

Academic Writing Course Evaluation: Perspective of Engineering Students

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ABSTRACT

Engineering education has now put emphasis on writing skills that is considered equally important in shaping competent engineers. Academic Writing as an English for Specific Purposes (ESP) course equips students with essential writing skills for engineering academic and professional tasks. This study is undertaken with the aim to investigate the strengths and weaknesses of the current Academic Writing course offered at a technical university. The findings are crucial for the course's continuous improvement. This paper will report quantitative data through the questionnaire method employed that involves the feedback of 100 enrolled students. It comprises four dimensions namely course contents, materials and resources, testing and assessment, and academic instruction. The results reveal some constructive feedback from students that includes the need to improve in course materials and resources due to lack of study materials, as well as a call for the academic instruction by instructors to be improved. Suggestions and recommendations are made in order to contribute to continuous quality improvement for the course.

Keywords: Academic Writing (AW), engineering education, English for Specific Purposes (ESP)

1. INTRODUCTION

A well-trained and well- rounded engineering workforce is what is needed by the industry to ace through the Fourth Industrial Revolution (IR 4.0). Technical knowledge and skills added with graduate employability skills and values are the ingredients of preparing a good pool of workready technical graduates. To this end, engineering institutions need to have a relevant curriculum with not only having emphasis on the hard skills but also on the soft skills. This aspiration has been embraced well by the Malaysian Technical University Network (MTUN) group of higher learning institutions of which Universiti Teknikal Malaysia Melaka (UTeM) is one of the pioneering members. Amiruddin et al. [1] claimed that one of the employability skills considered desirable by the industry is communication skill on top of the knowledge in the fields of engineering. Hence, engineering education institutions are urged to understand these needs and deliver the right curriculum that is able to shape engineers who can communicate well in both spoken and written forms. Mastering communication skills, be it speaking or writing is deemed an important attribute for engineering graduates as they are expected to deal with people from diverse backgrounds and make decisions involving multiple stakeholders, government, private organizations and the public. In this vein, Manjet Kaur [2] espoused that employers' input in the design of the university curriculum is very much needed especially in matters pertaining to communication elements.

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In many Asian countries where English is not the first language, English has been seen as a tool for internationalisation where it provides more opportunities and prospects to businesses. It opens up the window for interaction and collaboration across the globe. For example, as one of the most advanced countries in engineering, Japan is moving towards globalization by taking initiatives in teaching engineering courses using English medium as stated by Rose and McKinley [3]. Ota [4] also stated that non-English speaking country has difficulty to generate revenue in business. Therefore, it is important to take initiatives in English education. Due to its importance, engineering curriculum design has always integrated English for Specific Purposes (ESP) courses that provide engineering students with the needed English language communication skills for their academic endeavours and future placement in the workforce. Perhaps, the reason why ESP is so much sought after today is because ESP delivers real communication tools for engineering communicative tasks rather than formal language use, that is not realistic of the field, as advocated by Kirkgöz and Dikilitaş [5].

In the Malaysian context, English Language Teaching (ELT) at tertiary level education mostly focuses on ESP. ESP can somehow be seen as an approach to prepare engineers-to-be for employment since it centralises in improving communication skills that are directed to their specific academic and professional needs. In relation to this, Karmila *et al.* [6] propounded that ESP is an essential branch in English language teaching and learning as it seeks to cater to different contexts which require different levels of language mastery. Among common ESP areas are English for Business, English for Legal Studies, English for Medical Practitioners, etc.

At Universiti Teknikal Malaysia Melaka (UTeM), a public higher learning institution that focuses on the technical field, ESP courses are compulsory for all students. One of the ESP courses offered is the Academic Writing (AW) course which has just been developed and offered in 2019. Its focus is on the essential writing skills that prepare students to communicate content materials in written form. This study, hence reports the evaluation study of the AW course carried out at the end of the course which includes their perspectives on the course contents, materials, assessment, independent learning and academic instructions. The objectives of this study are to investigate the effectiveness of the AW course in the perspective of the students and to explore the changes that need to be done for continuous quality improvement.

