

# EVALUATION OF THE CHILDREN SOUL DEVELOPMENT MODEL (CSD) BASED ON IBNU SINA THEORY OF SOUL (Penilaian Model Pembangunan Jiwa Kanak-kanak berdasarkan Teori Jiwa Ibnu Sina)

\* Nurul Ain Norman<sup>1</sup>, Ahmad Zuhdi Ismail<sup>1</sup>, Zaharah Hussin<sup>2</sup>

<sup>1</sup>Academy of Islamic Studies,  
University of Malaya,  
50603 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur.

<sup>2</sup>Faculty of Education,  
University of Malaya,  
50603 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur.

\*Corresponding author's email: [nurnorman82@gmail.com](mailto:nurnorman82@gmail.com)

## Article History:

Submit: 21 December 2018

Accepted: 5 March 2019

Revised: 2 May 2019

Published: 30 June 2019

*Attarbawiy: Malaysian Online Journal of Education*

*Vol. 3, No. 1 (2019), 20-33*

## Abstract

This study is the last part of a doctoral dissertation research conducted with the aim at designing a Soul-Development Model based on Ibn Sina Theory of Soul. The development of this model is done to build a strong infrastructure for an effective learning educational setting based on Islamic Philosophy of thought. This study utilizes Design and Developmental Research (DDR) approach to design the Children Soul Development Model based on Ibn Sina's Theory of Soul. DDR that is used in this study is a definite method in designing a new model of the children's soul development. This method consists of three process of needs analysis, design and development, and evaluation of the model established, and is carried out by following the nature procedures of research and development; exploratory study, the stage of development, testing models and dissemination (Borg and Gall, 1983). This paper will analyse the last phase of the study, which is the evaluation of the designed model namely Children Soul Development Model (CSD Model) based on Ibn Sina Theory of Soul, where 25 respondents that are experts of different fields related to the study are selected to evaluate the model using the Fuzzy Delphi Method (FDM). The result of the evaluation shows that the CSD Model is suitable to be use as a reference model relying on the consensus of the respondents.

**Keywords :** Fuzzy Delphi Method, CSD Model, Ibn Sina, Theory of Soul.

## Abstrak

*Kajian ini adalah bahagian terakhir penyelidikan doktoral disertasi yang dijalankan dengan tujuan untuk merekabentuk Model Pembangunan Jiwa berdasarkan Teori Jiwa Ibn Sina. Model ini dibangunkan untuk tujuan pembinaan infrastruktur yang kukuh bagi menetapkan penyusunan pembelajaran yang berkesan berdasarkan pemikiran Falsafah Islam. Kajian ini menggunakan pendekatan kaedah Reka Bentuk dan Pembangunan Penyelidikan (DDR) untuk merekabentuk Model Pembangunan Jiwa Kanak-kanak berdasarkan Teori Jiwa Ibnu Sina. DDR yang digunakan dalam kajian ini adalah kaedah yang kukuh dalam merekabentuk satu model baru pembangunan jiwa kanak-kanak. Kaedah ini terdiri daripada tiga proses analisis keperluan, reka bentuk dan pembangunan, serta penilaian model yang dilaksanakan dengan mengikuti prosedur penyelidikan dan pembangunan; kajian penerokaan, peringkat pembangunan, model ujian dan penyebaran (Borg dan Gall, 1983). Artikel ini akan menganalisis jasa terakhir kajian ini, iaitu penilaian model yang telah dibangunkan iaitu Model Pembangunan Jiwa Kanak-Kanak (Model CSD) berdasarkan Ibn Sina Theory of Soul, di mana 25 responden yang pakar dalam bidang yang berbeza yang berkaitan dengan kajian ini dipilih untuk menilai model menggunakan Kaedah Delphi Fuzzy (FDM). Hasil penilaian menunjukkan bahawa Model CSD sesuai untuk digunakan sebagai model rujukan bergantung pada konsensus responden.*

**Katakunci :** Kaedah Fuzzy Delphi, Model CSD, Ibn Sina, Teori Jiwa.

## 1.0 INTRODUCTION

The lack of spiritual development among children has been identified as one of the major factors that affect the commitment of delinquent among adolescent. According to al-Ghazali, education (*ta'dib*) is a process of disciplining the spiritual self which involves the acquisition of knowledge and the transformation of the soul in order to possess good character traits (*hasn al-akhluq*) - the condition of the soul that conforms to the Intellect and Religious Law (*'aql wa Shar'*) (al-Ghazali, n.d.). Character formation thus, becomes the focal point of education (*ta'dib*) particularly in the early years. It is due to the child's imitative nature and his immaturity in reasoning at this stage. The Primary discussion in this article will be on the Ibn Sina Theory of Children Development Soul (CSD).

The purpose this article is to report the result of the evaluation of the model. This is to validate the whether the Children's Soul Development Model (CSD) could be suitable to be use as a reference model. To evaluate this model, the study adopted the Fuzzy Delphi Method (FDM) to elicit experts' views in validating the model.

### 1.1 Evaluation of the CSD Model

The evaluation phase of this study uses a panel of experts which was chosen through purposive sampling to evaluate the model. Twenty five (25) respondents had been selected to evaluate and validate the model. The procedure for this phase is as follows:

- a) Selection of experts to evaluate the model. Collect opinions of decision group: Find the evaluation score of each alternate factor's significance given by each expert by using linguistic variables in questionnaires. The linguistic scale which is similar to Likert scale is use to address the issue of fuzziness among the experts' opinion;
- b) Set up triangular fuzzy numbers to calculate the evaluation value of triangular fuzzy number of each alternate elements given by experts and find out the significance triangular fuzzy number of the elements.

