
EMPLOYERS' ASSESSMENTS OF PROGRAM EDUCATIONAL OBJECTIVES FOR IT STUDENTS IN POLITEKNIK UNGKU OMAR: A SURVEY STUDY

Suhainy binti Sulaiman¹, Faridah binti Jamil² and Mohd. Nizam bin Kamarull Baharin³

^{1,2,3}Jabatan Teknologi Maklumat dan Komunikasi, Politeknik Ungku Omar, Malaysia

¹suhainy@puo.edu.my

²faridahjamil@puo.edu.my

³mnizam@puo.edu.my

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ABSTRACT

This research examines employers' assessments of the Program Educational Objectives (PEOs) for the Diploma in Digital Information Technology, focusing specifically on two main goals: determining how well IT graduates fulfil the program's educational objectives, based on employer insight, and evaluating the relevance of the program's goals considering employer feedback on graduate performance. Within the broader context of aligning academic outcomes with labour market demands, this study addresses the pressing need for curriculum relevance in an ever-evolving digital environment. A quantitative approach was used, employing structured questionnaires completed by 105 employers across various industries to ensure statistical reliability and representativeness. The collected data provides insight into employers' perceptions of graduates' skills, including technical expertise, problem-solving abilities, flexibility, and communication. The findings reveal predominantly positive feedback, with most employers recognizing graduates' foundational digital skills and their willingness to adopt industry best practices. However, the study also highlights areas requiring improvement, particularly in advanced technical proficiency and applied problem-solving capabilities. The research concludes that while current PEOs offer a strong foundation, there remains a significant need for continuous curriculum enhancement, especially regarding the integration of advanced technologies and the development of soft skills. These insights are valuable for educational institutions aiming to refine learning strategies and ensure alignment with the rapidly changing demands of the digital information technology industry.

1. Introduction

In the fast-changing digital age, it is critically necessary that academic programs keep pace with current and future industry requirements. Technological innovation has been speeding up the nature of work dramatically, and therefore, the curricula need to be updated regularly to ensure that the graduates are equipped with the capabilities demanded by employers (World Economic Forum, 2023). As a result, higher education providers are required to regularly scrutinize and update their curricula to close the gap between academic instruction and industry requirements (Bakhshi et al., 2017). These alignments are critically necessary in technology-oriented courses, where the pace of change is the greatest.

Politeknik Ungku Omar is a polytechnic that is moving towards becoming an apex polytechnic. This study investigates the effectiveness of the Diploma in Information Technology (Digital Technology) program at Politeknik Ungku Omar in meeting industry needs. The evaluation is grounded in feedback from employers who have engaged with graduates of the program, providing critical insight into the relevance and applicability of the skills and knowledge imparted. By analyzing these employer perspectives, the study seeks to assess how well the institution is preparing students for careers in the digital technology sector and to identify areas for potential enhancement in curriculum design and delivery (Mohamad et al., 2020).

Programme Educational Objectives (PEOs) describe the key qualities and achievements expected from graduates several years after finishing their studies. In Malaysia, institutions assess these objectives 3 to 5 years post-graduation to measure the effectiveness of their academic programs and determine whether graduates meet industry requirements. Programme Educational Objectives (PEOs) are broad statements that outline what graduates are expected to accomplish professionally within three to five years after finishing their education. They represent the long-term goals of an educational program and typically align closely with the mission of the institution, expectations from stakeholders, and industry requirements (Hairi et al., 2019). Common examples of PEOs, according to Hairi et al. (2019), include:

- Achieving professional success in their chosen fields.
- Effectively applying the knowledge and skills learned during their studies.
- Actively participating in lifelong learning and continuing professional growth.
- Demonstrating ethical behavior, strong communication skills, and leadership abilities.

Clearly defined PEOs are valuable as they guide curriculum development, teaching methods, and assessment strategies, ensuring graduates acquire the skills and competencies necessary to positively contribute to their professional communities.

