



Language of expert consensus: The indicator of student outcome according to *Ibn Miskawayh's* theory using Fuzzy Delphi Technique application

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Abstract

The success of a school depends on student outcome which can be measured based on three main aspects, namely academic, co-curriculum and personality. The ineffectiveness of programs organized by schools to cultivate good values among students has led to the need for certain efficient and systematic mechanisms to be established to assess the current level of student outcomes. Therefore, this study aimed to get expert views and consensus on the indicator of student outcome based on *Ibn Miskawayh's* theory in the mission of shaping students according to the true Islamic practices. This research employed the Fuzzy Delphi technique utilizing a 7 Likert scale to accumulate answers of 15 experts in different areas of education at public universities and government sectors in Malaysia. A total of 54 item survey was given to experts for evaluation. The Fuzzy Delphi technique was used for statistical analysis. Data were analyzed using a triangular fuzzy numbers and the ranking of each variable was determined using the 'defuzzification' process. The findings showed that response and expert consensus on the factors that lead to academic dishonesty was at a good level. The general findings of the expert consensus exceeded 75%, the overall value of the threshold (d) <0.2 and α -cut exceeded 0.05. The priority factors were sorted and refined by adding and dropping items as recommended by the experts.

Keywords: Islamic Education; Expert Consensus; Fuzzy Delphi; Student Outcome; Expert Validity; Islamic Perspective; Ibn Maskawayh

1. Introduction

Student outcome has a different perspective from the views of scholars. This perspective evolved over time. Knowledge and values are essential foundations in building human intellectual and moral strength. 'Adlina Abdul Khalil, Mohamad Khairi Haji Othman and Mohd. Kasri Saidon (2020) also explains that to form good morals, ethics and pure values one needs to master good knowledge, skills

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and attitudes about values. Nuriman Abdullah & Fauzan Syarifuddin (2017) claimed that one of the most crucial phases of life as a Muslim is to have great ethical principles or pure values. In the aspect of education, it is related to teaching and disciplining students to have the best morals and excellent personal characteristics. Therefore, education plays an important role in shaping values among students and shaping values among students is becoming a strong culture in a society.

Meanwhile, according to Ibn Miskawayh, through the field of education, moral values can be created, which describe the qualities that are considered as a noble character among students (H. Afifuddin, 2017). Students' acceptance of learning at a tender age is easier and more transparent compared to grownups. Therefore, to achieve the goals of education as required by the study towards understanding the character or role of a human being or individual must be fully studied.

Mohd Zamani Ismail and Fatimi Hanafi (2006) state that the lack of the internalization of moral values in society causes the behavior of society members to be directed towards negative behavior and tends to lead to moral collapse as a result of poor moral internalization (Harery Abu Saad, 2007). Thus, there are various problems and challenges faced by many parties, especially teachers in forming good values among adolescents, especially students (Mohamad Khairi Haji Othman, Mohd Zailani Mohd Yusoff, Alis Puteh & Nurfasihah Roslan, 2017).

1.1. Problem Statement

The issue of values integration is a major topic in the education system especially in providing the children of our nation with a strong sense of self-resilience. This desire will only be achieved if the younger generation of the nation is provided with and appreciate the noble values which will ensure a strong personality and honourable character. The concept of integrating values across the curriculum is a key strategy to ensure the achievement of the educational integration goal according to the National Education Philosophy towards producing balanced and harmonious human beings in terms of physical, emotional, spiritual and intellectual. These values can shape human attitudes and thinking where the internalization of noble values will enable a person to make appropriate decisions and be responsible for his morals and behaviour (Mohd. Arif Hj Ismail, Mohd Jasmy Abd. Rahman & Rosnaini Hj. Mahmud, 2005).

Mohamad Khairi Haji Othman et. al. (2017) states that the application of moral values among students is a difficult matter because there are many obstacles and challenges that need to be overcome to shape the individual into a person who practices and internalizes moral values. These noble values must be embraced and turned into criteria and measures at the same time. In determining the appropriate criteria and measures to be used as an indicator of student outcome based on *Ibn Miskawayh's* theory, several important steps and procedures need to be implemented. This is to ensure that the selected indicator items are accurate and reflect the actual situation of a student's state of values, conduct, behavior, role or character. To ensure that there is no confusion and ambiguity involving the indicator items of this study, the researchers used the Fuzzy Delphi technique to obtain expert consensus on each indicator item used in this study.

2. Literature Review

According to Ibn Miskawayh, there is a close relationship between the formation of values and spiritual attitudes (character) with education and psychology (Busyairi Madjidi, 1997). In his theory of psychology, Ibn Miskawayh (1977) has put forward three types of inner soul strength namely;

a) The power of thought (Quwwatun Natiqah/Malakiyah). This is the highest function of the inner soul, encompassing the power of thinking and seeing facts. The device that executes this function in the brain.

b) The power of anger /savagery (Quwwatun Ghodobiyah/Sab'iyah). This inner soul includes the courage to take risks, aspire towards power, position and honor. The 'heart' (emotions) usually takes charge of this function.

c) The power of lust / animals (Quwwatun Syahwiyyah/Bahimiyah). This inner soul includes the desire for delicious food, drinks, sexual needs and all kinds of sensory pleasures. The device that controls this desire is the stomach.

