Digital Entrepreneurship in Peruvian Students of Regular Basic Education Post Pandemic

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Abstract

The objective of this study was to compare the development of digital entrepreneurship competence in regular basic education students with technical and humanistic training in a post-COVID-19 pandemic context. The research was conducted with a quantitative approach, comparative descriptive type, non-experimental design, cross-section, the population consisted of 450 secondary school students; the probabilistic sample extracted was 200 students, 100 students with technical secondary education and 100 students with humanistic training, being the questionnaire the instrument for data collection carried out through the Google form. The results indicated that digital entrepreneurial skills in technical training students have a high level compared to that developed by students with humanistic training. Likewise, the identification of opportunities, action planning, initiative and collaboration, management and security, showed a high level in technical training students of regular basic education is transcendent in our current society, being education with technical training a factor of change by developing digital skills based on innovation, making use of Big Data or artificial intelligence exploiting technology and developing new business models based on online products and services, Oriented to collaborative work with creativity in post-pandemic times.

Keywords: Digital Competence, Creativity, Innovation, Development, E-Commerce

1. Introduction

The COVID 19 pandemic has undoubtedly accelerated a digital transformation in all areas, with greater prominence in the business environment (Palomares-Ruiz et al., 2021, Blanka et al., 2022;Hu Chan et al., 2021). Manybusinesses were not prepared for large-scale commercial transformation (Nicolás and Rubio, 2020). And although the health crisis harmed the commercial sector, the impact was undoubtedly greater, in the case of enterprises with little preparation in the digitalization of their business model (ECLAC, 2022; Ortiz and Castillo, 2020; Powell and Rojas-Suarez, 2022). Because many of them underwent a process of digital metamorphosis in the action of work (Ulfert-Blank & Schmidt, 2022; Kantis and Angelelli, 2020); added to this, the lack of structure and knowledge regarding the adaptation of work from home (Kantis and Angelelli, 2020)), the lack of technological equipment, as well as the demand for unsatisfied products and online assistance and the lack of preparation in the use of digital platforms generated competitive disadvantages (Jurczuk & Florea, 2022; Blanka et al., 2022); and that in turn were intensified directly and indirectly in the actions of thousands of small entrepreneurs (Donoso and Corvalán, 2012;Ortiz, and Castillo, 2020).

According to Kantis and Angelelli (2020) in a study to measure the impact of the health crisis on young enterprises in Latin America and the Caribbean (LAC); revealed that only 16% of entrepreneurs will recover their activity after the pandemic; However, most alarmingly, one in five will permanently close their business, Therefore, we are again facing a crisis of the different economies worldwide (Nicolás, and Rubio, 2020).

From what has been described; although, in Latin American countries, the promotion of entrepreneurship has been prioritized within the guidelines of public employment policies for young people (Sánchez et al., 2017;Useche-Aguirre et al, 2021);also, the use of technologies for the generation of more innovative and effective business should be considered as a basis (Mababu, 2017; Ovalles-Toledo et al. 2018;CEPLAN, 2020). From this

perspective, the application of digital entrepreneurship activities presents a great challenge due to its impact on the dynamization of its development (Tejeiro, et al., 2021); undertaking an online project, proposing goods or services online, without the need to own a physical channel with a cooperative work (Cando & Cando, 2021) should be one of the alternatives in times of digital age (Nicolás and Rubio, 2020). Therefore, education, especially in the school stage, is one of the most outstanding aspects for the development of the entrepreneurial profile (Torres, 2020; Ovalles-Toledo et al., 2018).. In the same line, education with technical training has been implemented in the secondary and higher spheres, being one of the categories formed by educational programs at the national level aimed at developing skills and abilities for work (Montalvo-Castro, 2016; Donoso and Corvalán, 2012). On the other hand, humanistic education is aimed at strengthening education oriented to social development, with the development of critical thinking, since it has as a consequence social inclusion to transform reality in an unfavorable context for humanity (Patiño and López, 2022;Labarca, 2016).

