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Determinants Influencing Distance Learning at Health Technology Higher Education Institutions in Portugal

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Abstract: Introducing distance learning within higher education institutions (HEIs) is a key societal issue, especially in the health sector, due to its in vivo learning nature. Public policies play an important role in these digital environments. This study aims to identify the determinants influencing national public policies that foster digital learning transformation in Health HEIs in Portugal. A prospective survey, using the structural analysis of Godet's method, is conducted, and data are gathered from different health sector stakeholders. Despite the efforts to increase digital literacy and funding toward digital learning in HEIs, a weak strategy and implementation of a national plan for distance learning in Health HEIs are still prevalent. The driver to success is grounded on national and international cooperation between health professionals, hospitals, and HEIs through transferability processes of innovative practices.

Keywords: higher education institutions; health sector; public policies; distance learning; digital learning transformation

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1. Introduction

Higher education institutions (HEIs) have a decisive contribution to the development and sustainability of society. This development is not only observed in social and economic affairs but also promotes innovation toward a more cohesive, conscious, and responsible society [1–3].

The current online and digital innovation in HEIs is changing the landscape of possibilities and is assuming a more relevant role when compared to the "traditional" pedagogical strategy [4,5]. This paradigm shift has been pushed in part because of the COVID-19 pandemic, which forced its expansion to heterogeneous groups (inside and outside the HEI system) due to the new policies and sanitary limitations, and in part due to the new generation of "digital" students, where the socialization processes occur in digital and virtual domains [6,7].

Despite this fast pace, HEIs are still adapting to this new digital reality [8]. Particularly, this adoption carries extra difficulties for Health HEIs, considering that the competencies acquisition framework is based on in vivo and clinical placement pedagogical methods [9–11]. In this context, policy makers and public policies are key facilitators of the spread of local and emergent best practices through a supportive policy environment and knowledge transfer and dissemination strategies [9]. Thus, in a positive view, the implementation of distance learning strategies for Health HEIs has the potential to boost the innovation of the healthcare system and provide future health professionals with skills appropriate to the current development of the labor market and societal challenges [12]. This adoption is

both a technological and health service innovation, using telemedicine implementations as an example [9], that allows Health HEI providers to fundamentally rethink and reorganize processes, procedures, and services in line with healthcare institutions and workers (targeting the in vivo and clinical placement needs of Health HEIs), as well as patients and communities' needs and preferences.

Digital skills increase healthcare quality and patient safety. Healthcare professionals must have technical skills and competence with health information technologies to guide practitioners and health students in implementing the principles of evidence practice in a clinical setting [10]. The introduction of digitized workforce services, clinical knowledge management, and decision support competencies requires the existence of public and organizational policies that are focused predominantly on the integration of these digital skills.

Essential factors for the adoption of distance learning in Health HEIs are the learning attitudes and perceptions that the different stakeholders, teachers, health professionals, health students, health institutions, and HEIs have toward digital technologies applied to learning processes. In fact, digital literacy plays a big role in this context because it has been revealed that technology acts as a barrier for both tutors and students in distance learning health programs [11]. Thus, policymakers, health care administrators, and HEIs need to align their strategic plans towards a collaborative implementation of digital competencies, pedagogical innovation, and distance learning strategies.

Currently, in Portugal, the national program of public policies (Portugal 2030) is aligned with EU policies [13,14], which aim to increase student enrollment in Higher Education Institution programs, increase digital skills, and decrease the inequality in access to higher education institutions, and grounded on a national digital transformation strategy for HEIs [15]. Considering the following research question: "Is digital pedagogical transformation and distance learning in Health HEIs in Portugal being nourished by National Public Policies?", this study aims to identify the determinants influencing National Public Policies (Portugal 2030) that foster distance learning transformation in Health HEIs in Portugal.

In addition, the study intends to show the usefulness of prospective scenario methodologies to support policies and guide actions toward the sustainability of the planned outcome.

2. Materials and Methods

Defining scenarios means mapping probable futures, identifying trends and uncertainties, and anticipating opportunities and threats. Prospective scenario methodologies have been widely used to test and improve the performance of organizations in dynamic environments [16]. Scenarios are developed to reduce uncertainties and guide stakeholders' strategic decisions on how to build the best possible future. To do so, a set of descriptions, in the form of key determinant variables, of future conditions are developed and recommendations are built upon these.

