

# Conceptualization of A Leadership Learning Model for Medical Curriculum: Mix Approaches, Literature Review & Qualitative Case Study

## *Konsepsualisasi Model Pembelajaran Kepimpinan untuk Kurikulum Perubatan: Campuran Pendekatan, Kajian Literatur & Kajian Kes Kualitatif*

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**Abstract:** Although there is a growing interest in research about learning leadership skills, brief details on the medical undergraduate students' learning experience pertaining to the skills seems to be lacking. This issue raises the question: How do Malaysian medical undergraduate students learn their leadership skills? Thus, this study aims to explore learning experiences of the leadership skills among medical undergraduate students in Malaysia, produce a leadership learning model and present the components of the model. Thus, action research focusing on a reflection stage has been conducted. A literature review approach supports with a case study design was adopted in which responses from 91 medical undergraduate students were randomly selected. Students' responses on an online platform were analysed using framework analysis. Three components for the model were found; (1) content determination, (2) design and delivery of content, and (3) significance of the learning design. The findings led to the creation of a model that presented the components that are benefit for designing learning for students' leadership skills. The model adds value on a better understanding of the extension of leadership skills development in the medical undergraduate's curriculum. The model may also influence the future development of pedagogies in leadership such as curriculum development in term of designation of course learning outcomes, teaching and learning activities, and students' assessment.

**Keywords:** qualitative model, learning experience, leadership skills, medical undergraduates;

**Abstrak:** Walaupun terdapat minat yang semakin meningkat dalam penyelidikan tentang pembelajaran kemahiran kepimpinan, perincian tentang pengalaman pembelajaran mahasiswa perubatan yang berkaitan dengan kemahiran ini nampaknya kurang. Isu ini menimbulkan persoalan: Adakah mahasiswa perubatan di Malaysia dapat menguasai kemahiran kepimpinan mereka? Justeru, kajian ini bertujuan untuk meneroka pengalaman pembelajaran kemahiran kepimpinan dalam kalangan mahasiswa perubatan di Malaysia, menghasilkan model pembelajaran kepimpinan dengan mengetengahkan beberapa komponen dalam model tersebut. Oleh itu, kajian tindakan yang memfokuskan kepada peringkat refleksi telah dijalankan. Pendekatan kajian literatur telah menyokong reka

bentuk kajian kes yang digunakan di mana respon daripada 91 mahasiswa perubatan dipilih secara rawak. Maklum balas pelajar pada platform dalam talian dianalisis menggunakan analisis rangka kerja. Tiga komponen untuk model ditemui; (1) penentuan kandungan, (2) reka bentuk dan penyampaian kandungan, dan (3) kepentingan reka bentuk pembelajaran. Penemuan ini membawa kepada penciptaan model yang membentangkan komponen yang bermanfaat untuk mereka bentuk pembelajaran khusus untuk kemahiran kepimpinan pelajar. Model ini menambah nilai pada pemahaman yang lebih baik tentang pembangunan kemahiran kepimpinan dalam kurikulum sarjanamuda perubatan. Model ini juga boleh mempengaruhi perkembangan pedagogi dalam kepimpinan seperti pembangunan kurikulum dari segi penetapan hasil pembelajaran kursus, aktiviti pengajaran dan pembelajaran, dan penilaian pelajar.

**Kata kunci:** Model kualitatif, pengalaman pembelajaran, kemahiran kepimpinan, mahasiswa perubatan;

## Introduction

Leadership concept has been widely debated across the globe. Among various leadership styles, the transformational style is particularly prevalent (Fischer & Sitkin, 2023; Khan & Tidman, 2021; Kwan, 2019). This transformational leadership style is characterized by the following key dimensions: idealized influence, intellectual stimulation, and individual considerations.

Leadership learning and development are deliberated based on several fields of knowledge, different educational levels such as elementary school and tertiary school, university and workplace, teaching and learning activities, and assessment. In the learning and development area, leadership implementation is greatly reviewed. It mostly touches on the implementation contexts. The online or digital contexts have become more trending nowadays (Banks et al., 2022; Contreras et al., 2020; Guzmán et al., 2020). The online contexts are divided into informal platforms such as social media, face-to-face or virtual interactions, computational modelling, and leveraging of technology.