The evaluation of the Children Soul Development (CSD) Model is based on Ibn Sina's Theory of Soul. The evaluation phase is aimed at answering the following research questions:

- a) Towards what extent is the experts' agreement on the Main Category of the Children Soul development (CSD) model based on Ibn Sina Theory?
- b) Towards what extent is the experts' agreement on the Human Soul Sub-Category of the Children Soul development (CSD) model based on Ibn Sina Theory?
- c) Towards what extent is the experts' agreement on the Animal Soul Sub-Category of the Children Soul development (CSD) model based on Ibn Sina Theory?
- d) Towards what extent is the experts' agreement on the Vegetative Soul Sub-Category of the Children Soul development (CSD) model based on Ibn Sina Theory?

The analysis of the evaluation in this section was utilized using <sup>[1]</sup>Fuzzy Delphi method (FDM) which is based on the requirements contained in the triangular fuzzy number and defuzzification process. The terms of triangular fuzzy number is engaging the threshold value  $d$  and the percentage of the experts consensus where the threshold value  $d$  for each item must be less than or equal to 0.2 and the percentage of agreement of the experts must be more than or equal to 75.0%. The results are presented based on these two requirements contained in the triangular fuzzy number and defuzzification process. Findings of the Evaluation Phase are presented in four themes' as below:

- a) Background Information of the Experts
- b) Expert Consensus on the Main Category of Children Soul Development (CSD)
- c) Expert Consensus on the Human Soul Sub-Category of CSD
- d) Expert Consensus on the Animal Soul Sub-Category of CSD
- e) Expert Consensus on the Vegetative Soul Sub-Category of CSD

## 2.0 BACKGROUND INFORMATION OF THE EXPERTS

The evaluation phase was conducted on 25 experts. They are acquired to have more than ten years of experience in the field of Philosophy, Islam, soul and spiritual, Child Psychology, Early Childhood Education, writers/journalist and Islamic Studies Education. In terms of their academic qualification,

20% (n = 5) possessed the highest qualification (PhD), 52% (n = 13) with Masters, and 28% (n = 7) with basic degree.

## 2.1 Result : Expert Consensus of the Main Category of the CSD model

This section presents the answer of Research Question 1: “Towards what extent the experts’ agreement on the main categories of the Children Soul development (CSD) model based on Ibn Sina Theory?”. Based on a seven-point linguistic scale, the responses of the experts to the evaluation were obtained. Based on the experts’ feedback, the threshold value  $d$  was calculated for all questionnaire items as shown in Table 1 determines the consensus level among experts for each item.

The experts agreed and accepted the there main categories of the children’s soul development phases which are; the Vegetative Soul, Animal Soul, and Human Soul. The results indicates that the average score for the Human Soul is 0.939, Animal Soul is 0.931 and Vegetative Soul is 0.845.

As discussed earlier, the analysis of the evaluation survey data for Fuzzy Delphi method (FDM) is based on the requirements contained in the triangular fuzzy number and defuzzification process. The terms of triangular fuzzy number is engaging the threshold value  $d$  and the percentage of the experts’ consensus where the threshold value „ $d$ ” for each item (components and elements) as measured must be less than or equal to 0.2 (Cheng & Lin, 2002). Whereas, the percentage of agreement of the experts must be more than or equal to 75.0% (Chu & Hwang, 2008; Murry & Hammons, 1995). For the defuzzification process, there is only one condition which is the Fuzzy Score (A) must be greater than or equal to the value of  $\alpha$ -cut of 0.5 (Bodjanova, 2006; Tang & Wu, 2010).

As shown in the result, the average response of each item in the CSD model were scored very high (Item 1= Vegetative Main Category = 0.931 ; Item 2= Animal Main Category = 0.845 ; Item 3= Human Main Category = 0.939) which indicate that the majority of the experts agreed with the categoriation of CSD model main catogery.

According to the formula by Cheng & Lin, 2002 on Table 4.3.4 below, the overall threshold value  $d$ , was calculated which indicates that the experts have reached the required consensus for all three items of the main categories of the CSD model.

Table 1 Result of Treshold  $d$  value for Each Item

Item	Main Category of CSD	Treshold value $d$
1.	Vegetative Soul Main Category	0.070
2.	Animal Soul Main Category	0.089
3.	Human Main Soul Category	0.062

Table 2 indicates the result after defuzzification process. Based on Table 2, the show the percentage of experts’ consensus for item agreement on the classification of the Human Soul sub categories of the CSD model. This indicates that the items were in the range of requirement for a triangular fuzzy number which is greater than 75%. Since a threshold value more than 75%, there is no necessity if conducting a second round of Fuzzy Delphi. As depicts in Table 2, the finding shows the defuzzification for each item in the main category development of the children soul model.

Table 2 Result of Defuzzification Process

no	item	Triangular Fuzzy Numbers		Syarat Defuzzification Process				Expert Consensus	Elemen DITERIMA
		Treshold value $d$	Expert consesus, %	m1	m2	m3	Fuzzy Score		
1		0.070	100.0%	0.828	0.964	1.000	0.931	Accept	0.931
2		0.089	100.0%	0.684	0.872	0.980	0.845	Accept	
3		0.062	100.0%	0.844	0.972	1.000	0.939	Accept	

As shown in Table 2, the results are as below:

- Human Soul with Defuzzification score is 0.939
- Vegetative Soul with Defuzzification score is 0.931
- Animal Soul with Defuzzification score is 0.845

The results indicates that all the items have met the requirements contained in the triangular fuzzy number and defuzzification process which revealed that all experts consensually agreed with these classification of main categories of the CSD model based on Ibn Sina's Theory.