In this study, the structural analysis of Godet's method was used. This method uses an algorithm that considers three stages: (1) identify the factors that influence a specific event; (2) describe associations between the factors through a matrix, which results in a direct and indirect impact graph; and (3) identify groups of factors (and from these, the crucial ones) and draw the influence–dependence chart [17].

In the following subsections, the method and the process used in the experimental results are described.

2.1. Research Questions

The main question of this study intends to answer what are the variables and actors that will impact on the digital transformation, innovation, and integration policies in health higher education institutions proposed by the National Public Policies Plan—Portugal 2030 (Research question 1).

Deriving from the main research question, and based on the prospective strategy method used, this study also intends to answer what are the key variables and actors that may foster distance learning transformation in Health HEIs in Portugal (Research question 2).

2.2. System Delineation

The process starts by constructing a global image of the present state system. This image is described as broad in scope, and comprehensive, dynamic, and descriptive forces for change. The global image is built up by delineating the system being studied, including a complete listing of variables that should be taken into consideration [18].

In this study, a bibliographic review, and informal consultations (interviews) with experts related to the Portuguese higher education institutions and health system were conducted. This led us to the elaboration of a list, as complete as possible, of the variables to take into account.

Keywords such as "Higher Education Institutions", "health sector", "public policies", "virtual learning", and "digital learning transformation" were used for the bibliographic review. Either journal papers or any type of document from national and international organizations related to these topics was included.

All variables identified were used to prepare a survey. The survey was organized in 4 dimensions and each dimension was in 4, 5, or 6 composites (Table 1):

1. Distance learning in higher education institutions in Portugal (4 composites);
2. National and international development policies (5 composites);
3. Health education context and good practices of distance learning in health (6 composites);
4. Consequences of distance learning on the digital skills of the health professionals (5 composites).

Table 1. Composites (E) and their dimensions (D).

(E1) Distance Learning in Higher Education Institutions in Portugal	(E2) National and International Development Policies	(E3) Health Education Context and Good Practices of Distance Learning in Health	(E4) Consequences of Distance Learning on the Digital Skills of Health Professionals
E1.D1. Distance learning framework and regulations	E2.D1. Existence and type of digital-based distance learning policies	E3.D1. Digital skills and digital literacy	E4.D1. Patient/person-centered care
E1.D2. Level of adoption and integration of digital technologies in higher education institutions	E2.D2. Articulation with civil society in the design, application, and accreditation of digital-based distance learning policies	E3.D2. Resources	E4.D2. Interdisciplinary teamwork
E1.D3. Digital training strategy for teachers	E2.D3. Support and promotion of digital-based distance learning in higher education institutions	E3.D3. Institutional strategy and support	E4.D3. Evidence-based practice
E1.D4. Suitability of the study plan's construction	E2.D4. Digital-based distance learning policies in the health sector	E3.D4. Attitude and predisposition to digital	E4.D4. Continuous improvement
	E2.D5. Health organizations and their relationship with digital-based distance learning policies in the health sector	E3.D5. Curriculum planning strategies (online and offline teaching methods)	E4.D5. Using digital technology
		E3.D6. Virtual clinical practice	

A list of the identified variables was included in each composite. Overall, the survey had 4 composites, 20 dimensions, and 106 variables. Four different scales were used (Table 2), and all had the option of "not applicable":

Table 2. Scales used in the survey.

Expert's Level of Knowledge	Occurrence Probability Degree	Main Driving Agent	Time of Completion
Excellent	Very likely	Portuguese state	5 years
Good	Likely	Ministries (health and education)	10 years
Moderate	Unlikely	Association of municipalities	15 years
Weak	Very unlikely	Local agents	
		Leading teams/CEO	
		Qualified human resources	

A group of different experts from the health sector and higher education institutions (researchers, managers, and decision makers) reviewed the survey to test it. Our sample also had experts from both sectors (researchers, managers, and decision makers).

The survey was developed on the www.survs.com platform. Considering the dimensions of each composite and the respective response time, the survey was divided into four parts, one for each composite, each with a different link (sent to each participant). The survey was disseminated via email to our sample in April 2022, with reinforcement in May 2022. The structure and form of completion were explained to the participants in the email and the introduction of the questionnaire. To try to guarantee an adequate minimum number of responses, some informal personal contacts were made, raising awareness of the importance of completing the survey. The survey was sent to 250 participants (each composite at a time), with a mean completion rate of 28% (70 participants).