For the Diploma in Information Technology (Digital Technology) program at Polytechnic, five specific PEOs have been established. These objectives were evaluated through a study involving 105 employers who hired graduates from June and December 2019. This assessment provides insights into graduate capabilities and helps ensure teaching and learning processes align with industry expectations.

The five PEOs are:

PEO 1: Possess relevant knowledge, skills and aptitude to meet job specifications, organizational and system needs.

PEO 2: Can utilize current computing tools and techniques by applying knowledge and interpreting information to solve problems, can execute and be responsible for routine tasks.
PEO 3: Have effective communication skills to convey information, problems and solutions.
PEO 4: Have teamwork and interpersonal skills, entrepreneurial awareness and are aware of their social and ethical responsibilities; and
PEO 5: Possess skills for life-long learning and career development.

1.1 Problem Statement

Many institutions develop PEOs to ensure their graduates are industry ready. However, the real challenge lies in proving that these goals match the changing needs of the job market. At Politeknik Ungku Omar, there hasn't been enough data from employers to clearly determine if the programme of IT (Digital Technology) graduates is meeting these expectations 3 to 5 years after graduation. This gap in data makes it hard for the institution to effectively refine its curriculum and teaching methods to improve job readiness and graduate employability.

1.2 Research Objectives

- 1.2.1 To determine how well IT graduates fulfil the program's educational objectives, based on employer insights.
- 1.2.2 To evaluate the relevance of the program's goals considering employer feedback on graduate performance

1.3 Scope of Research

This study focuses on evaluating how effectively the Program Educational Objectives (PEOs) for the Diploma in Information Technology (Digital Technology) at Politeknik Ungku Omar are being achieved—based on feedback from employers who have hired the program's graduates.

1.3.1 Targeted response

The research specifically looks at graduates from the June and December 2019 cohorts and gathers insights from their employers across various sectors in Malaysia, particularly within the digital and IT industries. The main objective is to determine whether these graduates meet the expectations set by the program's PEOs, which reflect industry-relevant skills and competencies.

1.3.2 Data Collection

Employers' perspectives are collected using a structured questionnaire distributed electronically. The study uses a quantitative approach to analyze responses, aiming for at least 100 employer participants to ensure that the findings are statistically reliable and broadly representative.

1.3.3 Focus Area

The scope of this research covers graduates' job readiness, performance, and alignment with the curriculum objectives 3 to 5 years after entering the workforce, offering valuable input for future curriculum improvements and policy planning.

1.4 Related Works

The implementation of Outcome-Based Education (OBE) and its core components such as Program Educational Objectives (PEOs) have become a defining feature of Malaysian higher education to improve quality and accountability (Mohayaddin et al. 2018). These objectives outline what a program aims for its graduates to achieve in the long run, both professionally and personally.

According to Pegg et al., (2012), skill training is an employee with the ability to use new technologies and materials optimally and to use creativity and innovation effectively. Employers' perspectives can offer valuable insights into how well a curriculum prepares students for the real world, including whether it provides enough hands-on training and fosters essential soft skills like communication and teamwork (Chiu et al. 2016; Succi et al. 2020). This is especially important in fast-moving fields like Information Technology, where technology evolves quickly and job requirements change just as fast. Employers are in a strong position to assess whether graduates have the up-to-date technical skills and flexible mindset needed to succeed in such dynamic environments (Babashahi et al. 2024).

In response, institutions in Malaysia particularly polytechnics are being encouraged to build closer ties with industry and use employer feedback when reviewing and updating their programs. This approach supports national efforts to boost graduate employability and reduce the gap between the skills taught in.

2. Materials and Methods

This research uses a quantitative survey approach to collect insights from employers who have hired graduates of the Diploma in Information Technology (Digital Technology) program.

- **Sample:** 105 employers who hired graduates from the June and December 2019 batches.
- **Instrument:** A structured questionnaire using a Likert scale to measure employer perceptions across all PEOs. The questions developed using google form. It is divided to TWO divisions. The following show the questions for the research.

