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Research Article

Students' Soft Skills Level Through Involvement in Club Activities

Azura Ishak [a*], Siti Fadzilah Mat Noor [b], Amirah Ismail [c], Zurina Muda [d]

[a,b,c,d] Faculty of Information Science and Technology

[a]azura@ukm.edu.my,[b]fadzilah@ukm.edu.my, [c]amirahismail@ukm.edu.my, [d]zurina@ukm.edu.my

Abstract

The main purpose of this study is to identify the levels of soft skills and compare the differences in the levels of soft skills before and after they are acquired by students during club activities in higher education institutions. This study used the soft skills instrument by Malaysian Institutions of Higher Learning as the primary data collection method. The study sample consists of 57 members of the Interactive Multimedia Club (IMeC) from the Faculty of Technology and Computer Science, Universiti Kebangsaan Malaysia (UKM). The association conducted UKM 2020 Computer Camp activities through the Animation and Graphic Design Program. The reliability of the instrument was tested using Cronbach's alpha value. The descriptive and inferential statistical analysis using the paired t-test was used for various types of pre- and post-users' soft skills from IMeC for a large-scale activity in UKM Computer Camp 2020. The results show an increase in students' soft skills after conducting the UKM Computer Camp 2020 activities. The implications of this study show the students' involvement in conducting club activities and their improvement in soft skills which are in line with the needs of employers that demand marketable employees.

Keywords: Soft skills, students club, activities, higher education

1. Introduction

The higher education students' soft skills are among the important elements to fulfill the demand of the challenging job market and daily life. The inculcation of students' soft skills is highlighted by the Ministry of Higher Education (MOHE) to launch the Soft Skills Development Module for Malaysian Institutions of Higher Learning that aims to produce quality human capital, competency, and competitiveness at the international level. The soft skills outlined by MOHE in 2016 cover the aspects of personality and team skills [1].

There are seven elements of soft skills that need to be mastered by graduates from higher learning institutions (Figure 1). In terms of personality, the elements of soft skills are critical thinking and problem-solving, entrepreneurship, professional ethics and morals, continuous learning, and information management. In terms of team skills, the elements of soft skills are communication, teamwork, and leadership skills.

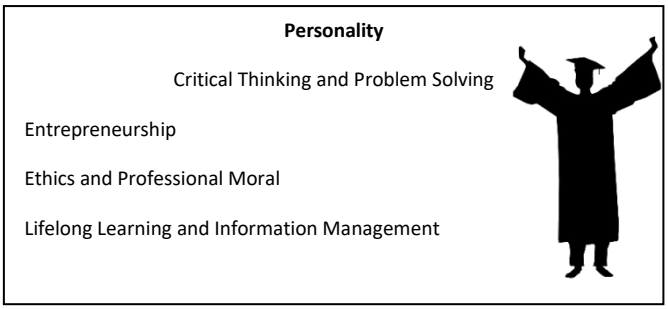

FIGURE 1. Soft Skills for Malaysian Higher Learning Institutions

Thinking skills and problem-solving skills encompass the ability to think critically, creatively, innovatively, analytically, as well as the ability to apply the understanding and knowledge to new and different problems. Entrepreneurship skills comprise the ability to explore opportunities and develop risk awareness, creativity, and innovation in business and employment-related activities. Professional ethics and morals involve the ability to practice high moral standards in professional practice and social interaction. Lifelong learning involves self-reliance learning efforts for the acquisition of new skills and knowledge. For communication skills, students should acquire effective communication in Malay and English in different contexts with different communication participants. Teamwork skills involve the students' ability to work with others from various socio-cultural backgrounds to achieve common goals. A person equipped with leadership skills can practice leadership traits in various activities.

The module has outlined several suitable approaches for higher learning institutions to inculcate soft skills among students. The approaches highlighted for soft skills development can be implemented by the teaching and learning of formal activities, support programs, and on-campus life activities.

