




Article

# Skills for a Working Future: How to Bring about Professional Success from the Educational Setting

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**Abstract:** Globalization, digitalization, and the permanent alteration of information have led to important changes in the world of work. This demands a realignment of essential skills in order to access job positions in the coming years. In order to face up to the digitalization process, education is one of the ambits that has most come to a tipping point. This adds an urgency to the need to bring skills in line with the new demands of the job market and the challenges posed in the 21st Century. The methodology was based on a systematic review of the most commonly-used databases. It analyzed and synthesized the existing information on the skills required for the future job market and educational proposals to facilitate their acquisition. At the beginning of the search, 2045 records were selected. However, following the application of the exclusion criteria, a total of 63 records were included. From this in-depth analysis, it was uncovered that the most in-demand skill for the job market relates to the management of technology. Different proposals were located which targeted these skills in educational settings. The majority of these pertained to innovative projects emanating from digital and technological phenomena.

**Keywords:** future skills; job market; education; industry 4.0



**Citation:** García-Pérez, L.; García-Garnica, M.; Olmedo-Moreno, E.M. Skills for a Working Future: How to Bring about Professional Success from the Educational Setting. *Educ. Sci.* **2021**, *11*, 27. <https://doi.org/10.3390/educsci11010027>

Received: 26 November 2020

Accepted: 28 December 2020

Published: 12 January 2021

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## 1. Introduction

### 1.1. Background

Throughout time, three industrial revolutions have occurred that were known throughout the world. These were characterized, respectively, by mechanization, the discovery of electricity, and the invention of information technology [1]. These discoveries have not immobilized industry; instead, a fourth revolution has activated current society [2]. Sukhodolov alludes to the concept of Industry 4.0 in reference to industrial production processes which are influenced by digitalization and automation [3].

Since the emergence of these processes, industry has been directly influenced by the growth of commercial activities that are connected at a global level [4]. The impact of digitalization and globalization on the job market has revolutionized the binomial perspective of space and time, as such quick and simultaneous changes have never been previously observed [5]. According to the Spanish Confederation of Business Organizations [6], the growth of big business has slowed by up to 50% over recent decades at a global level. This is due to constant stream-lining owing to general purpose technologies (GPT) in the Digital Revolution, with this being one of the main axes of society.

In 1930, Maynard defined the concept of 'technological unemployment'. This has been demonstrated to be one of the main causes of unemployment, and alludes to the opening up of production systems to technological discoveries. Indeed, such progressive changes in the world of work and the economy were not seen until the beginning of the 18th Century. This concept prevails to the present day [7].

The Organization for Cooperation and Economic Development states that job automation will probably produce significant changes in various countries, as it leads to the

substitution of the workforce and directly affects jobs. In fact, automation will mean that more menial and repetitive construction tasks, the processes of which can be automated, will end up disappearing. Thus, the General Directorate of Communication proposed, in 2017, that a main challenge of Europe must be to target the following aspects over the coming years: (1) to innovate and promote technological strategies, (2) to support workers in the acquisition of skills and abilities, and (3) to reduce the prevailing gap in the market [8].

In its approach, the Spanish Confederation of Business Organizations urges coordination between European plans and social dialogue about the working future, reiterating the importance of sectoral strategies and actions [6]. In addition to these measures, the engagement of public administrations could increase GDP growth by around 40%, whilst also revitalizing education, innovation and entrepreneurship. This represents the best way to capitalize on the Digital Revolution [9].

### *1.2. Skills for a Working Future*

The report on the future of employment created by the University of Oxford determined that approximately 47% of the workforce will disappear from the job market by 2025. This represents a huge risk factor for the future economy of individuals [10].

ManpowerGroup used the term ‘skill revolution emergency’ to refer to the support required by the employment sector to improve the skills of employees and prepare them for upcoming jobs [11].

The skills indicated in the ‘Future Work Skills 2020’ report are believed to be a potential route towards achieving success in the field of work and overcoming the challenges that will be faced by society over the coming years. In this sense, the report seeks to provide foresight in relation to professional training. It strives to develop strategies for the emerging digital world and, in this way, equip the population for a more sustainable future [12].

In order to carry this out, ten skills or abilities are proposed for the future workforce: ‘sensemaking’, in order to help develop critical thinking; social intelligence, with the aim of building optimal relationships in different contexts; innovative and adaptable thinking, in order to streamline adaptation in diverse situations and prioritize innovation; intercultural skills, in order to respond to different settings; computational thinking, in order to enable the translation of a large amount of abstract data; digital literacy, in order to master communication channels; multidisciplinary, which makes it possible to interrelate different fields; design mentality, in order to target better outcomes; knowledge management, in order to be able to skim through large quantities of data and filter out important information; and virtual collaboration, which is manifested as productivity in relation to both autonomous and collaborative virtual working practices [12].

#### *1.2.1. Sensemaking*

One of the first individuals to coin this term in relation to their theory was Weik, who, in 1995, linked it to social processes [13]. In these processes, individuals must understand, interpret and make sense of problematic situations which cannot be resolved in a normal way. In other words, as the blueprints and routines which are typically adhered to lack utility, social interaction and reflection are necessary in order to create new meaning through technology and interaction between members of the same organization [14,15]. In this sense, individual interpretation and co-dependence within this setting led to the emergence of the concept of ‘sensemaking’ [16].

In addition, this concept deals with a continuous process, as it strives to make sense of daily activities, whilst at the same time attempting to achieve the deepest meaning of what one wishes to express [17]. In this way, it enables individuals to create unique sensations and ideas, and to contribute critical decisions to the process [12].

### 1.2.2. Social Intelligence

The debate around social intelligence began to emerge at the beginning of the 18th Century, being of particular interest in the field of pedagogy, and being studied by Thorndike in 1920. Decades later, Jean Paul Guilford considered social intelligence to be the outcome of interactions between individuals [18].

Following this, as the importance of this concept for human and social development became clear, Goleman conceived two broad categories in order to define it. Namely, these are social conscience and social aptitude. The first of these relates to empathy, in that the non-verbal and emotional signals of others must be interpreted and felt. Social conscience further defines the ability to tune in and connect receptively with others, whilst also having sufficient empathetic accuracy to correctly understand the thoughts and intentions of the environment. Finally, it encapsulates social cognition, which pertains to the aim of understanding the functioning of society. On the other hand, social aptitude contemplates synchrony in relationships, the influence of interactions, and interest in others [19]. It was in this way that the term ‘emotional intelligence’ was associated with the capacity of individuals to reflect on themselves and, especially, the environment surrounding them [20].

Davies et al. consider this skill in the context of the machines and robots that are likely to prevail in the future. On the one hand, a socially intelligent employee will be able to evaluate the emotions present within their work group, in such a way that it will make them able to adapt themselves in order to provide the best work environment for their peers, whilst also improving interpersonal relationships. On the other hand, this skill is in no way viable, at least for now, for automated work machines [12].