This study aims to answer these research questions: (1) What are the strengths and weaknesses of the existing AW course? and (2) What changes can be made to continuously improve the course?

2. LITERATURE REVIEW

2.1 Academic Writing for Engineering Students

AW is an example of ESP course that is typically offered at tertiary education. Realising that there are many academic tasks in the engineering faculties that require students to write in English, this course is made compulsory in order to amplify students' writing skills. This is supported by Ganobcsik-Williams [7] whose study has highlighted some research that clearly indicated a continuous requirement of writing being put on students at higher education. In engineering education, this may come in the form of lab reports, subject-specific posters, final year reports, manuals, presentation slides, etc. In Russia, AW has emerged as a distinct teaching and research subject, driven by its higher education policy [8]. Flowerdew [9] also put writing skill as a ticket to academic success where good writing skills are used in various writing genres that include off-line materials such as memo, reports, proposals, research articles and online materials that refer to social media and other online platforms used in learning. Therefore, the needs for this course is inarguable. The AW course offered at UTeM involves tasks such as writing argumentative essay, product description and text review.

2.2 Course Evaluation

In the context of ESP, course evaluation is considered as one of the processes involved in the curriculum design apart from needs analysis, course design, materials selection, and teaching and learning as maintained by Dudley-Evans and Johns [10]. It aims to see the effectiveness and relevance of a course that will enable a dynamic communication between all the elements that exist in ESP. Likewise, ESP course evaluation is used to gauge what students have experienced in the course, whether it has become a value added ones or it is still lacking of good pointers that can help to achieve the goals of the course. Findings from an evaluation will be used as a basis and justification for any decision making to be made on the course [11]. In the engineering education context, this is vital to ensure that the course maintains a certain dynamic change that is in line with the ever changing needs and requirements in the industry. To allow this to happen, a course evaluation typically covers an overall aspect of a course in order to see how all components in the course actually function to the students [12].

In the aspect of the feedback giver, some may question the issue of getting students to give comments which may be of unreal ones due to the fact that students may hesitate to speak the truth to their instructors. Nevertheless, Çelik [13] maintains that students, being the ones experiencing the learning process in the course would be the best source of evaluation to have a say on the course. Therefore, asking for feedback and evaluation from students, especially at the end of the course is seen as a feasible way of getting to know the strengths and weaknesses of a course. Even though evaluation is known as one integral part of an ESP course, studies related to it are still few. Çelik [13] explored the feedback from 96 Banking students from a Turkish university on an ESP course where content-specific instruction and language skills development were regarded as the strengths of the course. Acosta *et al.* [14] included task-based instruction to further support the evaluation gathered from a group of Law students taking an ESP course through a few surveys. Zoghipour [15] conducted a course evaluation involving 60 Iranian engineering students that employed the researcher-made questionnaire, classroom observation, instructors' interview and textbook evaluation.

A recommendation was made to arrange for an English for General Academic Purposes (EGAP) before the students are allowed to take the English for Specific Academic Purposes (ESAP). Çelik and Topkaya [16] studied Medicine students who attended the ESP Reading Skills Course to get their feedback. The lexicon teaching and translation of texts methods were figured to be a workable method with the students. Tsou and Chen [17] combined past frameworks of course evaluation with some recent research developments and used the updated framework to evaluate a course. Hatam and Shafiei [18] examined the effectiveness of an ESP course offered to engineering students. The study looked at the students' ability to translate texts from English to Persian. In short, as compared to the other aspects of ESP, studies on course evaluation still require more studies to provide a more established ESP practice in the ESP community.

3. METHODOLOGY

This section reports the details of the methods used to conduct this research. It consists of five major parts which are; research design, instrument, sampling, data collection, and data analysis.

3.1 Research Design

This study employed the quantitative method by devising a survey. Survey is selected to be the method in this study due to its convenience to get a snapshot of opinion from a large sample at a single point of time [19]. A purposive sampling method is applied for distributing the surveys. The survey was adopted to fit the context of the AW course.

