

## Development of Food Safety Module and Sanitation Management

**Nor Aziah Ahmad<sup>1\*</sup>, Siti Nur Sarini Mohamad Sukeri<sup>1</sup>, Nor Anis Intan Aqiah Tukiran<sup>1</sup>, Siti Hajar Zakariah<sup>1</sup>, Lisa Marian Syawal Ismail<sup>1</sup>, Hairuddin Harun<sup>1</sup>, Adibah Aishah Md Sahak<sup>1</sup>, Abdul Wafi Abdul Rahman<sup>1</sup>**

<sup>1</sup>Faculty of Technical and Vocational Education,  
Universiti Tun Hussein Onn Malaysian Parit Raja, 86400 Batu Pahat, Johor,  
MALAYSIA

\*Corresponding Author Designation

DOI: <https://doi.org/10.30880/ritvet.2021.01.01.019>

Received 21 February 2021; Accepted 10 March 2021; Available online 31 March 2021

**Abstract:** In the process of teaching and learning, teaching materials such as modules are tools of teaching aids that play an important role in achieving educational goals. The study was conducted to develop a study module of Food Safety and Sanitation Management for students taking catering courses at the Faculty Of Technical and Vocational Education at UTHM. In this study, the development of this module is based on the five phases of the ADDIE model consisting analysis, design, development, implementation, and evaluation. The development of this module will serve as a reference or guide for students taking catering courses. Subsequently, researchers have chosen to develop this module in English. Based on this module, researchers have also made improvements by adding subtopic to the content of this developed module. In addition, the researchers also developed this module by following the syllabus set by the faculty. Researchers have also obtained the approval of three experts who teach catering courses at the Faculty of Technical and Vocational Education (FPTV). The results show that all experts agree that this module can serve as a reference and a guide in teaching and learning. However, this module still needs to be improved to make it more interesting and interactive to engage students in learning.

**Keywords:** Model, Module, Food Safety and Sanitation Management.

### 1. Introduction

Education in this age requires a flexible teacher in delivering knowledge to students. Therefore, a teacher should have the best way of communicating information and knowledge to students. Teachers also need to be smart in choosing methods that will interest students in order to create a more effective teaching and learning process. The use of teaching aids is very important for students in ensuring that they master one skill or skills and adding on to other skills. This is because the use of teaching aids is

an important teaching strategy in determining a student's memory. Therefore, this should be emphasized because the method of presenting knowledge or information is more effective if a teacher or lecturer is able to explore the latest techniques in teaching and learning sessions.

### 1.1 Research Background

According to An-Nashmy (1980), it is advisable for teachers to choose teaching methods and techniques that will have a profound effect on students not only in terms of understanding but also in the soul and in the students' emotional reactions. With this, students will be more focused on teaching and will be able to remember every lesson that the educator delivers. However, there are some educators who use teaching methods and techniques that do not fit the student's level of ability. Next, according to Ahmad and Harun (2004), sometimes every teaching concept presented by the teacher will come out of the context of the actual lesson. This causes the students to not understand the learning well. As such, teachers need to change the methods or techniques of presenting information to students to help guide the teaching process more effectively. In addition, this module is very important in teaching and learning sessions as it contains content according to the syllabus set. This module can also serve as a scientific reference for teachers as well as students. Furthermore, according to Alsagoff (1987), the module developed was intended to enrich teaching and learning materials in a course or subject as teaching aids (ABBM) for learning sessions. Creating an exciting module will make it easy for students to self-study wherever they are. In addition, it also provides the opportunity for students to choose learning materials according to their comfort and needs that are also motivating to the student (Noordin and Yap, 1991). Lastly, modules on Sanitation and Food Safety are already on the market. However, the existing modules have been marketed for a long time and need to be improved as time goes by. Improvements to the module need to be made so that the module can be used effectively by students. Improvements to be made are important to make the module more engaging and interactive for the student catering students who will take the course of Food Safety and Sanitation Management at FPTV.