In Malaysia, the Malaysian Qualification Framework emphasizes the need for leadership and team skills in students (Sabesan, 2021). Furthermore, higher education also stresses that leadership skills are one of the main learning outcome domains that university students need to achieve (Jusoh, 2021). Thus, one university in Malaysia that has implemented the leadership program is the National Defence University of Malaysia (Lawson et al., 2019). Specific to the medical curriculum, leadership ability is the key area recognized in medical undergraduate and postgraduate educations either in overseas or Malaysia (Chen, 2018; Undergraduate Education Subcommittee, 2019).

In fact, medical professionals urge an individual student to develop skills in leadership for many reasons such as team management, conflict resolution, effective communication and quality of healthcare services. Medical leadership is a vital competency ability that are required in healthcare education. To date, medical malpractice among medical professionals is understood as unacceptable. One of the reasons in this scenario is a lack in the dimension of leadership behaviour, such as engaging with the team and evaluating information. Thus, it is crucial to instil leadership skills among medical students through either formal or informal training approaches.

Furthermore, several programs in undergraduate medical education have their leadership training program, which is unfortunately highly specific towards their own organization's objectives

(Anderson, 2017; Barry et al., 2018; Barry et al., 2019; Grunberg Maet al., 2018; Till et al., 2017). In addition, the existing leadership frameworks developed for medical curricula mostly related to leadership competencies such as the Medical Leadership Competency Framework (NHS III and AoMRC, 2010), The Healthcare Leadership Model (NHS Leadership Academy, 2013), FMLM Leadership and management standards for medical professionals (FMLM, 2016), CanMEDS framework (Frank et al., 2015) and Laboratory Leadership Competency Framework (2019). Thus, general guidance on leadership learning design that can be used by any individual which is regardless of each institution's mission is lacking.

Previous research suggests a lack of comprehensive guidelines to aid readers in understanding how to help undergraduate students develop their leadership skills through their learning experiences. Additionally, the student's learning experiences have not been explored thus far, especially in the context of medical undergraduate students' learning in Malaysian institutions. It is argued that without a clear explanation of the student's learning experience in leadership, the extension of leadership learning and development could not be well understood. The future development of leadership pedagogies may be distorted.

Therefore, the study objective is to focus on the leadership development for medical undergraduate students' learning. The study sought to understand leadership development among medical undergraduate students in Malaysia by exploring the students' leadership learning experiences in previous education programs and producing a model. The model would present the components of learning design on leadership, particularly for medical undergraduate students. The model has the potential to be a general guide towards the development of leadership pedagogies for these students in future.

In the next section, the research methodology is described around the first stage (reflection) of action research. Then, the results are presented and discussed in terms of the two main themes, with examples from the data. The themes are explained in a way that gives an in-depth understanding of the phenomena of the study. Based on the themes, the authors come out with the conceptualization of the learning design components in the synthesized model.

## Literature Review

Reviews show different leadership qualities or competencies. Previous studies described leadership qualities in two different themes: i) human self-development, and ii) human social development. Human self-development mostly cites around the

subthemes of a) knowledge/cognition, b) psychological well-being (motivation, readiness for change), c) attitude, d) characteristics and e) skills (Zeike et al., 2019; Zembat et al., 2020; Zheng, 2019). For human social development, the discussion starts from human perceptions, then it grows into the social organization (academic-based, workplace-based, or corporate governance), until the development of social capital (Latiffi & Zulkiffli, 2021; Martino et al., 2019; Renzulli, 2016; Sebastian et al., 2018). This division brought on some studies to come out with the leadership qualities scores comparison across certain criteria such as gender and culture.

## Method

### *Research Design*

A literature review approach was adopted in this study based on procedure stated in subsection (a) developing initial framework. Results of the exploration of this review then supported by action research to achieve the objective of the study based on the guidelines described by Creswell and Creswell (2017). Based on the recommendations from the literature (31 - 32), this study is helpful in the understanding of the medical students' learning experiences related to leadership. This action research was designed based on the Action Research Model developed by Kemmis and McTaggart (2014). This study was only focused on the reflection stage.

### *Research Informants and Sampling*

The informants are 91 students enrolled in the Year 1 medical undergraduate program, at the Islamic Science University of Malaysia, Negeri Sembilan, Malaysia. They were selected based on the convenient sampling method. The sample size was selected based on the total population of the current Year 1 students and their willingness to participate in the study.

### *Research Procedures*

The study was conducted based on the procedures (a) to (e).