Since the consensus among the experts has been achieved, the next step was to seek the answer of the research questions stated in section C, D and E as follows :

### 1. Section C

1.2 *Towards what extent are the experts' agreement on the Human Soul Category in the Children Soul development (CSD) based on Ibn Sina Theory?*

3.2.1 *Towards what extent are the experts' agreement on the sub-category of the Theoretical Faculty of the CSD model based on Ibn Sina Theory?*

### 2. Section D

1.3 *Towards what extent are the experts' agreement on the Animal Soul Category in the Children Soul Development (CSD) Model based on Ibn Sina Theory?*

3.3.1 *Towards what extent are the experts' agreement on the sub-category of the Motive Faculty of Animal Soul in the CSD model based on Ibn Sina Theory?*

3.3.1.2 *Towards what extent are the experts' agreement on the sub-category of the Appetence Faculty of Animal Soul in the CSD model based on Ibn Sina Theory?*

3.3.1.3 *Towards what extent are the experts' agreement on the sub-category of the Movement Faculty of Animal Soul in the CSD model based on Ibn Sina Theory?*

3.3.2 *Towards what extent are the experts' agreement on the sub-category of the Perceptive Faculty of Animal Soul in the CSD model based on Ibn Sina Theory?*

3.2.2.1 *Towards what extent are the experts' agreement on the sub-category of the External Senses of Perceptive Faculty of Animal Soul in the CSD model based on Ibn Sina Theory?*

3.2.2.2 *Towards what extent are the experts' agreement on the sub-category of the Internal Senses of Perceptive Faculty of Animal Soul in the CSD model based on Ibn Sina Theory?*

### 3. Section E

1.4 *Towards what extent the experts' agreement on the Vegetative Soul Category in the Children Soul Development (CSD) Model based on Ibn Sina Theory?*

## 2.2 Expert Consensus on the Human Soul Sub-Categories in the CSD Model

This section presents the answers of the second research question which is "Towards what extent are the experts' agreement on the Human Soul Category in the Children Soul Development (CSD) Model based on Ibn Sina Theory". According to Ibnu Sina Theory of Soul, Human Soul can be categorized into two sub-categories namely a) Theoretical Faculty, and b) Practical Faculty. The result indicates that the average score of each item was more than 75%. The average score for 'Theoretical Faculty' is 0.955, and for 'Practical Faculty' is 0.911. Thus, based on the data analysis, the consensus among the experts had been achieved as depicted in the table.

Based on the scores, the overall threshold value  $d$  was calculated as depicts in Table 3 below which indicates that the experts have reached the required consensus for all 2 items of the evaluation on the sub categories of the Human Soul of the CSD model. Since a threshold value reached more than 75% (Percentage of experts' consensus  $\geq 75.0\%$ ), there is no necessity to conduct a second round of Fuzzy Delphi. The result of the threshold value  $d$  for each sub-category of Human Soul of the CSD can be seen in Table 3.

Table 3 Result of Treshold  $d$  value for Each Item

Item	Main Categories of the CSD Model	Treshold value $d$
1.	Theoretical Faculty of Human Soul Main Category	0.032
2.	Practical Faculty of Human Soul Main Category	0.075

The summary of the defuzzification process depicts in the Table 4 below.

Table 4 Result of Defuzzification the Human Soul Sub-category

no.	Item	Triangular Fuzzy Numbers		Defuzzification Process				Expert Consensus
		Threshold value, $d$	Expert Consensus %	m1	m2	m3	Fuzzy Score ( $A$ )	
1		0.032	100.0%	0.876	0.988	1.000	0.955	accept
2		0.075	100.0%	0.788	0.944	1.000	0.911	accept

Table 4, the result of the defuzzification of the sub-categories of the Human Soul in the CSD model is as below:

- a) Theoretical Faculty of Human Soul with Defuzzification score is 0.955
- b) Practical Faculty of Human Soul with Defuzzification score is 0.911

Table 4 shows the findings of the experts' views on the questionnaire items for the Human Soul sub-category. Result of the defuzzification values for those two items are above the minimum value that indicates the consensus agreement on the Human Soul sub-category CSD model as proposed. In detail, the Theoretical Faculty and the Practical Faculty receives the highest value of agreement.

### 2.3 Expert Consensus of the Theoretical Faculty Sub-Categories of the Human Soul in the CSD Model

This section presents the answer of Research Question 3 based on su-category of Theoretical Faculty as "Towards what extent are the experts' agreement on the sub-category of the Theoretical Faculty of the CSD model based on Ibn Sina Theory?". According to Ibnu Sina's theory, the sub-category of the Human Soul; namely Theoretical Faculty, can be categorized into four sub-categories namely a) Potential Reason, b) Actual Reason, c) Active Reason, and d) Acquired Reason. This section presents the experts' consensus on these four sub-categories of the Theoretical Faculty. Based Reason on the data analysis, the consensus among the experts had been achieved (Item 1= Potential = 0.947; Item 2= Actual Reason = 0.923; Item 3= Active Reason = 0.883; Item 4= Acquired Reason = 0.843). The agreement of experts reach to 100% (Percentage of experts' consensus must be  $\geq 75.0\%$ ). Thus, conclusively, the experts consensually agreed with the proposed classification of sub-categories in the Theoretical Faculty of CSD model. Table 5 shows the result of treshod  $d$  data.

Table 5 Result of Treshold Value  $d$  of Sub-Category in Theoretical Faculty

Item	Main Categories of the CSD Model	Treshold value $d$
1.	Potential Reason	0.049
2.	Actual Reason	0.075
3.	Active Reason	0.094
4.	Acquired Reason	0.105

Table 5 shows the findings of Fuzzy Delphi analysis which indicates the  $d$  threshold value  $d$  score for each sub-category of the Theoretical Faculty. The highest agreement achieved by the experts are the four sub-categories of the Theoretical Faculty.