### 1.2 Problem Statement

Based on the research background, there are four problem statements in this research. Firstly, for students who are taking Food Safety and Sanitation Management courses, they need referrals as a guide for improving their knowledge and understanding during their learning. Every student has a different learning style and they will encounter problems during the learning session (Smith, 2000). Therefore, the development of this module will provide more guided teaching content to facilitate students' learning. This is because the module developed contains content that has followed the specified syllabus. It will serve as a scientific reference for teachers and students alike. In addition, teachers use teaching and learning methods that do not meet the student's ability. However, according to Taat (2012), appropriate teaching can have a positive effect on students as students will be more focused on teaching and easier to remember and understand each learning. With each passing lesson, it will be easy for students to understand. Most students need a module to facilitate independent learning that can be used as reference. Students will be more aware of and interested in the learning that comes with teaching from teachers along with scientific reference as a guide. With the creation of this learning module will attract students' attention as well as enhance their understanding of the learning session. Based on the background of the problem as well, the modules developed are intended to enhance the learning materials for students. Each student has their own learning style. This is because every student is different in terms of learning style. In addition, students' backgrounds are also very influential. Next, according to Smith (2000), students with a different learning style will have problems in design learning. In addition, the module to be built on Sanitation Management and Food Safety is already on the market. However, this module needs improvement as time goes on. It is necessary for more effective use of future students. In addition, these improvements are crucial to making the module more attractive and structured for students. Lastly, according to Mohamed Rafi (2003), the development of modules should be easy to understand and learn because students will use the module fully during the learning session.

Therefore, the creation of the Sanitation Management and Food Safety module is expected to aid and facilitate student learning and enhance knowledge related to food safety.

### 1.3 Objectives

The objectives of the study are the key elements to be considered in the development of learning modules for sanitation management and food safety. The objectives are:

- To design a module of Food Safety and Sanitation Management according to the syllabus provided.
- To develop a module of Food Safety and Sanitation Management according to the syllabus provided.

## 2. Literature Review

In this section, the researcher will discuss the development of modules that support research studies. In this case, the research will study the important matter of module development.

### 2.1 Module Definition

Modules are publications that contain small sections of related topics to facilitate the teaching and learning process in achieving the learning objectives. The use of appropriate teaching aids should be designed to interest students who have different learning styles for everyone. According to Smith (2000), each student will have a different learning style and they will have problems in their learning process. Therefore, the way to solve learning problems is through the learning module (Ke, 2003). Module-based learning is designed to facilitate students' learning by using their own methods while also making the learning sessions more meaningful. A form of teaching needs to be delivered with specific methods such as the use of modules so that the learning delivered is more effective in the short term (Hashim, 1997).

### 2.2 Teaching and Learning

The education system in Malaysia uses the same teaching and learning process. However, the process of teaching and learning is changing from time to time as education progresses in Malaysia. Lecturers are facilitators and examples for students during the teaching and learning process. Therefore, lecturers and students should play an important role in ensuring that each teaching and learning strategy is effective. This is because effective teaching and learning will lead to the achievement of well-defined teaching objectives. The quality of education depends on the teaching and learning strategies used by a teacher or lecturer. This is because the strategies used by a lecturer or teacher in effective teaching and learning processes also need to be considered and paid attention by the lecturer or teacher (Education Policy Planning and Research Division (BPPDP), Ministry of Education Malaysia, 2006). The combination of effective teaching processes and learning strategies will enhance the quality of education as well as enhance the student's academic excellence.

### 2.3 Using Module in Teaching and Learning

Modules is an alternative resource that can assist students in the learning process. The modules that have been developed have a common goal of facilitating teaching and learning activities. According to Alsagoff (1981), the application of modules is as follows:

- The use of modules during the teaching and learning process by lecturers and students is a teaching tool in the classroom. For example, students can use the learning module as a reference material during the lesson sessions in the classroom or outside the classroom.
- Learning modules can also be used as teaching aids during teaching among lecturers.

- Modules used by lecturers as well as students become a material that can give students greater understanding in a course where students can use the module for reference outside of class.
- In the early stages, the use of modules to measure the level of ability of each student. To measure student achievement, lecturers will use pre-test methods. This is intended to help the lecturer assess the extent to which students have prior knowledge before starting the lesson.
- Modules can also help students who cannot attend school or class. With the use of modules, students can study and study at home so that students will not miss out on the day's learning.
- The learning module is a convenience especially for students who use distance learning or post.

#### 2.4 Benefits of Learning from the Use of Modules

The development of the developed learning modules certainly benefits the students. This is because teaching using modules is a structured and systematic teaching method. This teaching is a system of learning in which content is organized in order of learning (Asran et al, 2007). According to Asran et al (2007), the benefits of structured and systematic teaching are:

- A student will excel or advance according to his or her ability, speed and interest.
- With the development of this module, every student can do the review anywhere and can do the review whenever they want. In addition, learning will also not be tied to time and place. Students are free to study anywhere.
- This learning module has content that is organized according to the syllabus set. Therefore, each learning will be easier and more organized.
- All content of the syllabus will be developed in a concise and appropriate manner. In addition, the explanation or writing will emphasize the delivery of content that will make it easier for students who are weak or moderate.
- The cost of preparing materials for the development of this module is also cheaper for a student. This is because one subject will not always change in terms of content.