#### a) Developing the Initial Framework

A systematic literature review was conducted to produce an initial framework for the study. The literature was explored to determine relevant past studies. The authors used the keywords, "leadership", "qualitative", "model", "training", "students' development" learning experience", and "undergraduates", to search for the related references. The abstract was analyzed prior to the whole pages of an article. Apart from the past studies, theories related to leadership also have been explored. Based on the

exploration, the initial themes that emerged helped the authors to develop the initial framework.

#### b) Conducting a Qualitative Approach

Based on the model in Diagram 1, the study only emphasized the reflection stage. In this stage, the researchers need to understand in-depth the student's learning experiences related to leadership. So, a qualitative approach has been implemented as recommended by Creswell and Creswell (2017). The study used a mixture of closed and open-ended questions in Appendix A. The questions were published on an online platform, Padlet.com. The students were asked to reflect on their learning experiences on leadership, which they needed to answer the questions. Based on the reflection, the authors analysed the students' responses.

#### c) Data Analysis

The students' responses to the questions were analysed using the framework analysis.

#### (d) Fitting The Emerging Themes from The Students' Responses to The Initial Framework

After data analysis, the emerging themes from the students' responses were fit into the initial framework becoming a fitted framework.

#### (e) Developing a Model Based on Authors' Conceptualization

After fitting, the initial themes were revised based on the consensus among authors. The fitted framework was then sequenced to the study model.

### *Validity Of the Study*

The study used a peer review process to ensure the validity. In the first meeting, the team members discussed the emerging themes in the initial framework. Then, questions posted on the online platform were discussed in terms of their alignment with the study objective. The ability of the questions to gain in-depth responses from the informants also has been discussed. At the last stage of the peer review process, the team members refined the emerging themes. The themes from the initial framework matched up with the themes that arose from the students' responses. The fitted framework is then used to conceptualise the learning model.

Furthermore, respondent validation also has been done by double checking with the informants regarding their responses.

## Results

### *The Initial Framework*

Table 1 shows the initial framework developed from the literature review. There are two initial themes.

The themes were coded with the following codes: (1a) leadership theories and (1b) leadership learning design. The leadership theories consist of subthemes including Transactional leadership, Transformational leadership, Situational leadership, Servant leadership, and Laissez-

Faire leadership. Meanwhile, leadership learning design encompasses the Rationale of the learning design, Content (leadership qualities), Types of learning experience, Teaching and learning activities, and Experience time.

Table 1. The Initial framework.

Themes	Sub-themes	Dimensions	Sub - dimensions
1a: Learning theories	1a. i: Transactional leadership		
	1a.ii: Transformational leadership		
	1a.iii: Situational leadership		
	1a.iv: Servant leadership		
	1a.v: Laissez-Faire leadership		
1b: Learning design	1b.i: Rationale of the learning design		
	1b.ii: Content (leadership qualities)	Leadership cognitions (perceptions, thoughts and beliefs)	
		Motivation	
		Characters	
		Competency	
	1b.iii: Types of learning experience	Formal	
		Informal	
	1b.iv: Teaching and learning activities	Offline interactions	Subject based
			Specific module
			Specific training program
		Online interactions	Social media
			Face to face
			Visual
1b.v: Experience time	School		
	Pre-university study		
	University study		
	Workplace		

*Emerging Themes from The Students’ Responses*

Table 2 and Table 3 show two emerging themes based on students’ responses. The themes were coded

as (2a) the student's learning experiences and (2b) the contribution of the learning experiences towards the students’ leadership development.

Table 2. The emerging themes.

<b>Theme 2a: Students’ learning experiences</b>		
<b>Subtheme 2a.i: Types of learning experience</b>		
Formal learning	Nonformal learning	Accidental learning
I have learnt how to organize an annual counseling program for form 1 in my school where the facilitators has to discuss activities for the participants and guiding them throughout the programme. (R10)	<ul style="list-style-type: none"> <li>- Sports (R3)</li> <li>- Role in schools</li> <li>- Became school prefect /exco</li> <li>- Managing tasks during school programs &amp; engaging in volunteer program</li> <li>- halaqa</li> </ul>	<ul style="list-style-type: none"> <li>- Common sense</li> <li>- inspiration for family members and fellow friends. (R13)</li> </ul>
<b>Subtheme 2a.ii: Experience time</b>		
Primary school (R4)	- secondary school (R1, R2, R6)	- Foundation/preuniversity (R3)

