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Research on the Current Situation of Digital Talent Supply Based on Dongguan Digital Empowerment Program

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Abstract: In 2022, the No. 1 document of Dongguan Municipal Government, "Policy Measures of Dongguan Municipal People's Government on Promoting the High-Quality Development of Digital Economy" (hereinafter referred to as "Policy Measures"), was released, focusing on scientific and technological innovation and advanced manufacturing, introducing a number of measures to help promote industrial digitization and digital industrialization, accelerating the promotion of industrial digitization and digital industrialization, and fully promoting the high-quality development of digital economy. Based on this, this paper analyzes the supply situation of digital talents in Dongguan through questionnaires and takes college students in Dongguan colleges and universities as the research object, as well as the current problems in the process of digital transformation in colleges and universities, and puts forward relevant countermeasures and suggestions in this regard to promote the development of Dongguan's digital economy.

Keywords: Dongguan City; Universities; Digital Talents; Digital Economy

1. Survey Data Testing

1.1 Reliability analysis of the questionnaire

Table 2

	Variable labels
SEX	Gender
EB	Academic qualifications
PAY	Salary Expectations
DE	Do you prefer to work in a digital-related industry over a traditional one?
KN1	You believe that digitalization is the use of digital technology to systematically and holistically change the business models and operations of enterprises, governments and other types of organizations.
KN2	You think digitalization is mainly the use of digital technology, the digital transformation of specific business, scenarios
KN3	Do you think that digitalization has changed the production relations of enterprises and improved their productivity?
KN4	Do you think digitalization uses data as the main production factor
KN5	Do you think digitization has unlocked the value of data by opening up enterprise information silos?
DC1	How do you feel about your digital application skills
DC2	How do you feel about your digital management skills
DC3	How do you feel about your digital expertise?
DW1	Want to work in digital manufacturing
DW2	You want to work in the digital e-commerce industry
DW3	You want to work in digital finance
DS	Are you satisfied with the way digital talents are trained at the school?
DY	If the school establishes school-enterprise cooperation with manufacturing enterprises in Dongguan City for digital talent training, are you willing to accept it?

As shown in Table 2, we use each question title as a variable label and use the SEX, EB, PAY... variables to represent the individual label variables.

This study was analyzed by SPSS software using a reliability test. Among them, 13 scale questions were finally obtained by screening the questionnaire questions and eliminating the non-scale question types. And the validity test was analyzed, and the results are shown in Table 3.

Table 3

Cronbach's alpha coefficient	Standardized Cronbach's alpha coefficient	Number of items	Number of samples
0.883	0.883	13	1045

As can be seen from the results in Table 3, we used SPSS as an analytical tool to analyze the reliability of these questions and obtained a standardized Cronbach's α coefficient of 0.883, which showed a very good reliability, so this questionnaire has high credibility.

1.2 Questionnaire validity test

First, we did a content validity analysis of the college questionnaire, which was analyzed on SPSS and obtained the KMO values and Bartlett's sphericity test values for the overall scale, and the results are shown in Table 4.

Table 4

KMO and Bartlett's test		
KMO Sampling suitability quantity		0.844
Bartlett's sphericity test	Approximate cardinality	794.806
	Degree of freedom	55
	Significance	0.000

From Table 4, it can be concluded that the KMO value of the overall scale is 0.845, which is much greater than 0.7, and the significance of Bartlett's sphericity test is 0.000, which is less than 0.06, which integrally indicates that the data of the questionnaire are good and can be analyzed in the next step of factor analysis. After completing the content validity analysis, the structural validity analysis was immediately followed. Next, the KMO values of each variable subscale were verified and Bartlett's sphericity test was performed.

Table 5

Variables	KMO value	Bartlett's test for sphericity		
		Approximate cardinality	Degree of freedom	Significance
Level of digital understanding	0.860	423.144	10	0.000
Digital Capabilities	0.716	148.674	3	0.000
Willingness to work in digital	0.686	121.047	3	0.000

The KMO values of each variable subscale and the results of Barlett's spherical test are shown in Table 5, from which it can be seen that the KMO value of digital understanding is 0.860, the KMO value of digital ability is 0.716, and the KMO value of willingness to engage in digital work is 0.686, except for the KMO value of willingness to engage in digital work which is less than 0.7, the values of the other two variables are The values of the other two variables were greater than 0.7:

and the significance value of Barlett's sphericity test for all variables was 0.000, which was less than 0.05, indicating that the data structure of each variable subscale was good and could be analyzed in the next step of factor analysis.

Table 6

The component matrix after rotation a spin			
Variables	Ingredients		
	1	2	3
KN1	0.809		
KN2	0.886		
KN3	0.759		
KN4	0.832		
KN5	0.811		
DC1		0.823	
DC2		0.843	
DC3		0.827	
DW1			0.773
DW3			0.786
DW2			0.802
a. The rotation has converged after 5 iterations.			

As can be seen from Table 6, a total of three factors were extracted from the scale, which is consistent with the number of variables, and the measurement question items of the variables were still classified into the same variable after the extraction of the common factor, which indicates that the questionnaire was set up reasonably and passed the factor test, and the validity test results of the questionnaire met the requirements.

2. Analysis of Dongguan Digital Talent Supply Based on Dongguan Digital Empowerment Plan

2.1 Data analysis of the current situation of digital talent supply

In order to better understand the current situation of digital talent supply in Dongguan, and in view of the fact that students in Dongguan colleges and universities are an important support for digital talent supply in Dongguan, this research chose to distribute the questionnaires to various colleges and universities in Dongguan. By analyzing the results of the returned questionnaires with descriptive statistical methods, the following results can be obtained.

