (Noteborn et al., 2012). The term virtual education encompasses a wide range of applications and processes. Synonyms for virtual education include: e-learning, distance learning, remote education, distributed learning, internet-based learning, networked learning, computer-based training, digital courses, synchronous online classes, live learning, web-based training, and mobile learning (Cho & Hong, 2021). Virtual education is the most significant application of information technology presented in various systems such as computer-aided learning, online learning, network-based learning, and networked education (Andreev et al., 2014). This term was first coined by Kerass and simply means the use of information technology for learning. In another definition, virtual education covers a wide range of processes and actions of information for learning, including web-based training, computer-based instruction, virtual classrooms, and digital collaborations. It includes content delivery via the internet, intranet, extranet, satellite broadcasts, video and audio tapes, satellite transmissions, interactive TV, and CD-ROMs (Foulerton et al., 2023). Therefore, e-learning refers to any type of course or training delivered in a manner other than face-to-face methods. Course contents may be delivered via the internet or through active and interactive videos and images. Cable or satellite TVs can also serve as mediums for disseminating course materials, or materials can be provided on CDs, DVDs, or video tapes, or a combination of the above methods can be employed (Caldwell et al., 2021). Virtual education has introduced a new paradigm, enabling learning in any field, for anyone, anytime, and anywhere. In this environment, learners and instructors are separated by time and place, or both, and educational content is delivered through learning management software, multimedia resources, the internet, and video conferencing. Learners engage in individual and group learning activities with the help of computer communications with instructors, classmates, and other individuals or resources (Machado et al., 2016).

One of the challenges that the educational system faced during the COVID-19 pandemic was the reality that most students lack the necessary resources to monitor online activities (Dias et al., 2021). From the teachers' perspective during the COVID-19 pandemic, challenges relate to reduced time available for developing activities, and from the student's perspective, lack of motivation is cited as an issue. The main challenges include insufficient infrastructure for some students, lack of communication and interaction between teacher and student, lack of socialization, inability to perform practical applications, and lack of learning motivation faced by the educational system during the COVID-19 pandemic (Lewis et al., 2012; Salimi & Fardin, 2020). Research confirms that providing quality

virtual education while maintaining educational equity is a significant challenge (Gozzelino & Matera, 2021).

Overall, historical review shows that theories presented on justice, and consequently, educational justice, are necessarily influenced by the culture and society of theorists in this field (Ranai, 2012). From an absolute and distributive perspective based on inherent merit in the classical era to a form of social contract aimed at defending and preserving individual freedom in the modern era and a relative, non-universal, pluralistic, non-meritocratic perspective, and even a threat to individual freedom and differences in the postmodern era (Martin, 2020). On a macro level, equality of opportunities carries a humanitarian and justice-seeking perspective, often considered an indicator of a developed society; however, on a micro level, equality of opportunities and educational justice are tools and mechanisms that facilitate the blossoming of creative ideas and provide equal capability development opportunities for all. Equal opportunity refers to a situation where even individuals who do not have a wealth base or membership in groups with special facilities and privileges have the chance for social mobility through education and schooling (Schumann, 2022). Educational justice equals access to the following conditions. From the perspective of access or educational entitlement; in this context, the enrollment ratio to the total educable population, eradication of illiteracy, denial of discrimination for different classes, etc., are considered. Resources made available for input into the educational system; these resources could include per capita spending, programs, educational texts and methods, and instructional aids. The performance of the educational system; the educational system's performance can be seen as the system's commitment to society, reflected in the transition from one educational level to another (Warren, 2014).

Rezvani, Parish, and Kazemi (2021), in a study on the factors creating educational justice in teaching-learning environments and the barriers to its expansion, concluded that if educational justice is established in teaching-learning environments, then fairness and equality in education and facilities, access to educational environments, and motivation and hope for further education increase (Rezvani et al., 2021).

Alipour, Noroozi, and Nourian (2021), in a study titled "Designing a Model of Effective Components on the Quality of E-learning Environments," reported that seven factors were identified for learners (with 6 subcategories including individual learner characteristics, cultural considerations, learner relationships with each other, learner-teacher relationship, learner's prior knowledge, and learner interaction with the physical environment), curriculum approach (with 5 subcategories including learner-centered processes, social approach to education, behavioral approach, constructivist approach, and constructionist approach), teacher (with 4 subcategories including teacher competence, interactive relationship with the learner, teacher experiences, and teacher relationship with school authorities), teaching-learning process (with 4 subcategories including teaching and learning styles, curriculum planning, collaborative learning strategies, and learner motivation), content (with 2 subcategories including content selection and instructional materials and media), physical environment (with 4 subcategories including physical environment, layout, light-location-sound, and safety in the learning environment), and assessment (with 4 subcategories including self-assessment, homework assignments, teacher observation, and criteria in evaluation) (Alipour et al., 2021).