2.3. Structural Analysis

In this step, a search for the principal determinants of the system and their parameters was performed [18].

The structural analysis was carried out using MicMac 6.0 (Matrice d'Impacts Croisés Multiplication Appliqués à un Classement) software, as follows [19]:

1. Identification of relevant variables—based on the results from the survey, the 5 variables from each composite, most relevant and important, based on the combination of the occurrence probability degree and the expert's level of knowledge, were identified (total of 20 variables).
2. Description of the relationships between the variables—in MicMac software, a matrix was filled by the authors of the study, describing the relationships between the variables using a two-input table. For each relation, the direct influence of one variable upon the other was asked.
3. Identification of the strategic variables—through the calculations obtained through MicMac software, it was possible to perform a direct and indirect classification of the variables, which confirmed the importance of certain variables and also revealed certain variables that, due to the indirect actions, played an important role in the system.

The results were displayed in a cartesian displacement map, where it was possible to determine the most influential determinants and which were the most dependent. This method also allowed the development of graph maps, where the direct and indirect influence could be further studied.

This process ended with the identification of the leading actors, the influencers of the system, through the identified key variables and their acting mechanisms.

3. Results

A total of 153 stakeholders from different sectors participated in the study, of which 48 completed the questionnaire.

The results of the collected data from the conducted survey allowed the selection of the 20 most relevant variables (Table 3).

Table 3. Top 20 most relevant variables, 5 per composite, by order of relevance (E—composite; D—dimension).

Composite	(Code) Variables
(E1) Distance learning in higher education institutions in Portugal	E1.D2.1. The use of digital technologies makes it possible to increase the opportunity to improve education. E1.D4.1. The functionalities and intrinsic properties of technologies intertwine with the curriculum, generating mutual transformations in the perspective of curriculum reconstructed in pedagogical social practice. E1.D1.1. The modality of distance education and the use of digital systems is not yet conveniently regulated. E1.D1.2. There is no national strategy for education that includes the use of digital systems favoring distance education in Portugal. E1.D2.7. There are free wireless internet access points in all areas/services/buildings associated with HEIs in Portugal.
(E2) National and international development policies	E2.D1.2. General and specific objectives underlying the existence of a digitally based public policy for distance learning (reduction in inequalities, the inclusion of more categories of students and trainees, combating desertification, the management of distances and the impossibility of physical presence, and the flexibility of models educational/training). E2.D3.1. There is(are) public funding measure(s) or initiative(s) for the creation and development of digital-based distance learning processes and models in higher education institutions. E2.D3.2. There is(are) public measure(s) to support the adoption and/or implementation of digital-based distance learning models in higher education institutions. E2.D4.4. There are training packages and/or pedagogical resources for the adoption and/or implementation of digital-based distance learning models in higher education institutions in the health area. E2.D1.3. There is(are) global/general strategic plan(s) for the creation, development, and application of digitally based distance learning systems originated in the government/central administration.
(E3) Health education context and distance learning in good health practices	E3.D2.8. Due to the lack of training in human resources, there is an underutilization of the potential of ICT in HEIs. E3.D2.9. Due to the absence of a teaching–learning model adequate for the work processes and distribution of teaching services, the underutilization of distance learning potential arises. E3.D4.1. The predisposition of professors to integrate digital techniques in higher education institutions in health depends on their mastery of digital skills. E3.D5.1. There are no strategies for good online and offline curriculum planning in health education. E3.D5.2. Good online and offline curriculum planning strategies are associated with the existence of policies that support them.
(E4) Consequences of distance learning on the digital skills of the health professionals	E4.D2.3. Interdisciplinarity is one among several topics that need to be developed to generate a good contribution to the work in health units. E4.D3.4. It would be very important and useful for professional associations to be responsible for collecting and disseminating evidence related to various areas. E4.D2.6. The concepts of teamwork and interdisciplinary work do not become practice, although they are already part of the discourse of professionals and institutions. E4.D2.2. Multidisciplinary teamwork requires an approach that questions professional certainties and encourages permanent horizontal communication between team members. E4.D3.1. Digitalization allows/facilitates the sharing of good practices and standards.

The time horizon foreseen for the occurrence of actions that can guarantee the success of the public policies under study is 5 years.

From the MicMac process, the displacement map (Figure 1) revealed the key variables (most influential and highly dependent—right upper quadrant).

