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Online Accounting Education: Opportunities and Innovations

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Abstract

The spread of the COVID-19 pandemic and the need for online teaching methods in accounting education have led to changes in training in this field. Despite its many challenges, online education has provided an opportunity to revolutionise the quality, effectiveness, and efficacy of education. Before the COVID-19 pandemic, many researchers had already discussed the opportunities provided by online education. This study uses qualitative content analysis to determine the factors, conditions, and changes provided in online accounting education from the perspective of accounting professors to improve accounting education in Iran. The interviews with 17 accounting professors showed that online accounting education in Iran has created opportunities and led to innovations classified into nine main categories and can be the start of a more general change in accounting education and a step toward improving its quality.

Keywords: Online Education, COVID-19, Opportunities, Innovations, Accounting Professors

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1. Introduction

Accounting education in universities plays a crucial role in training professional accountants. Before the outbreak of COVID-19, i.e., until the first semester of the 2019-2020 academic year, Iranian universities taught specialised courses in this field to their students in person, which was also the most common method of teaching accounting throughout the world. After the outbreak of COVID-19, universities and educational institutes were forced to use online education methods to prevent the spread of the disease, and they were therefore faced with many challenges in education due to the unexpected circumstances emerging and the lack of appropriate infrastructure.

According to accounting professors and students, some of the challenges in implementing the online education method during the COVID-19 pandemic include the lack of internet access for students living in rural areas, power outages, being financially unable to buy smartphones, tablets, or laptops, the teachers' low computer literacy, the difficulty of explaining accounting concepts, the lack of interactions, the lack of examination security, unfamiliarity with designing appropriate exam questions, insufficient technical support (Sangster, Stoner and Flood, 2020) and difficulty in designing and updating technical information and issues (Grabinski et al., 2020).

Challenges do not in and by themselves mean absolute limitation and a barrier to continuing education. A different approach to the challenges that emerged during the COVID-19 pandemic shows that each can be a path towards evolving, innovation and progress and are opportunities for good change. Any constraint can also be an opportunity to build skills, make progress, and innovate. Examining the trend of changes in accounting education in the world, the growing need to use online education can be seen. With the widespread use of online education due to the prevalence of coronavirus, there is a prospect of using this educational method in the future (Rahmouni, 2020). As a practical and difficult field, accounting requires systematic measures, sufficient studies, and basic thinking to transfer from traditional teaching methods in the classroom to online education (Grabinski et al., 2020). There are very few researches in accounting education in Iran that can be studied to understand online accounting education and be aware of its opportunities. Therefore, to improve the quality of education, it is necessary to recognise the various dimensions of accounting online education and the opportunities available. Identifying opportunities for online accounting education in Iran can help predict the facilities and conditions of online education in the post-corona era. These opportunities can also be better utilised by identifying innovations created by certified accounting professors and introducing them to others. The importance of identifying opportunities and innovations in online accounting education can be expressed from three dimensions; First, it helps the planners of the educational system to anticipate, identify and strengthen the opportunities for growth and innovation and their optimal use in order to increase the quality of accounting education, to develop appropriate programs to promote education in this field; Second, it enables accounting professors to recognise and use these opportunities and innovations to improve the quality of education by using them; and third, Accounting students are introduced to opportunities and innovations that can enhance the quality of their education so that they can make good use of the online learning environment by recognising them.

The rest of this article explains the opportunities identified in online accounting education during the COVID-19 pandemic and previous years. Then, according to the interviews conducted with accounting professors in Iran, the opportunities and innovations provided by online education will be presented from their perspectives.

2. Theoretical Foundations and Background

Accounting professors and researchers have pointed out the weaknesses in accounting education

in terms of the expectation gap, the gap between accounting knowledge and practice (Etemadi and Fakhar, 2004; Rahnama Roodposhti, Vakili Fard and Raeszadeh, 2009), and the need to revise the accounting education method and employ new technologies within it (Mansuri, 2012). Throughout the world, many studies have been conducted by researchers to replace traditional methods of accounting education with new methods or ensure the use of a combination of new and traditional methods. As a result, some new methods have been proposed to improve performances, increase the quality of accounting education, and increase student satisfaction. One of these methods is online education, which is used synchronously, asynchronous or hybrid. Online education is based on the use of the internet and related technologies. There has always been a need to use Information Technology (IT) as part of the educational environment in accounting education. Still, this need has become more apparent in recent years with the rapid advances in IT. Before the outbreak of COVID-19 in Iran, online education was only used in a limited way as a pilot in a few universities (e.g., Tehran University, Isfahan University, Sharif University of Technology, Tarbiat Modares University, Payame Noor University, etc.).

According to the theory of constructivism, humans can learn anything if they make it meaningful in their minds. Also, knowing is synonymous with understanding how to act and do something. As a proponent of constructivism, Rousseau's idea is that problems must be *experienced* during education. As a result of this experience, the learner can give meaning to phenomena and determine their actions. Online accounting education can be an opportunity to simulate and demonstrate the real and practical environment of accounting and can thus help students understand accounting concepts (Braun et al., 2020).

According to constructivism, electronic technologies can be widely used in learning and help bring about changes in education. Technology can encourage professors and engage students in more complex tasks and content. For instance, technology can support professors in becoming informers rather than information disseminators; it can provide safe opportunities for teachers to become learners and share their ideas about curricula and teaching methods with others; it can also encourage students to perform more challenging tasks and increase the (Zofen, 2010).

The International Accounting Education Standards Board (IAESB) statement lists IT knowledge and skills required for professors to train accounting students to become professional accountants and perform tasks such as IT risk assessment and IT control (Wilson, 2014). Defining an accountant's core competencies, the American Association of Certified Public Accountants (AICPA) also considers the ability to use technology a factor that helps enhance students' skill development and highlights its role. The importance is given to the assessment of computer skills in the CPA test also shows the need for applying IT in accounting.

In Iran, the accounting profession needs graduates who can develop this profession, understand it from the information system perspective, and provide the skills and services required by potential business owners. According to international accounting education standards, the content of professional accounting education courses should include IT knowledge and capabilities (IFAC¹, 2010).