Roodsaz, Kamalian, Amiri, and Ghaem Maghami Tabrizi (2017), in a study, identified causal factors affecting the pattern of virtual university education including 80 indicators in 11 concepts organizational issues, integrated management, competitive advantage, targeted educational quality, knowledge management, technology, measurability, accessibility, innovation and creativity, futurism, and meritocracy (Roodsaz et al., 2017).

Bagheri Majd and Sedghi Boukani (2017), in a study on designing an e-learning readiness model in the educational system of the Islamic Azad University, concluded that the barriers included five factors pedagogical-behavioral, managerial-structural, economic-cultural, contextual-technological, and individual-professional. Also, in the interview section, 59 initial conceptual propositions and 5 main categories and 14 subcategories in causal, contextual, and environmental sections were identified; so that the main categories included pedagogic (with 3 subcategories content production, participatory management, and intermediary approach), management (with 2 subcategories cognition and awareness, and leadership and management), individual (with 3 subcategories individual competencies, motivation, and human communications), context (with 3 subcategories higher education system background, technological infrastructure, and learning culture), and environment (with 3 subcategories higher education structure, higher education policy, and technological thinking) were identified (Bagheri Majd & Sedghi Boukani, 2017).

Akbari Bourang, Ajam, Ja'fari Saani, Saberi, and Shokouhi Fard (2016), in a study on the accreditation of a

quality virtual teaching model in higher education, reported that the model consisted of three inseparable and interacting stages of design, implementation, and evaluation, and in this model, the competencies of a virtual instructor included pedagogical skills, subject matter expertise, technology skills, and communication skills, and the skill competencies of virtual learners included communication skills, interest and motivation for learning, technology skills, teamwork skills, and metacognitive skills (Akbari Bourang et al., 2016).

The category of educational justice has been the focus of researchers in recent years from three perspectives access to equal opportunities, existing inequalities, inputs, and equal performance and has been examined from various aspects, but in the field of components related to educational justice in the field of virtual education for different levels of society and the development of a model that encompasses these identified components, no research has been conducted. In this context, this study aimed to design a model of equity-centered virtual education in schools in Golestan province, providing challenges and solutions so that stakeholders can have a better opportunity to use the proposed methods for virtual education. Also, according to the authors, with the changes that have occurred in various layers of society, including the educational system, due to the coronavirus outbreak, virtual education was used extensively for the first time. While it must be said that due to the first-time experience of this method with such breadth, it was accompanied by numerous problems, but it could be a start for creating educational justice. Many students in rural, urban, or nomadic schools study and these students are not equally provided with facilities, services, and educational quality, in other words, just as there are dimensions of social and economic inequality at different levels and layers of social life, these inequalities exist in the educational system, especially in the realm of educational quality. Lastly, the results of this study can significantly help curriculum specialists and planners and even educational authorities in better understanding equity-centered virtual education and assist them in better realizing this educational method. Therefore, the use of virtual education has seen significant growth compared to the past, making it essential to consider it within the context of educational equity. Consequently, this study aimed to present a model for virtual education considering educational equity with a phenomenological approach in schools of Golestan province.

2. Methods and Materials

2.1. Study Design and Participants

Given the nature of this research and the method of data collection, the research approach was qualitative and phenomenological. The research population consisted of experts and professionals in the education sector of Golestan province, from which 11 individuals were selected as the sample using a purposive sampling method based on the principle of theoretical saturation. Experts and specialists in educational management, educational sciences, decision-making, and policy-making in education with more than 5 years of managerial experience, more than 10 years of teaching experience, and at least a master's degree were selected among them. Sampling continued until saturation in the collected information was achieved.

2.2. Data Collection

In the qualitative section, a demographic information form created by the researchers of the current study was used for collecting demographic information, and deep, semi-structured interviews with participants were utilized for data collection. Interviews with each participant were conducted in one session lasting between 20 to 60 minutes. Participants were informed about the necessity of the research and their consent was obtained before conducting the research. Then, meetings were arranged with them at agreed times and places, and the interviews were conducted individually.