Table 6 Result of Defuzzification for Each Item of the Human Soul Sub-category

no.	item	Triangular Fuzzy Numbers		Defuzzification Process				expert consensus
		Threshold value, $d$	Percent of Expert Consensus, %	m1	m2	m3	Skor Fuzzy ( $A$ )	
1		0.049	100.0%	0.860	0.980	1.000	0.947	accept
2		0.075	100.0%	0.812	0.956	1.000	0.923	accept
3		0.094	100.0%	0.748	0.912	0.988	0.883	accept
4		0.105	100.00%	0.684	0.868	0.976	0.843	accept

The defuzzification results above shows the experts' strong consensual agreement on the sub-categories of the Theoretical Faculty of the Human Soul. Table 6 also shows the details of the findings that indicate the experts consensus agreement on the list of in the respective four sub-categories of the Theoretical Faculty. In sum, the result of the experts' consensus on the classification of four sub-categories as below:

- a) Potential Reason through the defuzzification process scores an average of 0.947 for the sub-category of the Theoretical Faculty in the CSD Model.
- b) Actual Reason through the defuzzification process scores an average of 0.923 for the sub-category of the Theoretical Faculty in the CSD Model.
- c) Active Reason through the defuzzification process scores an average of 0.883 for the sub-category of the Theoretical Faculty in the CSD Model.
- d) Acquired Reason through the defuzzification process scores an average of 0.843 for the sub-category of the Theoretical Faculty in the CSD Model.

The result of the defuzzification values for these four sub-categories are above the minimum value. The finding indicates that the consensus agreement achieved on the Human Soul sub-categories of the CSD Model is less than  $\leq 0.2$ .

## 2.4 Expert Consensus on the Sub-Categories of the Animal Soul of the CSD Model

This section presents the answer of the research question: "Towards what extent are the experts' agreement on the Animal Soul Categories in the Children Soul Development (CSD) Model based on Ibn Sina Theory". According to Ibnu Sina's theory, the sub-categories of the Animal Soul can be categorized into two sub-categories namely a) Motive Faculty and, b) Perceptive Faculty. Based on the data analysis, the consensus among the experts had been achieved as depicted in Table 7. The agreement of experts reached to 100%. Thus, conclusively, the experts consensually agreed with the proposed classification of sub-category of Animal Soul of the CSD Model. The average Fuzzy number for each sub-category is as follow: 1) Motive Faculty: 0.935, while 2) Perceptive Faculty: 0.895.

Table 7 presents the result of the Threshold  $d$  value for those two sub-categories of the Animal Soul of the CSD Model.

Table 7 Result of Threshold Value Value  $d$  of Sub-Category of Animal Soul

Item	Main Categories of the CSD Model	Threshold value $d$
1.	Motive Faculty of the Animal Soul	0.066
2.	Perceptive Faculty of the Animal Soul	0.062

Table 7 shows the findings of the threshold value  $d$  score for each sub-category of the Animal Soul as main category. The finding indicates that the higher agreement achieved by the experts are the second sub-category of the Animal Soul. Table 8 shows the result of the defuzzification for each item of the Animal Soul.

Table 8 Result of the Defuzzification for Each Item of the Animal Soul Sub-Categories

no	Item	Triangular Fuzzy Numbers		Defuzzification Process				Expert consensus
		Threshold value, $d$	Expert Consensus %	m1	m2	m3	Fuzzy Score ( $A$ )	
1		0.066	100.0%	0.836	0.968	1.000	0.935	accept
2		0.062	100.0%	0.756	0.928	1.000	0.895	accept

The result indicates that all the items have met the requirements contained in the triangular fuzzy number and the defuzzification process which reveals that all experts consensually agreed with this classification of the main category ; Animal Soul of the CSD Model. The result of the defuzzification as shown in Table 8 are as follow :

- a) Motive Faculty of Animal Soul: 0.935
- b) Perceptive Faculty of Animal Soul: 0.895

The finding indicates that the consensus agreement achieved on the Human Soul sub-categories of the CSD Model is less than  $\leq 0.2$ . Thus, all experts consensually agreed with the classification of the Animal Soul in the CSD Model.

## 2.5 Expert Consensus of the Sub-Categories of the Motive Faculty of the Animal Soul of the CSD Model

This section presents the answer of the research question: "Towards what extent are the experts' agreement on the sub-categories of the Motive Faculty of the Animal Soul in the CSD Model based on Ibn Sina Theory?". According to Ibnu Sina theory, the sub-categories of the Motive Faculty of the Animal Soul is classified into two groups: 1) Appentence Faculty and, 2) Movement Faculty. For further consensus, the experts had to respond to the following questions: Do you agree with the Appentence Faculty and Movement Faculty to be classified in the sub-categories of the Motive Faculty in the CSD Model ?.

The result of the experts' consensus depicts in Table 4.3.15. Based on the data analysis, the experts' consensus among experts had been achieved as depicted in Table 4.3.15. The agreement of the experts reached more than 75%, thus the result indicates that the experts consensually agreed with the proposed classification of the Motive Faculty sub-categories of the Animal Soul in the CSD Model. The average Fuzzy number for each sub-category is: 1) Appentence Faculty: 0.947, while 2) Movement Faculty: 0.899.

Table 9 presents the result of the Treshold  $d$  value for those two sub-categories of the Motive Faculty in the CSD Model.

Table 9 Result of Treshold value  $d$  of Sub-Category of Motive Faculty in Animal Soul

Item	Sub-Categories of the Motive Faculty	Treshold value $d$
1.	Appetence Faculty	0.049
2.	Movement Faculty	0.066

Based on the data analysis, the consensus among the experts had been achieved as depicted in Table 10. The agreement of experts reached to 100%. Thus, conclusively, the experts consensually agreed with the proposed classification of the sub-categories of the Animal Soul of CSD Model. The Treshold value  $d$  for each sub-category: 1) Appentence Facult: 0.049 while, 2) Movement Faculty: 0.066.