### 1.2.3. Innovative and Adaptive Thinking

The world of work values the innovation brought by each employee to their functions [5,21]. Innovation corresponds to a creative and complex process, the objective of which is the creation of new products [22]. The act of renovating, internationalizing, and differentiating the products available on the market would also lead to an increase in competitive orientations, giving businesses preferential access to certain rewards [23].

The concept of innovative thinking favors creativity [24]. Furthermore, when innovative and creative thinking is acquired, individuals tend to look for opportunities which enable them to innovate. In this way, they will be prepared to face up to any sudden or incongruent change that may occur. This is important given that the world and society, in general, are in a state of constant change, and production requires adaptive processes capable of meeting any situation [25].

For this reason, employees must develop the skill of innovative thinking and learn to contribute ‘outside of the box’ solutions, experiencing personal creativity depending on the situation to which they must adapt [26].

### 1.2.4. Intercultural Competence

Businesses have varied their selection processes for the incorporation of any employee into the workplace. A culminating factor of this has been interculturality in business [27].

UNESCO understands intercultural competence as “knowledge about different cultures, in addition to general knowledge about the randomness of the issues that emerge when members of different cultures interact, preserving receptive attitudes that encourage the establishment and maintenance of contact with diverse others” [28] (p. 20). The minimum requirements for the effective acquisition of this skills are as follows: to know how to rate others, to understand and adapt to other perspectives that are different to one’s own, to listen to and participate in intercultural dialogue, to forge links between members, and to combine respect and self-awareness in order to achieve intercultural humility [29].

A study was carried out in 2013 by the British Council on the value of intercultural skills at work in nine countries. This study determined that one of the greatest challenges to businesses is finding qualified professionals who already possess intercultural tools [30].

One of the noteworthy benefits to business is the ability to work with colleagues from other cultures. Clearly, being able to communicate effectively and communicate with individuals from anywhere in the world is useful, as is the ability to build confidence with clients and develop relationships with new clients [30].

In conclusion, it is of vital importance to be able to adapt to and accept the differences encountered in distinct settings. This refers to both professional and personal settings, as globalization focuses on diversity as one of the most important factors for human development. In this way, the acquisition of this skill has become a competitive advantage for the job market.

#### 1.2.5. Computational Thinking

In the present day, demands for computer programming are emerging across the world due to technological evolution [31]. When a person has well developed computational thinking, they are also effective at problem solving, system design, and understanding the behavior of other human beings by making use of the fundamental concepts of computing. Furthermore, it is important to think like a scientist and consider different levels of abstraction. This makes it necessary to combine computational thinking with mathematical thinking, and to overlap ideas when faced with different appliances [32].

In this sense, this must be a skill for the future. Workers must be able to assimilate and channel information, analyze it, and extract from it the competitive advantages it gives to the company. Similarly, workers must be able to translate and interpret large amounts of data with the aim of rationalizing it, abstracting it and specifying it in practice. All of the above will result from innovation technology as it equips individuals with language for programming, enabling the workforce to be molded and enriched [12].

#### 1.2.6. Digital Literacy

Digital literacy lays the foundations of key skills in order to stand up to the test of supporting employability in the 21st Century [33].

Generation Z is at an advantage when they are considered in comparison to the predominant social setting of previous decades. Contemporary young people were born in technological times, and therefore their way of communicating is highly socialized. In this way, their use of digital devices is increasing, and they benefit from 'speaking' an innate digital language. This acts as a point in their favor when it comes to accessing the job market [34,35].

It is necessary to integrate digital literacy within learning in vocational training. This instills individuals with a greater capacity to analyze and critically reflect on digital texts. They will also have a greater ability to interpret the messages delivered through communication media, being able to select the most appropriate messages or, in contrast, to create their own messages so that they reach population groups. In the same way, it is a useful skill when identifying productive sources and increasing access to communication media [33].

In addition, through this competence, it is sought to:

... transcend the technological act, insist that knowledge of media is a challenge to be taken on head first and requires ownership of individuals with the aim of preparing citizens for responsible consumption but also for production in and with media. Such ownership serves to overcome challenges to accessibility and technology use, and find new spaces via critical understanding, communication and creative production [33] (p. 790)

#### 1.2.7. Multidisciplinarity

Many authors frame their studies with this concept. For Grosmann (1979, cited in Villa et al.), multidisciplinarity takes place when a "research group, formed by individuals from different disciplines, works as a team with mutually accepted organizational systems and within a general set of goal systems" [36] (p. 183). The prefix 'multi-' indicates "that

it is simultaneously between, through and beyond the entire discipline. Its objective or purpose is to understand the world as it is at the moment, with one of its requirements being the joining up of knowledge" [37] (p. 38).

Finally, multidisciplinary working manages diverse disciplines, sharing both objectives and skills. Even when professionals have different roles within the process, they develop a common and shared conceptual theory, putting into practice the integration, fusion, incorporation and unification of disciplines via a multidisciplinary, holistic and collaborative approach [38].

For this, workers must embody the multidisciplinary skill, as through it they will be able to adapt to the adverse issues or problems that may arise. It gives them the chance to contribute a large number of ideas and to resolve problems, creating the basis from which they can create something entirely new.

#### 1.2.8. Design Mentality

The need to innovate in the world of business and of work is one of the heaviest demands of recent times. Continuous evolution and change oblige employees to adapt and, in doing so, take on novel challenges in order to earn prestige at work [39].

Design is a creative activity, the objective of which is to establish the multifaceted qualities of objects, processes, services and systems within whole life systems. Thus, design is the central factor of the innovative humanization of technology, and the crucial factor of cultural and economic exchange [39].

Thus, the possession of a design mentality responds to the potential to analyze totally different contexts, and to understand techno-cultural aspects and environmental preferences. The aim of this is to align oneself more closely to the market, and to create product interest [40]. Furthermore, design strategy requires values and leadership, which are driven towards innovation, within the organizational structure [41]. It also implies the adoption of a vision that is centered on the consumer. Every production, therefore, is wrapped up in uncertainty and risk taking, abductive reasoning and experimental design. This increases the capacity of individuals to transform ideas into their own physical representations [42,43].

In this way, a worker who possesses design mentality should have acquired the ability to solve problems when creating and evaluating alternatives. They should be able to integrate different production systems in order to rate a product's functionality, establish interpersonal relationships with the aim of strengthening work, develop different degrees of abstraction, and model solutions when the needed information is incomplete [44].

#### 1.2.9. Knowledge Management

In order to approach this skill, it is necessary to understand the concept of cognitive load. Cognitive load is the quantity of information or cognitive resources that a person puts into practice in order to perform a task. However, this must not exceed one's cognitive capacity, as this could provoke instability or the deterioration of the performance of the task, producing cognitive overload [45].

Three types of cognitive load can be distinguished: intrinsic, extraneous, and germane. Intrinsic cognitive load is the load inherent in the complexity of the task, which is in line with the individuals' level of experience. Extraneous cognitive load is related to unnecessary aspects, which lead to saturation. In other words, it involves aspects that affect working memory and hinder construction processes. Finally, the germane cognitive load is responsible for contributing to learning itself [46].