In this study, questions were initially designed for interviewing experts, then samples were identified, and interviews continued until theoretical saturation was achieved. Subsequently, the researcher analyzed the data and reduced the information to significant statements and phrases, which were then combined. In the next phase, these were transformed into a textual description and a structural description (how individuals experience phenomena based on conditions, situations, or contexts), and finally, a combination of textual and structural descriptions was presented to convey the essence of the experience to the reader. To examine the validity and reliability of the interviews, five questions were used, based on which both validity and reliability were confirmed: 1) Did the interviewer significantly influence the content provided by participants so that their descriptions reflect a true experience? 2) Was the transcription of interview content correctly done and did it include the entire meaning of the interview? 3) Can other results different from what the researcher has extracted and suggested be traced and extracted in the analysis of transcripts? 4) Is it possible to

derive a general structural description from the transcripts and reach specific content and general examples of participants' experiences (inverse method)? 5) Is the structural description specific to a particular situation or related to an experience in another situation?

2.3. Data Analysis

To identify the dimensions of virtual education and its indicators, a qualitative phenomenological analysis method was used. After conducting interviews and reaching theoretical saturation, the obtained data were analyzed using Colaizzi's 7-step strategy. This method includes the following seven steps: 1) Carefully reading all descriptions and significant findings of participants; 2) Extracting significant phrases and sentences related to the phenomenon; 3) Conceptualizing extracted significant sentences; 4) Sorting participant descriptions and conceptualizing

common concepts into specific categories; 5) Converting all deduced beliefs into complete and comprehensive descriptions; 6) Converting complete descriptions of the phenomenon into a concise, real, and brief description; 7) Final validation, credibility, transferability, and confirmability of data were examined and confirmed. Peer validation was also used, and reliability was confirmed with a 62% agreement rate between two coders.

The data from the demographic information form were analyzed using frequency and percentage methods, and data from semi-structured interviews were analyzed using thematic analysis.

3. Findings and Results

The frequency and percentage of demographic information of the samples are presented in Table 1.

Table 1

Demographic Information of Research Units

Demographic Information	Frequency	Percentage Frequency
Gender		
Male	9	81.82%
Female	2	18.18%
Age		
Less than 35 years	1	9.09%
35-45 years	3	27.27%
More than 45 years	7	63.64%
Education		
Master's degree	2	18.18%
Doctorate	9	81.82%
Work Experience		
10-20 years	5	45.45%
More than 20 years	6	54.55%

Based on the results of Table 1, most of the samples were male (81.82%) and had an age of over 45 years (63.64%), doctoral degrees (81.82%), and more than 20 years of work

experience (54.55%). The themes and concepts of virtual education considering educational equity are presented in Table 2.

Table 2

Themes and Concepts of Virtual Education Considering Educational Equity

Themes	Concepts
Equalizing educational conditions for students across the country	Lack of uniform educational conditions before the COVID era; some students benefiting from favorable educational conditions; some rural students not benefiting from optimal education.
Engaging in thought and reflection at all levels and layers of education	Increased organizational attention to improving education quality in the country; identifying strengths and weaknesses in educational services; analyzing all levels of education.
Presenting new educational innovations to empower students	Introducing innovations in virtual education due to the COVID-19 virus; strengthening students based on modern teachings; providing new teachings to students.
Realizing and expanding educational equity nationwide	Developing educational equity across all provinces; achieving equity among all students nationwide; increasing attention to education in all areas of the country.