2. Literature Review

Soft skills should be acquired by university graduates to fulfill and support job marketability. However, the lack of soft skills has contributed to the unreliability of graduates [2], [3]. The low level of soft skills among local university graduates in Malaysia has resulted in unemployment in the competitive job market despite their good academic achievement [4]. The Graduate Tracer Study Report from the Ministry of Education (MOE) revealed 298,551 graduates had graduated in 2019, but a total of 41,200 or 13.8% have not found a job [5]. Hence, higher learning institutions play an important role in assisting and developing students' skills for their career. Graduates' soft skills are indispensable factors in producing quality human capital resources for the current industry because the natural skills act as a complement to theoretical and technical knowledge [6].

Soft skills are not simply a necessity for graduates but are considered a priority for current employers [7]. This is because employers want versatile workers with knowledge and skills in addition to work experience [8], [9]. Hence, the students' involvement in activities through clubs or associations is important to improve their soft skills. Student organization activities provide experience in soft skills development that provides the opportunity for students to work on real projects [10], [11]. Nevertheless, the planning for students' development activities should be well organized and monitored by faculty and staff advisors to accomplish the implementation of soft skills among students.

3. Problem Statement

The involvement of students in on-campus activities can help them to improve their soft skills. The activities in clubs or student associations are considered informal education that equipped students for a challenging career and real life. However, there is a lack of studies on the extent of student involvement in on-campus activities regarding the application of soft skills. Therefore, this study aims to determine students' levels of soft skills before and after their involvement in club activities.

4. Objective

There are two specific research objectives:

1. Identify the level of each soft skill construct and the overall soft skills before and after students' involvement in UKM 2020 Computer Camp activities through the Animation and Graphic Design Program.

2. Identify the level of differences for each soft skill construct and the overall soft skills before and after students' involvement in UKM 2020 Computer Camp activities through the Animation and Graphic Design Program.

5. Methodology

This study used descriptive analysis to identify the levels of soft skills and inference analysis to identify the differences in the levels of soft skills before and after on-campus activities.

Participants

The sample for this study was 57 members of IMeC from the Faculty of Information Technology and Science (FTSM), UKM. The sample fulfilled the minimum size for an inference test which is 30 people [12]. The respondents were selected using the purposive sampling method in selecting subjects that have certain characteristics based on the knowledge and specific purpose of the study [13]. The sample included students who were involved in the annual activities organized by IMeC, which was under the UKM Computer Camp 2020 Program.

Instrument

The soft skills of students were measured using a soft skills instrument adapted by MOHE in the Soft Skills Development Module for Malaysian Institutions of Higher Learning [1]. Table 1 shows seven constructs of soft skills. Each item contains the five-point Likert scales starting from the value of one which represents strongly disagree to five which represents strongly agree. There are eight items for communication, five items for critical thinking and problem-solving, three items for teamwork, three items for lifelong learning and information management, four items for entrepreneurship, three items for professional ethics and moral, and four items for leadership skills

TABLE 1. Number of Items per Soft Skills

Constructs	Number of Items
Communication	8
Critical Thinking and Problem Solving	5
Teamwork	3
Lifelong Learning and Information Management	3
Entrepreneurship	4
Professional Ethics and Morals	3
Leadership	4
Overall	30

Each construct was tested for reliability using Cronbach's alpha coefficient analysis as shown in Table 2. The reliability tests show that each construct in the questionnaire had a high reliability of above 0.8. This result indicates that the instrument had a high reliability because the Cronbach's alpha value exceeded 0.7 that fulfilled the minimum criteria for consistency of an instrument [14].

