

A Comparative Evaluation of Lecturer Professionalism among Mechanical, Civil, and Electrical Engineering Faculties at UiTM

Fuziatul Norsyiha, Wan Nur Shaziayani, Norshuhada Samsudin
and Sharifah Sarimah

Jabatan Sains Komputer & Matematik (JSKM), Universiti Teknologi MARA Cawangan Pulau
Pinang, Malaysia

Email: fuziatul@uitm.edu.my, shaziayani@uitm.edu.my, norsh111@uitm.edu.my

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Abstract

Lecturer professionalism plays a pivotal role in shaping the quality of education, fostering effective learning experiences, and contributing to students' holistic development. This study focuses on evaluating student perceptions of lecturer professionalism within the engineering faculties at Universiti Teknologi Mara (UiTM), Cawangan Pulau Pinang. A survey-based approach was utilized to collect data from 98 undergraduate engineering students enrolled in a math course (MAT 183). The survey encompassed seven questions assessing different dimensions of lecturer professionalism, employing a 4-point Likert scale for responses. The collected data were analyzed using ANOVA tests, and post hoc Tukey's HSD tests were conducted to compare students' perceptions across the faculties. The study findings indicated consistent perceptions of lecturer professionalism across the faculties. Specifically, no statistically significant differences in mean scores were observed for the three categories: planning and preparation, delivery techniques, and lecturer-student relationships. These results imply that lecturer professionalism was uniformly perceived in a positive light by students across Mechanical Engineering, Civil Engineering, and Electrical Engineering faculties. This research contributes to the understanding of lecturer professionalism and its impact on students' educational experiences. The study underscores the importance of maintaining high standards of professionalism among lecturers, fostering an environment conducive to effective teaching and learning. As educational institutions continually seek to enhance teaching quality, these findings provide valuable insights into the consistency of student perceptions across different engineering disciplines. Further research could explore additional variables and conduct longitudinal studies to assess the sustainability of these perceptions over time.

Keywords: Lecturer Professionalism, Engineering Students, Anova, Tukey's Hsd Tests, Comparative Study.

Introduction

Lecturers play a crucial role in the world by contributing to education, research, knowledge dissemination, and social development. Lecturer can be said as the determining factor of education quality. That is because of lecturers are at the forefront of educating the next generation by delivering a lecture, leading a discussion, and facilitating learning experiences that equip students with knowledge, critical thinking skills, and practical expertise in various disciplines. In the realm of education, a lecturer holds a multifaceted responsibility that revolves around creating an environment conducive to effective teaching and learning. One of the primary responsibilities lies in meticulous course preparation. By thoughtfully structuring the course, lectures lay the foundation for a cohesive learning experience. Assessment and grading represent another vital aspect of a lecturer's duties. Fair and transparent grading practices not only motivate students to excel but also maintain academic integrity. Besides that, adapting to students' needs is a hallmark of an adept lecturer. They recognize that each student learns differently, and thus employ various teaching methods which are suitable for that student. Next, professional development is a continuous commitment for dedicated lecturers. They actively seek opportunities to enhance their teaching skills and explore innovative teaching techniques. In essence, a lecturer's responsibilities extend far beyond the classroom. By diligently fulfilling these responsibilities, lecturers not only promote effective teaching and learning but also contribute to the holistic development of their students and the educational institution.

Most educational institutions typically have comprehensive teaching and learning process evaluation systems in place to ensure the quality and effectiveness of education. Teaching and learning evaluation systems are designed to gather feedback from students about their educational experiences, courses, lecturer professionalism, and the overall learning environment. At Universiti Teknologi Mara (UiTM), the teaching and learning evaluation process is known as Students' Feedback Online (SuFO) which is carried out every semester for all the courses. SuFO is available online via <https://ufuture.uitm.edu.my/>. It was divided into four main sections such as Overall impression about the course (Section A), Lecturer Professionalism (Section B), Teaching and Learning activities (Section C) and Infrastructure (Section D). The primary objective of the evaluation is to furnish lectures with information and feedback regarding their teaching abilities. This allows them to engage in self-reflection and ultimately undertake the required measures to improve their teaching performance in the future. Students of the Arabic department perceive their lecturers' professionalism based on lecturers' educational backgrounds, level of education, age, and gender. If lecturers are competent in their teaching, it is assumed that instructional process will also improve (Rehani 2015). Besides that, to get an effective teaching, lecturers also require to strike a good balance between his teaching methodology and his personality (Aregbeyen 2010). Regularly assessing lecturers' professionalism based on students' feedback allows for continuous improvement in teaching practices. Constructive criticism and positive feedback help lecturers identify their strengths and weaknesses, enabling them to adapt their teaching methodologies accordingly. Furthermore, feedback data can inform faculty development programs, facilitating targeted training initiatives to enhance lecturers' skills and expertise.