Strengthening individuals' social responsibility	Raising students' awareness of their social responsibility; strengthening students' social responsibility; utilizing the outcomes of social responsibility to improve the country's educational conditions.
Enhancing parents' digital skills	Engaging parents to advance educational goals for students; increasing parents' learning about digital processes; raising the level of digital literacy in families.
Ensuring all individuals benefit from skilled teachers	All students utilizing knowledgeable teachers; distributing competent teachers across most regions of the country.
Reducing discrimination among people based on gender, social class, etc.	Reducing discrimination between individuals based on gender; reducing discrimination between individuals based on social class.
Preserving individuals' health during the COVID-19 pandemic	Reducing coronavirus-related risks from the outside environment with virtual education; protecting students' health.
Meeting the diverse needs of students	Identifying various needs of students; addressing different needs of students.
Increasing teachers' self-efficacy and scientific ability compared to pre-COVID conditions	Increasing teachers' self-efficacy compared to pre-COVID conditions; enhancing teachers' scientific capacity compared to pre-COVID conditions.
Enhancing teachers' proficiency in using various virtual education software	Increasing teachers' awareness of using various software; strengthening teachers in technology use.
Improving teachers' skills in virtual education	Enhancing technological skills of teachers; improving teachers' awareness.
Providing equal access for all individuals to necessary knowledge and information	Even distribution of knowledge among individuals; access for all individuals to necessary information.
Facilitating mutual communication between administrators, teachers, and students	Improving interactions between administrators, teachers, and students; increasing communications between administrators, teachers, and students.
Offering education sensitive to cultural beliefs and norms	Offering education sensitive to beliefs; offering education sensitive to cultural norms.
Utilizing modern auditory and visual methods	Utilizing modern audio methods; utilizing modern visual methods.
Creating competition and motivation for timely completion of assignments by students	Creating competition among students; increasing motivation for task completion among students.
Fostering greater interaction between students and families	Increasing communication between students and their families; improving interactions between students and their family.
Boosting academic motivation and media literacy	Increasing educational motivation; improving media literacy.
Making use of all aspects of virtual education (online teaching)	Employing all aspects of virtual education; online teaching.
Providing sufficient financial credits and facilities for virtual education	Providing sufficient credits for virtual education; providing financial resources for virtual education.
Material and moral government support for virtual education	Material support from the government for virtual education; moral support from the government for virtual education.
Promoting research and development in society	Enhancing the discussion of research in the community; improving the discussion of development in the community.
Strengthening general culture and social acceptance of virtual education	Strengthening public culture; socializing virtual education.
Building confidence for teaching and sharing in classroom groups	Creating confidence for teaching; creating confidence in sharing within classroom groups.
Increasing and enhancing access ways to virtual education	Increasing access ways to virtual education; strengthening access ways to virtual education.
Implementing educational laws and regulations	Implementing educational laws; implementing educational regulations.
Providing necessary standards for designing, developing, and implementing equity-based educational strategies	Providing necessary standards for designing equity-based education; providing necessary standards for developing equity-based education; providing necessary standards for implementing equity-based education.
Benefiting from e-services in education	Providing electronic services needed for virtual education delivery; using electronic services.
Producing interactive educational software	Producing up-to-date educational software; designing software based on interaction principle.
Making learning flexible for students	Flexibility in learning; facilitating the educational process for students.
Revising the compilation of programs and textbooks	Reviewing the compilation of programs; reviewing the compilation of textbooks.
Integrating electronic technologies in the education and learning process	Employing electronic technologies; integrating technology with education and learning.
Equipping students with electronic learning skills	Addressing the learning needs of students; improving electronic learning skills.
Identifying strengths and weaknesses of students	Identifying students' strengths; identifying students' weaknesses.
Increasing access to high-speed internet for individuals	Increasing access to the internet; equipping all provinces for internet use.
Removing network connection limitations	Identifying existing network limitations; resolving internet-related issues.
Ensuring complete security in virtual education	Creating a safe information environment for virtual users; providing software environments with high security.
Upgrading hardware and software infrastructures	Upgrading hardware infrastructure; upgrading software infrastructure.
Paying attention to the important role of education and improving internet infrastructures	Recognizing the importance of education's role; improving internet infrastructure.

Simplifying the virtual education process	Facilitating learning for students; ease of access to information for everyone.
Designing and introducing domestic programs for general student use	Designing domestic programs for student use; introducing domestic programs for student use.
Creating a more precise vision for education in terms of content transfer and distance learning	Creating a precise vision for education; distance learning material transfer.
Formulating virtual education missions with an equity-focused approach	Drafting virtual education missions; importance of equity orientation.
Setting long-term goals to establish equity in education	Setting long-term goals; establishing equity in education.
Developing strategies and approaches to achieve equity in virtual education	Adjusting strategies for equity access; adjusting approaches for equity access.
Drafting equity-focused educational policies and guidelines	Drafting equity-oriented educational policies; drafting equity-oriented educational guidelines.
Determining equity-focused virtual education laws and regulations	Establishing equity-oriented laws for virtual education; establishing equity-oriented instructions for virtual education.

Based on the results of Table 2, the main and sub-categories of virtual education considering educational equity are presented in Table 3.