TABLE 2. Reliability of Soft Skills

Constructs	Reliability
Communication	0.948
Critical Thinking and Problem Solving	0.931
Teamwork	0.912
Lifelong Learning and Information Management	0.919
Entrepreneurship	0.935
Professional Ethics and Morals	0.949
Leadership	0.964
Overall	0.984

The normality of data distribution was also tested as shown in Table 3 using skewness and kurtosis statistical tests as a condition of inferential statistical test analysis [15], [16] such as paired *t*-tests. The results of the analysis show that both skewness and kurtosis values were in the range of -1.96 to 1.96; all constructs were normally distributed as stated in the reference [15], [16].

TABLE 3. The Normality Distribution of Soft Skills

Constructs	Skewness	Kurtosis
Communication	-0.11	-0.41
Critical Thinking and Problem Solving	-0.26	0.10
Teamwork	-0.28	-0.49
Lifelong Learning and Information Management	0.05	-0.64
Entrepreneurship	0.01	-0.08
Professional Ethics and Morals	-0.05	-0.69
Leadership	-0.11	-0.58
Overall	-0.11	-0.38

Procedure

Two sets pre and post of soft skills questionnaires were given to measure the levels and differences of soft skills before and after the students implemented the activity by IMeC and the FTSM namely UKM Computer Camp 2020 through the Animation and Graphic Design Workshop Program. Both programs provide training to participants using Adobe Illustrator for the Graphic Workshop and Unity Software for Animation Workshop. The target participants of this program consist of various age groups from the age of 11 years old to the adult's stage. The fee of each program is RM30 per participant, and there were 47 participants in Graphic Design and 83 participants for the Animation Workshop.

There were 25 committee members that managed the programs for graphic and 32 committee members involved in animation. Two IMeC advisors monitored the program for smooth implementation of the program. The program planning period was within four months (September to December 2020), while the implementation of the program was for one day from 30 to 31 December 2020 from 9 am to 5 pm for both programs: graphic design and animation (see Table 4).

TABLE 4. Program's Descriptions

UKM Computing Camp 2020	Descriptions
Program: Graphic Design Workshop Organizer: Interactive Multimedia Club (IMeC) and Faculty of Information Science and Technology UKM Committee Members: 25 Advisors: 2 Planning: September–December 2020	Date: 30 December 2020 Time: 9am–5pm Platform: Google Meet Software: Adobe Illustrator Fee: RM30 Participants: 47
Program: Animation Workshop Organizer: Interactive Multimedia Club (IMeC) and Faculty of Information Science and Technology, UKM Committee Members: 32 Advisors: 2 Planning: September–December 2020	Date: 31 December 2020 Time: 9am–5pm Platform: Google Meet Software: Unity Fee: RM30 Participants: 83

The implementation of the program involved 57 committees from IMeC members. They were given the tasks to plan and implement both programs, namely graphic and animation (see Table 5). Students were expected to apply various soft skills throughout the planning and implementation of the program. They had to discuss with committee members and advisors, contact participants, manage the activity, solve technical problems, make a decision, and cooperate with the team. They also had to be involved in the training of trainers to gain new knowledge and skills regarding graphic and animation software, manage and update the information to participants, promote activity, look for program participants to generate income, conduct training, and initiate the ceremony. They had to be responsible for their job scope and perform personal coaching during the workshop training.

TABLE 5. Tasks Based on Soft Skills

Soft Skills	Tasks
Communication	• Discussing with committee members and advisors • Contacting participants
Thinking Skills and problem-solving	• Planning activity • Solving technical problem • Decision maker
Teamwork	• Working together with committee members
Lifelong Learning and Information Management	• Involving in training for trainers to gain new knowledge and skills on graphic and animation software • Managing and updating information to participants
Entrepreneurship	• Promoting the event to the public • Looking for program participants to generate income
Professional Ethics and Morals	• Conducting training • Conducting opening ceremony of the event • Responsibility on job scopes
Leadership	• Personal coaching with participants

Data Analysis

The data were analyzed using descriptive and inferential analyses. This study used SPSS software version 25.0. Descriptive statistical analysis was used to obtain the mean score value in determining the levels of soft skills as shown in Table 4. According to the reference [17], the mean score ranges from 1.00 to 2.33 is considered low level, 2.34 to 3.66 is medium level, and 3.67 to 5.00 is high level as shown in Table 6. Inferential statistical analysis used paired *t*-test to identify the comparisons of soft skills before and after the program's implementation.