Additionally, as lecturers, they developed the values and skills that aid students in attaining not only their academic goals but also their future aspirations. Effective teaching was discovered to be significantly influenced by the personality and characteristics of the

lecturer. As indications of good teaching, Delaney et. al (2010) listed the top nine prominent characteristics and groups of behaviours as described by students. Those nine showed respect, expertise, friendliness, engagement, communication, organisation, responsiveness, professionalism, and humour. An excellent lecturer's demeanour fosters comfort and boosts students' confidence in their ability to learn. In addition, a variety of elements that affect the teaching-learning environment, such as student approaches to learning, motivation, self-regulation, and concepts of learning and teaching, also have an impact on learning outcomes (Biggs & Tang, 2007; Vermunt & Vermetten, 2004).

The quality of higher education is substantially impacted by the broad concept of lecturer professionalism. Various elements contribute to lecturer professionalism, ranging from academic qualifications to instructional strategies and personal attitude. According to Hazzam & Wilkins (2023), lecturer and learner personalities are highly significant for efficient communication and successful completion of lessons. The study done by Zinn (2004) determines the relationship between teaching methods and students' performance. Samian & Noor (2012) in their research concluded that to be an excellent lecturer, one should master delivery techniques and should establish good relationships with the students. Thus, the main purpose of this article is to compare the level of satisfaction of lecturer professionalism among students of Mechanical Engineering, Civil Engineering, and Electrical Engineering at UiTM Cawangan Pulau Pinang.

Methodology

Samples were taken from the math course MAT 183 (Calculus 1) by 98 undergraduate engineering majors at the UiTM campus in Permatang Pauh, Pulau Pinang. The survey in this study consists of seven questions focused on lecturers' professionalism. It consists of several statements or criteria that assess different aspects of the lecturer's performance, including completing scheduled hours of instruction, providing academic guidance to students, using English as a medium of instruction (except for specific courses), being approachable, being accessible for discussion, monitoring student attendance, and exhibiting overall high professionalism. A 4-point Likert scale (1 = strongly disagree, 4 = strongly agree) is used to record item responses.

The collected data were analyzed using IBM SPSS Statistics 20. Descriptive statistics were generated on the students' perceptions based on the number of students enrolled in MAT183 (Calculus 1) at the faculties PKM, PKA, and PKE. ANOVA tests were carried out to determine if there is any significant difference in students' perceptions across different engineering faculties at UiTM. This study uses descriptive research to determine students' perspectives towards lecturer professionalism, which can be divided into three categories. Category A, which focuses on planning and preparation by the lecturer, assesses various aspects of the lecturer's performance in terms of their planning and preparation for instructional activities. Category B focuses on delivery techniques by the lecturer, while Category C evaluates various aspects of the lecturer-student relationship, such as communication, approachability, availability for discussions, and overall satisfaction with the lecturer-student interaction.