Table 10 Result of Defuzzification of Sub-Category of Motive Faculty in Animal Soul

no	item	Triangular Fuzzy Numbers		Defuzzification Process				Expert Consensus
		Threshold value, $d$	Percentage of Expert consensus, %	m1	m2	m3	Fuzzy Score ( $A$ )	
1		0.049	100.0%	0.860	0.980	1.000	0.947	accept
2		0.066	100.0%	0.764	0.932	1.000	0.899	accept

The accepted defuzzification value for each item must be less than 0.2. Referring to the result in Table 4.3.16, reveals that all experts consensually agreed with the item to be included in the Motive Faculty of the Animal Soul in the CSD Model. The experts clearly agreed of both sub-categories of the Motive Faculty to be included in the model. The defuzzification result are as follows :

- a) Appetance Faculty: 0.947
- b) Movement Faculty: 0.899

The finding indicates that the consensus agreement achieved on the Human Soul sub-category CSD Model is less than  $\leq 0.2$ . Thus, all experts consensually agreed with this classification of the sub-categories of the Motive Faculty of the Animal Soul in CSD Model.

## 2.6 Expert Consensus on the Perceptive Faculty Sub-Categories of the Animal Soul Faculty of the CSD Model

This section presents the answer of the research question: "Towards what extent are the experts' agreement on the sub-categories of the Perceptive Faculty of the Animal Soul in the CSD Model based

on Ibn Sina Theory?”. According to Ibnu Sina’s theory, the sub-categories of the Motive Faculty of the Animal Soul is classified into two groups : 1) External Senses and, 2) Internal Senses. For further consensus, the experts had to respond to the following questions : ‘Do you agree with the External Senses and Internal Senses to be classified in the sub-categories of the Perceptive Faculty in the CSD Model ?.

The result of the experts’ consensus can be seen in Table 11. Based on the data analysis, the experts’ consensus had been achieved. The agreement of experts reached more than 75%. Thus, the result indicates that the experts consensually agreed with the proposed classification of the Perceptive Faculty sub-categories of the Animal Soul of the CSD Model. The average Fuzzy number for each sub-category: 1) External Senses: 0.939, while 2) Internal Senses: 0.877. Result of the Treshold value  $d$  of the sub-categories of the Perceptive Faculty can be seen in Table 11.

Table 11 Result of Treshold value  $d$  of the Sub-Categories of the Perceptive Faculty

Item	Sub-Categories of the Perceptive Faculty	Treshold value $d$
1.	External Senses	0.062
2.	Internal Senses	0.068

The finding in Table 11 indicated that higher agreement had achieved by the experts on the two sub-categories of Perceptive Animal Soul in the CSD model. Table 12 below shows the result of defuzzification for each item of the Perceptive Faculty of the Animal Soul in CDS Model.

Table 12 Result of Defuzzification for each item of the Perceptive Faculty

no	Item	Triangular Fuzzy Numbers		Defuzzification Process				expert consensusr
		Threshold value, $d$	Percentage of expert consensus, %	m1	m2	m3	Skor Fuzzy ( $A$ )	
1		0.062	100.0%	0.844	0.972	1.000	0.939	accept
2		0.068	100.0%	0.732	0.908	0.992	0.877	accept

The result indicated that all the items have met the requirements contained in the triangular fuzzy number and defuzzification process which revealed that all experts consensually agreed with these classification of sub-category of Perceptive of Animal Soul in CSD model based on Ibn Sina Theory. The result of defuzzification as shown in Table 12 as follow :

External Senses of Perceptive Faculty – 0.939

Internal Senses of Perceptive Faculty – 0.877

The finding indicates the consensus agreement achieved on the Human Soul sub-categories of the CSD Model is less than  $\leq 0.2$ . Thus, all experts consensually agreed with the classification of the sub-categories of the Motive Faculty of the Animal Soul in the CSD Model.

## 2.7 Expert Consensus on the External Senses Sub-Categories of the Perceptive Faculty in the CSD Model

This section presents the answer of research question: “Towards what extent are the experts’ agreement on the sub-category of External Senses of Perceptive Faculty of Animal Soul in the CSD Model based on Ibn Sina Theory?”. According to Ibnu Sina’s theory, the sub-categories of the External Senses of the Animal Soul is classified into five categories : 1) Sight Faculty, 2) Hearing Faculty, 3) Smell Faculty, 4) Taste Faculty and 5) Touch Faculty. For further consensus, the experts had to respond to the following questions : ‘Do you agree with the : 1) Sight Faculty 2) Hearing Faculty 3) Smell Faculty, 4) Taste Faculty, 5) Touch Faculty to be classified in the sub-categories of the External Faculty in the CSD Model ? .

The result of the average response of each item in the CSD model were scored very high which indicates that the majority of the experts agreed with the five categories of the External Senses of CSD Model. The experts’ agreement on the External Senses sub-categories of the Perceptive Faculty of the



CSD Model are as follow: Item1: Sight Faculty = 0.943, Item 2: Hearing Faculty = 0.912, Item 3: Smell Faculty =0.859, Item 4 : Taste Faculty = 0.844 and, Item 5: Touch Faculty = 0.881.

Table 13 Result of the Treshold value  $d$  of the Sub-Categories of the External Faculty of the Perceptive Faculty

Item	Sub-Categories of the External Senses of the Faculty	Treshold value $d$
1.	Sight Faculty	0.056
2.	Hearing Faculty	0.086
3.	Smell Faculty	0.121
4.	Taste Faculty	0.124
5.	Touch Faculty	0.075

Table 13 shows the findings of the threshold value  $d$  score for each External Faculty sub-categories of the Animal Soul. The finding indicates that a higher agreement than before, had achieved by the experts as indicated by the above table and the treshold value  $d$  is less than 0.2. The results of the Treshold value  $d$  of the five sub-categories of the External Faculty of the Perceptive Animal Soul in the CSD Model are in Table 14 .