According to Ibn Maskawaih, each individual has a different inner soul. One is strong, the other is weak and this depends on one's behavior, customs or education that one has acquired. Further, Ibn Maskawaih explained that among the main values and morals is wisdom (*Al-Hikmah*). Wisdom is the main attribute of the inner soul of natiqah, that is, the inner soul acts critically and analytically to know or recognize the meaning and reality of something in the context of its existence in the sight of God. Therefore, if the nature of *Al-Hikmah* is nurtured, a person will acquire other attributes such as intelligence, memory, reasoning, quickness understanding and ease to learn. In this article, the researchers have categorised the theory of Ibnu Miskawih into three indicators namely *Al-Hikmah*, *Al-Iffah* dan *Asy-Syaja'ah* (Ibn Miskawayh, 1977).

2.1. *Al-Hikmah*

Al-Hikmah is one of the basic human qualities that shape the character of an individual (Harpan Reski, 2019). According to him, the formation of human nature can be processed through the educational process. The purpose of education based on Ibn Miskawayh is to form a person of noble character as referred to as *isbah al-khuluq asy-syarif*. It is in line with the main purpose of human life which is to achieve goodness, happiness and perfection through education (H. Mahmud, 2011). Teachers must always inculcate pure values besides developing the intellectual (cognitive) aspects and instill a noble personality trait in students. Thus, the nature of *Al-Hikmah* is important and can be used to measure the characteristics of a student.

Most of the crises that arise today that involve economic, political and social-cultural aspects are due to moral collapse. Faisal Abdullah (2020) stated that moral education first introduced by Ibn Miskawih has a significant value in shaping the characteristics of a nation. Ibn Miskawayh emphasized moral education for human development and the nature of wisdom in human beings and the latest quality education system and following the development of the time will help produce good ethical values (morals) as introduced in the theory of Ibn Miskawih.

Syafa'atul Jamal (2017) has put forward all three morals or values based on the theory of Ibn Miskawih. According to Ibn Miskawih, morality is *hāl nafs*, which is the state of a person's soul that can give rise to various forms of nature, namely good or bad. When the state of the soul gives birth to bad behavior, then it can be said that his morals are *sayyi'ah*, but when various forms of good attitudes arise from him then his morals are said to be *hasanah*. Through the value of wisdom (*Al-Hikmah*), Ibn Miskawih highlights the values of wisdom, honesty, intelligence and so on that can be used as an indicator of measurement.

2.2. *Al-Iffah*

Syafa'atul Jamal (2017) has also presented the value of *Al-Iffah* in his study based on the theory of thought of Ibn Miskawih. According to researchers, it is regarding the aspect of self-esteem or self-

purity in which a person's soul can produce lust or desire. Based on the concept that has been highlighted by Ibn Miskawih's thought, a person's behavior will collapse and submit to the temptations of lust but if this nature can be nurtured with other qualities such as shyness, patience, calm and so on then the temptations of lust that arise can be blocked or hindered.

N. Nizar (2016), based on the thought of Ibn Miskawih, said that the concept of Al Iffah (maintaining self-purity) is the priority of the soul of al Bahimiyyah. This preference will appear in a person when his passions are controlled by his mind. This means that a person can make the right and free choice without being dominated by his lust. This nature is between greed (al syarah) and cold-hearted (khumud al syahwat). What is meant by al syarah is to be immersed in pleasure and transcendence, while khumud al syahwat is refusing to strive to obtain good pleasure based on the Islamic teachings (syariat) and common sense.

2.3. *Asy-Syaja'ah*

Syafa'atul Jamal (2017) has put forward the value of *Asy-Syaja'ah* which means courage by which the soul gives birth to the emotion of courage. According to Ibn Miskawih's theory of thought, the existence of courage nature in an individual will rationally encourage him to do good deeds and always be patient with the challenges and face them in a commendable way. Attitudes such as perseverance and high expectation illustrate the courage required to make one's dreams a reality.

Further N. Nizar (2016) highlighted the concept of *Asy-Syaja'ah* (courage) which is a virtue of the soul of al ghadabiyyah. This characteristic is displayed in man when his lust is guided by the soul and nathiqah. In this context, one is not afraid to do great things as long as the implementation leads to righteousness and to maintain it is commendable. This attribute is in between cowardice, al jubn and nekad, al tahawwur. Al Jubn is afraid of things that should not be feared. That is why al jubn is classified as an extreme weakness meanwhile al tahawwur belongs to the nature of courage that one should have. Therefore, al tahawwur is classified as an extreme strength.

