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## Explored the Constructs of Teachers' Teaching Supervision in the Subject of Food Services: The Application of the Modified Delphi Technique

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### Abstract

The implementation of teaching supervision in the classroom is mandatory for all teachers. This study aimed to obtain a consensus or an agreement among the chosen experts on the constructs and items of supervision in food services. The interviews conducted with the eight experts found that there are only five successful constructs that had reached the consensus among the experts and additionally, there are some constructs modification that were made which is (i) planning and preparation (ii) implementation and delivery (iii) evaluation method (iv) objectives achievement and reflection (v) teachers' professional responsibilities. Researchers have formulated items for each construct in the questionnaire with reference to the previous studies. The questionnaire that has been developed will then be evaluated and reviewed by experts in the second round of the Delphi technique. The instrument for this study consists of a set of questionnaire, which contains 72 items and is then being distributed to the eight experts. Then, the experts were given time for two weeks to make an evaluation and suggestion for the improvements of these items either by contributing new ideas or criticizing the content of the item that has been determined by the researcher. The items that have been assessed will then be analyzed based on the Interquartile range (IQR) formula and the level of agreement will be determined based on the 3-point Modified Likert scale. From the result obtained in the second round of the Modified Delphi technique, it is found that there are 12 items that need to be rejected, 10 new items to be added and other items, which need modification. Subsequently, the results of the IQR value in the third round found that all items had reached the level of consensus in accordance with the 3-point Modified Likert scale. The findings show that there are two items in which can be found in the constructs of 'Teacher Professional Responsibilities' that need to be emphasized in this supervisory aspect. In this regard, it is important that this study was carried out in order to discern the necessary items for a supervisor, especially the administrator of the TVE system in Malaysia.

**Keywords:** Supervision, Food Studies and Presentation, The Modified Delphi Technique, Interquartile range (IQR)

## Introduction

Learning and teaching supervision is important in order to ensure a successful and effective teaching with the help and support from the supervisors (Anizam & Farzeeha, 2014). At school level, the implementation of teaching supervision in the classroom is mandatory for all teachers. To ensure a smooth supervisory process in schools, the Headmaster and Principal will appoint supervisors among school administrators such as Senior Assistant Administration, Student Affair Division, Co-curriculum Committee, Evening Supervisor, Head of Subjects, and Head of School Subject Committee based on the annual school planning and suitability. The school administrator that were appointed to be a supervisor, including the Headmaster and Principal is comprised of various subject options (Bil. 3/1987).

Based on the Inspectorate of Schools and Quality Assurance Report in the Malaysia Education Development Plan 2013-2015 (PPPM 2013-2025), it has stated that there was a difference in perceptions regarding the definition of a quality teaching and learning between the school and the inspectorate of schools. With a total percentage of 63%, School Self-Evaluation (SSE) implemented by the school administrators show that the standard of teaching and learning process in schools is either Good or Outstanding. However, in accordance to the results of supervision by the Inspectorate of Schools, there are only 13% of the schools that had reached the level. The findings from the previous studies found that the use of instruments for teaching and learning supervision, which used to assess the pedagogical skill of hotel teachers are not able to distinguish between general teaching behaviors and hospitality teaching behaviors (Feng, Su, and Yang, 2011). This matter has also been raised by Ambarwangi and Rachman (2015) and Paulsen and Martin (2013) in which they had suggested that proper supervision using special instruments for cultural arts and agricultural education programs should be created so that the implementation of supervision on teaching and learning process can be done more effectively. Therefore, this study will identify the constructs and the appropriate items for the teachers' teaching supervision instruments in the field of food serving.

## Research Methodology

The Modified Delphi technique will be used in this study. Cluster, Scarcella, and Stewart (1999) stated that the Modified Delphi Technique is similar to that Delphi method in terms of the procedure in which a series of rounds with selected experts were conducted with the purpose of predicting future events and to reach a certain level of consensus. The main modification consists of starting the process with a carefully selected set of items. The selected items are taken from various sources and the major advantages of the Modified Delphi technique is (i) improving the reaction rate of the initial round, and (ii) providing a solid foundation in the previously developmental work (Cluster, Scarcella, and Stewart, 2016). Irdyanti, Ramlee, and Abdullah (2015) stated that the Delphi technique is the framework used to conduct a research by collecting and analyzing the opinions of a group of experts in the selected field of studies.

