

# Content Validation of the KhAIR rubric, a Value-Driven Rubric for Health Science Students

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## ABSTRACT

**Background:** As education in Malaysia is becoming more holistic, an accurate, trustworthy, and useful assessment of students' qualities is required to guarantee a fair assessment of students. This study aimed to develop and validate a rubric to evaluate four student value-driven attributes, *Khalifah*, *Amānah*, *Iqra'* and *Rahmatan lil- 'Alamin* (KhAIR), which is highlighted in the International Islamic University Malaysia's Sejahtera Academic Framework. **Methods:** Following the initial rubric construction, content validation was conducted through expert interviews with six subject matter experts and measured using the analysis of content validity index (CVI) and content validity ratio (CVR). **Results:** The final version of the KhAIR rubric includes four main attributes and 16 sub-attributes. Its content validity improved significantly between the pre- and post-discussion sessions with the experts (S-CVI<sub>Relavance</sub>: pre=0.99, post=1.00; S-CVI<sub>Clarity</sub>: pre=0.90, post=0.98; CVR<sub>Essential</sub>: pre=0.90, post=1.00). **Conclusion:** This study highlights the complexity of producing a value-driven rubric that is founded in Islamic teachings and values. Nevertheless, the development of this rubric revealed that it is possible to establish and align institution-specific value-based rubrics in health sciences. Despite showing good content validity, further research is needed to assess its reliability and applicability in the various fields of the health sciences.

## Keywords:

KhAIR Rubric; Rubric Development  
Students' Attributes; Sejahtera  
Academic Framework; Student  
Evaluation

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## INTRODUCTION

Modern education focuses on preparing students and graduates for an increasingly competitive global marketplace, where the demand for interpersonal and cognitive abilities is rising. As the global economy shifts from general labor-driven industries to those powered by technological innovations (Ontario's Global Competencies, 2014), educational system is adapting to meet these new workforce demands. While the importance of these human-centred skills is widely recognized across regional, national, and global educational institutions, a definitive list of specific skills or attributes remains less established. In Malaysia, the National Philosophy of Education emphasizes the importance of developing students who are not only knowledgeable and competent, but also socially, spiritually, emotionally, and physically balanced (MOE, 2019). These attributes are crucial for fulfilling their roles as workforce professionals and responsible Malaysian citizens. The initiation of a high-quality graduate program marks the primary shift in the National Education Blueprint (2015-2025), aiming for continued excellence in Malaysia's higher education system, particularly in addressing graduate employability challenges. The

blueprint outlines six primary graduate attributes: knowledge, leadership and thinking skills, language proficiency, ethics, spirituality, and national identity that are incorporated into all aspects of students' teaching and learning experiences (MOE, 2013). Founded with a focus on incorporating Islamic principles into its academic programmes, the International Islamic University Malaysia (IIUM) has established the Sejahtera Academic Framework (SAF) that is consistent with the aims of the National Education Blueprint. The SAF serves as a guideline for planning, designing, and maintaining high-quality academic programmes to nurture a well-balanced and harmonious student, also known as *Insan Sejahtera* (Borhan et al., 2021). The IIUM's SAF defines *Insan Sejahtera* as an individual who possesses the four main core elements or attributes of *Khalifah*, *Amānah*, *Iqra'* and *Rahmatan lil- 'Alamin* or KhAIR. In Arabic, KhAIR means 'good,' a concept repeatedly emphasized in many Quranic verses, prescribed as a mission for all human beings, including students and graduates (Borhan et al., 2021). These attributes collectively nurture a balanced individual who is ethical (*Amānah*), knowledgeable and reflective (*Iqra'*), responsible for societal and environmental stewardship (*Khalifah*), and driven by a purpose of