Table 14 Result of the Defuzzification of the Sub-Categories of the External Senses of Perceptive of the Animal Faculty of the CSD Model

no	item	Triangular Fuzzy Numbers		Defuzzification Process				Expert Consensus
		Threshold value, $d$	Percentage of Expert Consensus, %	m1	m2	m3	Fuzzy Score (A)	
1		0.056	100.0%	0.852	0.976	1.000	0.943	accept
2		0.086	96.0%	0.796	0.944	0.996	0.912	accept
3		0.121	100.0%	0.716	0.884	0.976	0.859	accept
4		0.124	100.00%	0.692	0.868	0.972	0.844	accept
5		0.075	100.00%	0.740	0.912	0.992	0.881	accept

The results indicate that all items have met the requirements contained in the triangular fuzzy numbers and that the deffuzification process reveals all experts consensually agreed with these classification of sub-categories of the External Senses of the Perceptive of Animal Soul of the CSD Model. The result indicated in Table 14 shows that the defuzzification score for the Sight Faculty is 0.943, Hearing Faculty is 0.912, Smell Faculty is 0.859, Taste Faculty is 0.844, and Touch Faculty is 0.881.

## 2.8 Expert Consensus on the Internal Senses of the Sub-Categories of the Perceptive Faculty of the CSD Model

This section presents the answer of the research question: “Towards what extent are the experts’ agreement on the sub-categories of the Internal Senses of the Perceptive Faculty of the Animal Soul in the CSD Model based on Ibn Sina Theory?”. According to Ibnu Sina’s theory, the sub-categories of the Internal Senses of the Animal Soul is classified into five groups : 1) Fantasy Faculty, 2) Representation Faculty, 3) Rational Imagination Faculty, 4) Estimative Faculty, 5) Retentive and Recollective Faculty. For further consensus, the experts had to respond to the following questions : ‘Do you agree with the : 1) Fantasy Faculty, 2) Representation, 3) Rational Imagination Faculty, 4) Estimative Faculty, and 5) Retentive and Recollective Faculty to be classified in the sub-categories of the External Faculty in the CSD Model ?.

The result shows that the average response of each item for the CSD Model were scored very high which indicates that the majority of the experts agreed with the five categorization of the Internal Senses of the CSD Model.

Result shows that the average response of each item in the CSD Model were scored very high: Item 1) Fantasy Faculty = 0.935, Item 2) Representation Faculty=0.923, Item 3) Rational Imagination Faculty = 0.899, Item 4) Estimative Faculty = 0.871, Item 5) Retentive and Recollective Faculty = 0.847). Results indicate that the majority of the experts agreed with the categorization of the CSD Model.

Table 15 Result of Treshold value  $d$  of the Sub-Categories of the Internal Faculty of the Perceptive Faculty

Item	Sub-Category of Internal Senses of the Faculty	Treshold value $d$
1.	Fantasy Faculty	0.066
2.	Representation Faculty	0.075
3.	Rational Imagination Faculty	0.066
4.	Estimative Faculty	0.077
5.	Retentive and Recollective Faculty	0.109

Table 15 shows the findings of  $\frac{1}{SEP}$  threshold value  $d$  score for each Internal Faculty sub-category of the Animal Soul. The findings indicate that higher agreement had achieved by the experts on as indicated by above table and the treshold value  $d$  less than 0.2. The result of Treshold value  $d$  in Table 4.3.25 for the five sub-categories of the Internal Faculty of the Perceptive Animal Soul in the CSD Model.

Table 16 Result of the Defuzzification of Sub-Categories of the Internal Senses of the Perceptive of the Animal Soul of the CSD Model

NO.	Item	Triangular Fuzzy Numbers		Defuzzification Process				Expert Consensur
		Threshold Value, $d$	Percentage of expert consensur, %	m1	m2	m3	Skor Fuzzy (A)	
1		0.066	100.0%	0.836	0.968	1.000	0.935	accept
2		0.075	100.0%	0.812	0.956	1.000	0.923	accept
3		0.066	100.0%	0.764	0.932	1.000	0.899	accept
4		0.077	100.00%	0.724	0.900	0.988	0.871	accept
5		0.109	100.00%	0.692	0.872	0.976	0.847	accept

The results indicate that all the items have met the requirements contained in the triangular fuzzy numbers and the defuzzification process reveals that all experts consensually agreed with these classification of the sub-categories of the Internal Faculty of the Perceptive of the Animal Soul in CSD Model. The result indicates in Table 16 that the defuzzification score for the 1) Fantasy Faculty is 0.935, 2) Representation Faculty is 0.923, 3) Rational Imagination Faculty is 0.899, 4) Estimative Faculty is 0.871 and 5) Retentive and Recollective Faculty is 0.84.

## 2.9 Expert Consensus on the Movement Faculty Sub-Categories of the Movement Faculty of the CSD Model

This section presents the answer of research question: "Towards what extent are the experts' agreement on the sub-category of Movement Faculty of Animal Soul in the CSD Model based on Ibn Sina Theory?". According to Ibnu Sina's theory, the sub-categories of the Movement Faculty of the Animal Soul in the CSD Model is classified into 2 groups: 1) Desire Faculty, and 2) Anger Faculty. For further consensus, the experts had to respond to the following question: 'Do you agree with the Desire Faculty and Anger Faculty to be classified in the sub-categories of the Movement Faculty of the Animal Soul in the CSD Model? .

Result shows that the average response of each item in the CSD Model were scored very high: Item 1) Desire Faculty = 0.931, Item 2) Anger Faculty = 0.877, which indicate that the majority of the experts agreed with the categorization of the Movement Faculty sub-categories of the Animal Soul in the CSD Model. Table 17 shows the findings of  $\frac{1}{SEP}$  threshold value  $d$  score for each Movement Faculty sub-category of the Perceptive Faculty

Table 17 Result of Treshold value  $d$  of Sub-Category of Movement Faculty of the Perceptive Faculty

Item	Sub-Category of the Movement Faculty of the Animal Soul	Treshold value $d$
1.	Desire Faculty	0.070
2.	Anger Faculty	0.123

The finding indicates a high agreement had achieved by the experts as shown in the above table and the treshold value  $d$  less than 0.2. The result of Treshold value  $d$  in Table 17 for the five sub-categories of the Internal Faculty of the Perceptive Animal Soul in the CSD Model.