By examining the situation in different universities around the world during the COVID-19 pandemic, Sangster, Stoner and Flood (2020) stated that despite its many challenges, online education has been able to create many opportunities for accounting education, some of which include:

- Transformation in education based on innovation, digitalisation, globalisation, interdisciplinary relationships, and flexibility
- Creating a balance between research activities and teaching for professors

- Virtual visit with the students
- Eliminating travel and transportation time
- Employment during education
- Promoting conceptual learning
- Resolving educational problems
- Innovations (Sangster, Stoner and Flood, 2020).

Pre-COVID-19 research has also shown that students and professors have been very satisfied with the flexibility and convenience of online education, and many studies have shown satisfaction (Jones, 2016) and improved student performance and academic achievement (Coetzee, Schmulian and Coetzee, 2018) with the use of online education.

Research shows that online education has created opportunities for improving the quality and effectiveness of accounting training. For instance, according to Love and Fry (2006), the students' own building of knowledge and formulation of learning strategies for themselves, the choice of their preferred time, place, and style of learning, their development of self-sufficient and independent learning, and the promotion of critical thinking and analysis skills among them are some of the opportunities created in the context of online education.

According to Lillie and Wygal (2011), since the accounting profession makes extensive use of information and communication technology (ICT), the online method is an opportunity to promote the use of IT by students and develop their technological skills and effective interaction with customers and colleagues. Students can benefit from communication with their professors outside of class hours, and the effective communication of professors with students to further involve them in their own education are other opportunities provided through online education, as discussed by these researchers.

Guthrie, Burritt and Evans (2013) proposed that online education is an opportunity to discuss and study a particular accounting topic emphasised in the profession, which results in the training of expert accountants and the production of high-quality interactive resources. According to these researchers, other opportunities provided by this method include the increased access to education for people who are economically, socially, or geographically disadvantaged, the provision of professional education to a wide range of students and enthusiasts anywhere and anytime, the development of professional experience, real-time dissemination of accounting research findings, the creation of an environment for digital discussions of plans, and training professional accountants on a global scale. Einig (2013) viewed the use of online education as an opportunity for students to get things done at their own pace.

Humphrey and Beard (2014) state the use of the online approach as an opportunity to train students as individual learners and an opportunity to improve educational course management and time management by reducing the time spent on some tasks and increasing teachers' focus on high-quality activities that improve the effectiveness of teaching. Lawless (2014) also proposed learning effective time management and gaining experience using web-based tools and technologies as other opportunities provided by online education.

Bayerlein (2015) viewed online education as an opportunity for virtual internships in the business environment, resulting in integrating theoretical and practical knowledge, better learning, and employing in-depth study strategies (inappropriate learning environments). Also, using different learning styles, the fact that every person can use their preferred style, and the flexibility created are other advantages of this method. Bayerlein further stated that a result-oriented educational environment is needed to take advantage of these opportunities.

Arkorful and Abaidoo (2015) outlined the opportunities available through online education as

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follows: Knowledge and competencies becoming effective by the access given to a wide range of information, reduction of costs, helping address manpower shortages in universities, increasing student satisfaction and reducing their stress, educating the community, cultural diversity, globalisation, achieving goals faster with less efforts, gaining experience from specialists in various fields, comprehensive learning with global relationships and dialogue with others, the ability to browse videos and content and view the details of activities, receiving and sending instant feedback in teacher-student communications, and teaching people with disabilities from anywhere.

Reyneke and Shuttleworth (2018) viewed this educational method as contributing to the comprehensive development of students' skills. By proposing the case study method in this educational context, they argued that skill development is one of the major educational opportunities this method provides. Montgomery (2018) also proposed online education as an opportunity to increase existing financial resources by offering more classes with larger numbers of participants during the day and week and a great opportunity for students interested in online communication.

Grabinski et al. (2020) considered online education an opportunity to acquire the additional skills needed and create added value for students. Chan (2020) also viewed the online approach during the COVID-19 pandemic as an opportunity for basic thinking about online education (e.g., planning to improve the quality of virtual services and expand simulation) and the internationalisation of higher education at home.

Providing opportunities for students to interact and work and thus solving the issue of isolation and distance from the study setting and even dropping out of school are other advantages of online education noted by Malan (2020). Achieving conditions that are difficult or impossible to achieve in a traditional environment and the students' comfort and self-reliance, personalisation of education, and diversification of the learning environment are other opportunities offered by the online approach, according to Braun et al. (2020). Rahmouni (2020) also considered online education a possibility for lifelong learning. In summary, previous studies have identified the opportunities and innovations identified in online accounting education:

Table 1: Opportunities and Innovations Introduced in Previous Research for Online Accounting Education

Research paper title	Name of authors (year)	Introduced opportunities and innovations
Seize the Opportunities that Online Education Offers, says a Lifelong Learner	Rahmouni, N. (2020)	Lifelong learning
Studying Coronavirus (COVID-19) and Global Higher Education: Evidence for Future Research and Practice	Chan, R. Y. (2020)	Simulate the work environment and create diversity in the learning environment Basic thinking about Online Education and the Internationalisation of Higher Education at Home Comfort
Accounting graduates with both online and traditional coursework: impact on hiring decisions	Braun, R. L., Boldt, M. N., Mauldin, S., & Viosca, C. (2020)	Personalisation of education Achieving conditions that are difficult or impossible to achieve in a traditional environment
Engaging students in a fully online accounting degree: an action research study	Malan, M. (2020)	Student employment opportunities Opportunity for interaction
Embedding e-Learning in accounting modules: The educators' perspective	Grabinski, K.; Kedzior, M.; Krasodomska, J., & Herdan, A. (2020)	Gain the additional skills that a professional will need in the future Create added value for students
Insights into accounting education in a COVID-19 world	Sangster, A., Stoner, G. and Flood, B. (2020)	Transformation in education Reduce costs by eliminating travel Promoting conceptual learning