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universal mercy (*Rahmatan lil-‘Ālamīn*). The SAF (Borhan et al., 2021) derived these attributes from the Islamic worldview and Quranic principles and aligned it with the University’s Mission and Vision, as well as the objectives of the *Maqāsid Ash-Sharī‘ah*, which focuses on the preservation of faith, life, intellect, lineage, and wealth. These attributes serve as a framework for the holistic development of IIUM graduates, ensuring their readiness to lead and serve in a rapidly changing world while maintaining both spiritual and practical dimensions of human development. The KhAIR attributes are unique as it highlights the importance of tawhidic epistemology which is in harmony with good character instead of isolating each value as a solitary and fundamental skills as seen in the iCGPA rubric (MOHE, 2016) and the AAC & U Value Rubrics (Rodriguez & Fekula, 2019). In Islamic theology, Allah SWT Created all things and has preordained outcomes for all His creations (Quran 25:2), therefore every attribute and circumstances in life must be attributed to Him. The KhAIR attributes serve as ontological markers of human purpose and societal guidance, not only within Islam but as universal moral archetypes. This stands in contrast with “modern” anthropocentrism, where man is autonomous and self-legislating such as the Kantian-humanist view (Minson, 1989). The Islamic paradigm defines man as dependent-yet-dignified, with purpose bound to Allah’s Will.

Table 1 shows the definitions of *Khalīfah*, *Amānah*, *Iqra’* and *Rahmatan lil- ‘Ālamīn*. These definitions clearly show that the list of IIUM graduates’ attributes firmly uphold the tawhīdic principle (Borhan et al., 2021). This principle is unique and not observed in other 21<sup>st</sup> century skills or attribute lists. Nevertheless, IIUM and other education institutions have similar graduate attributes, which can be classified into cognitive, interpersonal, and intrapersonal clusters. Cognitive attributes refer to mental abilities to receive, process, organize, remember and respond to information, which becomes knowledge. These abilities include problem-solving and critical thinking. Interpersonal attributes are abilities to interact and communicate with others, such as teamwork, communication, and social skills. Furthermore, intrapersonal attributes refer to an individual’s internal abilities to manage their emotions, feelings, and thoughts, including self-confidence and time management (Koenig, Council & Council, 2011).

Assessing students’ attributes is critical to educational assessment as it strives to nurture well-rounded individuals. Generally, educational assessment is a process of systematic collection and analysis of empirical data to monitor, evaluate, and improve the student learning process (Erstad, 2010). The assessment of the students’

attributes can be either formative (i.e., throughout the course), summative (i.e., at the end of the course), or both. Cognitive attributes are associated with knowledge and are usually measured using well-established and validated standardized assessments. Non-cognitive attributes, on the other hand, are always measured using self-, peers- or expert ratings rather than standardized assessments (National Research Council, 2012). In addition, other types of assessments, such as portfolios, performance- and situational-based tasks, and criterion- and standard-reference-based tasks, may also be used to assess students’ attributes (Aghazadeh, 2019). Malaysian Qualification Agency recognizes the need for the inclusion of value-based education (VBE) as it has enforced compulsory application of VBE for undergraduate programmes (MQA, 2025)

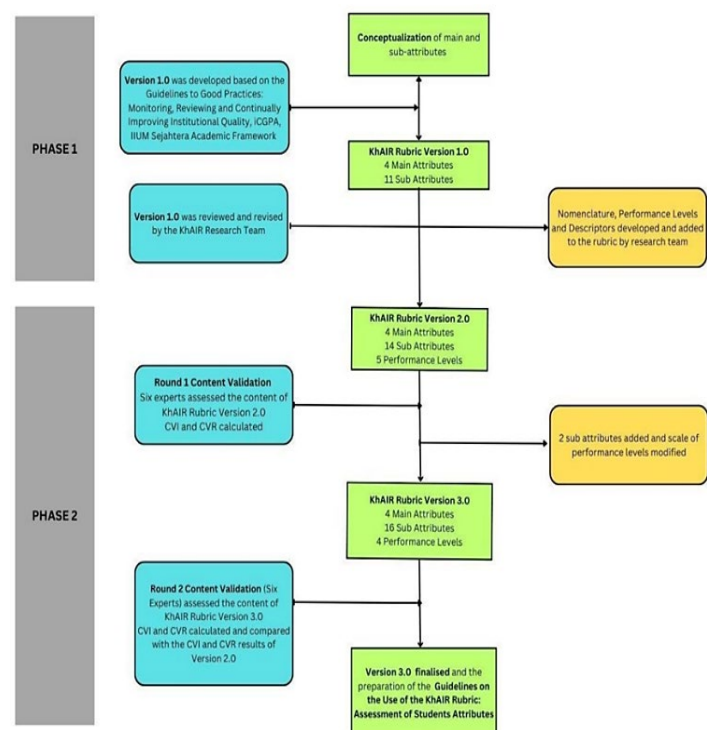
**Table 1:** Definitions of KhAIR by the Sejahtera Academic Framework (Borhan et al., 2021)