The development of important technological skills for the twenty-first century began in the 1980s (Rayna & Striukova, 2021), so the transformations that are being introduced in society show that, as technological progress accelerates, a change in the initial training of people is necessary to allow them to adapt and respond to these new changes (Palomares-Ruiz et al., 2021).

The concept of entrepreneurship, called by the Anglo-Saxon term "entrepreneurship", is a growing pillar in the educational field for its development of scientific research with an integrative and systematic approach (Sánchez et al., 2017).For Tejeiro and García, 2021 there are three types of ventures; the first based on the use of technologies closely related to the financing and commercialization of their value propositions. The second based on digital technology through proposals using information technology products (ICTs) designing smart devices, with external financing, that is, with the support of seed capital and the third based on technology innovation, in digital companies with online products and services, making use of Big Data or artificial intelligence for the production process.

According to Cando and Cando (2021) digital entrepreneurship must be related to online commerce and is an alternative to face the challenges. In this regard, multiple ventures have emerged, prevailing business models with technological dynamics as the engine of the economic resurgence (Nicolás and Rubio, 2020), the home delivery service with the help of a mobile device; use of social interaction platforms to promote their value propositions and attract their consumers (Useche-aguirre, et al., 2021) have mainly been a strategy for the digitization of business in times of pandemic.

For González-Clatayud et al., 2022, the search for opportunities leads to the search for information with creative analysis and with a prospective look towards the common good, whose approach is oriented to adapt to the needs of a digitally connected society. For this, digital entrepreneurial activity must lead to the strengthening of economies through the procreation of new jobs, with initiative and collaboration, applying technologies to strengthen the creation of digital products with efficiency and effectiveness under a line of responsibility and commitment and where the g gThis and safety must be related to learning based on experience, solving problems with planning and organization with motivating and persevering ethical vision.

2. Methodology

The research focused on quantitative methodology, due to the statistical measurement of the variables in a given context (Hernández et al., 2014). The research was obtained from the comparative descriptive level in order to compare the levels of competence of digital entrepreneurship among students of humanistic basic education and basic education of technical training post COVID 19 pandemic.

The constituted population was 450 students of regular basic education and the sample of 200 students, with a probabilistic intention, the instruments for data collection were carried out through the google form. In relation to data analysis, data processing and collection were analyzed by descriptive statistics and inferential statistics. SPSS version 26 was used for statistical analysis.

For the inferential analysis, the Mann-Whitney U test was used, a non-parametric test that allows contrasting two autonomous samples comparing their equivalent proportions, it is applied to an ordinal variable in order to establish comparisons as well as the differences between the means based on their ranges (Ramírez and Polack, 2019). The following results are presented below:

3. Results

Descriptive analysis



Interpretation:

Figure 1 shows that, in the dimension identification of opportunities, students with technical training have a percentage of 16.5% at the low level compared to 33.5% of students with humanistic training. At the middle level, students with technical training represent 16.5% compared to 11.5% of students with humanistic training. On the other hand, it is evident that students with technical training have 17% in the high level compared to 5% of students with humanistic training.



Interpretation:

Figure 2 shows that the planning dimension of the action of technical training students has 15% at the low level compared to 34.5% represented by students with humanistic training. At the middle level, technical students have 10% compared to 9.5% of students with humanistic training. On the other hand, it is evident that students with technical training represent the highest percentage at the high level with 25% compared to 6% of students with humanistic training, respectively.



Interpretation:

Figure 3 shows that, in the dimension of initiative and collaboration, the technical training institution has a low level compared to the humanistic training institution, which corresponds to 12% and 28% respectively. In the middle level, students with technical training have 10.5% compared to 14% of students with humanistic training. On the other hand, it is evident that students with technical training have 27.5% in the high level compared to 8% of students with humanistic training.



Interpretation:

Figure 4 shows that, in the management and safety dimension, technical training students have 13.5% compared to 29.5% of humanistic training students. At the middle level, technical training students and humanistic training students have 15.5% in both cases. On the other hand, it is evident that students with technical training represent 21% in the high level compared to 5% students with humanistic training, respectively.