3. Research Methodology

3.1. *Experts' Information*

To assess the consensus at this level, a panel of experts was selected using purposive sampling. Expert selection is the most crucial step in the Delphi approach because it affects the quality of the study outcomes. (Jacobs, 1996). Because they have continual teaching experience, lecturers with more than five years of experience are considered as experts. (Berliner, 2004). According to Akbari and Yazdanmehr (2014), Individuals with more than five years of specialised experience in education are referred to as experts. Linstone and Turoff (2002) advised a 5- to 10-member expert group to achieve specified objectives. Okoli and Pawlowski (2004) suggested that a model be validated by 10 to 18 experts. According to Gordon (2009), the number of experts selected ranges from 15 to 35 to guarantee comprehensive and reliable research results. The number of experts chosen to analyse and validate the model was limited to 15 after considering all relevant parameters.

Table 1. Experts' Information

		No.
Gender	Male	9
	Female	6
Academic	PhD	12

Qualification	Master	3
Working at	Public/Private Universities	9
	Teachers' Colleges	1
	MOE/SED	2
	School	3

According to Table 1, a total of 15 experts have responded to this questionnaire for verification. 9 of these specialists are male and 6 are female. While 12 of them have PhDs and 3 have Masters. In terms of the employment sector, 9 of them work in tertiary education, 1 in Teachers' Colleges, 2 in MOE offices and 3 are in schools. All these experts cover various sectors in the context of Islamic education.

4. Data Collection and Analysis Procedures

There are two words in the Fuzzy Delphi technique that must be understood: triangular fuzzy number and defuzzification procedure. The values of m_1 , m_2 , and m_3 are represented by the Triangular Fuzzy Number, which is written as follows: (m_1, m_2, m_3) . The value of m_1 denotes the least value; m_2 is the tolerable value, and m_3 denotes the maximum value. The Triangular Fuzzy Number is used to create a Fuzzy scale (similar to the Likert scale) that can be used to convert linguistic factors into fuzzy numbers. The Fuzzy scale's number of levels is in odd numbers. The higher the Fuzzy scale, the more precise the results. Figure 1 shows how it works.

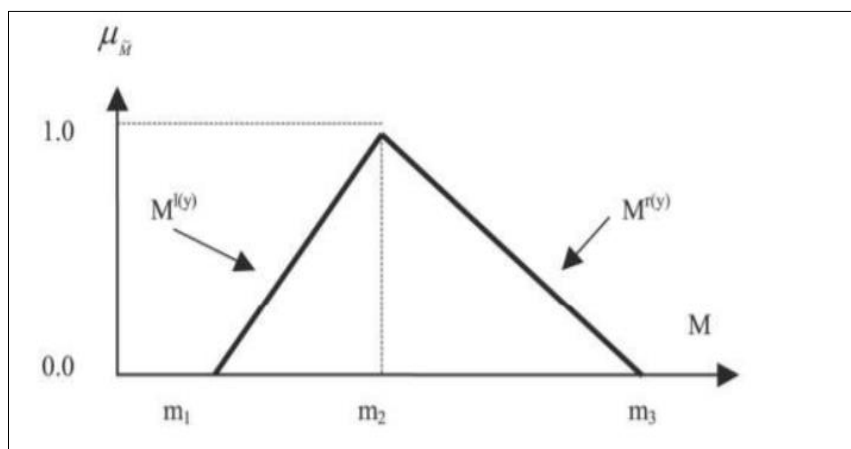


Figure 1. Fuzzy Scale Agreement Level which was adapted from "Fuzzy Delphi in design research." Source: Mohd. Ridhuan Mohd. Jamil, Saedah Siraj, Zaharah Hussin, Nurul Rabihah Mat Noh & Ahmad Arifin Sapar (2014).

In this analysis, the procedure of set and analysis of Fuzzy Delphi technique was implemented when experts were given items and each instrument was represented by Likert scale as well as blank spaces for expert comments and suggestions. Likert scale data obtained were analyzed using the Excel program. All of the data was transformed into a triangular fuzzy number. In this investigation, a five-point Fuzzy scale was used. Table 2 illustrates this.

Table 2. Five Point Fuzzy Scale

Fuzzy Scale Consensus Level
Strongly disagree 0.0, 0.0,0.2

Disagree 0.0, 0.2,0.4
Moderately agree 0.2, 0.4,0.6
Agree 0.4, 0.6,0.8
Strongly agree 0.6, 0.8,1

Figure 1 shows that the higher the number on the scale, the more accurate the data obtained. In this study, the researcher chose a five-point linguistic scale as shown in Table 2.

