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# THE EMPLOYABILITY OF UNDERGRADUATES IN TAIWAN: FROM THE VIEW POINT OF ENTERPRISES AND THEMSELVES

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## Abstract

97.70% of companies in Taiwan are SMEs. Most of these SMEs have an experience of recruitment on new employees just graduated from universities. Unfortunately, most companies often feel that there were exists a gap between school's supply and company's need for competencies. Therefore, the purpose of this study is to gain an insight into companies' views on the employability of undergraduates and to examine the employability they had by themselves. This study randomly selected 152 employers and 117 employees from 735 SMEs companies in 2018. According to the statistical analysis and discussion, the conclusions and recommendations drawn are as follows: 1. In view of companies' views on employability, employees' "general knowledge" is given greater importance, but graduates focus on "professional skills"; 2. Among the 45 employability items, companies attach the greatest importance to "working under pressure", but graduates focus on "team work"; 3. Top managers attach greater importance to "general knowledge" compared to middle managers; 4. Compared to other countries, the top ten employability items given importance are practically the same, but Taiwan gives special emphasis to learning ability.

***Keywords:*** *Internship, employability, small and medium-size enterprises (SMEs), undergraduate, cooperative education.*

## 1. Introduction

Education provides the different kinds of workforce for economy development. In order to strengthen the employability of undergraduates, the Department of Technological and Vocational Education, MOE proposed the "Outline of Technical and Vocational Education Policy" in March 2017. The outline states that students should strengthen their abilities in practice through systematic internship systems in order for companies to hire graduates best resembling the site of practice (Ministry of Education, 2017). Many studies and graduates have confirmed that the existing school education is not in line with companies' needs and students' career development and there exists a gap between company sites in which students have employed and the company' applications. There also exists a big gap between the abilities that students learn in school and the abilities needed in the actual company workplace. Therefore, the purpose of this study is to gain an insight into employability of graduates from the perspective of enterprises and to find the gap between enterprises and undergraduates. The research conclusions shall serve as a reference for schools when making curriculum adjustments or cultivation of abilities.

## 2. The definition and dimensions of employability

The academia has had divided views on the definition of employability. According to the Business Dictionary (2018), employability could be defined as "A group of essential abilities that involve the development of a knowledge base, expertise level and mindset that is increasingly necessary for success in the modern workplace." It is not easy for us to measure employability, unfortunately, Misra and Mishra (2011) thought employability is not just dependent upon the labor market forces, but also on other factors like willingness, capacity, mobility training (skills enhancement) and functional flexibility (working changing shifts, working beyond job description). For instance, technical universities are

recognized as the prime engineering who will teach future engineering practitioners and present students with the knowledge on how to become "employable" that is how to develop a range of employability skills which include not only hard skills i.e. discipline specific skills, technical and IT skills but perhaps most importantly soft skills i.e. communication and interpersonal skills, ethics, critical thinking, leadership, entrepreneurship, life-long learning, problem-solving, social responsibility, adaptability, flexibility and others (Chang, et al., 2018). Brennan et al. (2001) conducted a survey on university graduates from 12 countries (now employees). With the assistance of universities, 45,000 new graduates who were already working were surveyed. The questionnaire consists of three dimensions and 37 employability abilities. For the demand in local companies, this study was revised the initial 37-item questionnaire. In this study, a 5-expert pannel discussion meeting was held, and 8 questions were added to make the employability questionnaire become 45-item questionnaire.

## 3. Methodology

### 3.1. Participants

There were 735 companies in the list of institutions with Top-2000-Company in the Area of Electrical Engineering and Computer Sciences (EECS) of Industry of Manufactures (National Development Council, 2018) were downloaded from the Database of Common Wealth Magazine in Taiwan in 2018. Through purposive sampling, the samples were selected, and the questionnaire was mailed to these institutions. Questionnaires were recovered from 117 companies, accounting for the effective recovery rate of 15.9%.

### 3.2. Procedure

The questionnaire consists of two sections. The first section is about demographic information contains 5 items. The second section consists of 45 items concerning the "Employability". All scales comprised 5-point Likert-type items. The average time for completing each questionnaire is 6-7 minutes.