Table 3

Main and Subsidiary Categories of Virtual Education Regarding Educational Equity

| Main Categories	Sub-Categories
Equity-focused virtual education	Equalizing educational conditions for students across the country
	Engaging in thought and reflection at all levels and layers of education
	Presenting new educational innovations to empower students
	Realizing and expanding educational equity nationwide
	Strengthening individuals' social responsibility
	Enhancing parents' digital skills
Development of virtual education in rural areas	Ensuring all individuals benefit from skilled teachers
	Reducing discrimination among people based on gender, social class, etc.
	Preserving individuals' health during the COVID-19 pandemic
	Meeting the diverse needs of students
Enhancing teachers' digital skills	Increasing teachers' self-efficacy and scientific ability compared to pre-COVID conditions
	Enhancing teachers' proficiency in using various virtual education software
	Improving teachers' skills in virtual education
Equity focus in social media	Providing equal access for all individuals to necessary knowledge and information
	Facilitating mutual communication between administrators, teachers, and students
	Offering education sensitive to cultural beliefs and norms
Enhancing students' technological skills	Utilizing modern auditory and visual methods
	Creating competition and motivation for timely completion of assignments by students
	Fostering greater interaction between students and families
	Boosting academic motivation and media literacy
	Making use of all aspects of virtual education (online teaching)
Virtual education culture-building	Providing sufficient financial credits and facilities for virtual education
	Material and moral government support for virtual education
	Promoting research and development in society
	Strengthening general culture and social acceptance of virtual education
	Building confidence for teaching and sharing in classroom groups
Comprehensive monitoring system for virtual education	Increasing and enhancing access ways to virtual education
	Implementing educational laws and regulations
	Providing necessary standards for designing, developing, and implementing equity-based educational strategies

	Benefiting from e-services in education	
	Producing interactive educational software	
Virtual education performance evaluation system	Making learning flexible for students	
	Revising the compilation of programs and textbooks	
	Integrating electronic technologies in the education and learning process	
	Equipping students with electronic learning skills	
	Identifying strengths and weaknesses of students	
Understanding gaps related to electronic education infrastructure	Increasing access to high-speed internet for individuals	
	Removing network connection limitations	
	Ensuring complete security in virtual education	
	Upgrading hardware and software infrastructures	
	Paying attention to the important role of education and improving internet infrastructures	
	Simplifying the virtual education process	
	Designing and introducing domestic programs for general student use	
Strategic planning for virtual education	Creating a more precise vision for education in terms of content transfer and distance learning	
	Formulating virtual education missions with an equity-focused approach	
	Setting long-term goals to establish equity in education	
	Developing strategies and approaches to achieve equity in virtual education	
	Drafting equity-focused educational policies and guidelines	
	Determining equity-focused virtual education laws and regulations	

Based on the results of Table 3, virtual education considering educational equity with a phenomenological approach in schools of Golestan province consists of 49 sub-categories in 10 main categories including equity-focused virtual education, development of virtual education in rural areas, enhancement of teachers' digital skills, equity in social media, improvement of students' technological skills, culture building for virtual education, a comprehensive monitoring system for virtual education, virtual education performance assessment system, understanding the gaps related to electronic education infrastructure facilities, and strategic planning for virtual education. Based on the main categories in Figure 1, a model of virtual education considering educational equity with a phenomenological approach was designed for schools in Golestan province.

Figure 1

The Model of Virtual Education with Respect to Educational Equity Using a Phenomenological Approach in Golestan Province Schools
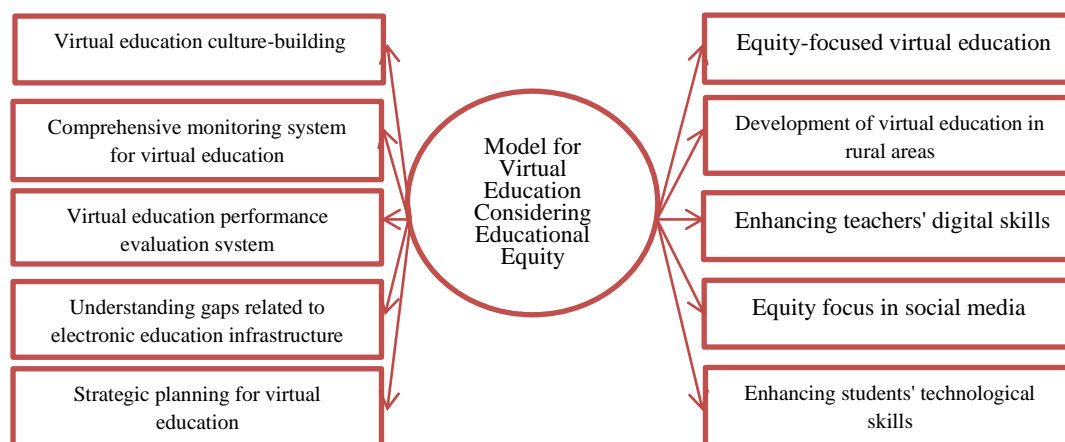
4. Discussion and Conclusion

