Assessing The Alignment Of Diploma in Information Technology (Digital Technology) - DDT Programme With Industry Needs in Malaysia

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ABSTRACT – This research study how well the Diploma in Information Technology (Digital Technology) Programme corresponds with the needs of industries from students' standpoint. To achieve this, a survey involving 250 respondents was carried out taking into consideration several aspects of the program including practical training and its relevance to various careers as well as employee preparedness. Results indicated a considerable general satisfaction (mean 3.98/5) on just how much in-line the program is with industry. Its strengths included hands-on training while areas needing improvement entailed industry tailored projects and assists for entrepreneurs. There were differences in levels of satisfaction among different tracks as well as by types of jobs held. The findings strengthen the idea that although such a program satisfactorily addresses industry demands it can still be directed towards more specific improvements for better student outcome through better clarity on its objectives.

KEYWORDS : DDT Program, Industry Alignment, Student Satisfaction

1.0   INTRODUCTION

In these days of development in the Information Technology (IT) sector, education wise an upward curve has to be maintained as per ongoing industry trends. In recent years, universities and colleges around the world—particularly those in areas of urgent labor market need such as digital technology—have faced a mounting call to scale up and optimize their curriculum content around current workforce requirements. This is essential to ensure that graduates are not only well-versed in the technical but have a practical advantage when pitted against competitors in a tough jobs market. One study underlines that higher expectations are placed upon institutional governance of learning to generate 'workforce-ready' graduates, ready to plug into career positions in those industries of highest demand for technological innovation and efficiency [1].

The Diploma in Information Technology (Digital Technology) (DDT) program at Polytechnic Ungku Omar is designed to meet these industry demands by providing theoretical knowledge and hands-on training to students in critical IT areas including software development, including communications and information security As the IT landscape continues to evolve, there is increasing focus on integrating emerging technologies such as cloud computing, cybersecurity, and artificial intelligence into academic curriculum [2]. This flexibility demonstrates the flexibility of graduates and their ability to work with sophisticated tools and practices.

Despite these advances, there remains a significant challenge to ensure that curricula not only equip students with technical skills, but also align with the specific needs of the industry. Industry-specific training, coaching and collaboration are seen as important elements to close the educational and employment gap [3]. For programs such as DDT this raises questions about the effectiveness of current curriculum programs though meet the practical requirements of the IT industry in Malaysia.

The study assess the alignment of the DDT program at Politeknik Ungku Omar with the needs of the industry, as perceived by the students themselves. This study is particularly concerned with practical training of students, relevance of the curriculum and employability of graduates as these are some essential parameters that a program must meet in order to properly prepare students for the IT industry. The purposes of the current study are to enhance both the parts of the program and those, which work with the curriculum by assessing students' views concerning the program's efficacy. Such information will be helpful in planning the curriculum and educational practices in the future.

2.0 METHODOLOGY

2.1 Research Design

This research used a quantitative survey approach to evaluate the program alignment of Diploma in Information Technology (Digital Technology) (DDT) with industry requirement which was perceived by students at Politeknik Ungku Omar. These include the type of training provided, opportunities to improve their career prospects and alignment with industry.

2.2 Participants

This study involving 250 students from various specialization tracks in the DDT program at Politeknik Ungku Omar. Participants were recruited through convenience sampling, in that they represented easily accessible participants for the research survey. The demographics were as follow:

- Sex: 61.2% female, 38.8 male
- Ethnic Background: 72.4% Malay, 14% Chinese, 11.6% Indian, 2% Others
- Age: Ranged from 19 to 24 years old with average 20.28 years old.

2.3 Data Collection

An online structured questionnaire was used for data collection. The survey included 20 Likert-scale questions ranging from a scale of Strongly Disagree to Strongly Agree designed to capture data on student perspectives regarding the alignment between the DDT program and industry needs. The emphasis was on making theoretical concepts relevant through practical and hands-on training, working closely with industry practitioners and preparing for the bright future ahead in their chosen career.

Further, the questionnaire obtained socio demographic details such as age, sex, and ethnicity, along with academic performances (CGPA).

2.4 Data Analysis

The survey responses were analyzed using descriptive statistics (mean, frequency, and percentage). Calculating the average score for each question, overall satisfaction with the program was assessed. The responses were tape-labelled into specialization tracks, particular employment statuses and academic performance (CGPA), so that the comparison of satisfaction levels amongst other students could be done under these categories.

