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Talent Cultivation Model of Universities Based on Employment Needs

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Abstract

This study investigated a talent cultivation model tailored to employment needs, analyzing responses from 561 individuals, primarily young adults aged 20–24. It evaluated the model's effectiveness in various components such as training goals, processes, and leadership development, highlighting the need for improvements in lifelong learning and transferable skills. A descriptive correlational design aimed to explain the relationship between two or more variables without making any claims about cause and effect. The majority of respondents were recent graduates, indicating a necessity for targeted talent cultivation efforts to address gender disparities and promote equal opportunities. Challenges identified include adapting to changing skill demands, managing a multigenerational workforce, and integrating technology into talent management. Age and graduation year significantly influenced engagement with talent cultivation efforts, while no consistent correlations were found with other demographics. Recommendations included focusing on lifelong learning, personalized training, continuous program updates, and leveraging technology for talent management enhancement. The study underscored the importance of a multifaceted approach to address talent cultivation challenges, emphasizing continuous skill development and strategic efforts to enhance model effectiveness in promoting comprehensive skill development and leadership capabilities.

Keywords: Adapting to changing skill needs; Career mapping; Leadership development; Legal compliance; Talent cultivation model

1. Introduction

China has seen a sharp increase in college graduates since expanding enrolment in 1999, from 1 million undergraduates in 1997 to 4.3 million in 2023. However, this has led to severe employment challenges, with many graduates struggling to find

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suitable jobs. The surge of 11.79 million new graduates expected in 2024, coupled with high youth unemployment and an uneven post-Covid economic recovery, has intensified pressure on the job market. A structural imbalance also exists, with a preference for white-collar over blue-collar jobs despite shortages in the latter (Hong, 2020).

To address this, China has initiated supply-side structural reforms that will increase demand for skilled, professional talents. This transformation requires higher-quality talent training from universities to meet new employment needs (Liao et al., 2022).

This paper examines how to optimize the talent training model of local universities like Dalian University of Technology to align with evolving employment demands. It surveys nearly 300 graduates to understand employer needs, analyze reasons for the labor demand imbalance, and identify issues with current training models (Guerra et al., 2023).

The study proposes that the government should enhance vocational education, universities should revise training programs and improve employment services, employers should strengthen university partnerships, and graduates should enhance their skills and career planning. The goal is to provide suggestions for optimizing talent cultivation models to meet new workforce requirements.

2. Methodology

The study used a descriptive correlational research design, which aims to explain the relationship between variables without establishing causation. It involves collecting data on at least two variables to examine potential links between them, without manipulating any variables (Graffam, 2007).

In this study, a questionnaire survey method was employed to describe the talent cultivation model based on employment of graduates from the School of Art and Information Engineering at Dalian University of Technology.

2.1. Sampling Procedure

The study used a simple random sampling method to select samples from previous and recent graduates (2021-2023) of the Art and Information Engineering program at Dalian University of Technology. To determine the appropriate sample size, the researchers used the Raosoft online calculator, which recommends a sample size based on factors such as margin of error, confidence level, and population size. This tool helps ensure the sample is large enough to provide reliable and valid results while minimizing sampling errors.

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2.2. Respondents

The respondents consisted of 551 recent graduates from a specific school at Dalian University, who shared their experiences with the talent cultivation model and employment. The study also included 10 employer respondents from Liaoning Province, who offered perspectives on their requirements for hiring college graduates.

Table 1. *Population and Sample Size*

Target Respondents	Population	Sample Size	Percentage
Graduates	5,000	551	98.22
Employers	10	10	01.78
Total	**5,010**	**561**	**100.00**

2.2.1 Research Site

The study was conducted at the School of Art and Information Engineering of Dalian University of Technology located in Dalian, Liaoning Province, China, an independent college of Dalian Institute of Technology established in June 2002. The campus covers an area of 770 mu, construction area of 255,000 m meters, 25 undergraduate programs, and more than 400 full-time teachers.

3. Results and Discussion

3.1 Profile of the Respondents

Out of 561 respondents, there were slightly more females (51.16%) than males (48.84%), mostly young adults aged 20-24 (57.22%). The 25-29 and 30+ age groups each made up 21.39%. Most were single (43.85%), followed by married (36.54%), and widowed (19.61%). Their fields of study were finance/economics (26.56%), other categories (27.81%), traffic (23.71%), and manufacturing (21.93%). A plurality graduated in 2021 (40.64%), with 2022 (29.77%) and 2023 (29.59%) having nearly equal numbers.

3.2 Talent Cultivation Model Based on Employment Needs

The table shows the weighted means and corresponding verbal interpretations for various key variables related to a Talent Cultivation Model.

Table 2. Talent Cultivation Model

Key Variables	Weighted Mean	Verbal Interpretation
1. Cultivation Objectives	2.70	Effective
2. Training Goals	2.92	Effective
3. Training Process	2.48	Moderately Effective
4. Training System	3.06	Effective
5. Training Evaluation	2.66	Effective
6. Career Mapping/Growth Plans	2.40	Moderately Effective
7. Mentoring	2.37	Moderately Effective

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8. Leadership Development	2.34	Moderately Effective
GRAND MEAN	**2.62**	**Effective**

Legend: 4.00-3.26-Very Effective; 3.24-2.50-Effective; 2.49-1.75-Moderately Effective; 1.74-1.00-Less Effective

The grand mean of 2.62 indicates that the overall Talent Cultivation Model is considered "Effective". Cultivation Objectives (2.70) and Training Goals (2.92) are rated as "Effective". Training Process (2.48), Career Mapping/Growth Plans (2.40), Mentoring (2.37), and Leadership Development (2.34) are rated as "Moderately Effective". Training System (3.06) and Training Evaluation (2.66) are rated as "Effective".