Table 2.1. PEO's Statement Questions

Item	Research Question	PEO Statement
Q1	Mempunyai pengetahuan, kemahiran dan kebolehan yang relevan untuk memenuhi spesifikasi pekerjaan, keperluan organisasi dan sistem.	PEO 1
Q2	Boleh menggunakan alat dan teknik pengkomputeran semasa dengan menggunakan pengetahuan dan mentafsir maklumat untuk menyelesaikan masalah, boleh melaksanakan dan bertanggungjawab untuk tugas rutin.	PEO 2
Q3	Mempunyai kemahiran komunikasi yang berkesan untuk menyampaikan maklumat, masalah dan penyelesaian.	PEO 3
Q4	Mempunyai kerja berpasukan dan kemahiran interpersonal, kesedaran keusahawanan dan sedar akan tanggungjawab sosial dan etika mereka.	PEO 4
Q5	Mempunyai kemahiran untuk pembelajaran sepanjang hayat dan pembangunan kerjaya.	PEO 5

Note: PEO statements are based on the program's intended graduate attributes, which align with the Malaysian Qualifications Framework (MQF) for Diploma-level outcomes.

Table 2.1 lists the *Programme Educational Objectives (PEOs)* along with their corresponding research question statements used in the employer survey. Each item (Q1–Q5) represents a general statement measuring employer perceptions of the PEOs.

Table 2.2. Employer Survey Questions Based on PEOs

Item	Research Question	PEO
Q6	Graduan dapat menggunakan pengetahuan Teknologi Maklumat dan Komunikasi dalam melaksanakan tugas.	PEO 1
Q7	Graduan dapat mengaplikasikan kemahiran teknikal sedia ada yang bersesuaian dengan keperluan tugas.	PEO 1

Q8	Graduan memiliki kecekapan menggunakan alat dan teknik pengkomputeran dalam menyelesaikan masalah tugas rutin.	PEO 2
Q9	Graduan dapat menyelesaikan masalah dalam pelbagai situasi secara inovatif, kreatif dan beretika.	PEO 2
Q10	Graduan menunjukkan kemahiran komunikasi yang berkesan.	PEO 3
Q11	Graduan menunjukkan keupayaan untuk meningkatkan kemahiran pengurusan maklumat.	PEO 3
Q12	Graduan berkeupayaan untuk bekerja dalam kumpulan dengan berkesan.	PEO 4
Q13	Graduan memiliki potensi dan kemahiran dalam keusahawanan.	PEO 4
Q14	Graduan adalah model rujukan dan berkelakuan mengikut nilai etika.	PEO 4
Q15	Graduan mampu menunjukkan sifat kepimpinan dan kemahiran sosial yang berkesan.	PEO 4
Q16	Graduan terlibat dalam pembelajaran sepanjang hayat untuk membolehkan kemajuan kerjaya.	PEO 5
Q17	Graduan sentiasa meningkatkan kemahiran diri dan bersedia mempelajari perkara baru.	PEO 5

Note: Each PEO was measured using multiple items to capture employers' overall perception of graduate performance and employability attributes.

Table 2.2 presents the specific questionnaire items (Q6–Q17) used to assess each PEO dimension. Each question was rated using a Likert scale to measure the extent of employer agreement with the statement.

- **Data Collection:** Conducted online with employers across a range of industries in digital technology.
- **Data Analysis:** Both descriptive and inferential statistics were used to evaluate feedback. Metrics included mean scores, standard deviations, and response distributions.

3. Results

This study gathered feedback from employers for alumni of the IT department at Politeknik Ungku Omar through a survey that explored how well their education prepared them for their current jobs. A total of 105 employers took part, sharing their views on the knowledge and skills they now use in the workplace.