Furthermore, relationships of CGPA with students' employability status were also investigated to find out whether high academic performance is linked to the degree of career readiness. The data were analyzed using a software program, which made the information easy to interpret.

3.0 RESULT AND FINDINGS

The results of the questionnaire are extracted from the responses of the polytechnic students across various tracks. The students provided valuable perspectives on their experiences with the TVET diploma program, assessing how well it meets industry needs and its effectiveness in preparing them for their employment. The collected feedback highlights the perceived advantages and areas for development within the program, offering a comprehensive overview of how well the curriculum meets the practical and theoretical demands of the industry.
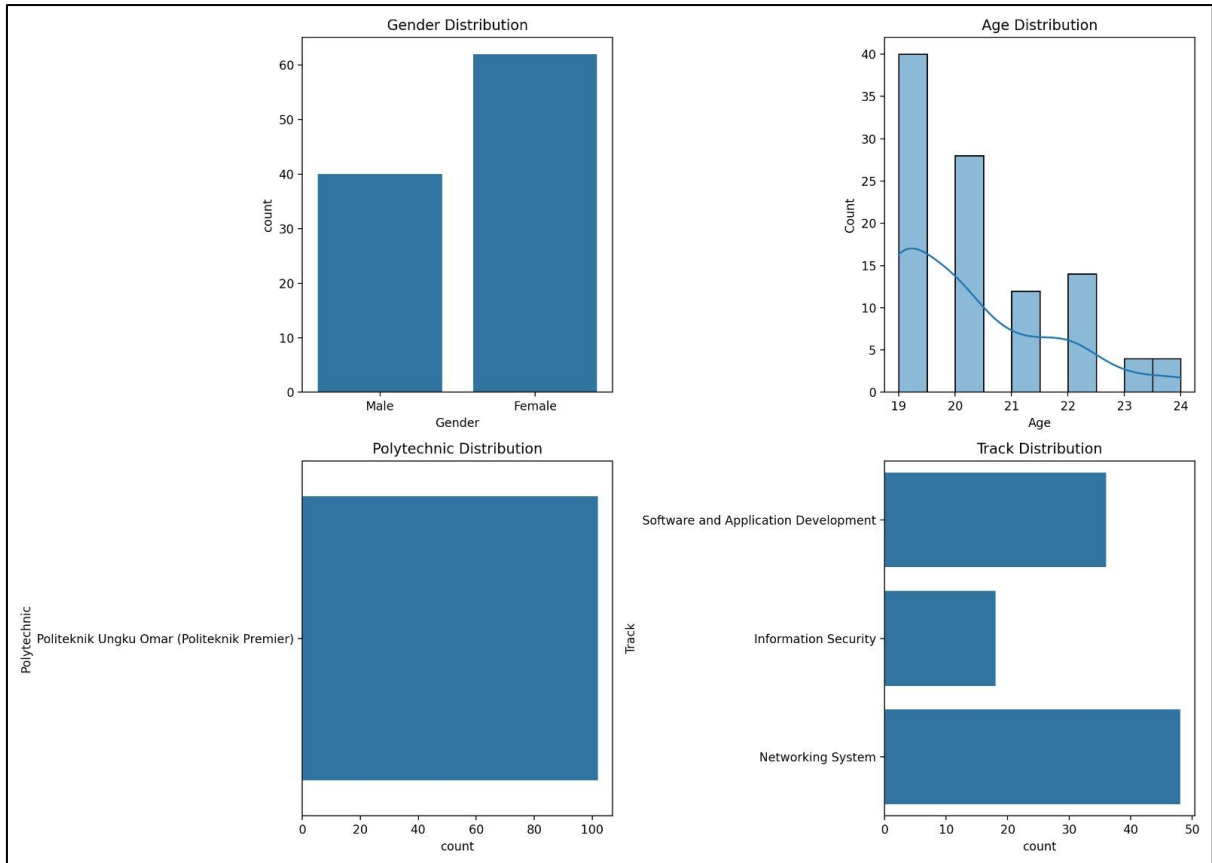
Figure 1: Demographic breakdown of students in the DDT programme at PUO, showing gender, age, polytechnic, and specialization tracks