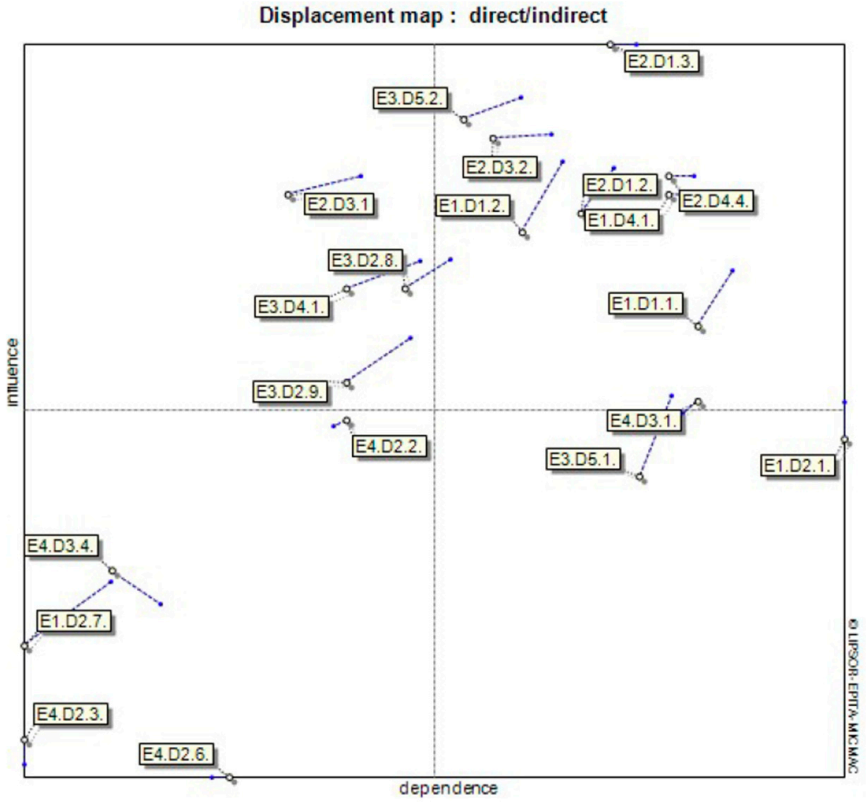

Figure 1. Dependence and influence variable's relationship analysis (variables' displacement are shown in blue dashed lines).

The results revealed eight (8) key variables: E2.D1.3; E2.D3.2.; E2.D4.4.; E2.D1.2.; E3.D5.2.; E1.D1.1.; E1.D4.1.; and E1.D1.2., which will be used to support the exploration of different scenarios.

The direct (Figure 2) and indirect (Figure 3) influence graphs further improve the knowledge of the possible "behavior" of the evolution of the key variables.

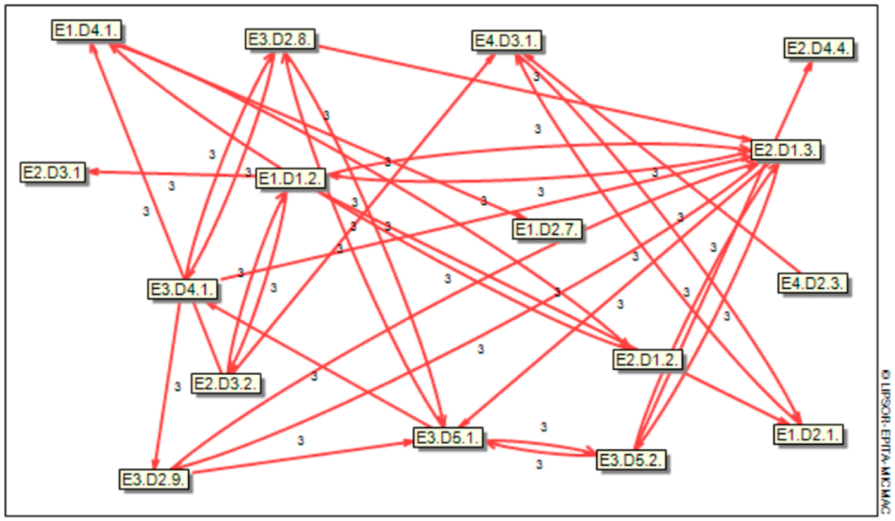

Figure 2. Direct influences among the variables (strongest influences shown in red lines).