KhAIR Attribute	Definition
<b>Khalīfah</b>	A <i>khalīfah</i> ’s role is to lead humankind to the right path of Allah which is <i>al-ṣirāṭ al-mustaqīm</i> as well as to become an exemplar to others. All human beings regardless of their beliefs and religions are appointed as <i>khalīfah</i> . One of the important tasks for <i>khalīfahs</i> to do then is the <i>‘imārat al-kawn</i> (construction of the universe), to administer, manage, develop, and flourish
<b>Amānah</b>	The world is an <i>amānah</i> that Allah has given humankind to be fulfilled, bringing peace and harmony to the world. <i>Amānah</i> is also an adjective to describe our graduates who are ethical, trustworthy and conscientious in executing their responsibilities in any sphere of life.
<b>Iqra’</b>	The pursuit of knowledge in the name of Allah is sacred. The learners who fulfil the <i>amānah</i> of knowledge become scholars, who should be the inheritors of the prophets. <i>Iqra’</i> is not just about being knowledgeable in a specific area of study, but this attribute also pertains to one who expands on the culture of <i>iqra’</i> , spreading knowledge to others, and imparting hikmah wisdom.
<b>Rahmatan lil-‘ālamīn</b>	Essentially, this attribute speaks to the nature of the graduates who affect change and advancement in humanity via the knowledge, wisdom, and skill sets that they have gained. IIUM graduates aim to do good, and will do good, to all people regardless of creed; and to do good for all the worlds - nature, animals and the built environment

Despite its mission and vision of training students towards developing holistic qualities, the IIUM does not have a valid and reliable tool to assess non-cognitive students attributes as stated in the IIUM SAF. This paper aimed to develop and conduct a content validation of a rubric which can be used in both formative and summative assessments to evaluate students' achievement of the KhAIR attributes. The development of standardized rubric is essential in the training of allied health professionals who require set soft skills to deal with patients and other health professionals effectively. While this paper specifically focuses on the content validity of the rubric, subsequent stages of the research examine its reliability and construct validity to provide a comprehensive evaluation of the tool, and is presented in other papers.

## MATERIALS AND METHODS

This study focused on developing and validating the KhAIR rubric through a mixed method with a sequential exploratory design. It was carried out in two phases, between August 2022 and August 2023. Ethical approval was obtained from the IIUM Research Ethics Committee (Human) (IREC 2022-149). Phase 1 involved the qualitative method while the quantitative method was applied in Phase 2. Figure 1 shows the process flow of rubric development.



**Figure 1:** Schematic diagram of the development of the KhAIR rubric from its conceptualization (Phase 1) and the content validation (Phase 2).