Interpretation:

Figure 5 shows that, the variable digital entrepreneurial competence, the technical training institution has a lower percentage at the low level compared to the humanistic training institution, which corresponds to 14.5% and 32% respectively. At the middle level students with technical training has 9.5% compared to 12% of humanistic training students, respectively. On the other hand, it is evident that technical training students represent the highest percentage at the high level than humanistic training students, with 26% and 6% respectively.

Inferential Analysis

Hypothesis Testing

Decision rule;

If Value Sig. > 0.05, the Null Hypothesis (Ho) is accepted.

If Value Sig. < 0.05, the Null Hypothesis (Ho) is rejected. And, Ha is accepted

Ha: There is a significant difference in entrepreneurial digital competence between students of humanistic training and technical training

Ho: There is no significant difference in entrepreneurial digital competence between humanistic and technical training students.

		Table 1			
Mann-Whitney U Test of	Identification of	Action	Initiative and	Management	Digital
Independent Samples	opportunities	planning	collaboration	and security	competence
Total N	200	200	200	200	200
U of Mann-Whitney	3,074,000	2,695,000	2,798,000	2,904,000	2,740,000
W of Wilcoxon	8,124,000	7,745,000	7,848,000	7,954,000	7,790,000
Test statistician	3,074,000	2,695,000	2,798,000	2,904,000	2,740,000
Standard error	375,640	375,441	383,180	382,429	378,826
Standardized Test Statistic	-5,127	-6,139	-5,747	-5,481	-5.966
Asymptotic sig. (bilateral test)	,000	,000	,000	,000	,000

In Table 1 for the dimension identification of opportunities the result of Sig. value of the Mann Whitney U test Sig.=0.000 > 0.005; Therefore, the alternative hypothesis is accepted. So it can be said that if there is a significant difference in the dimension identification of opportunities between students of humanistic training and technical training. It also has a Mann-Whitney U of 3074,000 and a significance level of 0.000 supporting the significant difference.

In relation to the action planning dimension, the result of Sig. value of the Mann Whitney U test Sig.=0.000 > 0.005; Therefore, the alternative hypothesis is accepted. So it can be said that if there is a significant difference in the dimension: action planning between students of humanistic training and technical training. It also has a Mann-Whitney U of 2,695,000 and a significance level of 0.000 supporting the significant difference. In relation to the dimension initiative and collaboration the result of Sig. value of the U test of Mann Whitney Sig.=0.000 > 0.005; Therefore, the alternative hypothesis is accepted. So it can be said that if there is a significant difference in the dimension: initiative and collaboration between students of humanistic training and technical training.

It also has a Mann-Whitney U of 2,798,000 and a significance level of 0.000 supporting the significant difference. In relation to the management and security dimension, the result of Sig. value of the Mann Whitney U test Sig.=0.000 > 0.005; Therefore, the alternative hypothesis is accepted. So it can be said that if there is a significant difference in the dimension: management and security between students of humanistic training and technical training.

Finally, in relation to entrepreneurial digital competence, the result of Sig. Value of the Mann Whitney U test Sig.=0.000 > 0.005; Therefore, the alternative hypothesis is accepted. So it can be said that there is a significant difference in entrepreneurial digital competence between students of technical training and humanistic training. It also has a Mann-Whitney U of 2,695,000 and a significance level of 0.000 supporting the significant difference.

4. Discussion

In the dimension identification of opportunities, digital entrepreneurial competence in technical training students has a percentage of 17% compared to 5% in students with humanistic training. For González-Clatayud et al., 2022, the search for opportunities leads to the search for information with creative analysis and a prospective look towards the common good. For this, the various digital capacities must be present in the production process (Palomares-Ruiz et al., 2021). On the other hand, the creation of digital enterprises in young people is an opportunity to develop projects (ECLAC, 2022) that will contribute to goal eight of the 2030 Agenda, obtaining decent and productive work guaranteeing the same opportunities for all, including young people with equal remuneration for labor of equal value (UNESCO, 2016; Hanni, 2019); and in this way impact on their life project and that of the community. From the above, it can be deduced that work and the identification of opportunities are essential to reduce the unemployment rate worldwide. Therefore, the current labor market requires the development of digital skills, for the procreation of businesses with viable opportunities in a digitally competitive landscape (Blanka et al., 2022 (Ulfert-Blank & Schmidt, 2022, Rodrigues et al., 2021).