Table 18 Result of Defuzzification of the Sub-Categories of the Movement Faculty of the Animal Soul of the CSD Model

no	item	Triangular Fuzzy Numbers		Defuzzification Process				Expert Consensus
		Threshold value, $d$	Percentage of Expert consensus, %	m1	m2	m3	Fuzzy Score ( $A$ )	
1		0.070	100.0%	0.828	0.964	1.000	0.931	accept
2		0.123	100.0%	0.748	0.904	0.980	0.877	accept

The result indicate that all the items have met the requirements contained in the triangular fuzzy number and defuzzification process which reveals that all experts consensually agreed with these classification of the sub-categories of the Movement Faculty of Animal Soul in the CSD Model. The result indicated in Table 18 shows that defuzzification score for the 1) Desire Faculty is 0.931 , and 2) Anger Faculty is 0.877.

## 2.10 Evaluation of the Suitability of the Vegetative Soul

Based on the data analysis, after the consensus among the experts had been achieved, the next step was to seek the findings for the experts' collective views on the evaluation in terms of sub category of the model. According to Ibnu Sina theory, there are 3 sub-category of Vegetative Soul namely: 1) Nutrition Faculty, 2) Growth Faculty, 3) Reproductive Faculty. This section presents the answer for the research question: "Towards what extent are the experts' agreement on the sub-categories of the Vegetative Soul of the CSD Model based on Ibn Sina Theory?".

Result shows that the average response of each item in the CSD model were scored very high: Item 1) Nutrition Faculty =0.943, Item 2) Growth Faculty =0.923, Item 3) Reproductive Faculty =0.889, which indicate that the majority of the experts agreed with the categorization of the Vegetative Soul of the CSD Model. The experts agreement on the Vegetative Soul category of Human Soul in CSD Model were accepted by the panel of experts.

Table 19 shows the findings of the  $d$  threshold value score for each sub-category of the Vegetative Soul. The finding indicates that a higher agreement had achieved by the experts on as indicated by above table and the treshold value  $d$  less than 0.2. The result of Treshold value  $d$  can be seen in Table 19 for the three sub-categories of the Vegetative Soul of the CSD Model.

Table 19 Result of Treshold value  $d$  of of the Vegetative Soul

Item	Sub-Categories of the <i>Vegetative Soul</i>	Treshold value $d$
1.	Nutrition Faculty	0.056
2.	Growth Faculty	0.075
3.	Reproductive Faculty	0.086

Table 20 shows the findings of  $d$  threshold value score for each Vegetative Soul sub-categories. The finding indicates that a higher agreement had achieved by the experts as indicated by above table and the treshold value  $d$  less than 0.2. The result of the Treshold value  $d$  for the three sub-categories of the Vegetative Soul in the CSD Model are shown in Table 20.

Table 20

No.	Item / Elemen	Defuzzification Number		Defuzzification Process				Expert Consensus	Accepted
		Threshold Value, $d$	Percentage of Consensus	m1	m2	m3	Score Fuzzy A		
1		0.056	100.0%	0.852	0.976	1.000	0.943	Accept	0.931
2		0.075	100.0%	0.812	0.956	1.000	0.923	Accept	
3		0.086	100.0%	0.756	0.920	0.992	0.889	Accept	

The result indicates that all the items have met the requirements contained in the triangular fuzzy numbers and defuzzification process reveals that all experts consensually agreed with these classification of sub-categories of the Vegetative Soul in the CSD Model based on Ibn Sina Theory. The result is shown in Table 20 and indicates that Defuzzification score for the 1) Nutrition Faculty - 0.94, 2) Growth Faculty – 0.923, and 3) Reproductive Faculty – 0.889.

### 3.0 CONCLUSION

The overall mapping results for all three main categories in the CSD Model could be concluded in Table 21. The table does not only show the defuzzification values for all questionnaire items but also includes the ranking of the items. The ranking of the items indicates how an item compares with other items in the degree of agreement among participants. Ranking number one (1) is taken as the highest rank consistent with the highest defuzzification value registered to the particular item. In a conventional Fuzzy Delphi, the ranking of the items is to determine the variables for the scope of a case being studied. Items that received higher ranks could be considered as a variable or an element chosen as the result of the study. However, in this study, the ranking is used to compare the level of agreement of items among the experts only.