Table 3.1. Mean Score of PEO's Statement

PEO's Statement	Employers Mean
PEO 1 Mempunyai pengetahuan, kemahiran dan kebolehan yang relevan untuk memenuhi spesifikasi pekerjaan, keperluan organisasi dan sistem.	4.30
PEO 2 Boleh menggunakan alat dan teknik pengkomputeran semasa dengan menggunakan pengetahuan dan mentafsir maklumat untuk menyelesaikan masalah, boleh melaksanakan dan bertanggungjawab untuk tugas rutin.	4.35
PEO 3 Mempunyai kemahiran komunikasi yang berkesan untuk menyampaikan maklumat, masalah dan penyelesaian.	4.37
PEO 4 Mempunyai kerja berpasukan dan kemahiran interpersonal, kesedaran keusahawanan dan sedar akan tanggungjawab sosial dan etika mereka.	4.44
PEO 5 Mempunyai kemahiran untuk pembelajaran sepanjang hayat dan pembangunan kerjaya.	4.36
Average of Mean	4.37

Interpretation: Overall, employers expressed strong agreement with all PEOs, with the highest mean score observed for PEO 4, indicating that teamwork, ethics, and interpersonal skills were the most evident strengths among graduates.

3.1 Demographic of Respondents

Table 3.2 shows the demographic of respondents who were graduated. It includes details such as the types of industries they work in, how long they've been with their companies, their highest level of education, and their current job positions.

Table 3.2. Demographic of Respondents

Perkara	Bilangan	Peratus
Jantina		
Lelaki	143	49%
Perempuan	150	51%
Jumlah	293	100%
Bangsa		
Melayu	236	81%
Cina	9	3%
India	41	13%
Lain-lain	7	3%
Jumlah	293	100%
Trek Pengajian		
Pembangunan Perisian dan Aplikasi	33	11%
Sistem Rangkaian	108	37%
Keselamatan Maklumat	152	52%
Jumlah	293	100%
Status Pekerjaan		
Bekerja	148	51%
Melanjutkan Pengajian	119	41%
Tidak Bekerja	26	8%
Jumlah	293	100%
Bekerja di dalam bidang		
Ya	63	43%
Tidak	85	57%
Jumlah	148	100%
Jenis Sektor		
Kerajaan	118	80%
Swasta	21	14%
Bekerja Sendiri	9	6%
Jumlah	148	100%
Pendapatan Bulanan		
Kurang RM 1000	3	2%
RM1001 - RM2000	73	49%

RM2001 - RM3000	53	36%
RM3001 - RM 4000	14	10%
RM4001 - RM5000	3	2%
RM5000 dan ke atas	2	1%
Jumlah	148	100%

Note: Of the 148 alumni who were working at the time of data collection, feedback was further sought from their respective employers for this study.

From 148 alumni who were distributed the questionnaires, only 105 employers responded the survey that was distributed. The findings of the demographic distribution of employers who responded to the survey are summarized as Table 3.3 below.

Table 3.3. Demographic of Employers

Perkara	Bilangan	Peratus
		Jantina
Lelaki	64	61%
Perempuan	41	39%
Jumlah	105	100%
Sektor Bekerja Semasa		
Kerajaan	16	16%
Swasta	76	72%
Bekerja Sendiri	13	12%
Jumlah	105	100%
Bilangan Staf		
Kurang dari 5 pekerja	13	12%
5 hingga 19 pekerja	30	29%
20 hingga 50 pekerja	21	20%
51 hingga 150 pekerja	17	16%
151 hingga 500 pekerja	8	8%
Lebih dari 500 pekerja	16	15%
Jumlah	105	100%

Note: Most respondents were from the private sector (72%), indicating that graduates are predominantly employed in industry-based organisations.

4.2 PEO Finding

Table 3.4 till 3.8 shows the mean score for each question of PEO.

Table 3.4. Mean Score of PEO 1

Item	Research Questions	Mean
1	Graduan dapat menggunakan pengetahuan Teknologi Maklumat dan Komunikasi dalam melaksanakan tugas.	4.33
2	Graduan dapat mengaplikasikan kemahiran teknikal sedia ada yang bersesuaian dengan keperluan tugas.	4,43
Average of mean		4.48

Table 3.5. Mean Score of PEO 2

Item	Research Questions	Mean
1.	Graduan memiliki kecekapan menggunakan alat dan teknik pengkomputeran dalam menyelesaikan masalah tugas rutin.	4.40
2.	Graduan dapat menyelesaikan masalah dalam pelbagai situasi secara inovatif, kreatif dan beretika.	4.32
Average Mean		4.36