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Accounting education in an open distance learning environment: Case studies for pervasive skills enhancement	Reyneke, Y. and Shuttleworth, C. C. (2018)	Resolving educational problems Innovations A factor contributing to the comprehensive development of students' skills Proposing the case study method in this educational context
Perception of Online Accounting Graduates: State of Florida Hiring Managers' Perspectives	Montgomery, E. (2018)	Opportunity to increase existing financial resources by offering more classes Teaching people with disabilities from anywhere Ability to browse videos and content and view activity details Send instant feedback on teacher-student communication Effectiveness of knowledge and competencies by the access given to a wide range of information
The role of e-learning, advantages and disadvantages of its adoption in higher education	Arkorful, V. and Abaidoo, N. (2015)	Gaining experience from specialists in various fields Eliminate labour shortages in universities Achieving goals faster with less effort Educating the community, cultural diversity, globalisation Comprehensive learning with global relationships and conversation with others An opportunity to educate all sections of society Opportunity for a comprehensive learning Each person can use their preferred style, and flexibility is created
Curriculum innovation in undergraduate accounting degree programmes through "virtual internships."	Bayerlein, L. (2015)	Employing in-depth study strategies Virtual internship in the business environment and combination of theoretical and practical knowledge and better learning Increasing students' experiences in education
Facing the Facts: opportunities and challenges of online learning	Lawless, E. (2014)	Gaining experience using web-based tools and technologies Learning effective time management Train students as individual learners Increasing teachers' focus on high-quality activities that improve the effectiveness of teaching
Faculty perceptions of online homework software in accounting education	Humphrey, R. L. and Beard, D. F. (2014)	Opportunity to improve educational course management and time management by reducing the time spent on some tasks Professional education to a wide range of students and enthusiasts anywhere and anytime
Challenges for accounting and business education: blending online and traditional universities in a MOOC environment	Guthrie, J., Burritt, R. O. G. E. R. and Evans, E. (2013)	Training of expert accountants Training professional accountants on a global scale Discussing and studying a particular accounting topic that is emphasised in the profession Development of professional experience

Supporting students' learning: The use of formative online assessments	Einig, S. (2013)	<ul style="list-style-type: none"> Production of high-quality interactive resources Real-time dissemination of accounting research findings Creation of an environment for digital discussions of plans Opportunity for students to study at the desired speed (slow or fast) Students benefit from communication with professors outside of class hours Effective communication of professors with students to further involve them in their own education
Virtual Office Hours (VOH) in accounting coursework: Leveraging technology to enhance an integrative learning environment	Lillie, R. E. and Wygal, D. E. (2011)	<ul style="list-style-type: none"> Promote the use of information technology by students and develop their technological skills Effective interaction with customers and colleagues (communication) Choice of their preferred time, place, and style of learning The students' own building of knowledge and formulation of learning strategies
Accounting students' perceptions of a virtual learning environment: Springboard or safety net?	Love, N. and Fry, N. (2006)	<ul style="list-style-type: none"> Development of self-sufficient and independent learning Promotion of critical thinking and analysis skills Eradicate the boundaries of place and time

3. Research Methodology

The literature review showed that accounting education in Iran also has many potential opportunities that need to be identified to improve the quality of training in this field. The question thus arises as to what opportunities are created by online accounting education in Iran.

This study utilised qualitative content analysis. Like Chan (2020), Reyneke, and Shuttleworth (2018), after studying the existing literature, the opportunities mentioned in previous research in online accounting education were extracted, and interview questions were prepared on their basis as a thematic guide. Structured interviews were the primary instrument used. An interview is a controlled exchange of words effective for exploring people's opinions (Wiid and Diggins, 2015).

The research population consisted of accounting professors from universities across the country. In qualitative research, we are looking for an example representing the community to generalise the study's findings to the whole community. This is done to understand the phenomenon in question in the community from which the sample is selected (Helman, 2002). Therefore, qualitative research is based on purposeful sampling to select sample members to effectively understand the central phenomenon under study (Zolfagharian and Latifi, 2011). In this study, the sample was selected among Iranian accounting professors purposefully, and they were invited for an interview. The interviews were held with professors who played scientific activities in accounting education. Data were collected until reaching theoretical saturation; that is, the interviews were discontinued when no new information could be obtained from the respondents any longer. The total number of samples until reaching saturation amounted to 17. Table 2 presents the interviewed professors' frequency by the academic rank of professors, type of university and teaching experience.

Table 2. Frequency of the Interviewed Professors by Academic Rank, Type of University and Teaching Experience

Academic Rank	Sample Size	Type of University	Sample Size	Teaching experience (Year)	Sample Size
Assistant Professor	5	State university	14	Up to 15 years	7
Associate Professor	8	Islamic Azad University	1	Up to 25 years	6
Full Professor	4	Non-profit higher education institutions	2	More than 25 years	4
Total	17	Total	17	Total	17

The selected professors were mostly associate professors of state universities with about 20 years of teaching experience. An email was sent to all professors requesting an interview to contact them. The interviews were then conducted in coordination. The interviews were conducted in a structured manner using written questions provided to the professors. The professors provided answers to the questions in writing format, audio recordings, telephone calls, or online interviews.

Coding was performed after each interview to determine the open codes. The process of recording responses and extracting code, like the Orlando (2020) research, was done in Excel (2016) software. The axial and selective codes (categories) were then extracted. Code development and data search were performed first deductively and then inductively. Deductive codes are derived from a conceptual framework, and data searches are based on a title or concept within the conceptual framework. Inductive codes are taken from transcribed data, and the data search is carried out using topics that are defined inductively (Abolma'ali, 2012).

3.1. Validity and Reliability

Like the Orlando (2020) study, the data triangulation method was used to validate the research findings. The views and opinions of professors with different scientific ranks, including professors, associate professors, assistant professors and from various universities, including State University, Islamic Azad University and Non-profit higher education institutions, were collected and analysed. In addition, data were regularly compared by a researcher other than the main interviewer, and the percent agreement index measured the coding reliability. Percent agreement is the ratio of the sections on which the two coders agree to the total number of sections rated.

$$P_A = \frac{N_A}{N_A + N_D} \times 100$$

where N_A is the total number of agreements and N_D the total number of disagreements.

$$P_A = \frac{109}{109 + 11} \times 100 = 91\%$$

A more than 75 percent agreement indicates excellent agreement (Motamedzadeh, Tavakoli and Golmohammadi, 2014).