Table 2 shows the Fuzzy Likert Scale agreement level; Strongly Disagree 0.0, 0.0,0.2; Disagree 0.0, 0.2,0.4; Moderately agree 0.2, 0.4,0.6; Agree 0.4, 0.6,0.8 4; and Strongly agree 0.6, 0.8,1. The data were then tabulated to obtain Fuzzy values (n_1, n_2, n_3) as well as Fuzzy mean values (m_1, m_2, m_3) to obtain threshold values, percentage of expert consensus, defuzzification and item ranking.

The threshold value for each item should not exceed 0.2 to obtain expert consensus. The expert consensus percentage should be greater than 75%, and the defuzzification value for each item should be greater than α -cut = 0.5. The distance between two Fuzzy numbers was calculated using the following formula to establish the threshold value:

$$d(\tilde{m}, \tilde{n}) = \sqrt{\frac{1}{3}[(m_1 - n_1)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2]}.$$

Figure 2. The Formula for Determining the Distance between Two Fuzzy Numbers

The value of d is the threshold value, according to the formula in Figure 2. If the value of d is less than 0.2, the item has been agreed upon by all experts. If this is the case, a second-round should be conducted to determine whether the item is required (Cheng & Lin, 2002). The Delphi Fuzzy also includes calculating whether expert consensus for the total construction or each component exceeds or equals 75%. If the percentage of expert consensus for an item is equal to or greater than 75 percent, it is presumed that the item has reached expert consensus. (Chu & Hwang, 2008). The defuzzification procedure is also used in the Fuzzy Delphi technique study's data analysis. It's the procedure for deciding each item's position or priority, as well as the position of each variable or sub-variable. There are three formulas in this process:

- i. $A = 1/3 * (m_1 + m_2 + m_3)$,
- Or; ii. $A = 1/4 * (m_1 + 2m_2 + m_3)$,
- Or; iii. $A = 1/6 * (m_1 + 4m_2 + m_3)$.

The α -cut value = the median value of '0' and '1', where α -cut = $(0+1)/2 = 0.5$. If the resulting A value is less than the α -cut value = 0.5, the item will be rejected because it indicates expert consensus in rejecting the item. However, if the resulting A value is above the α -cut value = 0.5, the item will be accepted because it indicates expert consensus to accept the item in question (Bodjanova, 2006). The rationale for performing the Delphi Fuzzy Technique compared to the usual Delphi technique in this study was because it would save time and cost in handling the questionnaire. In addition, it also allowed experts to give their full views consistently (Mohd. Ridhuan Mohd. Jamil et al., 2014).

5. Findings and Discussion

5.1. Al-Hikmah Indicator

The value of the item exceeded the threshold value (d) = 0.2, the percentage of expert consensus above 75 percent and above, and the defuzzification value for each item exceeded the α -cut value = 0.5, according to the Al-Hikmah indicator findings based on the three techniques. All exceeded the

threshold value (d) = 0.2 and have a threshold value (d) 0.2 using this method. According to Cheng and Lin (2002), if the average value and expert rating are both less than 0.2, the item has obtained expert consensus. All of the items had a value of more than 75%, according to the expert consensus percentage. Each item's defuzzification values likewise exceeded the α -cut threshold of 0.5. The overall findings can be seen in Table 3.

Under this construct, 16 items were tested using FDM to obtain the expert consensus. Based on table 3, the analysis of FDM findings displayed that some experts were not in agreement with other experts on some specific items that resulting in no consensus being reached. Referring to the findings, threshold values that exceeded 0.2 were experts 7 and 8 for item1, expert 12 for item 2, experts 1, 3, 6, 7, 11, 13, 14 & 15 for item 3, expert 4 for item 4, experts 1, 9, 11, 12, 14 & 15 for item 5, expert 12 for items 6 and 7, experts 1, 8 & 13 for item 8, experts 7 & 12 for item 9, experts 4 & 7 for item 10, expert 4 for items 12 and 15, and experts 4 & 12 for item 16. However, based on the value of the d construct, the result displayed $d = 0.119$ which was < 0.2 which meant that the overall items under the *Al-Hikmah* construct reached expert consensus and were all accepted. This finding was also supported by the percentage of expert consensus which showed that all items were at a level above the value of 75% and all defuzzification values for each item also exceeded the value of α -cut = 0.5.

The analysis findings showed that the expert consensus value was at a good level. Thus, it is believed that this study has successfully achieved the objectives and answered the research question where the results of the analysis showed that there was expert consensus in forming the profile of student achievement indicators based on *Ibn Miskawayh's* theory of thought.