Table 3.6. Mean Score of PEO 3

Item	Research Questions	Mean
1.	Graduan mempunyai keupayaan komunikasi yang berkesan.	4.26
2.	Graduan menunjukkan keupayaan untuk meningkatkan kemahiran pengurusan maklumat.	4.38
Average Mean		4.32

Table 3.7. Mean Score of PEO 4

Item	Research Questions	Mean
1.	Graduan berkeupayaan untuk bekerja dalam kumpulan dengan berkesan.	4.39
2.	Graduan memiliki potensi dan kemahiran dalam keusahawanan.	4.05

3.	Graduan adalah model rujukan dan berkelakuan mengikut nilai etika	4.30
4.	Graduan mampu menunjukkan sifat kepimpinan dan kemahiran sosial yang berkesan.	4.27
Average Mean		4.25

Table 3.8. Mean Score of PEO 5

Item	Research Questions	Mean
1.	Graduan terlibat dalam pembelajaran sepanjang hayat untuk membolehkan kemajuan kerjaya.	4.29
2.	Graduan sentiasa meningkatkan kemahiran diri dan bersedia mempelajari perkara baru.	4.41
Average Mean		4.35

4. Discussion

The analysis of this study was based on the items developed for the five Programme Educational Objectives (PEO). To discuss the findings of the study descriptively, the interpretation of the mean score was used by calculating the class intervals measured according to the scale as in Table 4.1.

Table 4.1 Mean Score Interpretation

Mean Score	Mean Score Interpretation
1.00 – 2.33	Low
2.34 – 3.66	Moderate
3.67 – 5.00	High

Based on the result, all PEOs got high mean score. The highest is PEO 1: *Mempunyai pengetahuan, kemahiran dan kebolehan yang relevan untuk memenuhi spesifikasi pekerjaan, keperluan organisasi dan sistem* whereas the lowest is PEO 4; *Mempunyai kerja berpasukan dan kemahiran interpersonal, kesedaran keusahawanan dan sedar akan tanggungjawab sosial dan etika mereka.*

The analysis also focuses on the reliability and consistency of the survey responses, with a specific emphasis on evaluating internal consistency using Cronbach's Alpha. Cronbach's Alpha for the study is 0.957, indicating excellent internal consistency. This means the items in the study are highly correlated and measure a consistent concept – graduate competencies.

Cronbach's Alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered a measure of scale reliability. The value of Cronbach's Alpha can range from 0 to 1, with the following interpretations:

- $\alpha \geq 0.9$: Excellent reliability
- $0.8 \leq \alpha < 0.9$: Good reliability
- $0.7 \leq \alpha < 0.8$: Acceptable reliability
- $0.6 \leq \alpha < 0.7$: Questionable reliability
- $0.5 \leq \alpha < 0.6$: Poor reliability
- $\alpha < 0.5$: Unacceptable reliability

In this research, Cronbach's Alpha was calculated using the Likert-scale questions that evaluate graduate competencies. The result was $\alpha = 0.957$, which is categorized as 'Excellent'. This indicates that the survey items are highly consistent with each other and likely measure a unified construct, i.e., employers' perception of graduate competence.

This means that as the number of items increases, and if all items are positively correlated, Cronbach's Alpha will increase. However, a very high alpha (close to 1) might also indicate redundancy among items. In conclusion, the high reliability coefficient observed in this study assures that the items are suitable for evaluating graduate performance consistently and reliably.

The table 4.2 presents the Cronbach's Alpha values for each individual item in the study. It includes the item-total correlation (how closely each item correlates with the total score) and the Cronbach's Alpha if that item were to be removed from the scale.