4. Findings

Finally, 131 open codes and 25 axial codes were obtained by analysing the data, which resulted in nine categories after their classification. The first category extracted from the interviews removed restrictions and frameworks in online accounting education. This method has removed the restrictions and frameworks due to being electronic and remote. Table 3 shows the open and axial codes of this category.

Table 3. Removing restrictions and frameworks

Educational facilities and equipment	Time
	Place
	Space
	Number of students in the class
	Single teaching tool
	A large amount of information being shared
	Increased quantity and volume of lessons
Educational communication	Holding classes and webinars with several professors simultaneously
	Communication with professors abroad the country
	Wider interactions
	Online interviews
	Participating in various classes, conferences, and meetings
	Improved educational communication
	Learning about different cultures

The results of the interviews showed that professors have been able to use a variety of educational tools in the context of online education, such as videos, books, spreadsheets, websites, and virtual networks. Everyone has removed time and space constraints, and communication has become facilitated at a wider level. Many professors mentioned in their interviews that online education has provided them with the opportunity to invite qualified professors from other cities and countries to teach at their classes so that students can benefit from virtual interactions with them.

Table 4. New accesses

Information access	Access to student information and records
	Access to a variety of archives
	Access to the latest statistics and information
	Access to multiple sites and resources
Communication access	Access to a network of global communications
	Access to different professors
	Access to top education around the world
	Access to students from different regions and even other countries
	Access to remote universities for teaching
	Presence of learners who could not have been physically present
	Lifelong communication
	Communication with people working in the profession and different professors even in other universities
	Collective or dedicated voice and text comments for professors
	Electronic submission of content and assignments
Teaching tools and techniques	Discussion forums
	Using a variety of educational content and tools
	Access to the latest training techniques without requiring special facilities
	Complementing the subject of the lessons with a variety of websites, pamphlets, files, etc.
Class affairs	Access to software and multimedia facilities
	Ability to combine classes
	Creating variety in classes and participating in more courses
	Ability to remotely monitor the classes held
Others	Access to recorded class and course files
	Creation of an opportunity to address other issues

Such virtual interactions in the class environment contribute to students' interaction with new

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professors and lead to wider interactions between the students themselves. In this respect, they can also become somewhat familiar with different cultures. Online accounting education removes some constraints and frameworks and facilitates new access to information, communication, teaching tools and techniques, class affairs, etc. Table 4 shows the codes and categories related to new accesses.

Some professors agreed that easier access to a variety of information resources and electronic and multimedia tools in the context of online education had enabled comprehensive education in the classroom. Accessing experienced professors and students in different regions has facilitated educational communication. This communication has taken place both in online classes and virtual networks. By forming or joining scientific groups in virtual networks, most professors can interact virtually and receive various comments and feedback from professors and students. In addition, since there is no space constraint in the online classroom, teachers can combine classes and thus hold additional and more diverse classes and have the time to address other issues. Also, some of the professors who lived in different cities have switched to virtual universities of their choice to teach their favourite courses.

Online accounting education has also created saving opportunities for professors. Table 5 presents the codes and categories extracted from the interviews in this regard.

Table 5. Savings

Cost savings	Costs of fuel and energy, water, electricity, depreciation, maintenance, food, catering, transportation, communication and related services, and printed books. Manpower for exams and student affairs, dormitories and accommodation, educational facilities; Time-opportunity costs
Other savings	Saving space Saving time

According to the interviewees, the closure of universities during the COVID-19 pandemic saved operating and non-operating costs. It has also been effective in reducing traffic and air pollution and has led to the greater preservation of natural resources and the environment. In addition, resources can be used elsewhere or to improve infrastructure from the savings generated by online education. The time saved also served as the best opportunity to deal with issues the professors did not have enough time before.

According to some professors, online education has also led to more self-reliance and autonomy among capable students. The codes and categories related to this factor are reported in Table 6.

Some interviewees stated that student-centred online education systems, such as postgraduate courses, lead to self-reliance in the students. Online education serves as the best opportunity for developing self-reliance if the students can desirably continue their education by managing their time, benefiting from their abilities, and adapting to the conditions.

According to some professors, students learn independently in online education and thus become more self-reliant. In some cases, students are even put to teach their professors. Also, because students have greater opportunities for employment during online education, they become financially self-reliant.

Table 6. The development of self-reliance incapable students

Performing technological activities	Computerised modelling of concepts by the students
	Various technological activities performed by the students
	Unique web browsing and searches by the students
Individual learning	Educational and moral self-reliance for the students
	Students teaching the professors
	Students' self-control
	Individual use of complementary resources in cyberspace by the students
	Students watching the class videos alone
	Students comparing their homework and solutions individually
	Individual learning by the students if desired
Livelihood	The leading role of the professor
	More search and research done by the students
Cognitive	Students' economic self-reliance
	Helping families and gaining experience by the students
Others	Getting to know more about professional communities and other professors
	The development of abilities not previously developed in the students

One of the interviewed professors believed that online education had been a compulsion during the COVID-19 pandemic, and times of compulsions and constraints are always associated with people becoming adept at finding solutions. Some of the interviewees discussed the students' improved skills in online education, and Table 7 presents the codes and categories related to this finding.

Table 7. Students' improved skills

Multimedia skills	Strengthening technology and ICT skills
	Improving extracurricular skills
Professional skills	Becoming a jack of all trades
	Strengthening the theoretical foundations and professional skills of accounting
Other skills	Improved eloquence of speech
	Improved holistic approach as a skill
	Improved teamwork skills
	Improved entrepreneurial skills
	Improved communication skills
	Improved multi-level communication
	Improved foreign language skills
Improved critical thinking skills	

Almost all the professors agreed that due to the use of computers and electronic tools in online accounting education, technological skills had been strengthened in students and professors, and innovations have been witnessed in this area. Some of the interviewees believed that because of the time saved and the facilitated access to various educational opportunities, students could participate in skill-based classes and courses more easily, which will improve their extracurricular skills. One professor also believed that involving students in education and using the full range of facilities available and visual communication in non-problem-based and theoretical courses will improve their skills. Some interviewees stated that the formation of floating student teams strengthens the students' teamwork skills. Also, as students enter the classroom in a virtual environment, they more confidently present their lessons orally, give lectures more comfortably, and interact more widely with the teachers. Some of them believed that the virtualisation of communication in online education, which

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has led to the formation of and membership in virtual groups, has made it easier for people to criticise and challenge various issues without fear, thus creating a basis for better communication interactions and improved critical thinking. According to the interviewees, the opportunity created for the students for time and new accesses has also contributed positively to their employment. Table 8 shows the codes and categories extracted from the interviews in this area.