TABLE 6. Level of Soft Skills According to Mean Score

Mean Score	Level of Soft Skills
1.00 – 2.33	Low
2.34 – 3.66	Moderate
3.67 – 5.00	High

Source: Jamil (2002)

6. Results

The results of this study are used to achieve the research objective of identifying the levels and differences of each soft skill construct and overall soft skills before and after the UKM Computer Camp 2020 through the Animation and Graphic Design Program.

Soft Skills Level

To answer the first objective, the results of the descriptive analysis show that the levels of communication constructs for each item were medium (before) and high (after) for the UKM Computer Camp 2020 activities (see Table 7). The results of the study are the constructs of critical thinking and problem-solving skills, teamwork skills, lifelong learning and information management, entrepreneurship skills, professional ethics and morals, and leadership skills. The results of the overall study for the soft skills constructs were at a moderate level before the UKM Computer Camp 2020 activities through the Animation and Graphic Design Programs, and they obtained a high level after conducting the activities (see Table 8).

TABLE 7. Mean and Levels of Soft Skills

Soft Skills	Mean and Levels (Before)	Mean and Levels (After)
Communication		
1. Ability to orally communicate ideas clearly, effectively, and confidently	3.21 (Moderate)	4.35 (High)
2. Ability to practice active listening skills and provide feedback	3.40 (Moderate)	4.44 (High)
3. Ability to make a clear presentation with confidence in accordance with the level of the listener	3.09 (Moderate)	4.21 (High)
4. Ability to use technology in presentation	3.33 (Moderate)	4.49 (High)
5. Ability to negotiate and reach an agreement	3.26 (Moderate)	4.40 (High)
6. Ability to communicate with speakers of different cultures	3.42 (Moderate)	4.26 (High)
7. Ability to develop individual communication skills	3.19 (Moderate)	4.32 (High)
8. Ability to use non-verbal skills	3.25 (Moderate)	4.28 (High)
Critical Thinking and Problem Solving	3.07 (Moderate)	4.30 (High)
1. Ability to identify and analyze problems in complex and vague situations and make justified assessments	3.23 (Moderate)	4.32 (High)
2. Ability to develop and improve thinking skills such as explaining, analyzing, and evaluating discussions	3.21 (Moderate)	4.30 (High)
3. Ability to find alternative ideas and solutions	3.07 (Moderate)	4.05 (High)
4. Ability to think 'outside the box'	3.30 (Moderate)	4.46 (High)
5. Ability to understand and adapt to the new community culture and work environment	3.47 (Moderate)	4.58 (High)
Teamwork	3.49 (Moderate)	4.49 (High)
1. Ability to build good relationships, interact with others, and work effectively with them to achieve the same objectives	3.65	4.61
2. Ability to understand and take on alternate roles between group leaders and group members		
3. Ability to recognize and respect the attitudes, behaviors, and beliefs of others		
Lifelong Learning and Information Management		