Subtheme 2a.iii: Learning activities		
Offline interactions	Specific programs	leadership camp, annual counseling program
	Extracurricular activities	sports, school's club/society, students' exchange programme, halaqa etc
	community service	

Theme 2b: Contribution of the learning experiences towards the students' leadership development.							
Dealing with people's /Cooperation	Decision making	Respect others	Problem solving	Work delegation/task completion	Communication skills	Build confident	Personal well being
<p>R1 Dealing with people's opinions R2- confident to talk and know how to convince others.</p> <p>R3- spirit of cooperation with each other is very important because it is the starting point for the success of any work</p> <p>R5 - we always need to work together to speed up our task like folding clothes.</p> <p>R6- I learn how to manage a team; felt the togetherness within teammates</p> <p>R7- How significance is a teamwork especially during crucial time. I also learned that each and every member is important and not to left anyone behind.</p> <p>R8 - how to be brave to confront people and how to accept others' opinion because teamwork need consent of others.</p> <p>R9- i learnt how to have a good teamwork skills</p>	<p>R1 be responsible for whatever decisions that we made. work guarantees the completion of a task.</p>	<p>R2 - a leader should respect others opinion</p> <p>R4 - learnt to respect other's thinking.</p> <p>R9 - always respect to others' opinion.</p>	<p>R2-able to solve problems</p>	<p>R3- I learn that the leader is the starting point for the beginning of a task while group</p> <p>R5 - Yes, I do agree with that because from teaching and learning session, we can improve ourselves by sharing an experience with others.</p> <p>R6 - how to separate the works systematically</p> <p>R7- to facilitate the group in completing tasks.</p>	<p>R6 - I also learn how to communicate well</p> <p>R9- improved my communication skills a lot.</p> <p>R12 - how to deliver informations and instructions in a good way</p>	<p>R8 - how to be more confident</p>	<p>Yes. I think the teaching sessions are very suitable as they <b>included not only academic values but also physically, mentally and spiritually</b> where everyone have the chances to improve themselves. (R7)</p>

Theme 2a reflected on the student’s learning experience. Most students claimed that they have learnt the skills. However, one student mentioned that he was still looking forward to learning the skill. Three sub-themes emerged from theme 2a. They were coded into (2a. i) types of learning experience, (2a. ii) experience time, and (2a.iii) learning activities.

For subtheme 2a.i, two types of learning experiences have been constructed: formal and non-formal learning. The students’ feedback on formal learning has been correlated with subtheme 2a. ii, experience time. The students have mentioned that they have learned leadership skills in formal learning starting from primary school, then continuing to secondary school and later in high school and pre-university studies.

Subtheme 2a.iii, various learning activities occurred in formal learning such as leadership camp, annual counselling program, and extracurricular activities (sports, school’s club/society, community service etc.). For non-formal learning, the students learned the skills while having a role in school such as becoming the

school prefect or the school exco. They also learned the skills while managing tasks during school programs (student exchange program) and volunteer programs (fun race). Another activity that has imparted leadership skills in student’s learning is halaqa, a religious gathering. The findings also revealed that the students have experienced accidental learning of leadership skills when need to think about problems using their common sense or when they became the family’s inspirational subject.

Lastly, theme 2b reflected on the contributions of the learning experience towards the students. Findings have revealed that the students gained leadership qualities from joining the learning experiences. The qualities are the ability to deal or cooperate with people’s opinions, decision-making, respecting others, effective communication skills, and confidence in managing a team. In addition, these learning experiences also help them develop good personal well-being.

*Fitting of the Emerging Themes into the Initial Framework*

Table 3. The fitted framework

Themes	Sub-themes	Dimensions	Sub - dimensions	
1a: Leadership theories	1a.i: Transactional leadership			
	1a.ii: Transformational leadership			
	1a.iii: Situational leadership			
	1a.iv: Servant leadership			
	1a.v: Laissez-Faire leadership			
1b: Learning design	1b.i: Rationale of the learning design			
	1b.ii: Content (leadership qualities)	Leadership cognitions (perceptions, thoughts and beliefs)		
		Personal well being	-Build confident -motivation	
		Characters	-Respect others	
		Skills	-Ability to deal with people -Ability to make decision -Ability to solve problem -Ability to delegate task/work -Communication skills	
	1b.iii: Types of learning experience		Formal	School/Institution based
			Informal	School/Institution based Accidental learning
	1b.iv: Learning activities		Offline interactions	Subject based
				Specific module
				Specific training program
				Community service
				Extracurricular activities
			Online interactions	Social media
				Face to face
		Visual		
		Computer modelling		
		Technology leverage		
1b.v: Experience time	School			