Result and Discussion

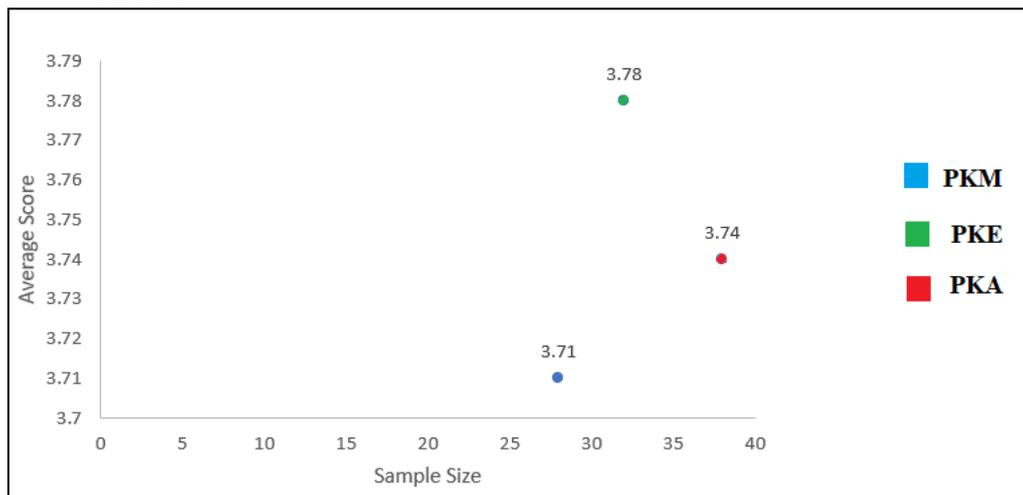


Figure 1. Lecturer Professionalism Mean Ratings and Student Counts Across Faculties

The number of students enrolled in MAT183 (Calculus 1) at the faculties PKM, PKA, and PKE is depicted in Figure 1. Particularly, there are 32 students registered in MAT183 at PKM, 38 at PKA, and 28 at PKE. These mean scores, ranging from 3.71 to 3.78, indicate a generally positive perception of lecturer professionalism in planning and preparation across all faculties. The relatively small variations in mean scores suggest a consistent agreement among students within each faculty.

Table 1

Test of Homogeneity of Variances for Category A

		Levene Statistic	df1	df2	Sig.
Category A	Based on Mean	.903	2	95	.409
	Based on Median	.164	2	95	.849
	Based on Median and with adjusted df	.164	2	91.100	.849
	Based on trimmed mean	.536	2	95	.587

The Levene statistic tests the equality of variances among different groups. Variance measures the spread of data points from the mean. It's important to check if the variances among groups are roughly equal when performing an ANOVA. Unequal variances can affect the validity of ANOVA results. The result in Table 1 showed that different tests based on various metrics (mean, median, etc.) were conducted to assess if the variances were significantly different among faculties for the Category A scores. The p-values associated with these tests indicate whether there's a significant difference in variances. In all cases, the p-values are larger than 0.05, which suggests that the variances among faculties are not significantly different.

Table 2

ANOVA Results for Category A

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.071	2	.035	.164	.849
Within Groups	20.551	95	.216		
Total	20.622	97			

Table 2 shows that the ANOVA is used to assess whether there are significant differences in the mean scores of lecturer professionalism in planning and preparation across different faculties (PKM, PKA, and PKE). The significance level (p-value) indicates whether the observed differences among groups' means are statistically significant. In this case, the p-value is 0.849, which is larger than the significance level of 0.05. This suggests that there is no significant difference in the mean scores of lecturer professionalism among the faculties.

Table 3

Multiple comparisons test for Category A

(I) Faculty	(J) Faculty	Mean Difference (I-J)	Std. Error	Sig.
PKM	PKA	-.023	.116	.979
	PKE	-.067	.120	.843
PKA	PKM	.023	.116	.979
	PKE	-.044	.112	.916
PKE	PKM	.067	.120	.843
	PKA	.044	.112	.916

Tukey's HSD is a post hoc test used to determine which specific groups' means are significantly different from each other when you have more than two groups. It helps identify which group pairs contribute to the overall lack of significance observed in the ANOVA. From Table 3, we can draw the conclusions that none of the pairwise comparisons among the faculties (PKM, PKA, and PKE) show statistically significant differences in mean scores for lecturer professionalism in planning and preparation. This suggests that the differences observed in mean scores between these faculty pairs are likely due to random variation and not indicative of meaningful distinctions.

Table 4

Test of Homogeneity of Variances for Category B

		Levene Statistic	df1	df2	Sig.
Category B	Based on Mean	.357	2	95	.701
	Based on Median	.117	2	95	.889
	Based on Median and with adjusted df	.117	2	93.370	.889
	Based on trimmed mean	.415	2	95	.662

Table 4 presents the results of testing the homogeneity of variances for delivery techniques used by the lecturer. The significant levels associated with these tests are all above

0.05, indicating that there is no significant difference in variances among the groups. This suggests that the variance in scores for delivery techniques is relatively consistent across the faculty groups.