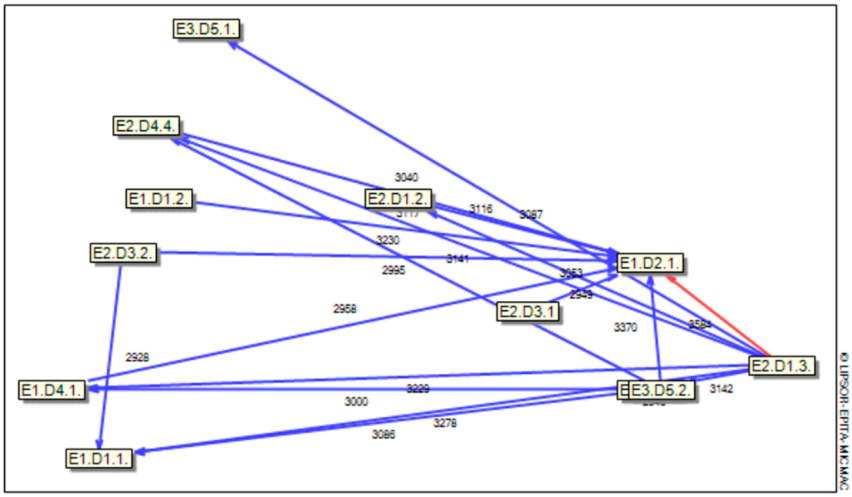

Figure 3. Indirect influences among the variables (relatively strong influences shown in blue lines and strongest influences shown in red lines).

Through the analysis of the direct influence of the identified variables, the variable E2.D1.3 has a strong influence on most of the variables. The indirect influence reveals a strong influence from E2.D1.3 to E1.D2.1.

The system is mostly influenced by issues associated with national and international development policies (Composite 2) and with distance education in higher education institutions in Portugal (Composite 1).

On the basis of the key variables, the Portuguese state and ministries (health and education) are considered the most relevant actors in the system, where HEIs (defined as local agents' actors) are key indirect actors in the evolution of the detected variables.

4. Discussion

On the basis of the analysis carried out and the reflection on the scenarios considered, it is important to highlight some considerations and determinants regarding the research question:

> *"What are the variables and actors that will impact on the digital transformation, innovation, and integration policies in health higher education institutions proposed by the National Public Policies Plan?"* Portugal 2030

The desirable scenario is recommended within a time horizon of 5 years and is characterized by the development of a national operational strategy for education that includes the use of digital systems since it is considered that the use of digital technologies allows an increase in the opportunity to improve education.

The success of this scenario implies a clear promotion and development of a dissemination plan and training activities to develop an attitude and predisposition for digital use in Health HEI programs.

Eight (8) variables were identified as key variables with an impact on the implementation of the public policies regarding digital transformation and innovation adoption in health higher education institutions in Portugal. Overall, experts consider important:

A. National and international development policies (E2) with a particular focus on:
   a. The existence of digital-based distance learning policies (E2.D1) with a focus on global/general strategic plan(s) for the creation, development, and application of digitally based distance learning systems (E2.D1.3) underlying the purpose of a reduction in inequalities, the inclusion of more categories of students and trainees, combating desertification, the management of distances and the impossibility of physical presence, and the flexibility of models educational/training (E2.D1.2).

b. The support and promotion of digital-based distance learning in higher education institutions (E2.D3.) based on actions promoted by the Health and Education Ministry (E2.D3.2.).
c. Digital-based distance learning policies in the health sector (E2.D4.), based on the existence of training packages and/or pedagogical resources (E2.D4.4).

B. Distance learning in higher education institutions in Portugal (E1), where experts consider it to have an impact:
   a. Distance learning framework and regulations (E1.D1.) are not yet conveniently regulated (E1.D1.1.), but it is acknowledged that the use of digital technologies may increase the quality of education systems (E1.D2.1).
   b. The suitability of the study plan's construction (E1.D4.), considering that the integration of digital technology within the curriculum will mutually transform the pedagogical approach as well as its social practice (E1.D4.1.)

C. Health education context and distance learning in good health practice (E3) success is based on curriculum planning strategies (online and offline teaching methods) (E3.D5.) that are supported in existent policies (E3.D5.2).

However, it is important to mention inconsistencies between the association/existence of global/general strategic plan(s) for the creation, development, and application of distance learning systems (E2.D1.3.) and the fear of the non-existence of a national strategy for education that includes the use of digital systems, favoring distance education in Portugal (E1.D1.2). This concern is also stated by Moore and Greenland [20] who sustain that the current online HEI policies may fail to acknowledge important fundamental differences between on-campus and online students, leading to inconsistent and vague policies.