3.2 Instrument

This study employed one instrument that is the AW Course Evaluation Student Questionnaire (AWCESQ) to get quantitative results. The questionnaire for this study was adapted from Richards [7]. It consists of 23 close-ended questions grouped in five sections: demographic details, course contents, course materials and resources, testing and assessment, and academic instruction. It uses a five-point Likert scale (1-Strongly Agree, 2-Agree, 3-No Idea, 4-Disagree and 5-Strongly Disagree) where students were required to indicate their agreements with the items.

3.3 Sampling

The target population for this study is UTeM students who have completed the AW course. The sampling method used in this study is a purposive sampling, a type of nonprobability sample, that enables representation of the population. According to Etikan *et al.* [20], "the purposive sampling technique, also called judgement sampling, is the deliberate choice of a participant due to the qualities the participant possesses" (p. 2). Table 1 below illustrates the demographic background of the participants involved.

Item	Description	Percentage (%)						
Gender	Gender Male							
	Female							
	Total							
Faculty	Information Technology and Communication (FTMK)	12.4						
	Manufacturing Engineering (FKP)	20.2						
	Electrical Engineering (FKE)	0.4						
	Electronics & Computer Engineering (FKEKK)	19.8						
	Electrical and Electronics Engineering Technology (FTKEE)	22.7						
	Mechanical and Manufacturing Engineering Technology (FTKMP)	24.4						
	Total	100						

Table 1 Demographic Details

3.4 Data Collection

The survey was administered via Microsoft Forms and shared using a link through WhatsApp groups at the end of the course implementation. The samples were students who have taken the AW course. A total of 242 (n=242) engineering students responded to the survey in this study.

4. RESULTS AND DISCUSSION

The data obtained from the questionnaire was analysed using the Statistical Packages for Social Sciences (SPSS). The mean's scores were calculated and presented in tables, charts and graphs interpreted by each Likert scale from the statistical data. Table 2 shows the mean distribution of the findings for sections 2,3, 4 and 5 respectively.

Table 2 Descriptive Statistics

Section	N	Mean	Std. Deviation
2	242	2.4284	1.34355
3	242	2.4529	1.28503
4	242	2.3942	1.37039
5	242	2.3559	1.45371

Meanwhile, Table 3 shows the analysis on course contents. Item 1 asks whether students have improved their English writing skills in the course. 73 (30.2%) respondents strongly agree, 88 (36.4%) respondents agree, 18 (7.4%) respondents are undecided, 36 (14.9%) respondents disagree while 27 (11.2%) respondents strongly disagree. The analysis shows that more than half of the majority of the respondents perceive that they have improved their writing skills. Item 2 shows the analysis of the question whether students were provided with sufficient practice in the course. 69 (28.5%) respondents strongly agree, 88 (36.4%) respondents agree, 22 (9.1%) respondents are undecided, 32 (13.2%) respondents disagree while 31 (12.8%) respondents strongly disagree. The analysis shows that only half of the respondents feel that they were given enough practice in the course. Item 3 shows the analysis of the question whether the contents are relevant to their academic and career needs. 88 (36.4%) respondents strongly agree, 66 (27.3%) respondents agree, 20 (8.3%) respondents are undecided, 33 (13.6%) respondents disagree while 35 (14.5%) respondents strongly disagree. The analysis shows that half of the respondents find the course to be relevant to their academic and career needs. Overall, the mean for this course content section is 2.4284 which tells that students are satisfied with the course contents.

Table 3 Course Contents

No	Survey Item	N					
		SA	A	NO	DA	SDA	Mean
1	I have improved my English writing skills in the Academic Writing class	73	88	18	36	27	
2	I was provided with sufficient opportunities to practise my academic writing inside the classroom	69	88	22	32	31	
3	The course contents (product description, argumentative essay and short video review) are relevant to my academic and future career needs	88	66	20	33	35	
						•	2.4284