### 3.3. Measurement

The Employability Scale implemented in this study was initial developed by Brennan, J., Johnston, B., Little, B., Shah, T., & Woodley, A. (2001). The Employability Scale consists of 3 dimensions: 1. Specific/ professional basic knowledge (SBK), 2. General knowledge/ abilities (GKA), and 3. Behavior/ character / personality (BCP). Internal consistency of total scale is measured with Cronbach's alpha ($\alpha$= .974), and sub-scale in SBK is .940, in GKA is .937, and in BCP is .961.

## 4. Results and discussion

### 4.1. Difference between self and enterprise evaluation on employability

As shown in Table 1, the self-evaluation employability by graduates is higher than enterprise-evaluation. Furthermore, there is a great difference between them on behavior/character/personality (BCP).

### 4.2. Ranking on the employability

In Table 1, both graduates and enterprises are thought that the employability is insufficient on the specific basic knowledge. The ranking of the respective employability items. The means of the 45 employability items show that "Economic reasoning" has the lowest mean (average=2.72), followed by "Foreign language proficiency (2.78)", and "Understanding complex social systems (2.86)." From the bottom three employability items, it can be found that all of the items fall under SBK, indicating that Taiwanese companies thought their employee with lower specific basic knowledge.

*Table 1. Difference between self-evaluation and enterprise- evaluation.*

| Item | Self-evaluation | | | Enterprise-evaluation | | | t-test |
|---|---|---|---|---|---|---|---|
| | M | SD | Rank | M | SD | Rank | |
| **Specific/pro. basic knowledge (SBK)** | **3.34** | **1.009** | | **3.22** | **1.022** | | **-3.424*** |
| 1. Broad general knowledge | 3.59 | 1.001 | 18 | 3.17 | 0.968 | 21 | -3.464* |
| 2. Cross-disciplinary thinking/knowledge | 3.49 | 0.988 | 14 | 3.01 | 0.952 | 13 | -4.037* |
| 3. Field-specific theoretical knowledge | 3.46 | 0.886 | 13 | 3.05 | 1.012 | 14 | -3.521* |
| 4. Field-specific technical knowledge[#] | 3.50 | 0.847 | 15 | 3.09 | 1.054 | 17 | -3.439* |
| 5. Field-specific knowledge of methods | 3.41 | 1.043 | 11 | 2.97 | 1.085 | 10 | -3.326 |
| 6. Foreign language proficiency | 3.01 | 1.071 | 1 | 2.78 | 1.018 | 2 | -1.814 |
| 7. Computer skills | 3.62 | 1.016 | 19 | 3.55 | 0.941 | 44 | -.579 |
| 8. Understanding complex social systems | 3.07 | 1.120 | 3 | 2.86 | 1.017 | 3 | -1.580 |
| 9. Planning, coordinating and organizing | 3.38 | 0.989 | 8 | 3.05 | 1.032 | 14 | -2.648* |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10. Applying rules and regulations | 3.20 | 0.949 | 5 | 3.05 | 0.951 | 14 | -1.288 |
| 11. Economic reasoning | 3.04 | 1.094 | 2 | 2.72 | 1.140 | 1 | -2.315* |
| 12. Documenting ideas and information | 3.38 | 0.945 | 8 | 2.93 | 1.021 | 7 | -3.704* |
| 13. Practical skills in EECS[#] | 3.38 | 0.990 | 8 | 2.99 | 1.042 | 12 | -3.172* |
| 14. Terminology in EECS[#] | 3.36 | 1.062 | 7 | 2.97 | 1.038 | 10 | -3.038* |
| 15. Emergency response[#] | 3.30 | 1.147 | 6 | 2.95 | 1.060 | 9 | -2.604* |