It is necessary to critically consider and filter information in order to maximize cognitive functioning and avoid overload. Workers must be equipped with varied tools and techniques which enable them to prioritize, organize and convert huge amounts of data, focusing their attention on only that which is relevant to their objective [12].



### 1.2.10. Virtual Collaboration

Any type of collaborative working, regardless of the context in which it is developed, implies a number of basic premises as a function of the components of the organization: (1) mutual support and help with tasks; (2) taking responsibility for the work of the entire group, and not just one's own; (3) the activation of interpersonal skills; (4) constructive conflict resolution; and (5) continuous exposure to reflections and heterogeneous strategies [47]. It should be noted that collaborative working is very different to group working, as it implies greater interaction [48].

“One of the basic aims pursued through the use of collaborative working is to promote adequate formation and appropriate job performance through the exchange of ideas and actions” [49] (p. 96). Following on from this, when it is carried out in a virtual way, it provides flexibility regarding timetabling, instant access, and unlimited resources. In the same way, it involves synchronous and asynchronous communication, and immediate knowledge construction, facilitating interaction between different knowledge areas [50].

Virtual work settings provide environmental sociability. They also ease issues with regards to the lack of space in closed areas, as—despite the implied physical separation—technology facilitates connectivity. They demand that expert employees become involved in the virtual world, and offer a means to track the immediate feedback offered by systems for businesses [12].

### 1.3. Education Oriented towards Skill Development for a Working Future

In order to face up to the process of digitalization, education is one of the settings that has reached a turning point at which it must bring skills into line with those which are newly demanded by the job market and the challenges proposed by the 21st Century [6]. The job market has experienced rapid and continuous transformations over recent years and, consequently, needs have changed. This is also true in the educational context, with new demands emerging which must be attended to [51].

The European Commission indicates that the quality of education is shown through the development of learning–teaching processes. The main objective of these processes is to develop generic skills and abilities, and to combine these with digital or organizational settings [9].

In this sense, educational systems that are framed by quality education should consider it a priority to offer students training that is in line with the demands of the current and future job market. In this way, systems will facilitate the insertion of these students into this market once their studies are finished. Nonetheless, our educational system lacks training with regards to skills that are geared towards employment in our society. This is concerning, given that these are the very skills that will enable students to achieve success in the field of work, and to overcome the challenges that society will face over the coming years as the world becomes more and more connected [12].

More concretely, the G20 employment plan set forth in 2014 indicates that skills do not currently meet job market requirements in Spain. This has generated a skill deficit with regards to business requirements, in addition to an underuse of skills [52]. These low levels of skill adequacy may be closely related with the high rate of unemployment in young people, with this being around 36%. Indeed, Spain had the second highest youth unemployment rate in the European Union in 2018 [53].

This analysis leads us to reflect on the value of systematizing and promoting the development of training programs that are linked to these skills [54–62], whilst also contemplating the need to adjust the programs to groups of young people and the demands of current society. This will aid the inclusion of all young people into the world of work.

In any case, within the educational ambit, professional guidance is the backbone on which skills, abilities and competencies will be developed which will facilitate the incorporation of young people into the job market. It concerns “an educational personality process targeting responsible decision making, training and professional performance which forms and develops potential personalities (. . . ) in order to achieve self-determined

professional performance” [63] (p. 267). It is also known as a guiding process which improves professionalism and/or employability by pursuing equality in the working context [51]. As a point of priority, teachers and guidance counselors should be aware of the need to renew knowledge and reflect on the importance of the use of new methodologies in order to help students in their future pursuit of employment [64].

As a result of the economic system that is currently in place in society, professional preparation must be considered as an essential aspect for successful work performance [65]. However, it is not enough only to approach learning and skill acquisition from the educational setting. Instead, workers must be intrinsically motivated to expend effort on their professional development, whilst a business strategy should also be in place in order to survive the globalized and competitive advances being made in the present day [66].

## 2. Justification and Purpose

In the present day, access to the job market has varied as a result of the digitalization, globalization, and permanent alteration of information. This situation has led businesses to reconsider the skills that job candidates need to possess. The occupational setting is no longer limited to optimal production techniques. Instead, it is driven to examine all of the skills or abilities of individuals in order to maximize their effectiveness in job performance. Businesses prioritize those workers who satisfy job requirements, favoring those who possess social innovation and the capacity to adapt to any problem. For this, both the skills that must be developed for all jobs and the processes for the selection of workers have changed.

In this sense, from the educational setting, it is necessary to redirect academic training and to assist students in their incorporation into the field of work, whilst also considering the skills demanded in the present day.

For this, the following main objectives are proposed:

- To identify the most in-demand skills in the job market through a systematic review of the literature.
- To analyze, in the literature, the type of proposals put forth by educational systems in order to target student upskilling and facilitate their incorporation into the occupational setting.

## 3. Materials and Methods

### 3.1. Design and Participants

The methodology was based on a systematic review [67] the aim of which was to explore, describe, analyze and synthesize existing information about the skills that must be acquired in order to optimize job market insertion, whilst also examining the educational proposals targeting this skill acquisition. This was achieved using the SALSA framework in its four dimensions: Search, Appraisal, Synthesis, and Analysis [68]. This labor was carried out through perusal of empirical and theoretical scientific publications. From this, a macro search was conducted in order to locate documents pertaining to the object of study.

Following specific guidelines, key words were defined, databases were identified, and terms were consulted. The inclusion and exclusion criteria were decided upon, and the filtering process was applied [69]. The following databases were used: Web of Science and Scopus, due to their important status and relevance, and Dialnet, Pubmed, Proquest, Google Scholar, and Scielo, due to their scope and dissemination, in order to increase the degree of coverage [70]. For the selection of the criteria, we first filtered by the year of publication, and filtered by keywords [71]. The scientific literature used for the data analysis was restricted by the year of publication, with all of the articles having been published within the last six years (2015–2020). The literature search process used key words such as *habilidades futuras*/future skills and *propuestas educativas*/educational proposals, followed by other concepts, such as *mercado laboral*/job market, *formación profesional*/vocational training, and *Industria 4.0*/Industry 4.0. The filtering of the language of the publication was emphasised as a criterion for exclusion [71]. The review was conducted on both

Spanish and English texts. At the beginning of the search, 2045 documents were found. The identified documents were separated according to the document type, year of publication, and research area.

After the initial filtering, the criteria of the area of publication and the topic were applied. For this, in order to further screen the documents, all of the documents that did not belong to the area of Social Science were excluded. Furthermore, only those that were in Open Access and that at least included “education”, “employability” or “globalization” as a topic were selected. It was necessary to use the Boolean operators AND and OR in order to join or relate concepts. Equations with parentheses were also formulated in order to prioritise the search. With these criteria, a total of 122 documents were collected. Then, we reviewed them by reading the title and abstract.

After this level of detailed analysis, it was possible to exclude some studies that were considered to be irrelevant. The main exclusion criteria applied to the reviewed literature were that articles were excluded if they did not include relevant information about the topic under study, or if they dealt with the analysis of skills for a concrete job position. Once the screening was completed, it was necessary to review by reading the full text, and to extract the data according to the objectives of the research. Finally, following the application of the exclusion criteria, a total of 63 publications were included. The review was based on these definitive publications.