Table 4 shows the analysis on course materials and resources. Item 1 asks the relevance of the materials to the contents. 80 (33.1%) respondents strongly agree, 87 (36%) respondents agree, 14 (5.8%) respondents are undecided, 28 (11.6%) respondents disagree while 33 (13.6%) respondents strongly disagree. The analysis shows that more than half of the respondents find the materials used to be relevant. Item 2 focuses on whether the materials are sufficient. 77 (31.8%) respondents strongly agree, 79 (32.6%) respondents agree, 21 (8.7%) respondents are undecided, 31 (12.8%) respondents disagree while 34 (14%) respondents strongly disagree. The analysis shows that more than half of the respondents find the materials used to be sufficient. Item 3 focuses on whether the topics and materials are engaging and interesting. 75 (31%) respondents strongly agree, 86 (35.5%) respondents agree, 18 (7.4%) respondents are undecided, 32 (13.2%) respondents disagree while 31 (12.8%) respondents strongly disagree.

The analysis shows that more than half of the respondents find the materials and topics used to be engaging and interesting. Item 4 focuses on whether the library has enough sources for studying the course. 52 (21.5%) respondents strongly agree, 74 (30.6%) respondents agree, 60 (24.8%) respondents are undecided, 29 (12%) respondents disagree while 27 (11.2%) respondents strongly disagree. Only half of the respondents agree with this statement while the other half is undecided and disagree. Item 5 is on whether a variety of audio-visual aids were used during the course. 75 (31%) respondents strongly agree, 82 (33.9%) respondents agree, 24 (9.9%) respondents are undecided, 28 (11.6%) respondents disagree while 33 (13.6%) respondents strongly disagree. More than half of the students agree that a variety of aids were used during the course implementation.

No	Survey Item	N					
		SA	A	NO	DA	SDA	Mean
1	The instructional materials were relevant to the course content	80	87	14	28	33	
2	The instructional materials (notes/reference books) were sufficient	77	79	21	31	34	
3	The topics and materials used in the AW classes were engaging and interesting	75	86	18	32	31	
4	The library has enough sources for studying AW	52	74	60	29	27	
5	A variety of audio-visual aids (multimedia, video, realia and so on) were used	75	82	24	28	33	

2.4529

Table 4 Course Materials and Resources

Table 5 depicts the analysis on testing and assessment. Item 1 asks whether the coursework is directly linked to the course contents and instructions. 79 (32.6%) respondents strongly agree, 85 (35.1%) respondents agree, 14 (5.8%) respondents are undecided, 36 (14.9%) respondents disagree while 28 (11.6%) respondents strongly disagree. The analysis shows that more than half of the respondents find the coursework to be directly linked. Item 2 looks at whether students feel that they had enough time to complete the coursework. 92 (38%) respondents strongly agree, 74 (30.6%) respondents agree, 12 (5%) respondents are undecided, 26 (10.7%) respondents disagree while 38 (15.7%) respondents strongly disagree. The analysis shows that more than half of the respondents find themselves having enough time to complete the coursework within the time given. Item 3 looks at whether students feel that they were given sufficient feedback on the performance of their coursework. 73 (30.2%) respondents strongly agree, 82 (33.9%) respondents agree, 19 (7.9%) respondents are undecided, 34 (14%) respondents disagree while 34 (14%) respondents strongly disagree.

The analysis shows that majority of the respondents find themselves getting enough feedback. Item 4 looks at whether assessment results were announced within reasonable time. 93 (38.4%) respondents strongly agree, 63 (26%) respondents agree, 21 (8.7%) respondents are undecided, 32 (13.2%) respondents disagree while 33 (13.6%) respondents strongly disagree. The analysis shows that majority of the respondents got feedback within reasonable time. Item 5 looks at whether assessment was graded fairly and thoroughly. 95 (39.3%) respondents strongly agree, 64 (26.4%) respondents agree, 19 (7.9%) respondents are undecided, 23 (9.5%) respondents disagree while 41 (16.9%) respondents strongly disagree. The analysis shows that more than half of the students agree that their assessment was graded fairly and thoroughly.