## Phase 1: Development of the Rubric to Assess KhAIR

Three key publications were referred to formulate the KhAIR rubric Version 1.0, including the IIUM Sejahtera Academic Framework (Borhan et al., 2021), the Guidelines to Good Practices: Monitoring, Reviewing and Continually Improving Institutional Quality (MQA, 2016)], and the iCGPA (MOE, 2016). The iCGPA is a reference for Malaysian academics when implementing constructive alignment in their teaching and assessment methods to meet course learning outcomes. These documents were used to draw out the relevant KhAIR sub-attributes using four main criteria: relevance, quantifiability, and consistency with the IIUM mission and vision. The sub-attributes of the first version of the rubric were then discussed with academics of the Kulliyyah (faculty) in several sessions to retrieve feedback and discuss possible applications. The research team then developed the KhAIR rubric Version 2.0 by consensus, which comprised the following five elements:

- i. **Evaluation Criteria.** The rubric was composed of 14 criteria for evaluating KhAIR attributes in students' work. For example, 'Teamwork' is defined as the "ability to work synergistically in a team to foster good relationships and working together effectively").
- ii. **Nomenclature.** Each sub-attribute was labelled with a specific name that reflects the evaluation criteria given.
- iii. **Performance Levels.** The rubric adopted five performance levels according to their suitability for each sub-attribute (i.e. 1-Beginning, 2-Developing, 3-Sufficient, 4-Proficient, 5-Exemplary).
- iv. **Performance Level Descriptors.** All performance levels are clearly described and reflect their differences. For example, 'Exemplary' is defined as "Able to foster good relationships and work together effectively with other group members towards goal achievement and beyond expectation").
- v. **Grading Strategy.** The rubric incorporated a quantitative rating for each sub-attribute and performance level, making it possible to form an analytic (sub-attribute by sub-attribute, assigning to each a score between 1 and 5), and holistic (sum of all the scores obtained on all sub-attributes, with a range of 14 to 70) rating of the student's performance in their assessment.

## Phase 2: Validation by the Panel of Experts

Six (6) subject matter experts were recruited to study the content validity of Version 2.0 of the KhAIR rubric. The

subject matter experts were selected based on their knowledge about KhAIR, the IIUM SAF, and their experience in academic assessment methods. Considering these criteria, three professors, two associate professors and one assistant professor specializing in medical education, rubric development and Islamic Studies were recruited across four faculties, with over 15 years of teaching experience and experience in student supervision and assessment methods. The experts were invited via personal interview, phone, or e-mail. After their acceptance, the experts received an introductory letter consisting of research background, objectives, and methodology, informed consent, and a non-disclosure agreement form.

The validation of the rubric involved two rounds: (1) Round 1 - Pre-discussion Validation, and (2) Round 2 – Post-discussion validation. In Round 1 (Pre-discussion Validation), the KhAIR rubric Version 2.0 was e-mailed to the experts with two content validation forms for their written quantitative assessment of the five elements described previously. In the Evaluation Criteria form, the experts were requested to rate each main and sub-attribute, and its descriptors with regards to clarity (“not clear”, “item needs some revision”, very clear), relevance (“not relevant”, “somewhat relevant”, “quite relevant” and “very relevant”) and essential (“essential,” “useful, but not essential,” or “not necessary.”). The experts were also allowed to give written comments and recommendations for improvements regarding the nomenclature, phrasing and terminology used for each evaluation sub-attribute.

In the Performance level and Grading Strategy form, the experts were requested to quantitatively score the clarity of each sub-attribute regarding the labelling of each performance level (1-5), performance level descriptions and suitability of the grading strategy of the rubric. The experts were also allowed to give written comments and recommendations for improvements regarding the nomenclature and phrasing used for each evaluation sub-attribute. Following the experts’ quantitative assessment, they were also invited to a group discussion to allow them to clarify their feedback, express their opinion and suggestions on the rubric with regards to:

- i. The rationale behind their scoring of each main and sub-attribute.
- ii. Whether they agreed with the nomenclature of each main and sub-attribute.
- iii. Their opinion about the definitions of each main and sub-attribute.
- iv. The appropriateness of each sub-attribute to measure the skills necessary under its main attribute.

- v. How would users of the rubric understand the criteria
- vi. What should be rephrased, removed, added or what alternative nomenclature and descriptors may be more relevant or appropriate.
- vii. Any further comments about the rubric overall, including recommendations for improvement.