		Pre-university study	
		University study	
		Workplace	

Table 3 shows the fitted framework. In the table, findings from the students’ responses merged into the initial framework. The yellow highlights emphasized the re-emergence of similar themes in both the initial framework and students’ responses. The blue highlights stressed the new emerging themes that solely came from the students’ responses, adding value to the overall findings. Table 3 also shows the red highlights which emphasized the details of the themes. The details solely came from the students’ responses, which may help the

readers to understand more about those themes. Theme 2b (contributions of the learning experience towards the students) from the students’ responses in Table 3 was fit under subtheme 2a. iv (leadership qualities) in Table 3. All the themes were coded accordingly. This fitted framework served as a baseline for the model development.

*Developing Model Based on Authors’ Conceptualization*

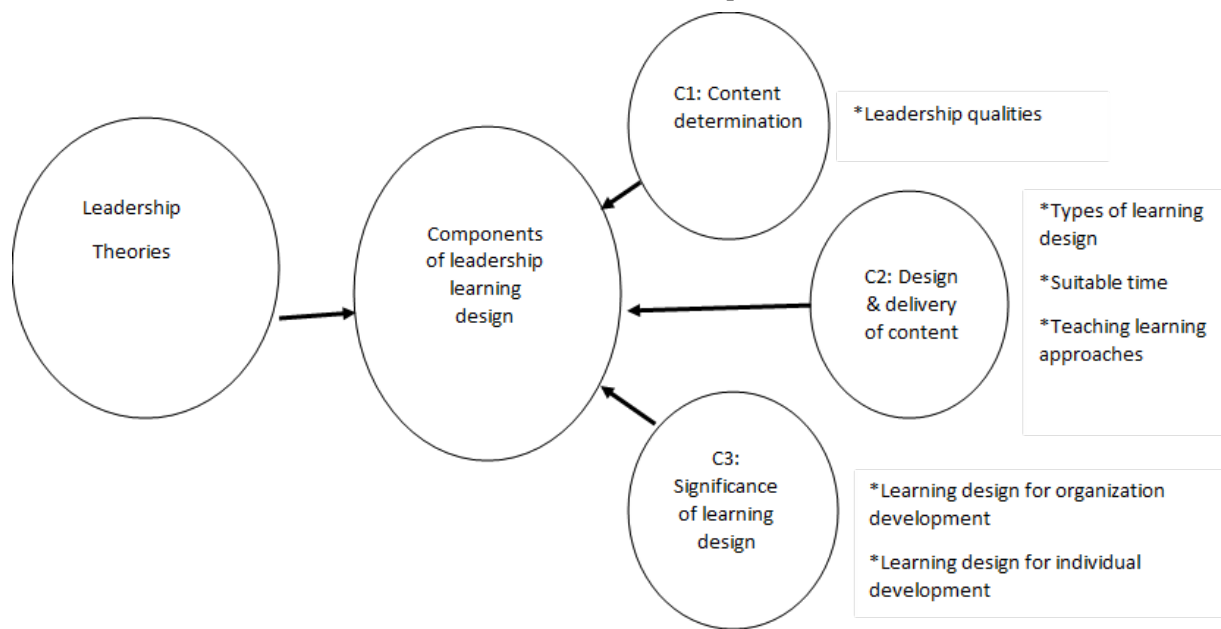


Figure 1: A leadership learning model

A leadership learning design model in Figure 1 was conceptualized based on the fitted framework in Table 4. The model is comprised of three components. The components were coded as (C1) determination of content, (C2) design and delivery of contents, and (C3) significance of learning design. Theme 1a, leadership theories became fundamental towards the leadership learning design, components (C1-C3). So, the association between theories and the components of learning design in the model was shown by an arrow.

Subtheme 1b. ii, leadership quality was helpful in conceptualization component C1. The component was conceptualized as the determination of content in the model. The content here referred to leaders’ qualities such as leadership cognitions, leadership style, leadership skills, leadership characteristics, leadership motivation and leadership attitudes.