Table 5 Testing and Assessment

No	Survey Item		N				
NO			A	NO	DA	SDA	Mean
1	The course works are directly linked to the course contents and instructions	79	85	14	36	28	
2	I had enough time to complete the course works within the deadlines given	92	74	12	26	38	
3	I was provided with sufficient feedback regarding the achievement of the course works	73	82	19	34	34	
4	Assessments results were announced in a reasonable time	93	63	21	32	33	
5	Assignments and tests were graded fairly and thoroughly	95	64	19	23	41	
		_					2.3942

Table 6 illustrates the analysis on academic instruction. Item 1 asks whether the instructor was knowledgeable and well-prepared for class. 98 (40.5%) respondents strongly agree, 72 (29.8%) respondents agree, 7 (2.9%) respondents are undecided, 23 (9.5%) respondents disagree while 42 (17.4%) respondents strongly disagree. The analysis shows that more than half of the respondents find the instructor to be knowledgeable and well-prepared for class. Item 2 represents whether the instructor has presented language points in clear and engaging ways. 100 (41.3%) respondents strongly agree, 67 (27.7%) respondents agree, 10 (4.1%) respondents are undecided, 27 (11.2%) respondents disagree while 38 (15.7%) respondents strongly disagree. The analysis shows that more than half of the respondents find the instructor to be clear and engaging in presenting language points. Item 3 represents whether the instructor has answered questions by students satisfactorily. 94 (38.8%) respondents strongly agree, 71 (29.3%) respondents agree, 11 (4.5%) respondents are undecided, 23 (9.5%) respondents disagree while 43 (17.8%) respondents strongly disagree.

The analysis shows that half of the majority of the respondents find the instructor to be able to answer questions satisfactorily. Item 4 represents whether the instructor has conducted effective and interesting classes. 90 (37.2%) respondents strongly agree, 72 (29.8%) respondents agree, 15 (6.2%) respondents are undecided, 24 (9.9%) respondents disagree while 41 (16.9%) respondents strongly disagree. The analysis shows that only half of majority of the respondents find the instructor conducting effective and interesting classes. Item 5 represents whether the instructor has treated the students fairly, impartially, and with respect. 96 (39.7%) respondents strongly agree, 66 (27.3%) respondents agree, 12 (5%) respondents are undecided, 27 (11.2%) respondents disagree while 41 (16.9%) respondents strongly disagree. The analysis shows that only half of majority of the respondents find the instructor treating students fairly, impartially and with respect. Item 6 represents whether the instructor has given appropriate feedback to students about their progress. 92 (38%) respondents strongly agree, 70 (28.9%) respondents agree, 17 (7%) respondents are undecided, 29 (12%) respondents disagree while 34 (14%) respondents strongly disagree. The analysis shows that only half of majority of the respondents find the instructor giving appropriate feedback to students' progress.

Item 7 represents whether the instructor was a good language model for the students. 105 (43.4%) respondents strongly agree, 60 (24.8%) respondents agree, 13 (5.4%) respondents are undecided, 26 (10.7%) respondents disagree while 38 (15.7%) respondents strongly disagree. The analysis shows that more than half of majority of the respondents find the instructor to be good language model. Item 8 represents whether the classes were smooth, sequenced and logical. 97 (40.1%) respondents strongly agree, 63 (26%) respondents agree, 16 (6.6%) respondents are

undecided, 27 (11.2%) respondents disagree while 39 (16.1%) respondents strongly disagree. The analysis shows that more than half of majority of the respondents find the class to be smooth, sequenced and logical.

Table 6 Academic Instruction

No	Survey Item	N					
NO		SA	A	NO	DA	SDA	Mean
1	The instructor was knowledgeable and well-prepared for class	98	72	7	23	42	
2	The instructor presented language points in clear and engaging ways	100	67	10	27	38	
3	The instructor answered questions by students satisfactorily	94	71	11	23	43	
4	The instructor conducted effective and interesting classes	90	72	15	24	41	
5	I was treated fairly, impartially, and with respect	96	66	12	27	41	
6.	The instructor gave appropriate feedback to me about my progress	92	70	17	29	34	
7	The instructor was a good language model for me	105	60	13	26	38	
8	The classes were smooth, sequenced and logical	97	63	16	27	39	
							2.2745

The findings of the analysis and is discussed under the related research questions in this paper:

RQ1: What are the strengths and weaknesses of the existing AW course?