The research team collated the quantitative and qualitative data into a table organized according to the rubric items. The aim was to revise the rubric and strengthen the validity of the subsequent rubric versions. These recommendations were then considered to create Version 3.0 of the KhAIR rubric. This new version was then sent to the subject matter experts again for Round 2 of content validation (Post-discussion Validation). The two rounds of expert validation were conducted between November 2022 and January 2023 to reach the required consensus level. The sections below describe the process for quantitative analysis first, and then the qualitative analysis is presented. Six subject matter experts participated in the KhAIR rubric content validity. Two rounds of content validations were necessary to achieve suitable validity levels.

### Quantitative Analysis

The content validity analysis was conducted using SPSS v21 applying the Polit and Beck methodology (Polit, Beck & Owen, 2007). The quantitative analysis involved two main aspects:

- i. Content validity of each main and sub-attribute.

The ‘relevance’ and ‘clarity’ of each sub-attribute were assessed by analysing the Item Content Validity Index ( $I-CVI_{\text{Relevance}}$  and  $I-CVI_{\text{Clarity}}$ ). Each sub-attribute  $I-CVI_{\text{Relevance}}$  and  $I-CVI_{\text{Clarity}}$  were calculated by dividing the number of experts rated as ‘very relevant’ (rating 4) or ‘very clear’ (rating 3), respectively, by the total number of experts. In addition, the overall Scale Content Validity Index for the ‘relevance’ ( $S-CVI_{\text{Relevance}/\text{Ave}}$ ) and ‘clarity’ ( $S-CVI_{\text{Clarity}/\text{Ave}}$ ) were also calculated as the average  $I-CVI$  of each main attribute.  $I-CVI$  and  $S-CVI$  values of 0.83 and above were accepted, and the main and sub-attributes were retained.

To assess the experts’ agreement of a sub-attribute as ‘essential’ or ‘necessary’, the Content Validity Ratio (CVR) was calculated using this mathematical formula:  $CVR = (2n_e / N) - 1$  where  $CVR$  = content validity ratio,  $n_e$  = number of experts indicating ‘essential’ (rating 3), and  $N$  = total number of experts. A negative CVR is when

less than half of the experts consider it essential, zero if half agree, one if all experts agree, and between zero and 0.99 if more than half but not all experts consider it essential (based on six experts). The main and sub-attributes with CVR values of 0.99 to 1 were considered acceptable.

- ii. Content validity of the individual performance level.

The 'clarity' of each 'Performance Level' descriptor (i.e. 1-Beginning, 2-Developing, 3-Sufficient, 4-Proficient, 5-Exemplary) was analysed for each main and sub-attribute using  $I-CV_{Clarity}$  and  $S-CV_{Clarity}/Ave$  as described above. Only the overall  $S-CV_{Clarity}/Ave$  of 'Performance Level' was reported in this paper.

## Qualitative Analysis

A cognitive interview approach was performed on the six subject matter experts who provided nuanced insights and practical perspectives on the rubric's applicability, comprehensiveness, and relevance to their personal assessment practices through structured consultations and collaborative discussions (Balza et al., 2022). By fostering this direct engagement, the research team gained a deeper understanding of the experts' perspectives, enabling more targeted adjustments to the rubric. The research team employed an iterative prototyping approach, developing successive drafts of the rubric based on the feedback received. The same subject matter experts were invited to review and provide input on each iteration, allowing for incremental improvements guided by their insights (Round 2). This iterative process ensured that the rubric evolved and improved in response to the expert feedback.

## RESULTS & DISCUSSION

### Development of the KhAIR rubric version 2.0 (Phase 1)

Table 2 presents the changes in the main and sub-attributes between Version 1.0 and Version 2.0 of the KhAIR rubric. The initial version comprised eleven sub-attributes. Following a thorough literature review (Steven & Levi, 2023 & Kapborg & Bertero, 2002) and discussions with the research team, this number increased to fourteen in the second version. The new sub-attributes were added to the *Amānah*, *Iqra'*, and *Rahmatan Lil' Alamin*, refining the initial sub-attributes.