Other subthemes of theme 1b, types of learning experience, experience time, and learning activities were raised to the conceptualization of component C2, design and delivery of contents. The C2 component was then divided into types of learning experiences categorized into formal and informal learning experiences. Subtheme 1b.v, experience time also gave an idea towards the development of subcomponent \*suitable time to introduce the content such as school level, university level and, workplace level. Subtheme 1b. iv, learning activities, were then conceptualized into \*teaching and learning approaches, which were categorized into active versus passive approaches and offline versus online interactions.

Theme 1b. i, rational of learning design was helpful for conceptualization of the component C3, significance of learning design. The component was detailed into



\*learning design for organization development and  
\*learning design for individual development.

## Discussion

A single guideline that may help people understand leadership development through learning experiences seems to be lacking, especially in the context of medical undergraduate students. Qualitative and quantitative research on leadership has made important contributions to leadership education globally. However, the medical undergraduates learning in Malaysian institutions are underexplored. Thus, these limitations may impact the understanding of components required for the student's development in leadership. Therefore, the study aimed to cover a greater aspect of leadership, focusing on students' development. Appreciating the relevance of students' insight, in the present study, the medical student's reflections on their learning experiences of leadership have been explored in different learning contexts, i.e. school and university previous programs.

### *Themes That Emerged in The Students' Responses Fit into Themes in The Initial Framework*

From the evaluation, four themes were identified. Two themes from literature: (1a) leadership theories and (1b) leadership learning design, and another two themes from the students' responses, (2a) the student learning experiences, and (2b) the contributions of the learning experience towards the students. The themes bring on the authors' conceptualization regarding the components of the synthesized model, components C1 to C3. This model may help in designing future leadership pedagogies for medical students' leadership development.

At the beginning of the study, the authors produced the initial framework. In the framework, many aspects of leadership education specific to medical undergraduate pedagogy have been explored through literature. "Pedagogy encompasses the performance of teaching together with theories, beliefs, policies, and controversies that inform and shape it" (McNiff & Whitehead, 2022). Leadership pedagogy normally has been discussed around curriculum design, delivery (teaching and learning), and the student's assessment. This study is focused on learning design only with an emphasis on medical undergraduates' leadership development. Based on the literature search, two initial themes are explored by the authors. The themes are (1a) leadership theories and (1b) leadership learning design.

Fundamental towards the leadership learning model is theme 1a, leadership theories. The literature argues on different roles of the theories towards the design of

students' learning in leadership. Transformational leadership, situational leadership, and servant leadership were said to have good impacts towards leadership competencies among the students. However, Laissez-Faire leadership has a contradictory impact. Among those theories, transformational leadership was viewed as a common basis for developing healthcare leaders. In Malaysia, Islamic perspectives were also considered in students' leadership development (Mahadi et al., 2017). The Islamic perspective was quite similar to transformational styles of leadership. Transformational styles help leaders to become role models towards their followers by motivating them to achieve target goals (Chen, 2018; Clyne et al., 2015). However, some agreed that the best practice in instilling leadership education in the medical undergraduate curriculum was the practice should be guided by the mixture of transformational, situational, and servant leadership theories. In line with the framework, the informants in this study responded in a similar way. Some students reflected the transformational leadership by being an inspirational subject or role model to their family members. Learning leadership through this style was said to be part of informal learning (Chen, 2018) which has a linkage to theme 1b, leadership learning design.

The second theme included in the framework was theme 1b leadership learning design. The first subtheme in designing learning for students was a rationale, which was coded as 1b.i in Table 4. Till et al. (2017) have emphasized giving rationale in developing the leadership pedagogy for students such as giving a valid reason for developing such pedagogy and its suitability towards the target students. Then, this rationale may shape the objective of the implementation such as the development of program objectives and learning outcomes. Such objectives may need prior attention.

The next important thing to be considered as part of theme 1b was subtheme 1b. ii, content. The content in this study was referring to leadership qualities. Most literature has mentioned the qualities as leaders' cognitions, leaders' personal skills, behaviors, characters, motivation, or competencies (Barry et al., 2018; Till et al., 2017; Allen et al., 2021; Lerman & Jamerson, 2018). In line with the feedback from informants, they regarded the qualities (subtheme 2a. iv) as the skills of leaders such as dealing or cooperating with other people's opinions, making decisions, solving problems, delegating work to team members and interpersonal communication skills. In addition, the leaders' characteristics such as respecting others and confidence in team management also have been emphasized by the informants. Stroller (2021) has detailed the competencies of a leader needed in healthcare. The leaders needed not only technical skills

in clinical operations; however, such leaders must have diversified non-clinical competencies such as strategic thinking, finance, human resources, and information technology.