What are the key variables and actors that may foster distance learning transformation in Health HEIs in Portugal?

Distance learning and digital pedagogical innovation require the use of innovation in curriculum development, pedagogical techniques, communication through various mediums (physical and digital channels), and proper organizational and administrative arrangements. Because they are in different places, teachers and students depend on some type of technology for information to be transmitted and for a means of interaction to be provided to them [21].

It will be critical to find a balance between the scientific and pedagogical autonomy of HEIs and the development of recognized standards and good practices to guarantee the integration of the functionalities and intrinsic properties of the technologies into the curriculum, generating mutual transformations in a perspective of curriculum reconstructed in the pedagogical social practice (E1.D4.1) at a national level and not just a local one, depending on the strategies of each HEI.

Despite the optimistic view of the main results, the obstacles and challenges identified may lead, at the national level, to the maintenance of a lack of a clear national strategy for education that includes the use of digital systems privileging distance education in Portugal (E1.D1.2.), despite the existence of residual success cases of digital pedagogical program implementations in HEIs. In fact, in 2010, only 3% of the HEIs in Portugal had enrolled in some kind of distance learning, revealing that Portugal started late when compared to Europe [22]. Despite the 2020 pandemic, Portugal HEIs decided to not maintain the distance learning format due to the difficulty of this format with practical classes, technological constraints, especially the internet, and the need for social proximity with colleagues and professors [23].

It was also notable that to address the specific issues of Health HEIs, such as the "virtual" clinical practice and the need for the digital skill of health professionals toward digital pedagogical tools, the abovementioned determinants need to occur.

This study included a limited number of participants due to a lack of participation from the invited experts and stakeholders. This is a common limitation of prospective

studies because the developed survey is too lengthy and integrates different dimensions of the system, which obliges the participant to reflect on each of the considered variables.

Future research will be held by improving the robustness of the actors' strategic analysis, which will include expert interviews with selected key actors, as well as including a broader view of the object in the study.

5. Conclusions

Despite the efforts to increase digital literacy and funding toward digital learning in HEIs, a weak strategy and implementation of a national plan for distance learning in Health HEIs are still prevalent. The driver to success is grounded on national and international cooperation between health professionals, hospitals, and HEIs through transferability processes of innovative practices.

This study opens the discussion for the development of an integrated development strategy towards the implementation of virtual learning and a digitalized environment at health technology higher education institutions in Portugal, through the correct identification of key determinants for the success of public policies in Portugal.

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Institutional Review Board Statement: This research, although envolving human participants, did not require Ethics Committee Approval, since no personal data was retrieved from participants and it posed no risk for participants. They were asked to answers questions thourgh an online questionnaire offering their opinion anonymouly with no personal data colection. In fact we did make a preliminary presentation of the project to our Ethics Committee, that said no submission of the project was necessary due to these facts.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Abad-Segura, E.; González-Zamar, M.D.; Infante-Moro, J.C.; García, G.R. Sustainable management of digital transformation in higher education: Global research trends. *Sustainability* **2020**, *12*, 2107. [CrossRef]
2. Akbar, M. Digital technology shaping teaching practices in higher education. *Front. ICT* **2016**, *3*, 1. [CrossRef]
3. Kireev, B.; Zhundibayeva, A.; Aktanova, A. Distance Learning at Higher Education Institutions: Results of an Experiment. *J. Soc. Stud. Educ. Res.* **2019**, *10*, 387–403.
4. Bond, M.; Marín, V.I.; Dolch, C.; Bedenlier, S.; Zawacki-Richter, O. Digital transformation in German higher education: Student and teacher perceptions and usage of digital media. *Int. J. Educ. Technol. High Educ.* **2018**, *15*, 48. [CrossRef]
5. Grahame, M.; William, M.; Anderson, G. *Handbook of Distance Education*; Lawrence Erlbaum Associates, Inc.: Mahwah, NJ, USA, 2003; ISBN 0-8058-3924-0.
6. Al-Balas, M.; Al-Balas, H.I.; Jaber, H.M.; Obeidat, K.; Al-Balas, H.; Aborajooh, E.A.; Al-Taher, R.; Al-Balas, B. Distance learning in clinical medical education amid COVID-19 pandemic in Jordan: Current situation, challenges, and perspectives. *BMC Med. Educ.* **2020**, *20*, 341. [CrossRef]
7. Khurshid, Z.; de Brún, A.; Moore, G.; McAuliffe, E. Virtual adaptation of traditional healthcare quality improvement training in response to COVID-19: A rapid narrative review. *Hum. Resour. Health* **2020**, *18*, 81. [CrossRef] [PubMed]
8. Saykili, A. Higher Education in The Digital Age: The Impact of Digital Connective Technologies. *J. Educ. Technol. Online Learn.* **2019**, *2*, 1–15. [CrossRef]
9. Oliveira Hashiguchi, T. Bringing health care to the patient: An overview of the use of telemedicine in OECD countries. In *OECD Health Working Papers*; OECD Publishing: Paris, France, 2021. [CrossRef]
10. Yaqoob Mohammed Al Jabri, F.; Kvist, T.; Azimirad, M.; Turunen, H. A systematic review of healthcare professionals' core competency instruments. *Nurs. Health Sci.* **2021**, *23*, 87–102. [CrossRef] [PubMed]