1. Ability to find and manage related information from various sources	(Moderate)	(High)
2. Ability to accept new ideas and ability for autonomous learning	3.47	4.49
3. Ability to develop curiosity and thirst for knowledge	(Moderate)	(High)
	3.39	4.42
Entrepreneurship	(Moderate)	(High)
1. Skills to identify business opportunities	3.47	4.49
2. Ability to formulate business planning	(Moderate)	(High)
3. Ability to build, explore, and seize business/employment opportunities	3.16	4.11
4. Ability to work alone	(Moderate)	(High)
Professional Ethics and Morals	2.98	3.88
1. Ability to understand the	(Moderate)	(High)
economic, environmental, and	3.04	4.00
socio-cultural impacts of professional practice	(Moderate)	(High)
2. Ability to analyze and make decisions in solving ethical related problems	3.21	4.11
3. Ability to practice ethical attitudes, while having a sense of responsibility towards society	(Moderate)	(High)
	3.16	4.18
Leadership	(Moderate)	(High)
1. Knowledge of basic theories of leadership	3.32	4.39
2. Ability to lead the project	(Moderate)	(High)
3. Ability to understand and take on alternate roles between team leaders and team members	3.42	4.47
4. Ability to supervise team members	(Moderate)	(High)
	3.30	4.28
	(Moderate)	(High)
	3.25	4.14
	(Moderate)	(High)
	3.35	4.40
	(Moderate)	(High)
	3.37	4.33
	(Moderate)	(High)

TABLE 8. Mean and Levels of Overall Soft Skills

Soft Skills	Mean and Levels (Before)	Mean and Levels (After)
Communication	3.27 (Moderate)	4.34 (High)
Critical Thinking and Problem Solving	3.18 (Moderate)	4.28 (High)
Teamwork	3.54 (Moderate)	4.56 (High)
Lifelong Learning and Information Management	3.44 (Moderate)	4.47 (High)
Entrepreneurship	3.10 (Moderate)	4.02 (High)
Professional Ethics and Morals	3.30 (Moderate)	4.35 (High)
Leadership	3.32 (Moderate)	4.29 High)

7. Comparing Soft Skills Before and After the Activity

To answer the second objective, this study analyzed the differences in soft skills before and after the UKM Computer Camp 2020 activities through the Animation and Graphic Design Programs using paired *t*-test. Table 9 shows the significant differences for each soft skill construct before and after the UKM Computer Camp 2020 activities through the Animation and Graphic Design Program. The communication's construct was significantly

different (t = - 11.65, df = 56, p <0.05) where it was high after handling the activities (M = 4.34, SD = 0.51) compared to before the activities (M = 3.27, SD = 0.84).

For the construct of critical thinking and problem solving, there was significantly different (t = -13.14, df = 56, p <0.05) where it was high after conducting the activities (M = 4.28, SD = 0.56) than before handling the activity (M = 3.18, SD = 0.83). For the teamwork construct, there was also significantly different (t = -10.60, df = 56, p <0.05) where it was higher after handling the activities (M = 4.56, SD = 0.55) than before handling the activity (M = 3.54, SD = 0.87). The lifelong learning and information management constructs, was significantly different (t = -11.11, df = 56, p <0.05) where it was high after conducting the activities (M = 4.47, SD = 0.54) than before handling the activity (M = 3.44, SD = 0.83).

Next, the entrepreneurship construct, there was significantly different (t = -8.70, df = 56, p <0.05) where it was higher after conducting the activities (M = 4.02, SD = 0.75) than before student involvement in handling activities (M = 3.10, SD = 0.96). For the constructs of professional ethics and morals, there was also significantly different (t = -10.62, df = 56, p <0.05) where it was high after conducting the activities (M = 4.35, SD = 0.57) than before handling the activities (M = 3.30, SD = 0.95). Finally, the leadership construct's was significantly different (t = -10.05, df = 56, p <0.05) where it was high after handling the activities (M = 4.29, SD = 0.64) than before handling the activity (M = 3.32, SD = 0.99).