Table 8. Student employment opportunities

Potential employment	Internship Students' interaction with professionals in the educational setting and getting recruited by them Promotion of professionalism among the students and helping secure employment Getting help from entrepreneurs and startups to gain more classroom experience and find employment
Actual employment	The students holding classes and earning money Having the opportunity to be employed Learning to work with scholarships Remote employment Employment during education Taking tests in the place of others!

According to the professors, the opportunity created by the reduced need for commute and not requiring physical presence in online education has helped the students become employed during their education. In the context of online education, students can offer in-service training and earn an income. In addition, online education can allow the students to increase their professional abilities and engage in various jobs that can generate income for them. The more accessible communication with entrepreneurs and experienced people in the virtual environment and benefiting from their experiences also provide employment opportunities. According to some professors, online education can serve as an opportunity to reduce the gap between the needs of the industry and university education by increasing the students' interaction with the industry and their improved professional training. Some professors believe that online accounting education can help improve education and address the existing challenges by transforming the education system. Table 9 presents the codes and categories in this area.

Table 9. Educational changes

University and educational programs	Using the generated savings for improving infrastructures, technologies, and educational resources Opportunity to enter the age of the Internet of Things Workplace simulation in education Educational revolution The effect of technology on the theoretical framework of financial reporting Reconstruction of accounting in the modern era Industry-specific bachelor of accounting Creating floating content for books and customised tutorials An opportunity for change E-learning and entering all the corners of ICT Creating a training tree Adaptation of educational standards at the international level and scientific relations with foreign countries
Quality of the education provided to the students	Designing conceptual questions for exams and learning the concepts behind the lessons The capable students' higher quality of work Statement of problems by the students

According to the interviewees, with the outbreak of COVID-19, universities inevitably continued to teach online and quickly adapted their education system to the conditions. Although the infrastructure is not yet well in place, the education system has changed so that its effects will continue to exist in the post-COVID-19 era. Professors expect to use hybrid teaching methods using face-to-face and online training side by side in the future. These changes have facilitated and increased the use of technological gadgets among professors and students and have provided ways to change the content of accounting education, facilitate access to industries to ensure industry-specific accounting education, and achieve globalisation. Some professors have also recruited PhD students to manage their master's classes and postgraduate students to manage their undergraduate classes and dubbed it the Training Tree. According to some professors, all of these measures have opened a window to the transformation of accounting education with the help of ICT.

The other opportunities provided by online education in the view of accounting professors are reported in Table 10.

Table 10. The other opportunities

Other opportunities created	Reduction in the need to be away from one's family and decreased worries Reducing the need for commute and a resultant reduction in air pollution Building a good social capital
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According to some interviewees, eliminating the need for commuting to class has reduced the distance between families and students studying in other cities. The need for commuting has been eliminated for all students and professors, helping reduce traffic and air pollution.

According to one professor, the sudden introduction of online education has strengthened an extensive education network for universities, which has improved the infrastructures, skills, and educational content. In addition, society's trust in online education has developed a good social capital for universities.

From the viewpoint of some professors, there have been innovations in accounting education through the use of the facilities available for online education, and Table 11 presents the related codes and categories of this area.

Some professors have taken creative steps to better teach accounting by adding audio and video to PowerPoint™ files, putting animations and graphics in them, making complimentary training videos, and at a more advanced level, by even making educational animations in a special studio or simulating the environment. To compensate for the technical and internet-related shortcomings, one of the professors used the triple simultaneous online-offline-quasi-offline method to pursue virtual training in the best way. Using the Learning Management System (LMS) and its facilities had allowed many professors to hold periodical and weekly exams and improve the educational program's order. The use of complementary technology websites and tools has also benefited the interviewees.

Some professors paid more attention to the students' intelligence and learning style in an innovative move. Learning style refers to acquiring knowledge (Ellington and Benders, 2012). Some professors believe that a group of students learn better through online education with the help of audio and video, and some of them need face-to-face involvement and observation of the real environment to learn better. Realising this difference, professors took flexible measures to improve the quality of their teaching.

Table 11. Innovations

Professor	Benefiting from technological tools	Narrated PowerPoint™ files
		Converting booklets to PDF and using them for teaching
		Simultaneous use of websites and cyberspace
		Online-offline and quasi-offline virtual training (webinar-voice)
		Using new tools
		Drawing the flowchart relationships between topics
		Constructing dynamic movements and animated content
		Making educational video clips
		More professional training with appropriate software
		Using a light pen
		Uploading questions on the website
		Weekly quizzes at scheduled times
		Making offline animated educational materials in the studio
		Drawing shapes, forms, etc. in the form of videos
		Using YouTube videos and creating Persian subtitles
Approaches toward the students	Giving scores to practical classroom activities	
	Random questions from previous topics	
	Getting random comments from the students on the content	
Benefiting from new accesses	Paying attention to the different intelligence levels of every individual	
	Online participation in conferences in different regions	
Students	Benefiting from technological tools	Benefiting from other professors
		Training faculty members
		PowerPoint presentation of the solved problems using sound and images
	Operational	Financial modelling by the students
		Working with MS Excel™ and MS Access™
		Posting assignments on social networks
Educational		Presenting lessons with the help of Google Drive™
		Student participation
		Group activities
		Review of the students' assignments by other students
		Encouraging class presentations
		Changing the educational behaviours
		Using computers in financial sciences

According to the interviewed professors, students have also been able to take innovative actions with the help of technological instruments or with the cooperation of the professors. Also, online

education has underscored the use of computers in financial sciences and the integration of IT with accounting education.