Table 5
ANOVA Results for Category B

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.059	2	.030	.117	.889
Within Groups	23.941	95	.252		
Total	24.000	97			

Table 5 shows the outcomes of an Analysis of Variance (ANOVA) conducted to assess the potential differences in mean scores among different delivery techniques employed by the lecturer. Since the p-value is greater than the typical threshold of 0.05, we do not have enough evidence to reject the null hypothesis. In other words, we conclude that there is no statistically significant difference in mean scores among the delivery techniques employed by the lecturer. The variability observed in the mean scores between the groups could likely be attributed to random chance rather than meaningful differences in the delivery techniques themselves.

Table 6
Multiple comparisons test for Category B

(I) Faculty	(J) Faculty	Mean Difference (I-J)	Std. Error	Sig.
PKM	PKA	.039	.125	.947
	PKE	.063	.130	.880
PKA	PKM	-.039	.125	.947
	PKE	.023	.120	.980
PKE	PKM	-.062	.130	.880
	PKA	-.023	.120	.980

The results of the multiple comparison test for delivery techniques used by the lecturer are shown in Table 6. It provides mean differences, standard errors, and significance levels for pairwise comparisons between faculty groups. The significance levels for all comparisons are greater than 0.05. This implies that there are no statistically significant differences in mean scores between any pairs of faculty groups regarding delivery techniques used by the lecturer.

Table 7

Test of Homogeneity of Variances for Category C

		Levene Statistic	df1	df2	Sig.
Category C	Based on Mean	.248	2	95	.781
	Based on Median	.153	2	95	.858
	Based on Median and with adjusted df	.153	2	93.951	.858
	Based on trimmed mean	.559	2	95	.574

Table 7 displays the results of the test of homogeneity of variances for lecturer-student relations. The significance levels associated with these tests are all greater than 0.05. This suggests that there is no significant difference in variances in lecturer-student relations among the faculty groups.

Table 8

ANOVA Results for Category C

	Sum of Squares	df	Mean Square	F		Sig.
Between Groups	.071	2	.035	.153		.858
Within Groups	21.929	95	.231			
Total	22.000	97				

The analysis of variance (ANOVA) results for lecturer-student relations are shown in Table 8. The sum of squares, degrees of freedom (df), mean square, F-statistic, and significance level are provided for both between groups and within groups. The F-statistic for between groups is 0.153, and the associated significance level is 0.858. Since P-value > 0.05, there is no evidence of a significant difference in mean scores among faculty groups with respect to lecturer-student relations.

Table 9

Multiple comparisons test for Category C

(I) Faculty	(J) Faculty	Mean Difference (I-J)	Std. Error	Sig.
PKM	PKA	.066	.120	.847
	PKE	.031	.124	.966
PKA	PKM	-.066	.120	.847
	PKE	-.035	.115	.952
PKE	PKM	-.031	.124	.966
	PKA	.035	.115	.952

The homogeneity of variance tests in Table 9 suggests that variances in lecturer-student relations are consistent across faculty groups. The ANOVA results indicate no significant differences in mean scores among faculty groups regarding lecturer-student relations. Therefore, the multiple comparisons test further confirms the lack of statistically significant differences in mean scores between any faculty pairs for lecturer-student relations. Overall,

these results suggest that lecturer-student relations do not significantly differ among faculty groups, and no significant differences in mean scores were found in this aspect.

Conclusion

In this study, the focus was on assessing students' perspectives towards lecturer professionalism, which encompassed planning and preparation, delivery techniques, and the lecturer-student relationship. The lecturer's versatility and strong communication abilities are demonstrated by the choice of English as the language of teaching, apart from several courses. They support a learning environment by providing a language environment that encourages comprehension and participation.

In summary, the comprehensive analysis of students' perspectives towards lecturer professionalism across these three categories revealed consistent outcomes. The results indicated that the differences observed in mean scores across faculties were not statistically significant and were likely influenced by random variation rather than meaningful distinctions. Overall, this study suggests that lecturer professionalism in planning, delivery techniques, and lecturer-student relationships was perceived positively by students across different engineering faculties at UiTM's campus in Permatang Pauh, Pulau Pinang.

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Corresponding Author

Fuziatul Norsyiha Norsyiha F, fuziatul@uitm.edu.my, Department of Computer and Mathematical Sciences, College of Computer, Informatics and Media, Universiti Teknologi MARA Pulau Pinang, 13500 Permatang Pauh, Pulau Pinang, Malaysia.

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