Considering the increased use of virtual education and the role of educational justice within it, this study aimed to present a model for virtual education with respect to educational justice using a phenomenological approach in the schools of Golestan province. The findings of this study showed that virtual education, considering educational justice with a phenomenological approach in the schools of Golestan province, includes 49 sub-categories in 10 main categories consisting of equity-focused virtual education, development of virtual education in rural areas, enhancement of digital skills for teachers, equity in social media, enhancement of technological skills for students, culture building for virtual education, a comprehensive supervisory system for virtual education, a performance assessment system for virtual education, understanding the gaps related to electronic education infrastructure facilities, and strategic planning for virtual education. These findings align with several studies (Akbari Bourang et al., 2016; Alipour et al., 2021; Bagheri Majd & Sedghi Boukani, 2017; Ranai, 2012; Roodsaz et al., 2017).

One of the themes of interest to experts, based on the primary goal of the research, was equity-focused virtual education in Golestan province schools. They considered factors such as achieving uniform educational conditions for students across the country, engaging in thinking and reflection at all levels and layers of education, offering new educational innovations to strengthen students, realizing and developing educational equity throughout the country, enhancing individuals' social responsibility, and increasing parents' digital skills as influential. Generally, virtual education refers to the use of electronic systems, like computers, the internet, electronic storage, electronic publications, virtual newsletters, etc., aimed at reducing commutes, saving time and costs, and also facilitating better and easier learning. Therefore, virtual education can be described as a type of learning that utilizes technology to facilitate the learning process and becomes independent of time and place for learning. The sub-categories of equity-focused virtual education include: achieving uniform educational conditions for students across the country, engaging in thinking and reflection at all levels and layers of education, offering new educational innovations to strengthen students, realizing and developing educational equity throughout the country, enhancing individuals' social responsibility, increasing parents' digital skills.

Interview participants expressed varied but unified views on the development of virtual education in rural areas. They believed one of the benefits of virtual education is expanding education throughout all regions of Golestan province, especially rural areas. They also mentioned that by developing education in these areas and creating equal educational opportunities, different students' needs could be met. In addition to the aforementioned issues, research participants pointed out the benefits for all individuals from capable teachers and, most importantly, maintaining people's health during the coronavirus outbreak and reducing discrimination among individuals in terms of gender, social class, etc. From the researcher's perspective, global advancements in information and communication technologies have led to the wide expansion of learning opportunities and access to scientific and educational resources; namely, educational justice which aims to prevent, eliminate, or reduce discrimination among individuals based on gender, race, global status, age, social class. Consequently, people around the world generally know that introducing new technologies requires a reevaluation of traditional educational methods. For instance, in England, virtual education as an essential skill has led to equality in educational opportunities for society members and made equal access to necessary knowledge and information possible. A student in a small school in the most remote part of the country, who has not left their village due to various reasons including poverty and economic conditions, and has not benefited from recreational and scientific camps, does not have equal opportunity compared to well-equipped schools but providing necessities for virtual education and making the required equipment accessible; implementing television and virtual education alongside each other has given the same student in remote areas equal opportunity alongside capital schools. This is what constitutes educational justice. The sub-categories of the development of virtual education in rural areas include: benefiting all individuals from capable teachers, reducing discrimination among individuals in terms of gender, social class, maintaining people's health during the coronavirus outbreak, meeting different students' needs.

Another influential factor in the discussion of equity-focused virtual education, as viewed by research participants, is the digital empowerment of human resources in Golestan province schools, or the enhancement of related teachers' digital skills. Individuals mentioned various components for enhancing teachers' skills and capabilities, including increasing teachers' self-efficacy and scientific

ability compared to before the coronavirus conditions, increasing teachers' mastery in using different virtual education software, enhancing teachers' skills in virtual education. The concept of digital skills has undergone fundamental changes, focusing not only on technological skills but also on cognitive and attitudinal components of personality. These technologies, a subset of electronic technologies - including various hardware and software that people use for recreational, social, and educational purposes at home or school, include desktops, mobile devices (laptops, tablets, ultra-thin mobiles, mobile phones, smartphones, PDAs, and game consoles), interactive smart whiteboards, data entry devices, digital recording devices (cameras, flip cams, voice and video recorders), web technologies, and other internet resources (informational and multimedia resources, communicative and collaborative resources, and various software packages) for teacher learning. The sub-categories of enhancing teachers' digital skills include: increasing teachers' self-efficacy and scientific ability compared to before the coronavirus conditions, increasing teachers' mastery in using different virtual education software, enhancing teachers' skills in virtual education.