The next was subtheme 1b.iii, types of learning experiences. This subtheme also emerged in the students' responses. In theory, there was a difference of belief between the theories of Man's Great theory and behavioural theory pertaining to leadership development. One theory agreed with the born leadership, but another one theory believed in trained leadership (Benmira & Agboola, 2021). The beliefs may inform the choice of pedagogical approaches such as the types of learning experiences. The authors believed that born leadership may arise when the learners receive accidental learning from their own experiences in non-formal learning experiences. On the other hand, some learners may need to be taught formally in a structured learning experience. The literature mostly discussed formal learning experiences such as learning through coaching, action learning such as workplace-based learning, specialized leadership programs, networking such as community service, experiential learning and stand-alone subjects (Lawson et al., 2019; Barry et al., 2018; Barry et al., 2019; Grunberg et al., 2018; Amnah Saayah et al. 2020). In line with the theories and the studies, informants in this study also have diverse leadership learning experiences in the formal type of learning such as leadership camp, annual counselling program, and extracurricular activities (sports, school's club/society, community service). Among those experiences, community service is regarded as a high-impact practice in education (Andreu, 2019). High-impact practices are the most recommended activity for students' leadership development. An added value in the study is accidental learning in which the students perceived the learning experiences through attending a role in school as well as managing tasks for the school programs. In addition, experiences with a religious gathering also have been stressed by the students.

Learning activities, the subtheme 1b. iv. also have been discussed in the literature, as well as emerged in the students' responses. Similar conceptions arose such as pedagogical styles or leadership development methodology (Barry et al., 2018; Stroller, 2021). Some literature discussed the learning experiences around the era of digitalization such as using social media (Mutch, 2021). Some other literature discussed learning experiences in offline mode via face-to-face interactions (Lawson et al., 2019; Anderson et al., 2017; Barry et al., 2018; Barry et al., 2019; Grunberg, et al. 2018; Amnah Saayah et al., 2020). The study also found that most students were having the learning experience through face-to-face interactions.

The final was subtheme 1b.v, experience time. In the literature, most leadership learning experiences occurred during university studies during preclinical modules and clinical postings (Inayat et al., 2023; Smithson et al., 2020; Taylor & Bell, 2017). The subtheme appeared once again in the study findings. However, this study demonstrated different findings in which leadership learning started during school. Then, the learning experiences expanded during university study as well as in the workplace. In addition, accidental learning was also found in the findings.

### *Development of the Learning Model*

Based on the fitted framework, the study developed the leadership learning model. The model would present the leadership learning design components, particularly for medical undergraduate students. There are three components in the model. The first component is (C1) determination of content. The component was conceptualized from subtheme 1b.i from the fitted framework. The content that should be determined was leadership qualities. The second component was C2, which designed the delivery of content. There were another four subcomponents under component C2. Subcomponent type of learning experience which is considered from subtheme 1b.iii. The types of learning experience were conceptualized into two types, "formal and informal learning".

Subcomponent suitable time to introduce the leadership content was conceptualized from subtheme 1b.v. The component was conceptualized into "during school", "during university study", "during workplace", and "accidental learning". The third subcomponent, learning activities, was adapted from the subtheme 1b.v and maintained as it was. It was detailed into "active versus passive activities" and "technology-based interactions/online interactions versus offline interactions". Lastly, component C3, the significance of learning design was initially taken from theme 1b.i. It was divided into two categories, "learning design for individual development" and "learning design for organization development".

### **Conclusion**

In the conclusion, the lack of general guidelines on leadership learning design for medical undergraduates' development became the spark of the study. Thus, a model of leadership learning design specific for medical undergraduates was developed based on a literature search and the undergraduates' perspectives—the model comprised three components of leadership learning design, C1 to C3. The study only focused on one stage of

the action research. However, this is only a preliminary study. The findings of this study were used for the subsequent phases of the action research. Even though the study has a limitation, the model of this study hopefully may help in understanding medical undergraduates' leadership development, particularly the design of leadership pedagogies in medical undergraduates' curricula. The model may serve as a foundation for the students' learning especially at the university level.

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