| **General knowledge & attitude (GKA)** | **3.68** | **0.933** | | **3.25** | **1.038** | | **-4.436*** |
| 16. Problem-solving ability | 3.69 | 0.960 | 23 | 3.11 | 1.081 | 18 | -4.634* |
| 17. Analytical competencies | 3.44 | 0.986 | 12 | 2.88 | 1.073 | 4 | -4.350* |
| 18. Numerical abilities | 3.19 | 1.050 | 4 | 2.89 | 1.007 | 5 | -2.377* |
| 19. Learning abilities | 3.87 | 0.856 | 38 | 3.63 | 0.975 | 45 | -2.168* |
| 20. Reflective thinking on one's own work | 3.69 | 0.885 | 23 | 3.26 | 1.002 | 30 | -3.662* |
| 21. Creativity | 3.56 | 0.986 | 17 | 3.36 | 0.945 | 37 | -1.763 |
| 22. Working under pressure | 3.72 | 0.999 | 27 | 3.20 | 1.088 | 24 | -3.980* |
| 23. Accuracy, attention to detail | 3.78 | 0.832 | 33 | 3.22 | 1.085 | 25 | -4.637* |
| 24. Time management | 3.77 | 0.913 | 31 | 3.19 | 1.108 | 23 | -4.575* |
| 25. Negotiating | 3.65 | 0.913 | 20 | 3.14 | 1.061 | 20 | -4.160* |
| 26. Physical and mental fitness for work | 3.68 | 0.953 | 22 | 3.53 | 1.003 | 43 | -1.304 |
| 27. Manual skills | 3.77 | 0.904 | 31 | 3.36 | 0.973 | 37 | -3.568* |
| 28. Working independently | 3.86 | 0.937 | 36 | 3.32 | 1.101 | 32 | -4.257* |
| 29. Ability to work in a team | 3.97 | 0.895 | 41 | 3.50 | 1.042 | 42 | -3.932* |
| **Behavior/character/personality (BCP)** | **3.83** | **0.894** | | **3.24** | **1.043** | | **-5.769*** |
| 30. Initiative | 3.81 | 0.860 | 34 | 3.25 | 1.105 | 28 | -4.541* |
| 31. Adaptability | 3.91 | 0.857 | 39 | 3.41 | 1.026 | 39 | -4.253* |
| 32. Decisiveness, persistence | 3.72 | 0.927 | 27 | 3.32 | 1.013 | 32 | -3.349* |
| 33. Power of concentration | 3.85 | 0.883 | 35 | 3.33 | 1.066 | 35 | -4.315* |
| 34. Getting personally involved | 4.02 | 0.861 | 42 | 3.46 | 0.996 | 41 | -4.816* |
| 35. Loyalty, integrity | 4.07 | 0.858 | 44 | 3.43 | 1.071 | 40 | -5.237* |
| 36. Critical thinking | 3.70 | 0.874 | 26 | 3.24 | 0.963 | 26 | -4.020* |
| 37. Oral communication skills | 3.74 | 0.948 | 29 | 3.26 | 1.013 | 30 | -4.018* |
| 38. Written communication skills | 3.66 | 0.921 | 21 | 3.18 | 1.057 | 22 | -3.852* |
| 39. Tolerance of different view points | 3.94 | 0.884 | 40 | 3.25 | 1.075 | 28 | -5.632* |
| 40. Leadership | 3.52 | 0.934 | 16 | 2.93 | 1.062 | 7 | -4.788* |
| 41. Taking responsibilities, decisions | 3.69 | 0.942 | 23 | 2.91 | 1.082 | 6 | -6.232* |
| 42. Tolerance for frustration[#] | 3.86 | 0.899 | 36 | 3.11 | 1.052 | 18 | -6.180* |
| 43. Creative thinking skills[#] | 3.74 | 0.902 | 29 | 3.34 | 1.003 | 36 | -3.455* |
| 44. Entrepreneurship[#] | 4.03 | 0.825 | 43 | 3.32 | 1.046 | 32 | -5.980* |
| 45. Empathy[#] | 4.08 | 0.939 | 45 | 3.24 | 1.061 | 26 | -6.711* |
| Whole scale | 3.63 | 0.674 | | 3.17 | 0.838 | | -4.803* |

## 5. Conclusion and recommendation

The self-evaluation employability by graduates is higher than enterprise-evaluation. Teachers and students in university could refer the means lower items of employee ability by enterprise evaluation in Table 1 to enforce the skills with remodel curriculum or teaching design.

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