By putting together the axial codes and categories, the conceptual model of the research can be drawn as follows.

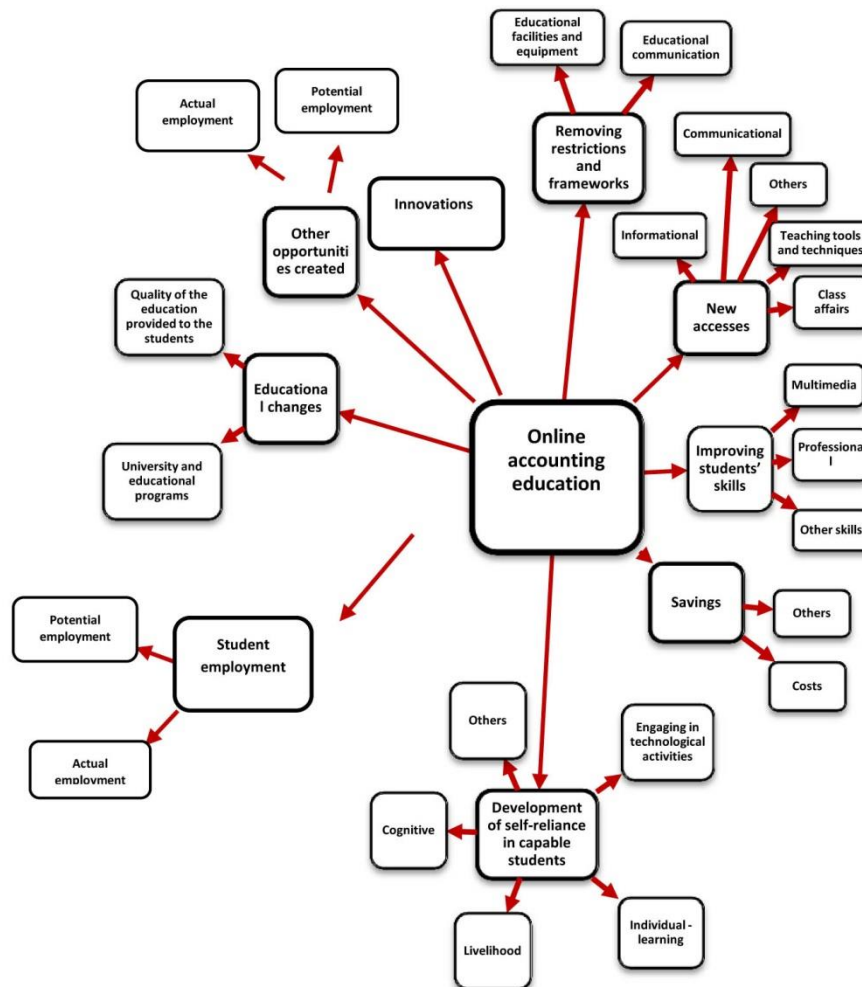


Figure 1. The conceptual model of opportunities and innovations provided by online accounting education in Iran

5. Conclusion and Recommendations

There has been a need to change accounting education since the advent of new technologies due to the complexity of businesses and the gap between universities and industries. With the initiation of online education to prevent the spread of COVID-19, universities and academics in Iran have faced limitations such as technical and infrastructure issues, students' poor attention and focus in virtual classes, difficulty explaining basic accounting concepts, some students' or professors' lack of access to computers, tablets or smartphones, and reduced social interaction and poor cognition and learning. These restrictions, however, have not blocked the path to education.

Universities have used their IT teams to set up online education systems with university officials' financial and spiritual support and worked to improve infrastructures that had many weaknesses from the beginning. Giving training to professors and students was also one of the good and timely

measures different universities took to prepare for online education. Professors and students have also learnt to adapt to the circumstances. Over time, despite its immaturity and shortcomings, online education established its rightful position in universities. The sensibility and cooperation of universities and academics have led to the removal of many obstacles and challenges and the creation of valuable social capital for universities to benefit from it even in the future. This social capital was the creation of extensive educational networks, the strengthening of technological infrastructures and skills, the preparation of technological educational content, and the acquaintance of academics with online education systems and their position and applications, and although accounting education already needed this transformation, the online method had not yet established its position in this field.

After using online education, academics' concern for unforeseen educational issues was greatly reduced, and many professors became creative to take advantage of the opportunity and took measures that were not easily possible during in-person education before. Taking into account the fact that practical accounting training in the workplace and professional learning along with university education are requirements of accounting education, many professors used the opportunity bestowed by the removal of time and space constraints, invited experts to teach in their online classes and acquainted the students with these experts and with the details of the practice of accounting. Some professors also managed to improve the quality of accounting education using technological tools and simulate the work environment by preparing videos and animations.

Inviting specialist accounting professors from other universities for short lectures in addition to each professor's own teaching was another step taken by some professors. In this situation, students who sought to benefit from education found many opportunities to meet professional accountants and professors from other universities and could thus become part of a wider professional environment, which, for some of them, led to better educational goal-setting, better learning, and even employment opportunities.

The interviews showed that online education has led to the removal of some restrictions and set frameworks due to its virtual nature and flexibility. In line with the present findings, Love and Fry (2006), Lillie and Wygal (2011), Arkorful and Abaidoo (2015), Bayerlein (2015), and Braun et al. (2020) also discussed how many educational limitations were removed in the context of the online method in their studies.

Online education has provided new access from the perspective of accounting professors. This category was also discussed by Guthrie, Burritt and Evans (2013) and Arkorful and Abaidoo (2015). The savings generated from online education were another topic extracted from the interviews. Similarly, Arkorful and Abaidoo (2015) and Montgomery (2018) also confirmed the savings generated by online education.