TABLE 9. Soft Skills Before and After the Activity

Soft Skills	N	Mean (M)	Standard Deviation (SD)	*t*-value	*df*	*p*
Communication						
Before	57	3.27	0.84	-11.65	56	0.00
After	57	4.34	0.51			
Critical Thinking and Problem Solving						
Before	57	3.18	0.83	-13.14	56	0.00
After	57	4.28	0.56			
Teamwork						
Before	57	3.54	0.87	-10.60	56	0.00
After	57	4.56	0.55			
Lifelong Learning and Information Management						
Before	57	3.44	0.83	-11.11	56	0.00
After	57	4.47	0.54			
Entrepreneurship						
Before	57	3.10	0.96	-8.70	56	0.00
After	57	4.02	0.75			
Ethics and Professional Moral						
Before	57	3.30	0.95	-10.62	56	0.00
After	57	4.35	0.57			
Leadership						
Before	57	3.32	0.99	-10.05	56	0.00
After	57	4.29	0.64			

The result also shows that there was significantly different in overall soft skills before and after the involvement of students in conducting the UKM Computer Camp 2020 activities through the Animation and Graphic Design Program (t = -11.81, df = 56, p <0.05) as shown in Table 10. The overall soft skills after students' involvement in activities were higher (M = 4.32, SD = 0.52) than before handling the activities (M = 3.28, SD = 0.83). The involvement of students in the UKM 2020 Computer Camp activities through Animation and Graphic Design Program can improve the students' soft skills.

TABLE 10. Overall Soft Skills Before and After the Activity

Soft Skills	N	Mean (M)	Standard Deviation (SD)	*t*-value	*df*	*p*
Before	57	3.28	0.83	-11.81	56	0.00
After	57	4.32	0.52			

8. Conclusion

The involvement of students in conducting on-campus activities is important to improve their soft skills. This is because conducting the activity and ensuring its productivity and success require the students to become truthful and responsible. They need to apply various soft skills as outlined by the MOHE such as communication, critical thinking and problem-solving, teamwork, lifelong learning and information management, entrepreneurship, professional ethics and morals, and leadership skills; they have to ensure that the event is carried out smoothly.

The active involvement of students in on-campus activities in accomplishing the goal of higher education graduates can improve their soft skills. Thus, the activity can produce graduates with better quality, competency, competitiveness, and resilience in facing the challenges of the real world. Hence, the high workability for higher education graduates can be accomplished and comply with the demands of current employers..

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AUTHOR'S PROFILE

Azura Ishak (EdD, Universiti Kebangsaan Malasyia) was appointed as an IT instructor in 2004 at the Faculty of Information Technology and Science (FTSM), Universiti Kebangsaan Malaysia (UKM). She is a registered Technologist under the Malaysia Board of Technologists since 2019. She was also appointed as the Head of Advisor of IMeC at FTSM UKM and she is interested in students' soft skills development through their involvement in club activities. Areas of research are

instructional design, educational technology, multimedia applications in education, and statistics education. Her research contributions in the field of expertise for the last three years are as follows: i) develop and copyright two learning modules for database and statistics and one framework model of students' soft skills development, ii) participated in six innovation competitions regarding the development of learning materials (three gold, three silver), iii) publish three journals with Scopus indexed as the lead author regarding the design of learning materials (2018–2020), and iv) appointed as a research grant leader for the community transformation with the project code of TT-2020-019.

Siti Fadzilah Mat Noor (PhD, Universiti Teknologi Malaysia) is a senior lecturer and a researcher at Learning Technology and Human-Computer Interaction Research Lab Centre for Software Technology and Management, Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia (UKM). Her research interests encompass Multimedia Application and Learning Technology. She has published 5 articles in High Impact Journals (WOS), and 17 articles in Scopus indexed journals. She has also presented 17 papers at local and international conferences and published 14 chapters in the book. She actively leads several research grants at the university and national level. She currently leads a fundamental research grants scheme (FRGS) that is expected to complete in 2022. She supervises 10 PhD, 13 Master and more than 10 undergraduate students. She has won 4 innovation and teaching quality award. She is a registered Technologist under the Malaysia Board of Technologists since 2018.