### 4.0 REFERENCES

- A&C Black and Marilyn Bowles. (2008). *Philosophy for Children*. London:A&C Black.
- Abdessalam Cheddadi. (2000). IbnKhalidun on Education in Prospects: The Quarterly Review of Comparative Education. Vol. XXIV. No. 1/2. (pp.7-9). Retrieved on February 25, 2012 from [http://www.ibe.unesco.org/fileadmin/user\\_upload/archive/publications/ThinkersPdf/khalidun\\_e.pdf](http://www.ibe.unesco.org/fileadmin/user_upload/archive/publications/ThinkersPdf/khalidun_e.pdf).
- Abu Hamid Al-Ghazali. (1937-8). [Ihya' 'ulum al-din](#) (The Revival of the Religious Sciences). (E.E. Calverley, Trans.). Cairo: Matba'ah Lajnah Nashr al-Thaqafah al-Islamiyyah.
- Abu Hamid Al-Ghazali. (1961) .Maqasid al falasifa (The Intentions of the Philosophers). (S. Dunya, ed.). Cairo: Dar al-Ma'arif.
- Abu Hamid Al-Ghazali. (1961).Mi'yar al-'ilm (The Standard Measure of Knowledge).(S. Dunya, ed.). Cairo: Dar al-Ma'arif.
- Abu Hamid Al-Ghazali.(1927). Tahafut al falasifa ([The Incoherence of the Philosophers](#)).(M. Bouyges, e.d. and S.A. Kamah, Trans.). Beirut: Imprimerie Catholique.
- Ann Margaret Sharp and Ronald F. Reed. (1992). *Studies in Philosophy for Children*. Philadelphia: Temple University Press.
- Best, R. (2008). In defence of the concept of 'spiritual education': a reply to Roger Marples. *International Journal of Children's Spirituality*. Oct. 2008, Vol. 13, Issue 4, 321-329.
- Bryant, A.N., Wickliffe, K., Mayhew, M.J. , & Behringer, L.B. (2009). Developing an Assessment of College Students' Spiritual Experiences: The Collegiate Religious and Spiritual Climate Survey. *Journal of College and Character*. Vol. 10, Issue 6 (online).
- Crossman, J. (2010). Secular Spiritual Development in Education from International and Global Perspectives. *European Journal of Teacher Education*. Vol. 38, Issue 2, (pp. 503-520).
- Daniel Tanner and Laurel Tanner. (1980). *Curriculum Development: Theory and Practice*. London:Macmillan Publishing Co..
- De Souza, M. (2003). Contemporary Influences on the Spirituality of Young People: implications for education. *International Journal of Children's Spirituality*. Vol. 8, Issue 3, (pp. 269-279).
- FazlurRahman. (1952).*Avicenna's Psychology*. Oxford: Oxford University Press.
- Fredric Copleston. (1983). *A History of Philosophy*.(Jallal al-Din Mojtabavi, Trans.). Tehran: n.p..
- Gerald L. Gutek. (1997). *Philosophical and Ideological Perspectives on Education*. Massachusetts: Allyn and Bacon.
- Jones, L. (2005). What Does Spirituality in Education Mean?. *Journal of College and Character*. Vol. 6, Issue 7 (online).
- Ibn Sina. (2000). *Durus-i M'arifat-i Nafs* (Lessons regarding the Knowledge of the Soul). Tehran: IlmiwaFarhangi Press.
- Ibn Sina. (1959). *an-Nafs* (The Soul) or *Avicenna de Anime*. (F. Rahman, ed.). London: Oxford University Press.

- Ibn Sina, al-Husayn ibn Abdallah. (1956). *Psychologie D'Ibn Sina (Avicenne) D'Apres Son (Euvre As-Sifa) (Psychology of Ibn Sina of His Work As-Shifa)*. In Jan Bakos (Ed.), (1st vol., 15p.).
- Ibn Sina. (1996). *al-Burhan (Logic)in al-Shifa'*. Egypt: Vizarat al-Tarbiatwa'ITa'lim.
- Louis Cohen and Lawrence Manion. (1994). *Research Methods in Education*. London and New York:Routledge.
- [Marguerite G. Lodico](#), Dean T. Spaulding, Katherine H. Voegtler. (2010). *Methods in Educational Research*. New York: John Wiley & Sons Inc.
- Marjorie Drake. (2006). *Developing and Consolidating the Global Dimension: A handbook for teachers*. Lancashire: [Lancashire Global Education Centre](#).
- Marples, R. (1999). *The aims of education*. New York: Routledge.
- Matthew Lipman. (1976). *Philosophy for Children*. (Terrell Ward Bynam, e.d. with.). Oxford: Basil Blackwell.
- Mohd. Ridhuan Mohd Jamil, Saedah Siraj e.t. (2017). *Pengenalan Asas Kaedah Fuzzy Delphi dalam Penyelidikan Rekabentuk dan Pembangunan*. Bangi : Minda Intelek Agency.
- Nathan D. Brubaker. (2012). *Negotiating Authority through Cultivating a Classroom Community of Inquiry in Teaching and Teacher Education*. Vol. 28. No.2. p.240-250.
- Noor Shakirah Mat Akhir. (2010). *Al-Ghazali and Theory of Soul : A Comparative Study*. Penerbit Universiti Sains Malaysia.
- N.S. Rajendran. (2016). *Teaching and Acquiring Higher-Order Thinking Skills Theory and Practice*. Universiti Pendidikan Sultan ISdriz.
- Pandya, S. K. (2011). *Understanding Brain, Mind and Soul: Contributions from Neurology and Neurosurgery*. *Mens Sana Monogr*. Jan-Dec; 9(1),(pp.129–149).
- Priestley, J. (2010). *Spirituality, Curriculum and Education*. *International Journal of Children's Spirituality*. Vol. 2, Issue 1, 23-34.
- Rosnani Hashim. (1999). *The Concept of Education in Islam: Islamization of the Curriculum*. Retrieved on May 29,2012 from [http://i-epistemology.net/attachments/637\\_V16N2%20Summer%2099%20-%20Hashim%20-%20Islamization%20of%20the%20Curriculum.pdf](http://i-epistemology.net/attachments/637_V16N2%20Summer%2099%20-%20Hashim%20-%20Islamization%20of%20the%20Curriculum.pdf).
- Saedah Siraj, Norlidah Alias e.t. (2013). *Design and Developmental Research Emergent Trends in Educational Research*. Pearson Malaysia Sdn Bhd.
- Syed Muhammad Naquib Al-Attas. (1997). *The Concept of Education in Islam: A Framework for an Islamic Philosophy of Education*. Kuala Lumpur: ISTAC.
- Syed Muhammad Naquib Al-Attas. (1990). *The Nature of Man and the Psychology of the Human Soul*.Kuala Lumpur: ISTAC.
- Syed Muhammad Naquib al-Attas. (2001).*Prolegomena to The Metaphysics of Islam: an Exposition of the Fundamental Elements of the Worldview of Islam*. Kuala Lumpur: ISTAC.
- Wan Mohd Nor Wan Daud. (1989). *The Concept of Knowledge in Islam*. New York: Mansell Publishing.
- Wan Mohd Nor Wan Daud. (1998). *The Educational Philosophy and Practice of Syed Muhammad Al-Attas*. Kuala Lumpur:ISTAC.
- Zafar Afaq Ansari. (1992). *Quranic Concepts of Human Psyche*. Pakistan: The International Institute of Islamic Thought and Institute of Islamic Culture.
- Zahra Al-Zeera. (2001). *Wholeness and Holiness in Education An Islamic Perspective*. USA : The International Institue of Islamic Thought.