Among the important issues in designing an equity-focused virtual education model in Golestan province schools, the thoughtful theme of equity in social media stands out. This theme was formed with indirect references from some participants and contains sub-themes such as equal access for all individuals to necessary knowledge and information, facilitating reciprocal communication among administrators, teachers, and students, providing education sensitive to cultural beliefs and norms. Television, the internet, satellites, and mobile phones are among the most important visual media that have a significant impact on individuals' lifestyles. Media significantly influence the formation of individuals' thought systems, and this thought system determines the bases of lifestyle. Media, especially visual media, are constantly teaching positive and negative lifestyles. Lifestyle includes perceptions, values, and ways of behavior. Lifestyle refers to issues that shape the content of human life. Although the development of mass communication means is useful for human society in terms of information, due to easy access and exporting various cultures and unlimited content of its programs in recent decades, it has transformed the social lifestyle in some societies. In fact, media define lifestyle for us and draw a strategic map, and therefore, to achieve a justice-oriented lifestyle, relevant authorities must have necessary measures.

The sub-categories of equity in social media include: equal access for all individuals to necessary knowledge and information, facilitating reciprocal communication among administrators, teachers, and students, providing education sensitive to cultural beliefs and norms.

One of the significant themes mentioned in forming an equity-focused virtual education model in Golestan province schools is enhancing students' technological skills. This significant theme was named with foundational sub-themes including utilizing modern audio and visual methods, creating competition and motivation for timely completion and submission of assignments by students to teachers, creating more opportunities for communication among students and families, increasing academic motivation and media literacy, using all aspects of virtual education (online teaching) with special focus on equity-oriented education. Students can use technology as a tool for remote communication and collaboration, interacting with homogenous groups. This application of technology in direct interaction with computers and other communication devices enhances digital literacy and information literacy in students. All educational environments and systems have accepted their crucial role in preparing children for entry into society and the job market, and to achieve this goal, schools play an important role in providing equal and just educational opportunities and teaching skills. Providing equal, just educational opportunities and access to them is part of educational justice. Achieving educational justice is a primary matter for all societies that consider education and training an essential part of individuals' lives. The sub-categories of enhancing students' technological skills include: utilizing modern audio and visual methods, creating competition and motivation for timely completion and submission of assignments by students to teachers, creating more opportunities for communication among students and families, increasing academic motivation and media literacy, using all aspects of virtual education (online teaching).

One of the fundamental pillars in designing an equity-focused virtual education model in Golestan province schools is the creation and strengthening of a culture of virtual education. In this regard, research participants also mentioned the importance of allocating sufficient financial credits and resources to virtual education, material and moral support from the government for virtual education, enhancing the discussion of research and development in society, strengthening the general culture and social acceptance of virtual education, and building confidence for teaching and sharing in the classroom group. Although the

relationship of justice with every aspect of a society's value system is important, the relationship of education with justice goes beyond a one-way connection. This is because the education system is not only an agent for achieving justice but also responsible for nurturing justice-oriented citizens and perpetuating justice in society. Justice is a fundamental indicator of community development, an intrinsic human need, and one of the effective factors in achieving the goals of education and training. Education and training, a right for everyone, prepares individuals for a better life, developing personal abilities, and entering social opportunities. Indeed, with equity-focused education, it is possible to strengthen personal values and capacities for adhering to justice principles in individual and social behaviors, sensitive to cultural beliefs and norms. The sub-categories of building a culture for virtual education include: allocating financial credits and resources to virtual education, government support for virtual education, enhancing the discussion of research and development in society, strengthening the general culture and social acceptance of virtual education, creating confidence for teaching and sharing in the classroom group.