These demographics are engaged in the questionnaire to obtain the feedback of the students on the alignment of the Diploma in Information Technology (Digital Technology) Programme with industry needs in Malaysian Polytechnics. The data visualizations provide an understanding of the demographic and academic backgrounds of the students in the Diploma in Information Technology (Digital Technology) program at Malaysian Polytechnics. The gender distribution shows that there are more female students (about 60%) compared to male students (around 40%). The age distribution indicates that most students are younger, with a significant number being 19 years old, and fewer students as the age increases, with only a small number aged between 23 and 24. All respondents are from Politeknik Ungku Omar, emphasizing the focus on this particular institution. When examining the specialization tracks within the program, most of them are registered students in the "Software and Application Development" and "Networking System" tracks, each having approximately 40 to 50 students. In contrast, the "Information Security" track is less popular, with about 20 to 30 students registered. This overview suggests that the program is drawing the interest of a diverse group of young students, particularly in the fields of software development and networking.

Table 1: Data analysis of the average scores for each question based on the respondents' responses on the alignment of the Diploma in Information Technology (Digital Technology) Programme with industry needs in Malaysian Polytechnics

No	Questions	Average
1	Prepared for job requirements	3.94
2	Incorporated industry-specific projects	3.82
3	Opportunities for internships/work placements	3.90
4	Relevance of theoretical concepts	3.86
5	Courses on emerging trends/technologies	3.83
6	Collaboration with industry professionals	3.87
7	Alignment with technical skills needed	3.88
8	Hands-on practical training opportunities	3.96
9	Incorporation of industry-relevant software/equipment	3.74
10	Focus on soft skills	3.88
11	Addressing current and future workforce needs	3.86
12	Opportunities for networking	3.88
13	Up-to-date teaching materials/resources	3.71
14	Flexibility or specialization options	3.88
15	Alignment with ethical and professional standards	3.88
16	Incorporation of industry-specific certifications	3.90
17	Understanding of socio-economic context	3.75
18	Support for entrepreneurship/self-employment	3.80
19	Preparation for future career prospects	3.96
20	Overall satisfaction with alignment	3.97

These averages are based on a Likert scale where 5 corresponds to "Strongly Agree" and 1 to "Strongly Disagree."

In terms of the program preparedness, the feedback is tremendously positive. Most students either strongly agree or agree that the Diploma in Information Technology (Digital Technology) (DDT) program has equipped them well for the specific job requirements in their industry. They also appraised the program highly for its alignment with industry needs and its ability to prepare them for future career prospects.

When it comes to industry-specific integration, students expressed strong approval of how the program incorporates industry-specific projects and case studies. These elements were seen as effectively integrated into the curriculum. Furthermore, the program's support for entrepreneurship and self-employment was well-received, though the responses were slightly more varied in this area.

Overall, the majority of students are very satisfied with how well the DDT program aligns with industry needs. This indicates that the students viewed the program as highly relevant and effective in preparing them for their careers.

4.0   CONCLUSION

This study looked at how the Diploma in Information Technology (Digital Technology) (DDT) program offered at Politeknik Ungku Omar, matches with the needs of the IT industry in Malaysia both on the view of the current students. The findings suggest that, to a huge extent, there are minimal gaps between the people's expectations and the realization of the program, with a special focus on the practical skills and knowledge availability, which addresses specific

industry requirements. However, the scope of technical projects involving the industry, involvement with latest technology, and the promotion of entrepreneur ownership were mentioned to be more attractive business opportunities.

The evaluation of the students pointed to a generally positive attitude concerning the extent to which the program prepares them for future employment with high assessments concerning their career readiness and meeting the employers' expectations. Such observation reinforces the extent to which the program prepares its graduates with the necessary skills to make a successful entry into the IT field, which has been highlighted by some recent surveys with regards to the effectiveness of educational programs in general [4]. Yet, as such industries overcome the competitive strategies, there remains an increasing need for whether some academic programs, in this case IT organizations, need to be more flexible when meeting the new developments in technology and changing workforce market demands [5]. As the findings suggest, it can be argued that even though great progress has been made in terms of meeting the needs of the industry within the DDT program, it is still crucial for educational institutions and industry collaborators to work together for the betterment of the graduates who will not only be able to 'do' but 'know' the industry. This is consistent with research findings, which indicate that industry-academia linkages strengthen vocational and technical education [6].

In summary, development efforts for the program DDT should be focused on industry participation, internships, developments such as infusion of new technologies, so that the program would be useful and efficient in the education of the future professionals in the sphere of IT. In terms of the improvement of the analyzed program, additional studies should be conducted aiming at the professional trajectory of the graduates on a long-term basis.

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