Under the *Al-Hikmah* construct, the items accepted described values such as intelligence, memory, rationality and smartness that need to be applied to students to achieve the level of expected student outcome. The measurement and criteria developed in this study can be used to determine the value and level of an individual's achievement. Under the value of memory, the expert consensus of the item 'I always remember the good morals taught by the teacher' was found to be parallel and consistent with the purpose (Harpan Reski, 2019) of education by Ibn Miskawayh that is to develop a person of noble character. Yet the era of education is seen to move across time and into the future. To face the learning of the 21st century, the expert consensus on the intelligence item such as 'I like to learn about new skills' was consistent with the opinion of Faisal Abdullah (2020) who claims that based on the nature of human wisdom and the latest education system that is quality and in line with modern developments, it will be able to produce good ethical values (morals) as introduced in the theory of Ibn Miskawayh. In facing the ever-changing challenges in the field of education today, the intelligence of the mind is very important to ensure the mental and physical integrity and resilience. Thus, based on the expert consensus on the item of intelligence, namely 'the intelligence of the mind helps me achieve success in learning' is found to support the study of Syafa'atul Jamal (2017).

Table 3. Threshold Value (d), Expert consensus Percentage, Defuzzification and Al-Hikmah Item Ranking Indicator

Experts	Items															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	0.099	0.083	0.386	0.163	0.234	0.076	0.036	0.266	0.092	0.112	0.031	0.066	0.031	0.026	0.056	0.052
2	0.099	0.083	0.170	0.060	0.110	0.078	0.036	0.128	0.065	0.045	0.031	0.088	0.031	0.026	0.098	0.052
3	0.099	0.083	0.968	1.098	1.030	0.078	0.036	0.037	0.092	0.045	0.031	0.088	0.031	0.026	0.056	0.052
4	0.099	0.083	0.109	0.230	0.160	0.076	0.036	0.128	0.092	0.282	0.031	0.327	0.122	0.365	0.337	0.339
5	0.099	0.076	0.109	0.060	0.110	0.076	0.036	0.037	0.065	0.112	0.031	0.066	0.031	0.026	0.056	0.052
6	0.099	0.083	0.294	0.163	0.160	0.078	0.036	0.128	0.092	0.112	0.031	0.066	0.031	0.026	0.056	0.052
7	0.878	0.076	0.386	0.060	0.110	0.076	0.036	0.037	0.301	0.282	0.122	0.088	0.031	0.026	0.056	0.052
8	0.294	0.083	0.109	0.060	0.110	0.078	0.118	0.266	0.065	0.112	0.031	0.066	0.122	0.026	0.056	0.052
9	0.099	0.076	0.294	0.060	0.234	0.076	0.036	0.128	0.092	0.112	0.031	0.066	0.031	0.026	0.056	0.052
10	0.099	0.083	0.170	0.163	0.110	0.078	0.036	0.037	0.092	0.045	0.122	0.088	0.031	0.026	0.056	0.052
11	0.099	0.083	0.294	0.163	0.234	0.076	0.036	0.128	0.092	0.112	0.031	0.066	0.031	0.026	0.056	0.052
12	0.078	0.598	0.109	0.163	0.447	0.318	0.356	0.037	0.301	0.045	0.031	0.066	0.031	0.026	0.098	0.339
13	0.099	0.076	0.294	0.060	0.110	0.076	0.036	0.266	0.065	0.045	0.031	0.066	0.031	0.026	0.056	0.052
14	0.099	0.083	0.294	0.163	0.234	0.076	0.036	0.128	0.092	0.045	0.122	0.066	0.122	0.026	0.098	0.052
15	0.099	0.083	0.294	0.163	0.234	0.076	0.036	0.128	0.092	0.112	0.031	0.066	0.031	0.026	0.056	0.052
D value for each item	2.443	1.733	4.278	2.828	3.627	1.390	0.941	1.876	1.687	1.619	0.733	1.338	0.733	0.731	1.245	1.357
d value of total items	28.561															
Construct d value	0.119															
Percentage of expert consensus based on each item	87%	93%	40%	87%	53%	93%	93%	80%	87%	87%	100%	93%	100%	93%	93%	87%
Average Percentage of Expert consensus	85%															

of Entire Item																
Defuzzication (Average of Fuzzy response) (Alpha – cut)	0.90	0.91	0.76	0.85	0.80	0.92	0.94	0.88	0.90	0.89	0.95	0.92	0.95	0.95	0.93	0.93
Ranking	11	9	16	14	15	8	4	13	10	12	2	7	2	1	6	5

1) Threshold Value $(d) \leq 0.2$ (Chen & Lin, 2002)

2) Expert consensus Percentage $\geq 75\%$ (Tang & Wu, 2010)

3) All α -Cut values for each item exceeded $\alpha = 0.5$ (Bojdanova, 2006)

The findings as in Table 4 of this analysis showed that the *Al-Hikmah* indicator has received good expert consensus.