A significant topic referred to by research participants was the comprehensive supervisory system for virtual education. They highlighted the importance of supervision in virtual education and mentioned themes such as increasing and strengthening access to virtual education, implementing educational laws and regulations, providing the necessary standards for designing, developing, and implementing equity-focused educational strategies, benefiting from electronic services in education, and developing interactive educational software. Virtual education is rapidly expanding in Iranian schools, and the quality of learning, retention rates of learners, and their satisfaction are important and necessary; specific characteristics of this mode of education should be considered. One of the principles of e-learning processes is independent learning, which requires the training of independent learners. This means that schools, by providing necessary opportunities for more beneficial interactions and creating self-regulated learning skills in students, enable independent and effective learning. Enhancing and developing the educational quality level requires knowledge transfer in the shortest time; thus, traditional education systems are insufficient to meet today's modern educational needs. In virtual education, combining different learning methods, such as text, audio, visual, etc., can achieve maximum learning efficiency. Information and

communication technology has created significant changes in all aspects of individual and collective life, leading to the emergence and growth of e-learning, virtual schools, and smart education. The sub-categories of the comprehensive supervisory system for virtual education include: increasing and strengthening access to virtual education, implementing educational laws and regulations, providing necessary standards for designing, developing, and implementing equity-focused educational strategies, benefiting from electronic services in education, developing interactive educational software.

According to research participants, one of the key pillars in designing an equity-focused virtual education model in Golestan province schools is establishing a virtual education performance evaluation system. They stated that with such a system in place, the efficiency and productivity of virtual education would significantly increase. Additionally, they mentioned factors for its enhancement, such as making learning flexible for students, revising the compilation of programs and textbooks, integrating electronic technologies into the teaching and learning process, equipping students with e-learning skills, and identifying students' strengths and weaknesses. Proper education and training can play a special role in the advancement of individuals and, consequently, society because through appropriate education, individuals are equipped with knowledge, skills, and attitudes that enable them to respond appropriately to life situations and thus lead a better life. This issue is of utmost importance in the training of educators as they are the current and future teachers of schools. Performance evaluation of virtual education is a crucial and important task of management that involves formal and regular assessment of students and teachers, examining how they perform their duties and responsibilities relative to defined goals or objectives. The results of this evaluation help school managers to provide a scientific and precise understanding of potential capabilities and existing weaknesses, encouraging teachers and students towards human resource development and solving issues such as identifying educational needs, professional advancement, personality development, reducing dissatisfaction, as a basis for recognizing competencies, determining criteria and proper methods for awarding grades, creating motivation, and ultimately increasing educational effectiveness and efficiency. The sub-categories of the virtual education performance evaluation system include: making learning flexible for students, revising the compilation of programs and textbooks, integrating electronic technologies into the teaching and learning

process, equipping students with e-learning skills, identifying students' strengths and weaknesses.

Understanding the gaps related to electronic education infrastructure facilities, according to participants, counts as one of the important and fundamental themes in designing an equity-focused virtual education model in Golestan province schools. This theme, being a primary and essential need in forming virtual education, facilitates achieving the goals of equity-focused virtual education when these facilities are provided. Additionally, factors such as increasing access to high-speed internet for individuals, eliminating connectivity restrictions, creating complete security in virtual education, improving hardware and software infrastructure, paying attention to the important role of education and training and improving internet infrastructure, simplifying the virtual education process, designing and introducing domestic programs for use by all students are influential in this area. Educational equity is one of the most challenging topics in education and training. Creating a stress-free learning environment, leading students to growth and prosperity, uniformly implementing educational laws and regulations for everyone, and providing the grounds for achieving skills and preparedness for the job market are aspects of educational equity. In line with achieving educational equity, different strategies have been proposed in scientific texts. Strategies for securing and expanding equality of opportunities and educational equity include distributing quality and skilled teachers across regions, informing planners about the importance and results of educational opportunity equality and educational equity, and eliminating gender stereotypes from curriculums. Prioritizing the training of local human resources, motivating teachers to serve in deprived areas, proportionally distributing quality and skilled teachers across regions, expanding higher-level girls' schools in deprived areas, increasing per capita for students in deprived areas, providing facilities to eliminate educational deprivation are also strategies for equality of opportunities and educational equity. The sub-categories related to understanding the gaps in electronic education infrastructure facilities include: increasing access to high-speed internet for individuals, eliminating connectivity restrictions, creating complete security in virtual education, improving hardware and software infrastructure, paying attention to the important role of education and training and improving internet infrastructure, simplifying the virtual education process, designing and introducing domestic programs for use by all students.

Authors' Contributions

In this study, authors had equal contributions.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

There was no conflict of interest among the authors in the present research.

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Ethical Considerations

The importance and necessity of the research were explained to participants of both qualitative and quantitative sections, and assurances were given regarding ethical considerations such as confidentiality and the privacy of personal information, etc.

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