According to the interviewed accounting professors, students' self-reliance was another achievement of online education. Studies by Love and Fry (2006), Humphrey and Beard (2014), and Arkorful and Abaidoo (2015) also indicated students' independence and self-reliance in online education. Students' enhanced skills in the context of online education, which was inferred from the interviews with the professors, has also been supported in the studies by Love and Fry (2006), Lillie and Vigal (2011), Lawless (2014), Bayerlein (2015), Reyneke and Shuttleworth (2018), and Grabinski et al. (2020). The creation of employment opportunities for students due to the opportunities created in online education was another category extracted from the interviews with accounting professors. Guthrie, Burritt and Evans (2013), Arkorful and Abaidoo (2015), Braun et al. (2020), and Malan (2020) also suggested how students had attained opportunities for employment by this means. The educational changes made by the introduction of online education in accounting was another category extracted from the interviews with the professors, which was also mentioned by

Guthrie, Burritt and Evans (2013), Humphrey and Beard (2014), Arkorful and Abaidoo (2015), Chan (2020), and Braun et al. (2020). Other opportunities mentioned by Arkorful and Abaidoo (2015), Malan (2020), and Grabinski et al. (2020) were all in line with the 'others' category of opportunities created through online education in this study. All the categories extracted from the interviews with Iranian accounting professors were mentioned earlier by Sangster, Stoner and Flood (2020), who studied accounting education during the COVID-19 pandemic in other universities worldwide.

In some researches conducted by researchers from other countries, opportunities in online accounting education were introduced that have not been mentioned in the present study by Iranian accounting professors. For example, the opportunity for interaction suggested by Malan (2020) was not found in interviews with professors. According to the opinions received from some Iranian professors, online education, due to the limitation of face-to-face interactions, limits the opportunity for interaction and is considered a challenge. Grabinski et al. (2020) Also presented the opportunity to create added value for students in online education, which is not provided in Iran. Such an opportunity arises when students can develop the additional skills needed. According to the interviews conducted, it seems that since the online education infrastructure in Iran is not suitable, and people are unfamiliar with the culture of distance education, Although students have had the opportunity to create value and increase their skills in various dimensions, they have often not been able to take full advantage of these opportunities and have not been provided with such an opportunity. Another opportunity that has not been provided from the perspective of Iranian accounting professors is the opportunity to apply the case study method in accounting education. According to Reyneke and Shuttleworth (2018), since the case study method can comprehensively enhance students' skills, it is better to use the case study method in the online education environment, where there is an opportunity to discuss and access various resources in the undergraduate and graduate courses in accounting. This educational method in Iran has not yet found its place. Due to the lack of complete familiarity of professors and students with this method, the opportunity to use it has been ignored despite the provision of new accesses in the online environment. Opportunities to help address the shortage of labour in universities and comprehensive learning opportunities for students are also among the causes that Arkorful and Abaidoo (2015) mentioned in their research as opportunities provided in online accounting education, which according to the results of interviews conducted in Iran, such no opportunities were mentioned. Iranian universities usually have a sufficient workforce. Online education has made it possible to use the services of specialists without time and space restrictions. Still, on the other hand, the workload of some workforce has been reduced by the closure of universities, or even some of them have become unemployed. Comprehensive learning is also provided when all facilities and infrastructure are available and professors and students are sufficiently prepared and knowledgeable for proper teaching. However, students do not have comprehensive learning due to their lack of provision.

Increasing the use of an in-depth study strategy by students was an opportunity mentioned in the Bayerlein (2015) study, but the results of the interviews did not show it. This strategy is well done when the learning environment is student-centred, outside the traditional classroom environment, and provides the right conditions (Bayerlein, 2015). Although online education offers the possibility of holding classes outside the traditional environment, accounting education in Iran is often teacher-centred. Holding classes online is similar to traditional classes, and the right conditions are not provided; the use of deep study strategy has not been found its place well.

Another opportunity Guthrie, Burritt and Evans (2013) in online education is real-time dissemination of accounting research findings. According to the interviews, such an opportunity is

not mentioned because there is no difference in the speed of the research process, the compilation of articles, and their publication.

Based on the codings done, despite the opportunities that were identified, it was found that some innovations were also used by accounting professors, which were coded separately, and the relevant results were extracted.

According to research, universities and higher education institutes are recommended to recognise and use online education and other educational methods to improve the quality of accounting education. Iranian accounting professors generally favour applying this method, especially in postgraduate programs. Utilising the opportunities presented in this research can help use the case study method and thus comprehensive and inclusive learning of students. Students can also enhance multiple skills and add value to their learning by recognising and taking advantage of opportunities.

Future researchers are also advised to use quantitative methods to assess how much other accounting professors agree about the opportunities and innovations identified in this study. Using a qualitative method to examine the opportunities created by online education from the students' point of view and finding the limitations and challenges of online accounting education from the perspective of professors and students are other recommendations for future research.

Endnote

- ¹. International Federation of Accountants Company

References

1. Abolma'ali, Kh. (2012). *Qualitative research: from theory to practice*. Science publication, first edition.
2. Arkorful, V. and Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, 12(1), pp. 29-42. https://www.itdl.org/Journal/Jan_15/Jan15.pdf#page=33
3. Bayerlein, L. (2015). Curriculum innovation in undergraduate accounting degree programmes through "virtual internships". *Education+ Training*, 57(6), pp. 673-684. <https://doi.org/10.1108/ET-09-2014-0110>
4. Braun, R. L., Boldt, M. N., Mauldin, S. and Viosca, C. (2020). Accounting graduates with both online and traditional coursework: impact on hiring decisions. *Accounting Education*, 29(4), pp. 340-355. <https://doi.org/10.1080/09639284.2020.1788613>
5. Chan, R.Y. (2020). Studying Coronavirus (COVID-19) and Global Higher Education: Evidence for Future Research and Practice. Available at SSRN 3622751. <https://ssrn.com/abstract=3622751>
6. Coetzee, S.A., Schmulian, A. and Coetzee, R. (2018). Web conferencing-based tutorials: student perceptions thereof and the effect on academic performance in accounting education. *Accounting Education*, 27(5), pp. 531-546. <https://doi.org/10.1080/09639284.2017.1417876>
7. Einig, S. (2013). Supporting students' learning: The use of formative online assessments. *Accounting Education*, 22(5), pp. 425-444. <https://doi.org/10.1080/09639284.2013.803868>
8. Ellington, Sh. And Benders, D. S. (2012). *Learning style and it's importance in education*. pp.1-15. https://www.researchgate.net/publication/256022625_Learning_Style_and_it's_importance_in_Education
9. Etemadi, H. and Fakhari, H. (2004). Explaining the needs and priorities of accounting research to provide a model for aligning research, training and practice. *Accounting and Auditing*