Based on the descriptive analysis, a few pointers can be highlighted as some of the weak points of the course. In Table 2, it is seen that only half of the students agreed that they had sufficient writing practice in class. This might be for the reason that there are many sub-topics to be delivered in the curriculum. Therefore, this might have limited the time for enough in-class practice to be done. Apart from that, it is worth to ponder on the part where only half of the students agreed that the course contents are relevant to their academic and career needs. This may be due to some writing tasks that are seen as irrelevant with writing tasks that they are expected to produce in the engineering setting. This finding resonates with Norkhairi *et al.* [21] who claimed that there is mismatch in ESP curriculum between skills taught with real tasks expected of engineering students in academic and professional settings.

In addition to that, lower percentage for agreements can be seen in the aspect of materials and resources available in the library for studying the course. This might be due to the fact that it is quite difficult to find specific ESP books in the library that fully follow the curriculum in this course. This is actually an existing issue in the aspect of ESP materials and resources as highlighted by Basturkmen and Bocanegra-Valle [22] who holds the view that published course books in the market tend to be irrelevant to the needs of specialized groups of learners. Another weakness discovered is when the students quite disagree with the statement that instructors have delivered the lesson interestingly and engagingly. This may be due to the reason that the course content is not fully tailored according to the various engineering majors available at UTeM. As highlighted by Norkhairi *et al.* [21], most ESP courses are made generic since instructors are not ready to custom-design for the diverse engineering majors at the institution. Among the strengths of the course is the presence of knowledgeable and well-prepared instructors and the clear link of the testing and assessment to the course content. This shows that the course is

designed with good construct that ensures good mapping of learning outcomes, course contents and assessment. On another note, more in-depth insights can be further gained through a qualitative approach. Interview approach will definitely be able to get more enriching data that can reveal more on the strengths and weaknesses of the course.

RQ2: What changes can be made to continuously improve the course?

At the moment, students were given loose materials in the form of notes in slides shows, PDF and other resources gathered online and offline. Therefore, to address the issue of textbooks for this course being lacking in the library, a tailor made module needs to be prepared. Instructors would need to jump into the bandwagon where other ESP instructors are already writing and developing their own ESP materials. This is seen as the best way that can ensure appropriate materials are supplied to students based on the tailored curriculum. Instructors can opt to either developing a proper course module from scratch or adopt/adapt from any available resources. Basturkmen [23] opines that certain amount of attention should be given for the use of authentic texts and tasks in ESP classrooms. ESP propounds the production of appropriate materials to suit the needs of the ESP learners. Celik [13] concedes that published materials are not always the best choice as those commercially available materials may not serve the specific needs of the target learners.

However, Lesiak-Bielawska [24] argues that teachers should only consider developing own materials as the last resort after exhausting all other possibilities of providing their learners with needs-specific materials.

5. CONCLUSION

This study has achieved its objectives in exploring the feedback on the AW course through the students' perspective, as well as proposing changes that can benefit the course. The method used has helped much in achieving this. However, a combination of qualitative approach can improve the understanding of this study through possible data such as interview, test results and classroom observation. For continuous quality improvement, it is suggested that a course module is developed by instructors as reference for students. Though it is one of the ESP characteristics that the ESP instructors provide learners with the materials catering for their specific needs, many ESP teachers face challenges in designing tailor-made materials, adapting materials originally designed for other purposes or editing published materials related to a given subject area (Lesiak-Bielawska, 24). More importantly, ESP instructors need to have experiences in the targeted communicative competence. By having more experiences in the target setting, these instructors will be more efficient in defining the course objectives and selecting appropriate materials for it. In order to achieve that, trainings and instructor-to-instructor sharing session between ESP and technical content instructor can be conducted. For future study, it is also recommended that the study includes other respondents such as student alumni, as well as industrial and engineering faculty representatives to share their feedback on the AW course.

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