Amirah Ismail, (Ph.D, Warwick) is a Senior Lecturer in the Center for Software Technology and Management (SOFTAM), Universiti Kebangsaan Malaysia (UKM) since 2010. Previously she was a Lecturer (2000-2009) and a tutor (1997-1999). She specializes in Multimedia Technology and Multimedia Information Retrieval. Her current research interests are in Serious Gaming for education, Image Retrieval System, Educational Technology, HCT and Public Health domain. She is also active in community works and programs, especially those involving students' development programs. She is the current Advisor for Interactive Multimedia Club (IMeC) SiG. She has been one of the active and prominent members for an NGO , WAFIQ (The International Women's Alliance for Family Institution and Quality Education). Amirah has a life membership to the PECAMP (Society of Information Retrieval @ Knowledge Management Malaysia). She is also one of the members for IEEE Computer Society to date. She was also the fellow member of The Tun Fatimah Hashim Women Leadership in UKM (PKWTFH) 2015-2017. Amirah was invited and referred to by industrial company, government ministry and agency and other universities at national level. She has been invited and appointed by the Malaysia Hon Minister of Education as the Member for the Malaysian Academic Association Congress (MAAC) in 2018 to present. She has also been invited and appointed as the Research Member for Health and Environment Cluster by Yayasan Dakwah Islamiah Malaysia (YADIM) in 2019-current. She has received 21 internal and external grants such as FRGS, ETP, GGP, DPP, PTS, etc. totaling RM1,241,600.00 million. As a main researcher for 3 research grants (GGP, GGPM and FRGS), she has received RM96,400.00 for research works related to Multimedia Information Retrieval and eLearning. She is also the corresponding author for many publications. From the SCOPUS database, she has 48 publications with 168 citations (information from main and secondary documents) with 7 H-index. From Google Scholar, she has 378 citations with 10 H-index and i10-index. Her achievements so far have received several awards from 2000 until now- FTSM Excellence Teacher in 2013, 2014, 2015, 2016, 2017, 2018 and 2019. Amirah received a silver award as the 1st runner-up and 2 bronze awards during the KNovasi UKM 2020. She also received a silver award during the KNovasi UKM 2018 and received a bronze award as during the KNovasi UKM 2019. She received the UKM 20 Years' Service Award in year 2018.

Zurina Muda (Ph.D, Southampton) is a Senior Lecturer in Center for Software Technology & Management (SOFTAM) at the Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia (UKM). Currently appointed as SOFTAM Coordinator of Industry and Community Partnerships (HEJIM for Hal Ehwal Jaringan Industri dan Masyarakat) and an advisor for Interactive Multimedia Club (IMeC), one of the student clubs at FTSM UKM; and actively involved in various programs with students development and linkage with the industries and communities. As a principal researcher in Games Lab, her area of interest and expertise are serious games design, animation/interactive multimedia, educational/online learning and technology, social interaction and image processing. She leads five research grants and co-researchers in more than twenty various research grants. Published four books, nine chapters in books, fourteen WOS/SCOPUS journals and two copyrights. Awarded UKM Excellent service

awards in 2014 and 2016; UKM Industrial Engagement Award in 2014; UKM Special Quality Award 2003; a bronze medal in ITSIM03 Seminar Research Exhibition; the first prize in poster exhibition, two bronze and four silver medals in Teaching and Learning Competition; and listed as top 5 in APICTA awards. Recognized as Master Certification of Women Leadership; member of a professional body of ACM Digital Library; a life member of Persatuan Capaian Maklumat dan Pengurusan Pengetahuan (PECAMP); and PERMATA Mentorship members. Actively involved with the community in education, humanitarian mission and volunteerism in the current issues related to teenagers, youth and women development, empowerment and leadership through community engagement as the Vice President 6: Women and Family Development section in NGO HALUAN. Appointed as MQA panel and assessor, UKM Auditor panels for undergraduate and postgraduate studies, Academic panel of Kolej Teknologi Darulnaim Cawangan Pengkalan Chepa (KTDPC) and Board of Directors of Kolej Teknologi Darulnaim Cawangan Kuala Lumpur (KTDKL).