11. Bin Mubayrik, H.F. Exploring adult learners' viewpoints and motivation regarding distance learning in medical education. *Adv. Med. Educ. Pract.* **2020**, *11*, 139–146. [CrossRef] [PubMed]
12. OECD. Health in the 21st Century: Putting Data to Work for Stronger Health Systems. In *OECD Health Policy Studies*; OECD Publishing: Paris, France, 2019. [CrossRef]
13. European Union. Shaping Europe Digital Future. 2020. Available online: https://ec.europa.eu/info/sites/default/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf. (accessed on 24 March 2022).
14. European Commission. Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions. In *Establishing a European Declaration on Digital Rights and Principles for the Digital Decade*; European Commission: Brussels, Belgium, 2022; Available online: https://digital-strategy.ec.europa.eu/en/library/declaration-european-digital-rights-and-principles. (accessed on 24 March 2022).
15. Presidência do Conselho de Ministros. Resolução do Conselho de Ministros n.º 98/2020. Available online: https://portugal2030.pt/wp-content/uploads/2021/11/RCM98_2020.pdf. (accessed on 24 March 2022).
16. Mellem, P.; Costa, I.; Costa, A.; Moreira, M.; Gomes, C.; Santos, M.; Corriça, J. Prospective scenarios applied in course portfolio management: An approach in light of the Momentum and ELECTRE-MOr methods. *Procedia Comput. Sci.* **2022**, *199*, 48–55. [CrossRef]
17. Arcade, J.; Godet, M.; Meunier, F.; Roubelat, F. *Structural Analysis with the MICMAC Method & Actors' Strategy with Mactor Method*; American Council for the United Nations University: Paris, France, 1994.
18. Moniz, A.B. Scenario-building methods as a tool for policy analysis. In *Innovative Comparative Methods for Policy Analysis: Beyond the Quantitative-Qualitative Divide*; Springer: Berlin/Heidelberg, Germany, 2006; pp. 185–209. [CrossRef]
19. Villegas Vilchis, A.; Platas Rosado, D.; Gallardo-López, F.; López-Romero, G. MicMac structural analysis to determine the strategic variables of the sugar agribusiness in Mexico. *Rev. Mex. Cienc. Agríc.* **2020**, *11*, 1325–1335. [CrossRef]
20. Moore, C.; Greenland, S. Employment-driven online student attrition and the assessment policy divide: An Australian open-access higher education perspective. *J. Open Flex. Distance Learn.* **2017**, *21*, 52–62.
21. Mendonça, J.R.C.D.; Fernandes, D.C.; Helal, D.H.; Cassundé, F.R. Public policies for higher distance education: An examination of the role of the Open University of Brazil. *Ensaio Aval. Pol. Públ. Educ.* **2020**, *28*, 156–177. [CrossRef]
22. Hassan, A.; Laaser, W. Higher Education Distance Learning in Portugal—State of the Art and Current Policy Issues. 2020. Available online: https://old.eurodl.org/index.php?p=archives&year=2010&halfyear=2&article=414. (accessed on 24 March 2022).
23. Gonçalves, S.P.; Sousa, M.J.; Pereira, F.S. Distance Learning Perceptions from Higher Education Students—The Case of Portugal. *Educ. Sci.* **2020**, *10*, 374. [CrossRef]