In the dimension planning of action, in technical training students has the highest percentage in the high level compared to humanistic training studies, with 25% and 6% respectively. Studies carried out in different areas have shown that the world of entrepreneurship not only needs entrepreneurial skills such as attitudes to innovate, problem solver (Lara et al., 2017;Hu Chan, et al., 2021). In addition, a digital entrepreneurship is needed whose starting factor is to plan actions to procreate new goods, services (Tejeiro and García, 2021), oriented to the achievement of objectives with leadership in a management respecting the digital identity (González-Clatayud, et al., 2022); through the construction of new goods based on the advancement of digital technology, whose new products such as devices with artificial intelligence, cloud navigation, will allow to achieve a competitive position unlike others (Moran-Motalvo; Sanchez-Riofrio, 2018;Powell, Andrew; Rojas-Suarez, 2022;Montalvo-Castro, 2016). It is worth mentioning that, the planning processes in technical education students are more dedicated to using innovation methodologies such as the Design Thinkinf, Canva business model, whose importance lies in the creative process to plan a business structure according to the needs of users considering the validation of your proposal as a way to validate your innovation before producing, reducing time and resource.

In the dimension initiative and collaboration, students with technical training have 27.5% in the high level compared to 8% in students of humanistic training. For González-Clatayud et al. (2022) digital entrepreneurial activity should lead to strengthening economies through the procreation of new jobs, with initiative and collaboration, applying technologies to strengthen the creation of digital products with efficiency and effectiveness under a line of responsibility and commitment. Therefore, the transformations that are being introduced in society show that, as technological progress accelerates, a change in the initial training of people is necessary that allows them to adapt and respond to these changes in a responsible and

collaborative way (González-Clatayud et al. 2022). It should be noted that collaborative work in entrepreneurship plays a key role for the development of the creative idea, since it requires skills such as assertiveness, tolerance, communication to direct a project and its viability to face the challenges that this entails.

In the management and safety dimension, technical training students have 21% at the high level compared to 5% of humanistic training students. In this regard, for González-Calatayud et al. (2022) management and safety must be related to learning based on experience, solving problems with planning and organization with motivating and persevering ethical vision. This allows validating the importance of an education with technical training (Hanni, 2019), which will strengthen the skills necessary to adequately act to the economic, social changes that are experienced, thus contributing in their environment to plan and apply it quickly as new technologies appear (Muñoz, 2019) considering management and security a process inherent to entrepreneurial action.

For digital entrepreneurial competence, students with technical training have 26% at the high level compared to 6% of students with humanistic training. For Hu Chan, et al. (2021) entrepreneurial action is manifested in a set of capabilities that allows the entrepreneur to design, build their ideas, to produce services, products assuming risks when solving problems of their interest that have not yet been resolved to generate social and economic change with their own initiative, creating collaborative work networks (Sánchez-García & Suárez-Ortega, 2017), which invites us to guide entrepreneurship, to form organizational leaderships with social and economic change aimed at generating new ideas with development of their environment prepared for the post-pandemic digital era (Tejeiro and García, 2021).

5. Conclusions

The pandemic has undoubtedly accelerated the use of digital resources in all sectors of the economy, highlighting a short-term trend. As entrepreneurs continue to adapt to this transformation, e-commerce is likely to continue to increase and evolve in the future, offering a huge opportunity.

For entrepreneurs, as long as they are willing to work hard and adapt to the changes of the online market. With a good strategy and innovative approach, they can build a successful and profitable online business.

Entrepreneurship is transcendent in the digital world; Due to the technological development of the last decades, being education with technical training a factor of change in the transformation exploiting technology and developing new business models based on artificial intelligence.

Digital entrepreneurship is an engine of innovation, growth and competitiveness for young people, considering the impact of their sustainable development of their economies and social transformation through a path oriented to collaborative work with creativity in post-pandemic times.

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