Table 7

	N	Average value	Standard deviation	Variance
SEX	1045	1.59	0.494	0.244
EB	1045	1.18	0.387	0.150
PAY	1045	2.56	0.853	0.727
DE	1045	1.11	0.316	0.100
KN	1045	3.70	0.746	0.557
DC	1045	3.31	0688	0.474
DW	1045	3.51	0.709	0.503
DS	1045	3.39	0.896	0.803
DY	1045	3.90	0.837	0.700

In summary, students have an average understanding of digitization, and they have average digitization skills, but they are generally willing to participate in school-enterprise cooperation and training, and they are positive about working in digitization.

2.2 Analysis of the differences in the supply of digital talents in Dongguan

2.2.1 Differences in college students' gender and education on employment choices in digital-related industries

To further explore the differences between different sample attributes on the issue of employment choice in digital-related industries, the following study analyzed the group differences in different college students' individual basic conditions using independent samples t-test and ANOVA. The results are shown in Table 10, and the differences in the means of college students in terms of gender and education are statistically significant ($p < 0.05$).

Table 8

Projects	Average value	Properties	Standard deviation	F-value	P-value
Gender	1.17	1 male (n=420)		1.667	0.199
	1.08	2 female (n=480)			
Academic qualifications	1.11	1 Undergraduate (680)		0.557	0.457
	1.15	2 Specialties (120)			

As can be seen from Table 8, the significance of gender on employment choice is 0.119, which is greater than 0.05, then it indicates that gender does not affect college students' choice of employment in digital-related industries. The significance of education on employment choice is 0.457, which is greater than 0.05, then it indicates that education does not affect college students' choice of employment in digital-related industries.

Combining the results of the two analyses above, it can be shown that students with different education levels and different genders have the same tendency to choose employment in digital-related industries.

2.2.2 The influence of students' digital understanding on students' willingness to participate in the training of school-enterprise cooperation

We conducted an ANOVA on the two groups of questions on the degree of students' understanding of digitalization and the cultivation of students' participation in school-enterprise cooperation, and the results of the analysis are shown in Table 9.

Table 9

ANOVA					
KN and DY					
	Square and	Degree of freedom	Mean Square	F	Significance
intergroup	35.174	17	2.069	4.025	0.000
Within the group	64.253	125	0.514		
Total	99.427	142			

As shown in Table 9, the significance is less than 0.05, which indicates that the degree of students' knowledge about digitalization significantly affects students' willingness to participate in school-enterprise cooperative training, and the higher

the degree of students' knowledge about digitalization, the more willing they are to participate in school-enterprise cooperative training.

2.2.3 The influence of students' digital competence on students' willingness to participate in the training of school-enterprise cooperation

Two groups of questions were analyzed by ANOVA for students' digital competency and students' involvement in the development of school-enterprise cooperation, and the results of the analysis are shown in Table 10.

Table 10

ANOVA					
DC and DY					
	Square and	Degree of freedom	Mean Square	F	Significance
intergroup	26.705	12	2.225	3.978	0.000
Within the group	72.722	130	0.559		
Total	99.427	142			

As shown in Table 12, the significance is 0.000, which is less than 0.05, then it shows that students' digital ability significantly affects students' participation in the training of school-enterprise cooperation, and the stronger students' digital ability, the more willing they are to participate in the training of school-enterprise cooperation.

From the above analysis, it is concluded that, firstly, students with different education and gender have the same tendency to choose employment in digital-related industries. Second, the higher the students' knowledge of digitalization, the more willing they are to participate in

The cultivation of school-enterprise cooperation. Thirdly, the stronger the digital capability of students, the more willing they are to participate in the cultivation of school-enterprise cooperation.

3. Recommendations

3.1 Enterprises actively participate in the joint digital talent training of schools and enterprises

School-enterprise joint talent cultivation mode is to jointly cultivate college students and enterprises, so as to improve the comprehensive ability, employment competitiveness and personal quality of college students. In addition, it can also integrate different teaching resources of schools and enterprises, combining classroom teaching and practical work, in order to cultivate various types of applied talents facing different demands.

The joint training of university and enterprises can achieve a mutually beneficial situation for the digital transformation of university students and the digital talent demand of enterprises, students can get help from enterprises on the road of digital transformation, and enterprises can solve their own digital talent demand problem to a certain extent.

3.2 Universities use digital labs for personalized learning

As a science and innovation platform, Digital Lab has many domestic first-class large-scale research infrastructures and gathered a group of competent high-level research teams. The cooperation between the university and enterprises to establish Digital Technology Lab in enterprises not only deepens the reform of science and technology system, but also is the need of enterprises' own development, moreover, it is the need of industrial and social development, so it will definitely play an important role in the construction of innovation system.

3.3 Universities promote the integration of industry and research to cultivate innovative talents

In today's environment, Dongguan manufacturing enterprises have joined the digital transformation team, and the corresponding demand for talent types has changed.

Dongguan should encourage schools with the foundation to explore the new era conditions of job creation, and promote higher education schools, applied undergraduate colleges and universities and large and medium-sized enterprises to cooperate in the construction of "dual-teacher" teacher training base. Improve the system of practical leave for teachers in vocational schools and higher education institutions, and support serving teachers to practice and exercise in enterprises on a regular basis. To further promote the integration of industry and education, several colleges and universities in Dongguan have hired entrepreneurs and entrepreneurial executives as business mentors, opening a new chapter for building first-class education, improving the quality of talent training in schools, and also improving the conditions for the future development of digital talent training.

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