### 3.2. Instruments

In order to facilitate the collection of the information, a file was generated. The categories included in it were the following: 1/ Type of document; 2/ Title; 3/ Authors; 4/ Year; 5/ Summary; 6/ Keywords; 7/ Content: skills for a working future; 8/ Content: educational proposals to develop skills for a working future. A file was prepared for each of the 63 documents. This task was carried out with the reference manager software program Mendeley.

### 3.3. Data Analysis

For the analysis of the information, a categorization of the information collected in the documentary files was carried out. A category system was generated. The categories that guided the analysis process were a priori, as they emerged from the task of bibliographic review, taking into account the objectives of the research. However, this list of categories was not the final one, but was refined and operationalized with a detailed reading of the information collected in the file of each document (Table 1). The information received a quantitative and qualitative treatment provided by the MAXQDA Analytic Pro software.

**Table 1.** Analysis’ dimensions and categories.

Dimension	Category
Year of publication	- 2015
	- 2016
	- 2017
	- 2018
	- 2019
	- 2020
Database	- Dialnet
	- Web of Science
	- Proquest
	- Scopus
	- Pubmed
	- Google Scholar
	- Scielo



**Table 1.** *Cont.*

Dimension	Category
Authors	
Most highlighted skills	<ul style="list-style-type: none"> <li>- Mastery of technology</li> <li>- Social intelligence</li> <li>- Virtual collaboration</li> <li>- Innovative thinking</li> <li>- Digital literacy</li> <li>- Multidisciplinarity</li> <li>- Interculturality</li> <li>- Critical thinking</li> </ul>
Educational proposals	<ul style="list-style-type: none"> <li>- STEM education</li> <li>- MOOC</li> <li>- Gamification</li> <li>- APS: service learning</li> <li>- ABI: Inquiry-based learning</li> <li>- Hi-Tech</li> <li>- ID-Tech</li> <li>- Robotics</li> <li>- Radio stations</li> <li>- Chatbot</li> <li>- Net-teaching and co-working</li> <li>- Digital Skills Accelerator Project</li> <li>- Multidisciplinary innovation project</li> <li>- SUPER</li> <li>- Disruptive education</li> <li>- WorldSkills</li> <li>- Learning with a rock music group</li> </ul>

Source: developed by the authors.

#### 4. Results

With regards to the skills for a working future, as can be observed in Table 2, a total of 42 publications were located, most of which were identified through Web of Science (28.6%) and Proquest (26.2%). The other databases represent smaller percentages: Dialnet (16.7%), Scopus (11.9%), Pubmed (7.1%), Google Scholar (4.8%), and Scielo (4.8%). According to the year of publication, it can be observed that the number of publications on this topic has increased progressively over the years. As such, the last two years (2019 and 2020) represent the highest percentage. These data offer information on the relevance that this issue has at present, as it is becoming a focus of research.

**Table 2.** Number of publications relating to the skills for a working future identified via the databases, according to year of publication.

	Dialnet	Web of Science	Proquest	Scopus	Pubmed	Google Scholar	Scielo	Total
2015	2	-	-	1	-	-	-	3 (7.1%)
2016	1	-	-	1	1	-	-	3 (7.1%)
2017	1	1	1	-	-	-	1	4 (9.5%)
2018	2	3	2	-	1	-	1	9 (21.4%)
2019	1	3	5	2	-	-	-	11 (16.7%)
2020	-	5	3	1	1	2	-	12 (28.6%)
Total	7 (16.7%)	12 (28.6%)	11 (26.2%)	5 (11.9%)	3 (7.1%)	2 (4.8%)	2 (4.8%)	42 (100%)

Note. The symbol '-' indicates that no publications were found in the selected year.

It can be observed in Figure 1 that the most common type of skill referred to in the publications was the mastery of technology (29%), followed by virtual collaboration (15%), innovative thinking (14%), and interculturality (13%). Other mentioned skills were referred to by less than 10% of the publications.

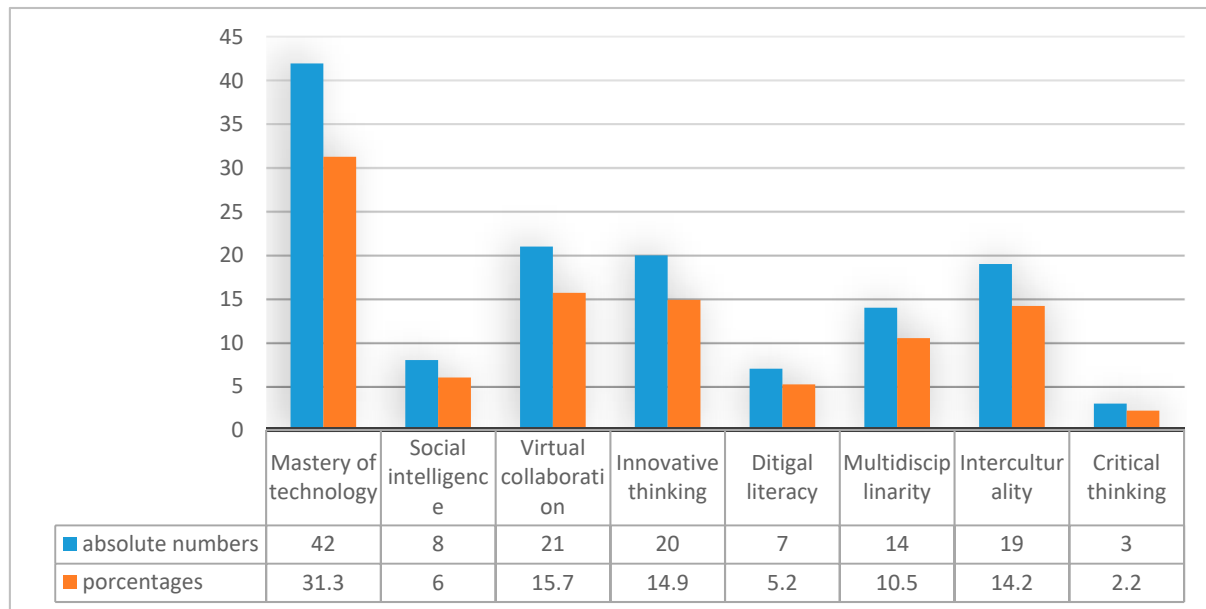


Figure 1. Most highlighted skills.

Table 3 lists the skills for a working future, organized by the authors of the publications, the database, and the year of publication. In addition, Table 4 shows literal fragments of text extracted from the publications that refer to each of the skills. These fragments are evidence, but they also reinforce the quantitative data, allowing us to deepen and better understand the information provided by them.

Table 3. Publications relating to the skills for a working future organized by the database and the year of publication.