Table 4.2. The Cronbach's Alpha values for each individual item

Item	Item-Total Correlation (r)	Cronbach's Alpha if Item Removed	Overall Cronbach's Alpha
Graduan dapat menggunakan pengetahuan Teknologi Maklumat dan Komunikasi dalam melaksanakan tugas.	0.856	0.952	0.957
Graduan dapat mengaplikasikan kemahiran teknikal sedia ada yang bersesuaian dengan keperluan tugas.	0.846	0.952	0.957
Graduan memiliki kecekapan menggunakan alat dan teknik	0.827	0.953	0.957

pengkomputeran dalam menyelesaikan masalah tugas rutin.

Graduan dapat menyelesaikan masalah dalam pelbagai situasi secara inovatif, kreatif dan beretika.

0.820

0.952

0.957

Graduan menunjukkan kemahiran komunikasi yang berkesan.

0.804

0.954

0.957

Graduan menunjukkan keupayaan untuk meningkatkan kemahiran pengurusan maklumat.

0.861

0.952

0.957

Graduan berkeupayaan untuk bekerja dalam kumpulan dengan berkesan.

0.798

0.954

0.957

Graduan memiliki potensi dan kemahiran dalam keusahawanan.

0.751

0.957

0.957

Graduan adalah model rujukan dan berkelakuan mengikut nilai etika.

0.876

0.951

0.957

Graduan mampu menunjukkan sifat kepimpinan dan

0.782

0.955

0.957

kemahiran sosial yang berkesan.

Graduan terlibat dalam pembelajaran sepanjang hayat untuk membolehkan kemajuan kerjaya.

0.810

0.954

0.957

Graduan sentiasa meningkatkan kemahiran diri dan bersedia mempelajari perkara baru.

0.830

0.953

0.957

Table 4.3. Items with the highest alignment

Item	Mean Score	Item-Total Correlation	Interpretation
Graduan adalah model rujukan dan berkelakuan mengikut nilai etika.	4.30	0.88	Very Strong
Graduan menunjukkan keupayaan untuk meningkatkan kemahiran pengurusan maklumat.	4.38	0.86	Very Strong
Graduan dapat menggunakan pengetahuan Teknologi Maklumat dan Komunikasi dalam melaksanakan tugas.	4.33	0.86	Very Strong

Graduan dapat mengaplikasikan kemahiran teknikal sedia ada yang bersesuaian dengan keperluan tugas.	4.43	0.85	Very Strong
Graduan sentiasa meningkatkan kemahiran diri dan bersedia mempelajari perkara baru.	4.41	0.83	Very Strong

These items reflect strong agreement among employers that graduates behave ethically, manage information effectively, and possess technical and continuous learning skills. Items with slightly lower correlations, though still strong, suggest opportunities for enhancement in leadership and entrepreneurship development.

The analysis confirms that the current educational objectives are well-aligned with employer expectations. The graduates are viewed positively across all competencies, particularly in ethics, technical skills, and adaptability.

5. Conclusion

As a conclusion, this study offered valuable insights into how well IT graduates from Politeknik Ungku Omar are performing in the eyes of their employers, particularly in relation to the Program Educational Objectives (PEOs) set by the institution. The feedback gathered shows that, overall, the program is doing a solid job in preparing its graduates for the workplace.

Graduates are meeting and, in many cases, exceeding expectations across all five PEOs. Employers expressed confidence in the abilities of the graduates, especially when it comes to applying their knowledge and handling real job tasks. Their technical skills and ability to grow on their own are clear strengths. Employers noticed that graduates aren't just well-versed in the technical side of things they also show a strong desire to keep learning and improving, which is essential in today's fast-changing tech world.

However, communication and entrepreneurial thinking stood out as areas to work on. While graduates perform well technically, their ability to communicate clearly and think entrepreneurially could be enhanced. These skills are increasingly important, not only for day-to-day work but also for long-term career success. The good news is, the current PEOs are still very relevant. They remain a useful and meaningful way to measure graduate performance and align well with what employers are looking for in the digital technology sector.

In short, this study highlights the value of employer feedback in helping academic institutions

improve their programs. By building on what's already working and giving more attention to areas like communication and innovation, Politeknik Ungku Omar can continue producing graduates who are both technically capable and ready to lead in the digital workforce.

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