- Reviews*, 11(35), pp. 3-27. <https://doi.org/20.1001.1.26458020.1383.11.1.1.1>
10. Grabinski, K., Kedzior, M., Krasodomska, J. and Herdan, A. (2020). Embedding e-Learning in accounting modules: The educators' perspective. *Education Sciences*, 10(4), pp. 1-19.
 11. <https://doi.org/10.3390/educsci10040097>
 12. Guthrie, J., Burritt, R. O. G. E. R. and Evans, E. (2013). Challenges for accounting and business education: blending online and traditional universities in a MOOC environment (Doctoral dissertation, Institute of Chartered Accountants Australia; Centre for Accounting, Governance and Sustainability, University of South Australia). <http://www.charteredaccountants.com.au/News-Media/Reports-and-insights/Academic-leadership-series>
 13. Helman, N. (2002). Research method in psychology (3rd edition), New York: Houghton Blackwell Science. <https://www.amazon.com/Research-Methods-Psychology-Gary-Heiman/dp/0618170286>
 14. Humphrey, R. L. and Beard, D. F. (2014). Faculty perceptions of online homework software in accounting education. *Journal of Accounting Education*, 32(3), pp.238-258 <https://doi.org/10.1016/j.jaccedu.2014.06.001>
 15. IFAC. (2010). Handbook of International Education Pronouncements. <https://www.iaesb.org/publications/handbook-international-education-pronouncements-2010-edition-0>
 16. Jones, M. A. (2016). A study of satisfaction with online learning in workplace training. (Doctoral dissertation, Walden University, USA. <https://www.semanticscholar.org/paper/A-Study-of-Satisfaction-With-Online-Learning-in-Jones/3ccc095a33cae095fb58c92b8e3c09c7049e71e6>
 17. Lawless, E. (2014). Facing the Facts: opportunities and challenges of online learning. IB Conference of Americas, Washington. <https://www.ibo.org/contentassets/60d1e68eafc7437faf033f8d9f5c6d6d/saturday-facing-facts-opportunities-challenges-online-learning-edward-lawless.pdf>
 18. Lillie, R. E. and Wygal, D. E. (2011). Virtual Office Hours (VOH) in accounting coursework: Leveraging technology to enhance an integrative learning environment. *Journal of accounting education*, 29(1), pp. 1-13. <https://doi.org/10.1016/j.jaccedu.2011.10.002>
 19. Love, N. and Fry, N. (2006). Accounting students' perceptions of a virtual learning environment: Springboard or safety net?. *Accounting Education: an international journal*, 15(2), pp. 151-166. <https://doi.org/10.1080/06939280600609201>
 20. Malan, M. (2020). Engaging students in a fully online accounting degree: an action research study. *Accounting Education*, 29(4), pp. 321-339. <https://doi.org/10.1080/09639284.2020.1787855>
 21. Mansuri, Sh. (2012). The Necessity of Using Technology in Accounting Education. *Accountant*, 1(241), 38-41. (In Persian)
 22. Montgomery, E. (2018). Perception of Online Accounting Graduates: State of Florida Hiring Managers' Perspectives [Doctoral dissertation, School of Business in Partial Fulfillment; Northcentral University].
 23. Motamedzadeh, M., Tavakoli, M. and Golmohammadi, R. (2014). Reliability Assessment of Washington States Ergonomic Checklist Using Agreement Method between the Observers of Two Groups of Ergonomic Specialist and Non-specialist. *Journal of Occupational Hygiene Engineering*, 1(2), pp. 67-73. (in Persian). <http://johe.umsha.ac.ir/article-1-51-en.html>

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24. Orlando, L. M. (2020). Experiences of Online Faculty with Best Practice Methods to Improve Performance and Retention of Accounting Students: A Multiple Case Study (Doctoral dissertation, Northcentral University). <https://www.proquest.com/openview/1f015514c9a2c1047ee26cca85963915/1?pq-origsite=gscholar&cbl=18750&diss=y>
25. Rahmouni, N. (2020). Seize the Opportunities that Online Education Offers, says a Lifelong Learner. <https://www.al-fanarmedia.org/2020/07/seize-the-opportunities-that-online-education-offers-says-a-lifelong-learner/>
26. Rahnama Roodposhti, F., Vakili Fard, H. R. and Raeszadeh, S. M. R. (2009). Determining the Priorities and Educational Needs of Accounting Courses Content from the Perspective of Students, University Professors, and Professionals Providing an Effective Model. *Accounting Researches*, 1(4), pp. 78-97. <https://www.sid.ir/fa/Journal/ViewPaper.aspx?id=137425>
27. Reyneke, Y. and Shuttleworth, C. C. (2018). Accounting education in an open distance learning environment: Case studies for pervasive skills enhancement. *Turkish Online Journal of Distance Education*, 19(3), pp. 140-155. <https://doi.org/10.17718/tojde.445115>
28. Sangster, A., Stoner, G. and Flood, B. (2020). Insights into accounting education in a COVID-19 world. *Accounting Education*, 29(5), pp. 431-562. <https://doi.org/10.1080/09639284.2020.1808487>
29. Wiid, J. and Diggines, C. (2015). *Marketing research*. 3rd edition. Cape Town: Juta. <https://www.loot.co.za/product/jan-wiid-marketing-research/nkvt-3483-g060>
30. Wilson, R. M. (2014). *The Routledge companion to accounting education*. 1st edition. Routledge. <https://www.amazon.com/Routledge-Companion-Accounting-Companions-Management/dp/0415697336>
31. Zofen, Sh. (2010). Application of new technologies in education. Samt Publishing. (in Persian). <http://samt.ac.ir/en/book/2321/applications-of-new-technologies-in-teaching>
32. Zolfagharian, M. R. and Latifi, M. (2011). *Foundation data theorising with NVivo 8 software*, Tehran, Imam Sadegh (AS) University Press. Tehran. Iran. (in Persian). <https://www.adinehbook.com/gp/product/6002140791>

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