Database	Year	Skills	Author
Dialnet	2015	Mastery of technology	Ordóñez-Jiménez, Gil-Gómez, Oltra-Badenes & González-Usach [72]
		Innovate thinking	
	2016	Mastery of technology	Jones & Matt [73]
		Virtual collaboration	
		Interculturality	
	2017	Interculturality	González, Fanju & López [74]
		Innovate thinking	
	2018	Mastery of technology	Buisán & Valdés [75]
		Virtual collaboration	
		Mastery of technology	Vega [76]
Mastery of technology		Aige, Ferrer, Montserrat, Paniza & Vaquer [77]	
Virtual collaboration			
		Multidisciplinary	

Table 3. Cont.

Database	Year	Skills	Author
Web of Science	2019	Mastery of technology	Juárez & Marqués [78]
		Virtual collaboration	
		Digital literacy	
	2017	Interculturality	Garrido [79]
		Digital literacy	
	2018	Mastery of technology	Achtenhagen & Achtenhagen [80]
		Mastery of technology	Aranda, Sánchez-Navarro, Martínez-Cerdá & Meneses [81]
		Master of technology	Soeiro, Uras & Royo [82]
	2019	Innovate thinking	Ruchiwit, Patchotasingh & Phanphairoj [83]
		Critical thinking	Voinea [84]
		Innovate thinking	
		Multidisciplinarity	Hero & Lindfors [85]
	2020	Critical thinking	Aguilar, Alcántara & Braun [86]
		Mastery of technology	López, Couso & Simarro [57]
		Multidisciplinarity	
Digital literacy			
Mastery of technology		Vasilescu, Serban, Dimian, Aceleanu & Picatoste [87]	
Innovate thinking		van Laar, van Deursen, van Dijk, & de Haan [88]	
Mastery of technology		Fajaryati, Budiyo, Akhyar & Wiranto [89]	
Proquest	2017	Interculturality	Castro, García, Jaramillo & Lozano [90]
		Virtual collaboration	Pereira, Vilas-Boas & Rebelo [91]
	2018	Mastery of technology	Jahlil [58]
		Digital literacy	
		Virtual collaboration	
	2019	Innovate thinking	Admiraal, Post, Guo, Saab, Makinen, Rainio, Vuori, Jacky, Gerd & Gerard [92]
		Mastery of technology	
		Multidisciplinarity	
		Mastery of technology	
	2019	Innovate thinking	Nakano & Wechsler [94]
		Master technology	Xenos, Cheistodouloupoulou, Mallas & Garafolakis [95]
		Innovate thinking	
		Inovate thinking	
		Mastery of technology	Domínguez, Oliveros, Coronado & Valdez [54]
	2020	Multidisciplinarity	Carballal & Pinillos [96]
Interculturality			
Mastery of technology			
Innovate thinking		Sima, Ileana, Subíc & Dumitry [97]	
		Interculturality	Kukla, Pelekh & Smolenska [98]

Table 3. Cont.

Database	Year	Skills	Author
Scopus	2015	Master of technology	Lin, Yu, Hsiao, Chu, Chang & Chien [99]
		Virtual collaboration	
		Multidisciplinary	
	2016	Innovate thinking	López [5]
		Critical thinking	
		Mastery of technology	
	2019	Innovate thinking	Oliveira & Cunha [100]
Mastery of technology		Ismail & Hassan [101]	
2020	Mastery of technology	Frunzaru & Corbu [102]	
	Interculturality		
Pubmed	2016	Innovate thinking	Manjarrez [21]
		Mastery of technology	
		Social intelligence	
	2018	Interculturaly	Ilich & Akilina [103]
		Virtual collaboration	
2020	Digital literacy	Ivzory, Sachs, Reiter & Schreuer [55]	
2020	Multidisciplinary		
Google Scholar	2020	Mastery of technology	Castellanos & Escott [104]
		Virtual collaboration	
	2020	Mastery of technology	Prospectiva [105]
		Virtual collaboration	
Scielo	2017	Digital literacy	Pernías [106]
		Mastery of technology	
		Social Intelligente	
	2018	Innovate thinking	Mackay, Franco & Villacis [107]
		Critical thinking	
2018	Multidisciplinarity		

Table 4. Textual evidence for the different skills for a working future.

Skills	Textual Evidence
Mastery of technology (42)	“Information technologies in society as a tool to facilitate both personal and productive processes (...) are increasingly present in organisations and operational processes that depend more on the correct implementation of technology” (p. 93) [72]
	“different technologies can play different roles in a virtual team. (...) multimedia such as video-conferencing and 3-D technologies provide a richer environment that more closely simulates face-to-face communication. For this, is necessary a mastery of diferents type of technology” (p. 57) [73]
	“the interest in technological change (...) and the possibilities offered by its development and application in different areas, has generated a new panorama of opportunities” (p. 192) [74]
	“Industry 4.0 therefore emerges as a new industrial revolution, and consists, in short, of incorporating and mastering new technologies or digital enablers in industry (p. 90) [75]

Table 4. Cont.

Skills	Textual Evidence
Virtual collaboration (21)	"technology has become increasingly common in the majority of contexts of daily and industrial life, there has been a major use of technological devices, such as computers, tablets, smartphones, domestic systems, etc" (p. 1) [76]
	"Experts have considered (...) the importance of having a good level of digital competence in the search for and mastery of employment" (p. 81) [78]
	"Technological innovation at the levels of business and national competitiveness, as well as extensive use of current technologies" (p. 14) [21]
	"The continued use of technological tools can serve (...) to improve their digital skills necessary for personal and professional development in the digital age" (p. 2) [57]
Virtual collaboration (21)	"The primary reasons for using these virtual teams was to access talent in different locations, promote collaboration and brainstorming for problems, decisions or issues" (p. 49) [73]
	"The Connected Industry 4.0 strategy promotes the creation and development of these collaborative environments (...) with the future development of a Connected Industry 4.0 platform to serve as a virtual meeting point between industry and enablers" (p. 98) [75]
	"Aspects (...) most demanded by companies (...): living in networks, communication and online collaboration" (p. 70) [78]
	"The creation of a shared work space is important. Similarly, (...) it is equally significant to have a physical space, parallel to the virtual one, in which to work together or independently, creating a collaborative work space" (p. 594) [77]
Innovate thinking (20)	"companies that are not willing to suffer only develop innovative thinking in their employees and jump on the bandwagon of digital transformation through the development of digital skills and digital leadership" (p. 94) [72]
	"The needs and current context lead organizations to seek creative, proactive profiles with an appropriate technological and digital training. These demands also force professionals to keep on training in order to remain competitive and promote their innovative thinking" (p. 194) [74]
	"The business world is (...) making the development of a culture of innovation a priority. It is the creative and proactive worker who will be most valued in the future" (p. 6) [5]
Intercultural (19)	"Innovative thinking promotes different styles of thinking, seeking to encourage originality in entrepreneurs" (p. 60) [21]
	"Intercultural competence implies a respect for one's own identity and the identity of others and an adaptation of behaviour to the functional requirements of the social environment is therefore one of the most important challenges for business leaders" (p. 20) [90]
	"The professionals of the future will be involved in intercultural business and labour relations where they will have to manoeuvre with skill" (p. 369) [96]
Multidisciplinary (14)	"Most of the companies surveyed value the fact that the student has mastered languages (...). Also that they have had some intercultural experience (...) through the Erasmus programme" (p. 199) [74]
	"Most of these authors suggest that planned cultural training as well as actually sending team members to different countries to meet colleagues and learn about the different cultures was essential to the success of intercultural virtual teams" (p. 50) [73]
	"Multidisciplinary consideration enhances effective decision-making and encourages more analytical and in-depth study" (p. 337) [107]
Multidisciplinary (14)	"As the real-life problems and challenges to cope with are not compartmentalized into clear-cut disciplines. (...). In the real-life, one job (...) faces several multidisciplinary problems: product design (...) service design (...), algorithms, (...) design (...) and business" (p. 92) [92]
	"The importance of a multidisciplinary analysis (...) is a key aspect (...) to bring professional practice closer to reality" (p. 594) [77]



Table 4. Cont.