The highest rated variable is Training System (3.06) while the lowest rated are Leadership Development (2.34) and Mentoring (2.37), both falling in the "Moderately Effective" range.

While the overall Talent Cultivation Model is considered effective, there are some areas like the training process, career mapping, mentoring and leadership development that are only moderately effective and may need further improvement according to this assessment (Guo, 2023).

3.3 Challenges Encountered in the Implementation of Talent Cultivation

The table shows the weighted means and verbal interpretations for various key variables related to the challenges encountered, likely in the context of talent cultivation or workforce development.

Table 3. Challenges Encountered

Key Variables	Weighted Mean	Verbal Interpretation
1. Adapting to Changing Skill Needs	2.70	Challenging
2. Competitive Market	2.70	Challenging
3. Navigating the Skills Shortage Crisis	1.71	Negligibly Challenging
4. Legal Compliance	1.70	Negligibly Challenging
5. Adapting to New Technologies	1.70	Negligibly Challenging
GRAND MEAN	**2.10**	**Moderately Challenging**

Legend: 4.00-3.26-Highly Challenging; 3.24-2.50-Challenging; 2.49-1.75-Moderately Challenging; 1.74-1.00- Negligibly Challenging

The grand mean of 2.10 indicates that the overall challenges are considered "Moderately Challenging" based on the provided legend. Adapting to Changing Skill Needs (2.70) and Competitive Market (2.70) are rated as "Challenging". Navigating the Skills Shortage Crisis (1.71), Legal Compliance (1.70), and Adapting to New Technologies (1.70) are rated as "Negligibly Challenging".

The highest rated challenges are Adapting to Changing Skill Needs and Competitive Market, both falling in the "Challenging" range. The lowest rated challenges

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are Legal Compliance, Adapting to New Technologies, and Navigating the Skills Shortage Crisis, all considered "Negligibly Challenging".

While the overall challenges are moderately challenging, the most significant challenges appear to be adapting to changing skill needs and the competitive market. On the other hand, navigating the skills shortage crisis, legal compliance, and adapting to new technologies are perceived as negligibly challenging based on this assessment.

3.4. Correlation between Profile and Talent Cultivation Assessment

Older respondents perceived talent cultivation efforts more positively, as indicated by positive correlations between age and aspects like cultivation objectives, training process, system, evaluation, career mapping, mentoring, and leadership development. More recent graduates were more attuned to talent cultivation efforts, shown by positive correlations between year graduated and all talent cultivation aspects. Civil status had nuanced effects, with a negative correlation for cultivation objectives and a similar trend for training evaluation, indicating some differences based on civil status (Sue, 2016).

However, talent cultivation perceptions were not strongly influenced by sex, field of study, or employment status, as there were no significant correlations with these factors (Miles, 2023).

3.5 Correlation between Profile of the respondents and Challenges Encountered

Sex did not correlate with any of the challenges encountered. Older age correlated positively with all challenges, suggesting greater perceived challenges with age. Civil status negatively correlated with adapting to changing skill needs and legal compliance, indicating potential differences based on civil status changes. Field of study did not correlate with any challenges, suggesting it may not determine perceptions of these challenges (Borate and Borate, 2016)

More recent graduates perceived greater challenges, shown by positive correlations between year graduated and all challenges. Employment status did not correlate with any challenges, indicating being employed may not impact perceptions of these challenges (Bates, 2015).

3.6 Correlation between Talent Cultivation Assessment and Challenges Encountered

The results of the correlation analysis indicated that there were significant positive relationships between all aspects of talent cultivation and the challenges encountered in adapting to changing skill needs, competitive markets, navigating skills shortage crises, legal compliance, and adapting to new technologies (all ps $<$ .001). Specifically, the cultivation objectives, training goals, training process, training system, training evaluation, career mapping, mentoring, and leadership development were all

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significantly correlated with each challenge, with correlation coefficients ranging from 0.776 to 0.831 for cultivation objectives, 0.796 to 0.855 for training goals, 0.790 to 0.852 for training process, 0.792 to 0.844 for training system, 0.807 to 0.860 for training evaluation, 0.821 to 0.883 for career mapping, 0.805 to 0.871 for mentoring, and 0.798 to 0.857 for leadership development.

4. Conclusions

The respondents were predominantly young adults aged 20–24, with a slight majority of males, and the 25–29 and 30+ age groups were equal in size. Most were single, with diverse academic backgrounds, mainly in finance/economics and traffic, and the largest portion graduated in 2021. The talent cultivation model effectively develops job-specific skills, problem-solving abilities, and utilizes technology and innovative teaching methods, though it faces challenges adapting to rapidly changing skill demands and integrating technology into talent management. Significant relationships were found between age/graduation year and civil/marital status, with no significant gender differences in perceptions of talent cultivation challenges, and strong positive correlations between cultivation objectives and encountered challenges.

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