Table 4. Agreed Items (*Al-Hikmah* indicator) based on Ranking

ITEMS	STATEMENTS	RANKING
1	The intelligence of the mind helps me to achieve success in learning.	11
2	The intelligence of the mind helps me master the knowledge of learning.	9
3	I find physical intelligence as important.	16
4	Physical intelligence helps me achieve good skills.	14
5	I find that physical intelligence influences me in making choices when solving problems.	15
6	I always remember the good morals taught by the teacher.	8
7	I always remember sin and reward before doing something.	4
8	Memory helps me think first before taking action.	13
9	I always accept what is appropriate, taught by the teacher.	10
10	I chose a way of learning that suits me.	12
11	I am able to make sound judgments about things in learning.	2
12	I always think of the best skills for me to follow based on due consideration.	7
13	I can easily understand what is being taught.	2
14	I like to learn new skills.	1
15	I have skills in various things.	6
16	I wisely choose the skills that suit me.	5

According to Table 4, the first ranking of items is *I like to learn new skills*. and the last ranking for *Al-Hikmah* indicator is *I find physical intelligence as important*. It is shown that experts agree these items as the first and the last items. Meanwhile, the others items are in the middle as in Table 4.

5.2. *Al-Iffah* Indicator

Findings from the *Al-Iffah* indicator based on the three methods showed that the value of the item exceeded the threshold value ($d = 0.2$); the percentage of expert consensus exceeded 75% and above, and the defuzzification value for each item exceeded the α -cut value = 0.5. Through this method, all exceeded the threshold value ($d = 0.2$) and have a threshold value ($d \leq 0.2$). Cheng and Lin (2002) stated that if the average value and expert rating is less than the threshold value of 0.2, the item has gained expert consensus. The expert consensus percentage indicated that all items were above the 75% value. All defuzzification values for each item also exceeded the α -cut value = 0.5. This indicated that the items have received expert consensus. The overall findings can be seen in Table 5.

Under this construct, 18 items were tested using FDM to obtain the expert consensus. Based on table 5, the analysis of FDM findings displayed that some experts were not in agreement with other experts on some specific items that resulting in no consensus being reached. Based on the findings, the threshold value which exceeded 0.2 was expert 12 for item 3, expert 8 for item 4, expert 12 for item 7, experts 3 & 12 for item 9, expert 3 for items 10 & 12, experts 3 & 12 for item 13, experts 3, 5 & 8 for item 16 and experts 5 for item 18. However, based on the value of the d construct, the result displayed $d = 0.119$ which was < 0.2 which meant that the overall items under the *Al-Iffah* construct reached expert consensus and were all accepted. This finding was also supported by the percentage of expert consensus which showed that all items were at a level above the value of 75% and all defuzzification values for each item also exceeded the value of α -cut = 0.5.

The analysis findings showed that the expert consensus value was at a good level. Thus, it is believed that this study has successfully achieved the objectives and answered the research question where the results of the analysis showed that there was expert consensus in forming the profile of student achievement indicators based on *Ibn Miskawayh's* theory of thought.

Under the *Al-Iffah* construct, 18 items accepted described values such as generosity, courtesy and peace-loving should be applied to the students to achieve the level of student outcome as expected. The suitability of this indicator profile to measure the level of achievement in an individual has received expert consensus. Under the value peace-loving, 2 items that obtained a good agreement from experts were the item 'I would rather tolerate than quarrel' which portrays the nature of patience that an individual or student should have is found in line with the opinion of Nizar (2016) while the item 'I like peace and harmony in life' also obtained good consensus from the expert panel where this item describes the peace that is consistent with Syafa'atul Jamal (2017). According to N. Nizar (2016), patience is very much needed in an individual or student to free oneself from being dominated by lust; for instance, a student chooses to be patient rather than quarrel. Syafa'atul Jamal (2017) also added that one needs to control his behavior so as not to fall and succumb to the temptations of his lusts by cultivating a sense of calm and peace in himself and his life.

Table 5. Threshold Value (d), Expert consensus Percentage, Defuzzification and *Al-Iffah* Item Ranking Indicator

Experts	Items																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.066
2	0.010	0.010	0.026	0.088	0.112	0.000	0.086	0.143	0.095	0.098	0.132	0.108	0.085	0.122	0.031	0.125	0.122	0.088
3	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.330	0.337	0.132	0.346	0.320	0.031	0.031	0.553	0.122	0.066
4	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.066
5	0.010	0.010	0.026	0.088	0.041	0.000	0.073	0.010	0.062	0.098	0.020	0.108	0.072	0.122	0.122	0.268	0.031	0.327
6	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.088
7	0.010	0.010	0.026	0.088	0.112	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.085	0.031	0.031	0.125	0.031	0.066
8	0.010	0.010	0.026	0.327	0.112	0.000	0.086	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.553	0.031	0.066
9	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.066
10	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.066
11	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.066
12	0.143	0.143	0.365	0.088	0.112	0.000	0.607	0.010	0.330	0.098	0.020	0.046	0.320	0.122	0.122	0.066	0.122	0.088
13	0.010	0.010	0.026	0.066	0.041	0.000	0.086	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.066
14	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.122	0.125	0.031	0.088
15	0.010	0.010	0.026	0.066	0.041	0.000	0.073	0.010	0.062	0.056	0.020	0.046	0.072	0.031	0.031	0.125	0.031	0.066
D value for each item	0.285	0.285	0.731	1.338	0.896	0.000	1.671	0.285	1.497	1.245	0.530	1.113	1.599	0.733	0.733	2.819	0.733	1.338
d value of total items	17.831																	
Construct d value	0.066																	
Percentage of expert consensus based on each	100%	100%	93%	93%	100%	100%	93%	100%	87%	93%	100%	93%	87%	100%	100%	80%	100%	93%