For example, 'Work ethics' under *Amānah* was replaced by 'Competency' and 'Commitment & Dedication', which enhanced clarity and specificity by capturing distinct and crucial aspects of what was previously encompassed by 'Work ethics'. 'Competency' is a fundamental aspect of work ethics, as it emphasizes the importance of having the necessary skills and knowledge to perform tasks effectively. 'Commitment & Dedication' reflects an individual's devotion, perseverance and willingness to make the necessary effort and remain engaged with their tasks over time.

Another amendment in the KhAIR rubric Version 2.0 was 'Information management' under *Iqra'*, that was split into 'Sharing information' and 'Life-long learning'. According to Khamzah et al. (2017), information or knowledge management comprises three components: developing, storing, and sharing knowledge. Knowledge development is based on acquiring information or evidence from various sources that can be used or applied to formulate a solution during problem-solving endeavours. This approach emphasizes the importance of not merely hoarding knowledge but actively sharing it with others, fostering a lifelong learning culture (Khamzah et al., 2017).

**Table 2:** List of main and sub-attributes of the KHAIR Rubric Version 1.0 and 2.0

Main attributes	<i>Khalifah</i>		<i>Amanah</i>		<i>Iqra'</i>		<i>Rahmatan Lil' Alamin</i>	
	Version 1.0	Version 2.0	Version 1.0	Version 2.0	Version 1.0	Version 2.0	Version 1.0	Version 2.0
Sub-attributes	Leadership Managing Skills Teamwork Communication Skills	Leadership Managing Skills Teamwork Communication Skills	Work ethics Integrity & Responsibility	Competency Commitment & Dedication Work Integrity & Responsibility	Problem Solving Profession Specific Skills Information Management	Problem Solving Evidence-Seeking Sharing-Information Life-long Learning	Community Engagement Sustainable Approaches	Social Sustainability Economic Sustainability Environmental Sustainability

## Content Validation of the KhAIR rubric version 2.0 (Phase 2)

Based on the subject matter expert scores, the I-CVI, S-CVI and CVR for all four main attributes in the KhAIR and their sub-attributes were calculated and shown in Table 3. Results showed that the I-CVI values of the sub-attributes of *Khalifah* and *Rahmatan lil - Alamin* (I-CVI: 0.8) were slightly below the expected cut-off value of 0.83. However, the S-CVI/Ave for the overall rubric showed acceptable values (S-CVI/Ave > 0.9).

The CVR calculations showed that four out of the 14 proposed sub-attributes (i.e., Leadership qualities, Managing skills, Teamwork, and Communication) did not achieve the cut-off value of 0.99 (CVR: 0.6). Similarly, the overall 'Performance Level' rating scale was very low (S-CVI<sub>Performance\_level</sub>/Ave: 0.5) compared to the acceptable value. These findings suggested the need to revise the Version 2.0 of the KhAIR rubric, specifically the main and sub-attributes with low values of relevancy, clarity and essentiality

**Table 3:** Content validation for the first-round content validation by six subject matter experts (KhAIR rubric version 2.0)

Attributes	Sub-attributes	Relevance		Clarity		Essential	
		S-CVI / Ave	I-CVI	S-CVI / Ave	I-CVI	CVR /Ave	CVR
<i>Khalifah</i>	Leadership qualities		1		0.8		0.6
	Managing Skills	0.95	1	0.8	0.8	0.6	0.6
	Teamwork		1		0.8		0.6
	Communication skills		0.8		0.8		0.6
<i>Amānah</i>	Competency		1		1		1
	Commitment and dedication	1	1	1	1	1	1
	Work integrity and responsibility		1		1		1
	Problem solving		1		1		1
<i>Iqra'</i>	Evidence seeking	1	1	1	1	1	1
	Sharing information		1		1		1
	Lifelong learning		1		1		1
<i>Rahmatan lil- 'ālamīn</i>	Social responsibility		1		0.8		1
	Economic responsibility	1	1	0.8	0.8	1	1
	Environmental responsibility		1		0.8		1
Total KhAIR		0.99		0.90		0.90	