#### 2.5 Food Safety and Sanitation

Food Safety and Sanitation Management is the control of food hygiene and preparation and storage. Under this heading, there are seven sub-topics which are introduction to sanitation and food safety, food borne illness and sanitation practices, safe food flow, food hazard analysis, general sanitation facilities and equipment, sanitation and food safety management and law and consumer. Under this subtopic, there are also small units that have been developed for each of the subunits that are under the seven subtopics contained in the syllabus that have been set.

### 3. Methodology

Methodology of the study is one of the important elements of the research. The study methodology covers the methods, methods and approaches used to achieve the objectives and objectives of the study. The study methodology makes the study conducted more systematic and the study focused more on achieving the set objectives. In this study, researchers use the ADDIE model as a guide for designing a module which consists of five phases. Among the phases involved analysis, design, development, implementation and evaluation. The instrument of this study is expert evaluation form which is questionnaire form. Thus, this study also used quantitative methods. Next, the researcher has selected three lectures as an expert. They will be given a questionnaire form in their response to the module development. The data of the analysis process will show in percentage according to the research question.

#### 4. Findings

The findings are based on the research instrument used by the researcher in collecting the questionnaire data. The data of this survey was obtained through feedback from three experts on the development of the module. The results of the study will be presented in the form of the table. The researcher performs the data and will translate in terms of percentage.

##### 4.1 Part A: Respondent demography

The table 1 below shows the quantitative analysis of the respondents of the study. A total of 3 female respondents (100%). Meanwhile, table 2 shows the analysis of the age range of 21- 30 years by 1 respondent (33.3%) and 31 - 40 years by 2 respondent (66.7%). Table 3 analysis of teaching experience, 1- 3 years for 2 respondent (66.7%) and 4 - 6 years for 1 respondent (33.3%).

**Table 1: Gender Respondent Analysis**

Gender	Frequency	Percentage (%)
Male	-	-
Female	3	100
Total	3	100

**Table 2: Age Respondent Analysis**

Age	Frequency	Percentage (%)
21 – 30 Years Old	1	33.3
31 – 40 Years Old	2	66.7
Total	3	100

**Table 3: Analysis Respondent Teaching Experience**

Gender	Frequency	Percentage (%)
1-3 Years	2	66.7
4-6 Years	1	33.3
Total	3	100

##### 4.2 Part B: Content of Module

This section is to answer the research question on the validity of the content of the Food Safety and Sanitation Management learning module for student and faculty use of Catering courses at the Faculty of Technical and Vocational Education, UTHM. Based on table 4, the survey found that all respondents chose to agree and strongly agree on all items. For items 1,2,3,4,5,6,7.8 and 10 as many as 2 respondents (66.7%) voted in agreement while 1 respondent (33.3%) said strongly agree. For item 9, 3 respondents (100%) answered agree.

Thus, the ten items constructed for the validity of the content indicate the respondents' acceptance rate and strongly agree with the content validity of the Food Safety and Sanitation module.

**Table 4: Analysis Respondent Survey Question Answer**

No. Item	Research Item	Strongly Disagree (%)	Disagree (%)	Not Agree (%)	Agree (%)	Strongly Agree (%)
1	The information contained in the module meets the syllabus	-	-	-	66.7	33.3
2	The information presents is at level that difficult to easy	-	-	-	66.7	33.3
3	The language used in this module is easy to understand	-	-	-	66.7	33.3
4	The method of delivery achieve the objectives of this study	-	-	-	66.7	33.3
5	The approaches contained in the module facilitate students understanding	-	-	-	66.7	33.3
6	The reinforcement activities contained in the module help students to remember easily	-	-	-	66.7	33.3
7	The content created is appropriate and relevant to the module title	-	-	-	66.7	33.3
8	This teaching module is easy to understand	-	-	-	66.7	33.3
9	Simple and compact teaching modules to help student understand	-	-	-	100	-
10	The module developed is based on the syllabus set	-	-	-	66.7	33.3
<b>Overall Total</b>					<b>70.08</b>	<b>29.97</b>