item	95%																		
Average Percentage of Expert consensus of Entire Item																			
Defuzzication (Average of Fuzzy response) (Alpha – cut)	0.96	0.96	0.95	0.92	0.94	0.97	0.92	0.96	0.92	0.93	0.95	0.94	0.92	0.95	0.95	0.88	0.95	0.92	
Ranking	2	2	6	14	10	1	17	2	13	12	5	11	16	7	9	18	7	14	

The analysis findings showed that the *Al-Iffah* Indicator items have received good expert consensus. The items agreed upon by expert consensus in order of ranking are as shown in Table 6.

Table 6. Agreed Items (*Al-Iffah* indicator) based on Ranking

ITEMS	STATEMENTS	RANKING
1	I like to help teachers.	2
2	I am happy to help my friends to learn.	2
3	I like to share new information with my classmates.	6
4	I like to teach the skills to my classmates who have not mastered the skills taught yet.	14
5	I love sharing skill ideas with friends.	10
6	I like to help friends who have learning difficulties.	1
7	I respect the teacher during classroom instructions.	17
8	I use polite language when talking to the teacher.	2
9	I maintain good manners as a student.	13
10	I practice good manners in carrying out activities.	12
11	I maintain good self-discipline while carrying out any activity.	5
12	I always maintain good manners in doing any activity.	11
13	I am polite when communicating.	16
14	I use polite languages	7
15	I would rather tolerate than quarrel.	9
16	I don't like to fight or argue.	18
17	I love peace and harmony in life.	7
18	I like to resolve disputes that occur.	14

According to Table 6, the first ranking of items is *I like to help friends who have learning difficulties* and the last ranking for *Al-Iffah* indicator is *I don't like to fight or argue*. It is shown that experts agree these items as the first and the last items. Meanwhile, the others items are in the middle as in Table 6.

5.3. *Asy-Syaja'ah* Indicator

Findings from the *Asy-Syajaah* indicator based on the three methods showed that the value of the item exceeded the threshold value (d) = 0.2; the percentage of expert consensus exceeded 75% and above, and the defuzzification value for each item exceeded the α -cut value = 0.5. Through this method, all exceeded the threshold value (d) = 0.2 and have a threshold value (d) \leq 0.2. Cheng and Lin (2002) stated that if the average value and expert rating is less than the threshold value of 0.2, the item has gained expert consensus. The expert consensus percentage indicated that all items were above the 75% value. All defuzzification values for each item also exceeded the α -cut value = 0.5. This indicated that the items have received expert consensus. The overall findings can be seen in Table 7.

Finally, the last one is the *Asy-Syaja'ah* construct which involved testing 20 items using FDM to obtain expert consensus. Based on table 7, the analysis of FDM findings obtained found that some experts were not in agreement with other experts on some specific items that resulted in no consensus being reached. Based on the findings, the threshold value above 0.2 was expert 12 for item 2, expert 12

for item 5, expert 11 for item 8 and expert 12 for item 9. However, based on the value of the d construct that displayed $d = 0.041$ which was < 0.2 , it showed that the overall items under the construct of *Asy-Syaja'ah* reached expert consensus and all were accepted. This finding is also supported by the overall expert consensus percentage of 99% which showed that all items were at a level above the value of 75% and all defuzzification values for each item also exceeded the value of α -cut = 0.5.

Thus, it showed that the *Asy-Syaja'ah* construct has received expert consensus which showed that the value of the agreement was at a very good level. Conclusively, it is believed that this study has successfully achieved the objectives and answered the research question where the results of the analysis showed a very high level of suitability in forming the profile of student outcome indicator based on *Ibn Miskawayh's* theory of thought.

Under the *Asy-Syaja'ah* construct, 20 items are accepted through expert consensus that describes the values such as big-hearted, courage in the face of obstacles, high ambitions, perseverance, patience, mental and physical resilience need to be instilled in students to achieve the level of student outcome as expected. The suitability of this indicator profile to measure the level of achievement of an individual has received expert consensus. Under the value of perseverance, the item that has obtained good expert consensus was the item 'I persevere in learning' which describes the nature of perseverance that an individual or student should have, is found to be in line with the opinion of Syafa'atul Jamal (2017). According to him, attitude such as perseverance and big-heartedness reflects the courage needed to achieve the anticipated success.