Ave: Average; CVR: Content Validity Ratio; I-CVI: Item-level Content Validity Index; S-CVI: Scale-level Content Validity Index

## Development of the KhAIR rubric version 3.0 (Phase 2)

Based on the findings of Round 1 content validation, the expert's qualitative input from the group discussion indicated that further consideration should be given to expanding, revising, and clarifying the sub-attributes of each main attribute to provide a more comprehensive and rigorous assessment tool. For example, 'Leadership qualities', under the *Khalifah* attribute, was perceived to be too broad a term and perceived more as a main attribute rather than a sub-attribute (Table 4). Upon deliberation, the research team agreed to replace 'Leadership qualities' with 'Inner stewardship' to better reflect the qualities of self-confidence, self-awareness, self-regulation, and self-efficacy to increase an individual's work performance and enable one to lead others at the organizational level (Golsby et al., 2021; Harari et al., 2021; Stewart, Courtright & Manz, 2018). The definitions of the other sub-attributes were rephrased to improve their clarity.

Other than introducing a new nomenclature, one sub-attribute was also added to the main attributes *Amānah*

and *Rahmatan lil' alamin*, following an expert's suggestion that maintaining an equal number of criteria for each construct in a rubric promoted fairness, comprehensiveness, clarity, and ease of use in the assessment process, contributing to the validity and reliability of the evaluation outcomes. This increased the total number of sub-attributes from 14 in the KhAIR rubric Version 2.0 to 16 in the KhAIR rubric Version 3.0. The addition of the new sub-attributes was performed in two ways. Firstly, the perceived double-barrelled sub-attribute 'Work Integrity & Responsibility' under the attribute of *Amānah*, was separated to yield 'Work Integrity' and 'Responsibility'. 'Responsibility' emphasizes the importance of individuals performing according to the job scopes/terms of references, and the job must be performed in an accountable and ethical manner (i.e. Integrity) (McGrath & Whitty., 2018; Bivins 2006; Vest et al., 2023). According to Said Nursi, as cited by Muslim, these two sub-attributes are developed within an individual based on the firm belief in Allah and the life of the hereafter (Muslim, 2016). Second, a new sub-attribute of 'Spiritual values' was added to the *Rahmatan lil' alamin* following the feedback of one of the subject matter

experts who emphasized its essential role in ensuring the success of the social, economic and environmental sustainability initiatives. This opinion was consistent with other researchers (Bensaid, 2018; Berejnoi, Messer & Cloutier 2020; Goralnik & Marcus, 2020; Dhiman 2024), suggesting spiritual values such as compassion, altruistic love, understanding, and empathy should be the driving force or motivation for an individual to engage in sustainable behaviours or *Rahmatan lil' alamin*.

Other than the sub-attributes, the nomenclature of each 'Performance Level' was further improved by changing from five levels to four levels with a new nomenclature: (1) Developing, (2) Approaching, (3) Meeting, and (4) Exceeding. The performance level descriptors were rephrased to accurately represent the expectations and achievements of the learning outcomes at each level. Changing to the 4-level or even number rating scale requires the users of this rubric to be more deliberate and precise in making definitive evaluations about the student's attainment of the learning outcomes (Chyung et al., 2017; Garland 1991; Busch 1993). In addition, it allows users to award a maximum score of 4 (Exceeding) to students who have achieved beyond the expected learning outcomes. In contrast, the 5-level rating scale seems more 'appreciative' to those who have achieved beyond the learning outcome with a score of 4 (Proficient) or 5 (Exemplary).