Skills	Textual Evidence
Social intelligence (8)	“In addition, organisations need to recognise that there are cultural differences (...) in terms of work and time expectations, or levels of risk-taking or knowledge sharing, thus enhancing the development of social intelligence” (p. 50) [73]
	“Levels of social intelligence and innovation are linked to levels of national and individual competitiveness” (p. 14). Also, “social intelligence can stimulate creativity and innovation” (p. 21) [21]
Digital literacy (7)	“The need to devote resources to digital literacy for all job seekers is even more evident” (p. 82) [78]
	“promote the ability to select and use information available on the web critically and safely, identifying and contrasting authorships and reliable information sources, as well as performing dynamic searches; also known as digital literacy” (p. 18) [57]
Critical thinking (3)	“Our brain has a great capacity to make decisions. When faced with a challenge, it channels all available information and critical thinking into decision making” (p. 2) [5]
	“Critical thinkers are those who think carefully, ensuring the validity of each inference, doubting their own perception of reality and questioning the rigour and purpose of each piece of information ( ... ) is the key to professional success” (p. 338) [107]
	“The acquisition of specific skills, such as critical thinking, allows you to analyze and evaluate your own thinking so that you can make decisions and solve complex problems with innovative strategies” (p. 166) [86]

Finally, with regards to the educational proposals targeting skill development for a working future, as can be observed in Table 5, a total of 26 publications were located, eight of which were identified through Dialnet (30.8%). In this case, 2018 was the most productive year with regard to the publication outputs on this aspect (30.8%).

**Table 5.** Number of publications relating to educational proposals identified via the employed databases, according to year of publication.

	Dialnet	Web of Science	Proquest	Scopus	Pubmed	Google Scholar	Scielo	Total
2015	1	-	-	1	-	1	-	3 (11.5%)
2016	-	-	-	2	-	1	-	3 (11.5%)
2017	1	1	2	-	-	2	-	6 (23%)
2018	5	2	-	1	-	-	-	8 (30.8%)
2019	-	2	2	-	-	-	-	4 (15.4%)
2020	1	-	-	-	1	-	-	2 (7.7%)
Total	8 (30.8%)	5 (19.2%)	4 (15.4%)	4 (15.4%)	1 (3.8%)	4 (15.4%)	-	26 (100%)

Note. The symbol ‘-’ indicates that no publications were found in the selected year.

The modalities of the educational proposals were varied, with close to 17 different proposed modalities being uncovered (Table 6). We can observe, in Table 7, that the most frequently-used modalities included STEM education, gamification, and MOOC. In this same table, literal text fragments related to each of the educational proposals found are collected. These evidences allow us to deepen and better understand these proposals.

**Table 6.** Educational proposals targeting skill acquisition for a working future.

Database	Year	Proposals	Author
Dialnet	2015	Learning with a rock music group	Gallardo & Estévez [108]
	2017	Radio stations	Araya [109]
		Robotics	Vega [76]
	2018	STEM education	Muñoz-Rujas, Diéz-Ojeda, Greca & Montero [110]
		Chatbot	Herrero-Diz & Varona-Aramburu [111]

Table 6. Cont.

Database	Year	Proposals	Author
Web of Science		Net-teaching and co-working	Aige, Ferrer, Sánchez-Escribano, Paniza & Vázquez [77]
		APS: service learning	Cabanés-Cacho, García-Casarejos & Romera [112]
	2020	Hi-Tech	Ufarte, Calvo & Murcia [113]
	2017	MOOC	Milligan & Littlejohn [114]
	2018	Digital Skills Accelerator project	Soeiro, Uras & Royo [82]
		Gamification	Martínez-Cerda, Torrent-Sellens & González-González [115]
2019	Gamification	Alomari, Al-Samarraie & Yousef [116]	
	Multidisciplinary innovation project	Hero & Lindfors [85]	
Proquest	2017	iD-Tech	Clarke [117]
		Disruptive education	Pilonieta [60]
	2019	STEM education	Domínguez, Oliveros, Coronado & Valdez [54] Prolongo & Pinto [59]
Scopus	2015	MOOC	Hernández-Carranza, Romero-Corella & Ramírez-Montoya [118]
	2016	Gamification	Senderek, Brenken & Stich [119]
		STEM education	Potkonjak, Gardner, Callaghan, Mattila, Guetl, Petrović & Jovanović [120]
2018	WorldSkills	Smirnova, Zafir, Vaganova, Vasilevna, Vladimirovna & Masaleno [61]	
Pubmed	2020	SUPER	Ivzori, Sachs, Reiter & Schreuer [55]
Google Scholar	2015	STEM education	Lin, Yu, Hsiao, Chu, Chang & Chien [99]
	2016	MOOC	Penstein & Fershke [121]
	2017	ABI: Inquiry-based learning	Sabando, Maldonado, Acevedo & Said [122]
STEM education		Toma & Greca [62]	
Scielo	-	-	-

Note. The symbol '-' indicates that no publications were found for the selected year.

Table 7. Textual evidence for the different educational proposals.

Educational Proposal	Text Evidence
STEM education (6)	"STEM education can be used to assess junior high students collaborative problem-solving skills" (p. 319) [99]
	"future advances is possible in the field of virtual-worlds-based laboratories for STEM disciplines and in particular for engineering and robotics (...) the introduction of technologies ( . . . ) or the introduction of entirely original concepts" (p. 24) [120]
	"This method promotes critical thinking, teamwork and creativity; necessary skills to meet the challenges represented by the 4.0 industrial revolution" (p. 18) [54]
	"acquire skills that will enable them to solve problems and interpret the world around them and in the complex societies of the 21st century" (p. 459) [59]
	"The experience ( . . . ) was positive, as they found the use of the elements and the conditions to comply with each of challenges by using collaborative and participatory work, taking advantage their creativity and even artistic skills to generate innovative solutions" (p. 15) [110]

Table 7. Cont.