#### 4.3 Part C: Design of Module

This section addresses the research questions pertaining to the design of the Food Safety and Sanitation module for student and faculty use of Catering courses at the Faculty of Technical and Vocational Education, UTHM. Based on the percentage shown in table 5, the survey found that almost all respondents chose to agree on all items. For items 1, 3 and 4, two respondent (66.7%) respondents said agree and 1 respondent (33.3%) answered strongly agree. Meanwhile, for item 2, 1 respondent (33.3%) said agree and 2 respondent (66.7%) answered strongly agree. Subsequently, of the 5 items 2 respondent (66.7%) answered not agree and 1 respondent (33.3%) answered agree. For item 6, 1 respondent (33.3%) answered not agree and 2 respondent (66.7%) said agree. A total of 3 respondents (100%) not agree on item 7 and answered agree on item 8. Meanwhile, item 9 of 1 respondent (33.3%) answered agree and 2 respondent (66.7%) said strongly agree. Finally, item 10 of 1 respondent (33.3%) answered not agree, 1 respondent (33.3%) answered agree and 1 person (33.3%) responded strongly agree.

Thus, the ten items constructed for module design suitability showed that the respondents' acceptance of design fit for the Food Safety and Sanitation Management module.

**Table 5: Analysis Respondent Survey Question Answer**

No. Item	Research Item	Strongly Disagree (%)	Disagree (%)	Not Agree (%)	Agree (%)	Strongly Agree (%)
1	The use of theme colour is compatible with the module	-	-	-	66.7	33.3
2	The size of the text used in the module is appropriate	-	-	-	33.3	66.7
3	The type of writing used in the module is interesting.	-	-	-	66.7	33.3
4	The information set in the module will interest the student to read	-	-	-	66.7	33.3
5	The format used is neat and orderly	-	-	66.7	33.3	-
6	The design of the module cover is interesting	-	-	33.3	66.7	-
7	There is no spelling error in the module	-	-	100	-	-
8	The images used are clear	-	-	-	100	-
9	The proportion of text size and picture size is appropriate	-	-	-	33.3	66.7
10	The use of colour in the module is interesting and appropriate to the module	-	-	33.3	33.3	33.3
<b>Overall Total</b>				<b>23.33</b>	<b>50</b>	<b>26.67</b>

## 5. Implication

Advanced suggestions are the recommendations made by researchers for future reviewers in the development of Food Safety and Sanitation Management modules for use during the teaching and learning process. The purpose of this is to incorporate more effective and engaging teaching methods in the classroom to attract students and achieve their learning objectives. These are needed to utilize modules according to the latest technological developments. For example, researchers have created interactive modules such as QR Code as they involve audio and visual learning that stimulates students' minds.

The results show that all experts agree that this module can serve as a reference and a guide in teaching and learning. However, this module still needs to be improved to make it more interesting and interactive to engage students in learning.

Next, integrate the elements of creativity within the module to become more interactive to engage students in learning. Lastly, strengthening exercises need to be improved to further enhance a student's level of understanding.

## 6. Conclusion

Overall, researchers can conclude that the study has shown that the development of the Sanitation Management and Food Safety Module can provide positive input to students and faculty who will use it. Any comments and suggestions that experts have come up with will be a guide to make this module more interactive and engaging. Finally, the research questions and objectives were met and received positive feedback from the experts. The researcher also hopes that students will be able to use this developed module as a guide to the best of their ability

## Acknowledgement

The authors would also like to thank the Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia for its support.

## References

- An-Nashmy, A. J. (1980). *Ma`alim fit- tarbiyah*. Kuwait: Makatabah Al-Manar.
- Ahmad, I & Harun J. (2004). *Pembangunan Perisihan Multimedia Berasaskan Proses Pembelajaran Masalah dalam Subjek Sains Komputer*. Persidangan Antarabangsa Pertama UPSI\_PUI, 9-10 Ogos 2004, Kuala Lumpur. Hotel Renaissance.
- Alsagoff, S. A. (1987). *Teknologi Pengajaran*. Kuala Lumpur: Dewan Bahasa dan Pustaka.
- Alsagoff, S. A. (1981). *Pengenalan Pengajaran Individu dengan Tumpuan Khas kepada Modul Pengajaran dan Modul Pembelajaran*. Pusat Pengajian Ilmu Pendidikan: Universiti Sains Malaysia.
- Asran, H., Mustafa, M. Z., & Idris, M. S. (2007). *Pedagogi Pendidikan (DBE 1213)*. Johor: UTHM.
- Hashim, Y. (1997). *Media Pengajaran Untuk Pendidikan dan Latihan*. Shah Alam: Penerbit Fajar Bakti Sdn. Bhd.