**Table 4:** List of main and sub-attributes of the KHAIR Rubric Version 2.0 and 3.0

Main attributes	<i>Khalifah</i>		<i>Amanah</i>		<i>Iqra'</i>		<i>Rahmatan Lil 'Alamin</i>	
Version	Version 2.0	Version 3.0	Version 2.0	Version 3.0	Version 2.0	Version 3.0	Version 2.0	Version 3.0
Sub-attributes	Leadership Managing Skills Teamwork Communication Skills	Inner Stewardship Managing Skills Teamwork Communication Skills	Competency Commitment & Dedication Work Integrity & Responsibility	Competency Commitment Integrity Responsibility	Problem Solving Evidence-Seeking Sharing-Information Life-long Learning	Problem Solving Evidence-Seeking Sharing-Information Life-long Learning	Social Sustainability Economic Sustainability Environmental Sustainability	Spiritual Values Social Sustainability Economic Sustainability Environmental Sustainability

### Content Validation of the KhAIR rubric Version 3.0

Table 5 shows that the I-CVI values of the 16 sub-attributes of the KhAIR Rubric Version 3.0 exceeded the cut-off value of 0.83 (0.8 - 1). Overall, the calculations also revealed an improvement in the S-CVI values from 0.90-0.99 (Version 2.0) to 0.98-1.00 (Version 3.0). The CVR calculations for the revised *Khalifah* sub-attributes also showed an improvement from 0.6 (Version 2.0) to 1.0 (Version 3.0). Similarly, the overall 'Performance Level' rating scale was improved from the S-CVI<sub>Performance\_level</sub>/Ave value of 0.5 (Version 2.0) to 0.98 (Version 3.0).

**Table 5:** Content validation for the second-round content validation by six subject matter experts (KhAIR rubric version 2.0)

Attributes	Sub-attributes	Relevance		Clarity		Essential	
		S-CVI / Ave	I-CVI	S-CVI / Ave	I-CVI	CVR / Ave	CVR
<i>Khalifah</i>	Inner stewardship		1		1		1
	Managing Skills		1		1		1
	Teamwork	1	1	1	1	1	1
	Communication skills		1		1		1
<i>Amānah</i>	Competency		1		1		1
	Commitment		1		1		1
	Work integrity	1	1	0.95	1	1	1
	Responsibility		1		0.8		1
<i>Iqra' bismirabbikalazi khalaq'</i>	Problem solving		1		0.8		1
	Evidence seeking		1		1		1
	Sharing information	1	1	0.95	1	1	1
	Lifelong learning		1		1		1
<i>Rahmatan lil-'ālamīn</i>	Spiritual values				1		
	Social responsibility		1		1		1
	Economic responsibility	1	1	1	1	1	1
	Environmental responsibility		1		1		1
Total KhAIR		1		0.98		1	

Ave: Average; CVR: Content Validity Ratio; I-CVI: Item-level Content Validity Index; S-CVI: Scale-level Content Validity Index



To summarize, the expert evaluation confirmed that the rubric effectively covers and represents the essential non-cognitive skills and attributes outlined in the educational frameworks (MOE, 2013 & MOE 2019) and the iCGPA: Learning Outcome Assessment Guide Rubric (MOHE, 2016) and the quantitative analysis guided the refinement of the terminology and definition used in the rubric. The high total I-CVI and I-CVR ratings in the final quantitative analysis supports the conclusion that the KhAIR rubric effectively represents the intended educational goals when used as a whole rubric.

## CONCLUSION

The KhAIR rubric was successfully developed using the combination of qualitative expert judgment and quantitative content validity analysis. High content validity was achieved, suggesting that all relevant content areas were accurately and comprehensively represented. Nevertheless, further research is needed to explore the reliability of the rubric and applicability across diverse health programmes and assessment types through a pilot study. Additionally, further investigation of its long-term impact on educational outcomes (e.g. student performance, professional competency) and practical implementation (e.g. integration into existing assessment practices, potential barriers) needs to be carried out. This study contributes to educational assessment literature by providing a robust framework for assessing healthcare student's attributes, emphasizing the development of value-based and holistic competencies.

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