This study was also aimed at obtaining a consensus among the selected experts on the constructs and items of supervision in the field of food serving which had been developed based on

the results from the first round. The Modified Delphi technique used in this study involves three rounds of study, which is; (i) literature review and interview (ii) questionnaire evaluation (iii) evaluation of the correction made on the questionnaire. The constructs in this study have been identified beforehand from the literature studies of past researches. And the results of the previous studies show that there are six constructs involved; (i) planning and preparation (ii) classroom environment and classroom management (iii) strategy and assessment (iv) professional responsibility (v) student counseling (vi) entrepreneurial skills. This identified constructs will then be used as a guide in the next phase, which is the interview phase. The interviews involved eight panels of experts who have been appointed including the Inspectorate of Schools, Curriculum Development Division, Technical and Vocational Division, university lecturers, and polytechnic teachers that teach in the field of Food Study and Food Presentation which, also have been involved in the construction of Standard Curriculum Module of Technical and Vocational Education (TVE). The interviews have been conducted separately so that each expert can express a much more open thought or opinions without being influenced by other experts. Based on the interviews with these eight experts found that there are only five constructs that is successfully reached the consensus and construct modifications that were made are; (i) planning and preparation (ii) implementation and delivery (iii) methods of assessment (iv) objective achievement and reflection (v) teachers' professional responsibilities.

The constructs that have been agreed by all eight experts will be used as a guide for researchers to build a set of questionnaire. Researchers have formulated items for each construct in the questionnaire by referring to the previous studies in order to conduct a research in regards to the topic of the study. It involves screening, careful reading, and interpretation of research topics (Zoolhilmi, Sattar and Norzaini, 2014). The questionnaire that has been developed will then be evaluated and reviewed by experts in the second round of the Modified Delphi technique. The research instrument for this study is a set of questionnaire which contains 72 items and has been distributed to the following eight Delphi's experts. The experts were then being given two weeks of time to make an evaluation and suggestion for improvements of those items, the experts were either to contribute new ideas or to criticize the content of the items that have been determined by the researcher\*\*. The evaluation of the items is based on the Likert-type scale or level of agreement markers which is Strongly Agree, Agree, Less Agree/Unsure, Disagree, and Strongly Disagree. After all the experts have decided their respective consensus benchmarked and each has expressed their views on each item, the data obtained from the Likert scale is then translated into quartile numbers and analyzed using Microsoft Excel software. The comments and suggestions are also taken into consideration to improve the relevant items and will be re-proposed in the third round. The following items that have been evaluated will be analyzed based on the Interquartile range formula (IQR) as shown in Figure 1 and then determined the level of consent based on the 3-point Modified Likert scale (Peck & Devore; 2007) as Table 1 below;

Steps to identify IQR values:

1. The Scale Value of Expert Approval needs to be compiled from small to a large value for each question of the item.
2. Use the formula in excel software to find Quartile 1 (Q1) and Quartile 3 (Q3) values.
3.  $IQR \text{ value} = Q3 - Q1$

Figure 1 Steps to identify the Interquartile range formula

Table 1  
3-point Modified Likert Scale

Level of consensus	Modified Scale	Result
High Consensus	0 to 1	Accepted
Moderate Consensus	1.01 to 1.99	Accepted
No Consensus	2.0 and above	Rejected

Based on Table 1 above, the findings from the second round found that there are 12 items that need to be rejected, 10 new items to be added and other items that need to be modified. The following items that need to be rejected or forfeited are due to the IQR value that exceed 2.0 where the item does not reach the consensus among the experts (Irdyanti, and Abdullah, 2015). Table 2 below is an example of a sample item that needs to be dropped, namely TP2 and TP7.

Table 2  
Items accepted and dropped

Teachers' Professional Responsibilities											
Item	The Approval Scale Value								Q1	Q3	IQR Value Q3-Q1
TP1	4	4	4	5	5	5	5	5	4	5	1
TP2	1	2	2	3	5	5	5	5	2	5	3
TP3	5	5	5	5	5	5	5	5	5	5	0
TP4	4	4	4	5	5	5	5	5	4	5	1
TP5	5	5	5	5	5	5	5	5	5	5	0
TP6	4	4	4	5	5	5	5	5	4	5	1
TP7	2	3	3	4	5	5	5	5	3	5	2

The instrument that has been improved were then returned to the eight specialists for re-evaluation in the third round. After a two-week period of re-evaluation by the Delphi's experts come to end, researchers will re-evaluate the IQR value to see if there are still items to be repaired or not. In accordance to the IQR value in the third round, it is found that all items have reached the level of consent based on the 3-point Modified Likert scale. Hence, the cycle of Modified Delphi Technique was halted in round three. By referring to the Delphi process performed by Morris et al. (2013), the cycle of the Modified Delphi Technique will cease as all items have reached a level of consensus among all experts involved.

## Conclusion

In conducting an analysis using the Modified Delphi Technique, researchers also take into consideration all comments and advice from the experts with the intentions of making refinements and improvements in the study. Once the items are sorted out after the process of item removal, the

sentence structures of each item are changed and refined once again. The findings show that the two items found in the 'Teachers' Professional Responsibilities' constructs are among items that need to be emphasized in this supervisory aspect. In this regard, it is important that this study was conducted in order to observe and given emphasize on the necessary items required by an administrator, especially in technical organizations in Malaysia. Thus, various stakeholders should strive to improve and formulate the existing supervision towards greater excellence. Malaysia has the potential to become an international education hub if every education organization administrator develops a supervisory instrument that can be applied in the technical and vocational education system in order to achieve all the desires, vision, and mission that has been outlined.

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