In addition, the item 'I dare to take risks in doing activities' also obtained a very good expert consensus where this item describes the courage to face obstacles as long as you believe what you do leads to good, which is consistent with N. Nizar (2016). According to N. Nizar (2016), having the courage to do great things as long as its implementation leads to good, and defending it is a commendable thing.

Table 7. Threshold Value (d), Expert consensus Percentage, Defuzzification and *Asy-Syaja'ah* Item Ranking Indicator

Experts	Items																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
2	0.031	0.108	0.132	0.132	0.118	0.143	0.122	0.096	0.108	0.143	0.132	0.010	0.000	0.020	0.132	0.010	0.031	0.010	0.102	0.010
3	0.031	0.108	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.132	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
4	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
5	0.031	0.046	0.020	0.020	0.036	0.010	0.122	0.064	0.046	0.010	0.020	0.143	0.000	0.132	0.132	0.010	0.122	0.010	0.102	0.143
6	0.122	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.132	0.020	0.010	0.031	0.010	0.051	0.010
7	0.122	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
8	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.108	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.143	0.102	0.010
9	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
10	0.122	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.122	0.010	0.051	0.010
11	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.615	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
12	0.031	0.346	0.132	0.132	0.356	0.010	0.122	0.096	0.346	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.102	0.010
13	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
14	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.143	0.122	0.010	0.102	0.010
15	0.031	0.046	0.020	0.020	0.036	0.010	0.031	0.064	0.046	0.010	0.020	0.010	0.000	0.020	0.020	0.010	0.031	0.010	0.051	0.010
D value for each item	0.733	1.113	0.530	0.530	0.941	0.285	0.733	1.571	1.113	0.285	0.530	0.285	0.000	0.530	0.530	0.285	0.733	0.285	1.018	0.285
d value of total items	12.314																			
Construct d value	0.041																			
Percentage of expert consensus based on each item	100%	93%	100%	100%	93%	100%	100%	93%	93%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Percentage of Expert consensus of Entire Item	99%																			
Defuzzification (Average of Fuzzy response) (Alpha – cut)	0.95	0.94	0.95	0.95	0.94	0.96	0.95	0.92	0.94	0.96	0.95	0.96	0.97	0.95	0.95	0.96	0.95	0.96	0.93	0.96
Ranking	13	17	8	8	16	2	13	20	17	2	8	2	1	8	8	2	13	2	19	2

The findings of this analysis showed that the *Asy-Syaja'ah* Indicator has received good expert consensus. The items agreed upon by expert consensus in order of ranking are as shown in Table 8.

Table 8. Agreed Items (*Asy-Syaja'ah* indicator) based on Ranking

ITEMS	STATEMENTS	RANKING
1	I always strive to be the best at learning.	13
2	I am determined to maintain excellence.	17
3	I am highly enthusiastic when performing any activity.	8
4	I work hard to achieve something acceptable.	8
5	I am determined to be a person of noble character.	16
6	I have a high desire to be an admirable human being.	2
7	Although difficult, I am willing to try something risky.	13
8	I dare to take risks in doing activities.	20
9	I am willing to compete healthily while doing activities.	17
10	I intend to continue to help others.	2
11	I persevere in learning.	8
12	I never give up on learning.	2
13	I keep trying even though I am less skilled in the activities I carry out.	1
14	I always persevere in doing good things.	8
15	I am always patient when facing difficulties in seeking knowledge.	8
16	I am always patient with my friends' behaviours during activities.	2
17	I have a strong mental resilience in fending off life's challenges.	13
18	Good health makes me study more comfortably.	2
19	I have stamina in performing activities.	19
20	I always take care of my health and maintain a neat appearance.	2

According to Table 8, the first ranking of items is I keep trying even though I am less skilled in the activities I carry out and the last ranking for *Asy-Syaja'ah* indicator is I dare to take risks in doing activities. It is shown that experts agree these items as the first and the last items. Meanwhile, the others items are in the middle as in Table 8.

6. Conclusion

The curriculum required teachers and students to educate via the present, practice, and produce methods (Majid Farahian, 2011). Many changes occur in a teacher's life once he or she begins teaching (Güneş & Uysal, 2019). One of the important aspects is student outcome. The development and formation of an appropriate and reliable profile of student outcome indicators are seen as very necessary and well-timed. It is hoped that the existence of these indicators can be used to determine the value and level of achievement of an individual. Three (3) constructs were submitted to a panel of experts to be evaluated and a consensus was obtained to recognize the use of these items in assessing the level of student outcome. These constructs consisted of *Al-Hikmah*, *Al-Iffah* and *Asy-Syaja'ah* which were extracted from *Ibn Miskawayh's* famous theory of thought. After going through the FDM analysis, the findings showed that the three constructs presented to measure the level of student outcome as proposed in this study were fully accepted by the experts. Therefore, the researchers hoped

that the student outcome indicators developed can be used widely and will contribute to the development of relevant studies in the future.

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