Educational Proposal	Text Evidence
	“aims to respond to the economic challenges (...) identify the needs of workers who require more flexible knowledge and new skills to meet current labour and social requirements, and emphasize the need to solve problems (...) through scientific literacy” (p. 392) [62]
MOOC (3)	“helped them to broaden their focus to prepare themselves for their future role, (...) broaden their skillset to increase their effectiveness at work, (...) and preparing them for new roles, and career progression” (p. 99) [114] “the participants efficiently mobilised skills and abilities in the use of ICTs, thanks to which they were able to generate their open resources and disseminate them through mass media on the Internet” (p. 81) [118] “framework include methods for assisting help exchange among students as well as means to navigate the massive amount of data that is produced by the community” (p. 673) [121]
Gamification (3)	“increase corporate use of play-based learning as part of vocational work-based learning to better meet future qualification requirements of companies, as well as training of workers with less education experience” (p. 44) [119] “gamification is the only significant tool in non-STEM studies. Results are very useful for (...) effectiveness in computer-supported collaborative learning” (p. 1055) [115] “The results showed the potential of using gamification techniques in promoting motivation, engagement, and performance” (p. 402) [116]
APS: service learning (1)	“to train future professionals in ( . . . ) values such as ethics, sustainability, transparency, equity and solidarity, that are such necessary nowadays” (p. 1001) [112]
ABI: Inquiry-based learning (1)	“strengthens academic performance and enhances the development of superior skills designed for future work” (p. 20) [122]
Hi-Tech (1)	“Having different subjects where hi-tech teaching is inserted promotes innovation in universities, following the rhythm of time and reacting to the evolution of the demands of new professional profiles” (p. 56) [113]
iD-Tech (1)	“Course topics include coding, 3D modeling, artificial intelligence, robotics and game design. iD Tech is dedicated to bridging the digital divide and is committed to gender diversity” [117]
Robotics (1)	“the students at pre-university curricular level learn the principles of Science and Engineering and the computer programming skills demanded in today’s society” (p. 13) [76]
Radio stations (1)	“This strategy could favor the strengthening of values, social inclusion and prevention of social problems in young people, as well as the development of generic competences that can provide important inputs for their future professional” (p. 1) [109]
Chatbot (1)	“Points out a path to follow in order to train students better able to face the changing media scenario” (p. 2084) [111]
Net-teaching and co-working (1)	“provides flexibility in the management of education (...) possibility of interdisciplinarity (...) and a greater approach to reality, which today is telematics” (p. 540) [77]
Digital Skills Accelerator Project (1)	“will produce the knowledge, resources and social capital to enable the introduction of the Digital Skills and Competences model (...) may present a solution to the identified skills gap of youth, of unemployed and of large part of active population” (p. 4) [82]
Multidisciplinary innovation project (1)	“It promotes the development of different personal characteristics, social skills, emerging leadership skills, creativity, future orientation, social skills, technical, development and testing skills and skills related to the implementation of innovation, such as marketing planning, sales and entrepreneurship skills” (p. 500) [85]

Table 7. Cont.

Educational Proposal	Text Evidence
SUPER (1)	“help students to connect the school world with practical work experience and equip them with learning strategies and skills in both fields, as well as knowledge about their future possibilities in the labour market” (p. 13) [55]
Disruptive education (1)	“Education focused on training processes with the advance of information and communication technologies (...), where wide spaces of creation mark and influence the ways of thinking and acting in almost all areas of productivity and thought” (p. 62) [60]
Learning with a rock music group (1)	“can acquire highly valued skills in today’s labour market, especially in fields such as engineering, economics, entrepreneurship, politics or science” (p. 62) [108]
WorldSkills (1)	“The application of the WorldSkills movement allowed to increase personal interes (...) to independent work, made it possible to carry out self-assessment and self-examination of knowledge, skills and practical skills” (p. 4107) [61]

## 5. Discussion

The results discussion section was developed in response to the two objectives raised at the beginning of the article.

Thus, in the first place, in relation to objective 1, “to identify the most in-demand skills and, in this way, facilitate access to the job market”, from the outcomes uncovered through the present literature review, it must be highlighted that all of the articles agree that the mastery of technology is critical for meeting the needs of the new occupational and digital era that rules in the present day. This conclusion was reached by a number of authors, after making it explicit that the acquisition of digital skills will be a key aspect for accessing the job market. Their work also outlines that, at the same time, aspects and knowledge must be developed which will be useful for this challenge. Such aspects include mastery over digital data and the ability to communicate in a digital way [74,78].

Digital transformation will be the main pillar on which the survival of businesses is built. For this reason, it is advised that companies join up with the Fourth Industrial Revolution in order to stop the market from disappearing [75]. For any individual who is hopeful of joining the job market, the knowledge of how to manage information and communication technology will not only be of benefit in the professional setting, it will also be transcendental for daily and personal life. This is due to the fact that knowing how to function in relation to this dimension helps the progression towards persistent change in current society [123]. This was demonstrated by Juárez and Marqués in their study of 1200 experts in the field of career guidance. These authors set out a rubric for the evaluation of the dimensions and aspects of digital competence (DACD). They concluded that, more than being a skill to develop, digital competence is a fundamental requirement when it comes to the occupation of any job position [78].

In another sense, Inzunza-Mejía and Espinoza-Durán (2018) also urged the importance of mastering digital processes. Following their study of 324 business organizations, they concluded that, by around 2025, the majority of job occupations will be linked to multi-disciplinary skills. In this way, workers will be able to adapt to any situation, regardless of the sector in which they are working. Furthermore, they will be able to adapt themselves, which will permit them to cooperate and perform totally differentiated work tasks. Nonetheless, this skill was not contemplated by the majority of the reviewed articles [124].

With regards to the intercultural skill, Elboj et al. argued that this skill is more often found in multinational and multicultural companies with cross-border workers who are working towards an entrepreneurial future. On the other hand, these same authors indicate that training for this skill is scarce despite its huge occupational demand, and that it therefore presents a challenge to society [125].

On the other hand, knowing how to effectively manage one's own knowledge and how to orientate critical thinking when making decisions will be another of the skills that must be demonstrated by employees. Another skill when opting for a working future will be the ability to set specific objectives when embarking on projects [126]. This will strengthen business success and keep competition alive within the market itself, though it is important to highlight that personal motivation will be vital in this approach.

There was a notable scarcity of research into the skills that are inherent to a design mentality. Social intelligence and digital literacy were also given less importance relative to other skills, such as the management of technology or virtual collaboration. For this reason, it is necessary to conduct more in-depth research into these skills with the aim of really understanding the importance they hold for a working future.

On the other hand, in relation to objective 2 of this research, "to analyze the type of proposals elaborated by educational systems to target student upskilling and facilitate their incorporation into the occupational setting", a number of proposals were located which had the main aim of improving the quality of this training.

The majority of the proposals were related to novel projects for the educational ambit, and they emanated from digital and technological phenomena. Along these lines, Vega urged the importance of robotics. This author highlighted that it is possible, through robotics, to raise awareness early in students about the importance of acquiring the work skills that will be demanded in the future. Furthermore, students must become familiar with software infrastructure and hardware platforms, amongst other things [76]. Chatbot, an instant message service that is capable of building real business scenarios, was also proposed as a link between knowledge-based competencies and some professions [111]. On the other hand, educational proposals described by Hi-Tech and Id-Tech opt for the use of the highest forms of technology to create content, e.g., using 3D platforms, artificial intelligence applications, drones, mobile phones, and immersive technology [113].

Various authors have suggested, in recent years, that STEM education should be carried out (Science, Technology, Engineering and Mathematics). This is understood as a form of education that finds cohesion between the disciplines of science, technology, engineering, and mathematics. This favors student literacy, and further alludes to study and professional practice. The objectives of STEM are to respond to economic challenges and to recognize the innovative skills that are needed to meet the occupational and social requirements that workers will covet in the future [54,59,62].

Smirnova et al. alluded to the WorldSkills movement. These authors conducted a pedagogical experimental study with university students at the State Pedagogical University of Gorod, Russia. This study was exclusively dedicated to the training of qualified staff, and obtained favorable results by integrating them into this movement. This movement concerns a contest, at both a national and global level, in which the main aim is to demonstrate mastery over work skills. This promotes personal and vocational strategies, in addition to knowledge exchange, in order to improve personal qualification. This initiative prepares students for competition and benefits professional skills training, increasing the power of learning during educational training [61].

Another of the proposals proposed to tackle the process of professional training is disruptive education. This substitutes formal and traditional classes for social learning, in which learning takes place through interaction with the setting, and is characterized by a form of totally personalized learning. This is made possible through the application of e-learning and web 2.0, i.e., virtual education [58]. This type of innovation within the educational setting implies the refocusing of current education with the aim of responding to future demands, placing special emphasis on vocational training. In this way, personalized learning is constituted by squeezing the potential of each individual whilst, at the same time, targeting early training that grants access to the digital world [60]. This reinforces digital skills whilst also supporting the integration of artificial intelligence in order to process and manage large quantities of data. At the same time, this promotes critical thinking, permitting individuals to analyze and compare all types of information [127].



Ivzori et al. urged the need for a program of transition towards employment. They developed a program called SUPER, and examined its intervention effectiveness between 2016 and 2018 in three secondary schools. The development of this program had a multidisciplinary focus, and was founded on the promotion of knowledge co-production through integrative and participative processes in diverse disciplines and knowledge bases. SUPER is framed by three differentiated models. The human occupation model (MOHO) provides the reference framework for theoretical concepts, and is based on practical tools for the improvement of occupational participation. The CIL (internalized learning cycle) employs group interactions in order to solve problems and develop interpersonal skills such as co-operation, the regulation of rules, or the development of critical thinking and intercultural working. Finally, TREC (rational emotional behavioral therapy) provides a psychological perspective that is based on rational thinking, facilitates emotional expression, and regulates behavior in diverse situations. In addition to that which was previously mentioned, students on this program enjoyed job experiences via extracurricular tasks. Through these tasks, they developed performance skills by experiencing paid work in the job market, and had the opportunity to practically implement the theoretical part of the program. Following the intervention, it was confirmed that SUPER offered equal opportunities for transition into the job market, above all, in at-risk youth who found it difficult to imagine themselves excelling in any occupation in the future [55].

Other innovative educational phenomena to have emerged through the history of educational training include MOOC (massive open online courses).

They were born out of the need to extend quality training opportunities to individuals who are capable of capitalizing on such knowledge but do not have access to the traditional forms of acquiring it. It was soon realized that students on this type of course were professionals or high-level students who needed quality training; they had well-consolidated self-directed study skills, but the high cost of formal training had dissuaded them from accessing the registration processes in order to undertake university degrees [106] (p. 69).

The educational proposals described present different means for equipping students in the acquisition of skills and their future incorporation in the job market. They consider the importance of every one of the skills that have been annotated and discussed by the different authors in order to achieve optimal training for the performance of any job. Factors were identified that have notably accelerated the changes in current society, remodeling the future occupations and the skills demanded by them. In this sense, the studies highlighted the integration of technology as one of the main motors of this change.

However, none of the research studies considered job market changes resulting from the current COVID-19 pandemic, given that immediate adaptations to the future working context have been necessary at an accelerated rate. Over the course of a few weeks, the world economy walked a path of cautious observation steered by health warnings until business was finally cancelled and closed. Instead, teleworking was encouraged, with this potentially being the impulse to catalyze business transformation and everything this brings with it [128]. This obliged change led millions of individuals to change their way of working, and has constituted the development of critical and innovative thinking. It forced individuals to make use of digital literacy in order to reduce business losses, whilst also leading many to learn how to manage knowledge and collaborate in a virtual way with other entities or workers. This was crucial in order to adapt to the radical changes suffered by the economy and job market due to the pandemic.

## 6. Conclusions

In the 21st Century, globalization, digitalization, and the permanent alteration of information has led to large changes in the working world, making it necessary to readjust the essential skills needed to access a job position. Furthermore, success in the occupational field will depend on the transversal skills that the worker is able to develop, in this way effectively adapting to the challenges of current society.

Industry 4.0 requires essential conditions for survival in the job market. Businesses should submerge themselves into the digital paradigm, as organizations themselves must take on this challenge as much as workers. In the same way, it will be necessary to contemplate new types of skills such as virtual collaboration, computational thinking, internationalization, multidisciplinary working, and strategic plan creation linked to innovative design. This will be necessary in order to take on competition in the market.

In order to facilitate the acquisition of the transversal skills demanded by the job market, it is necessary to redirect, from the educational setting, student training. The teaching–learning process should have students and their needs as its backbone. It should incorporate the dynamic methodologies that the target market demands, strengthening skills for a working future in students and facilitating their future insertion into the world of work.

The greatest strength of this paper is the in-depth bibliographic review work that was carried out. No limitations have been found in the development of this research, beyond the aforementioned absence of research on some skills for future work. The future line of research is connected with the research project in which we are working, the main objective of which is to know what skills for future work are presented by students who are in the last stages of the educational system in Spain, more specifically in Andalusia, as well as to ascertain the skills which are in most demand by employers in this context.

**Author Contributions:** E.M.O.-M. and L.G.-P. conceived the hypothesis and theoretical framework of the study. L.G.-P. and M.G.-G. participated in data collection and analysed the data. All authors contributed to the data interpretation and statistical analysis. L.G.-P. and M.G.-G. wrote the paper, with significant input from E.M.O.-M., who read and approved the final manuscript. All authors have read and agreed to the published version of the manuscript.

**Funding:** Proyecto I+D: B-SEJ-192-UGR18. FEDER-UE-Junta de Andalucía. IP Eva María Olmedo Moreno.

**Institutional Review Board Statement:** The whole process conformed to the ethical principles for research defined in the Declaration of Helsinki in 1975 and later updated in Brazil in 2013. A positive outcome was also received from the Ethics Committee of the University of Granada (reference code: 1678/CEIH/2020).

**Informed Consent Statement:** Not applicable.

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

**Ethical Approval Reference :** Ethics Committee of the University of Granada (reference code 1678/CEIH/2020).

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