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Motivation and Self-Efficacy: Determinant's of Food Management Skills Among Btled Students in Misamis Oriental

Charlito M. Castrodes[1], Psyche B. Cambo[2], Charlie H. Cosmiano[3], Aiza Mae D. Cahansa[4]

[1]Dean, College of Technology Education, City College of Cagayan de Oro, Cagayan de Oro City, Philippines
[2]Chairman, BTVTEd & BTLEd, College of Technology Education, City College of Cagayan de Oro, Cagayan de Oro City, Philippines
[3,4]Faculty, College of Technology Education, City College of Cagayan de Oro, Cagayan de Oro City, Philippines

Abstract.
Food Management is one of the solitary components of the Bachelor of Technology and Livelihood Education program and it is seen as a significant area in the lives of many students as it teaches them the desirable values, skills, and practical applications to real-life situations. This study explored the level of motivation and self-efficacy among the BTLEd students in Misamis Oriental and how it determines their food-management skills. The framework of the study is anchored on Ryan and Deci's (2000) Theory of Motivation and Albert Bandura's (1999) Theory of Self-Efficacy. The study assumes that food management skills may be acquired by students with a high sense of motivation and self-efficacy. A descriptive-correlational design was used to facilitate the collection and organization of the data. The study revealed that the students' intrinsic motivation is weakly correlated to their sense of self-efficacy while their extrinsic motivation is highly correlated with self-efficacy. Furthermore, their intrinsic and extrinsic motivation, are significantly correlated with their food management skills. However, their self-efficacy is not significantly related to all food management skills components. Thus, the findings of this study point to the need to enhance food-management skills to the desired standard balance with motivation and self-efficacy.

Keywords: Food Management Skills, Motivation, and Self-efficacy

1. INTRODUCTION

All students have various goals in coming to school. Some students go to school with the purpose of developing their skills and competence, while others focus on competing with their peers. There are those whose main aspiration is to master certain course content, and there are also those who want to get external rewards. Schools exist not only to educate students academically but also to develop them holistically. Real learning in food management takes place when the students are able to apply what they have learned. Thus, the Food Management program in BTLEd provides learning opportunities to develop students'

motivation in order to strive more in the different tasks given to them.

Furthermore, there are many constructs that could be investigated when assessing which factors influence students' food-management skills. This falls within two major categories: students' motivation and students' self-efficacy. Motivation urges one person to do something. In its simplest words, motivation gives strength for directing and driving one's passion in order to achieve better school performance. Research on students' motivation and self-efficacy has developed and expanded. However, both constructs lack current research that relates to food-management skills. Thus, this drives the researcher to explore the determines of food management skills of BTLEd students in Misamis Oriental since motivation and self-efficacy are seen as the foundation and have been considered imperative factors, especially for the life of the students.

For the students to show their fullest skills in food management, they should perform differentiated tasks competently and proficiently, accept and utilize the suggestions to improve performance, and be motivated, intrinsically or extrinsically. Additionally, it is important to understand the level of students' self-efficacy and get students to engage more fully and deeply with different performance tasks.

2. Methodology

2.1 Research Design

This study used a quantitative descriptive-correlational design which involves the conditions or relationships that exist between variables. This was deemed the most suitable design since the study will describe the relationship between the students' food-management skills and their motivation and self-efficacy.

2.2 Research Participants

The sampling technique used in this study was randomized sampling. This method was selected to ensure that every member of a population has an equal chance of being selected for a study. This method helps eliminate selection bias, allowing researchers to generalize findings to the entire population (Creswell & Creswell, 2018). The participants of the study were the seventy (70) BTLEd students of District I & II of Misamis Oriental. These seventy (70) students were enrolled and had food management as their major course in BTLEd.

2.3 Research Instrument

The primary instrument used in this study was the questionnaire developed by Murray, D.W. et al. (2015), which explores the culinary efficacy students' skills, confidence, and healthy cooking competencies among university students. This instrument was adapted to fit the context of the I & II District of Misamis Oriental, Philippines. The adaptation involved modifying the original instruments to better suit the study's context, ensuring that it captured the student's culinary efficacy, food processing skills as well as their achievement goal orientation (Castrodes, C.M. 2023). To establish the content validity of the adapted questionnaire, a validation process was employed. The research instruments were subjected to content validity by the experts in the field for comments, suggestions, improvements, and refinement. After incorporating their suggestions, the revised instruments were pilot tested to District III students of Misamis Oriental taking food management in one of the Tertiary Schools in Misamis Oriental. The researcher determined during the tryout if there were vague items. To ensure the internal consistency of the items in the questionnaire, Cronbach's Alpha Reliability Coefficient was used. In this study, the items on motivation got the Cronbach's Alpha of 0.86, self-efficacy was 0.85 and the rubric for food management skills got 0.95. The values obtained from the reliability test showed that the items in instruments used in

this study had internal consistency.

2.4 Data Gathering Procedure

The data gathering for this research was performed by administering a validated questionnaire to a chosen sample of students in higher education institutions within the 1st and 2nd District of Misamis Oriental, Philippines. The questionnaire evaluated the motivation and self-efficacy of the students in relation to their food management skills. It had gone through content validation by an expert panel and a pilot test prior to distribution. To guarantee accessibility and simplicity of response, the questionnaire was distributed electronically over a designated timeframe, allowing the participant sample adequate time to complete it. Clear guidelines were provided to ensure uniformity and consistency in the responses. Informed consent was acquired from all participants prior to data collection, ensuring their voluntary participation and the confidentiality of their answers.

Data collection took place within a defined timeframe, allowing adequate time to obtain a representative number of responses from the 70 students participating in the study. Once the data collection was complete, the responses were systematically organized and input into data analysis software for further scrutiny. Descriptive statistics were utilized to summarize the data, while correlational analysis was used to uncover patterns and relationships among variables. The analyzed data offered insights into students' motivation and self-efficacy as well as their food management skills. After the analysis, the findings were interpreted and discussed, in addition to the existing literature, providing conclusions and suggestions for future practice and research. To ensure transparency and adherence to ethical guidelines, the data were securely stored and kept for a designated period, after which they were appropriately disposed of to safeguard participants' confidentiality.

2.5 Ethical Considerations

Ethical considerations were very important in this study to protect the rights, privacy, and confidentiality of participants. Informed consent forms were given, explaining the study's purpose, the voluntary nature of participation, the procedures involved, and the confidentiality of responses. Participants were also informed they could withdraw without any consequences. Anonymity was strictly maintained during data collection, analysis, and reporting, ensuring individuals were not identified. Data handling aimed to minimize any potential biases, risks, or discomfort for participants, fully complying with ethical research standards and guidelines.

3. Results and Discussion

Lack of food management skills, financial instability, inadequate access to healthy food options, and other time/lifestyle constraints may have played a significant role in limiting their ability to prepare and consume healthy meals (Murray, D.W. et al. 2015). It is confirmed by Bandura, (1999) that self-efficacy is an important construct in behavior as it determines how much effort an individual will give to a certain task and the level of success which the individual will experience. Hence, higher levels of self-efficacy are related with more positive outcome expectancies in relation to the students' food-management skills.

The result is consistent with Elvira F & Quirap E (2024) statement that intrinsic motivation refers to what individuals do without any type of external incentives. Thus, attempting to learn new lessons in food management is done by the students for fun and enjoyment rather than trying to please their teacher, parents, and classmates.

Table 1. Frequency, Percentage and Mean Distributions of Participants' Level of Motivation (Intrinsic)

Range	Interpretation	F	%
3.51 – 4.0	High	13	18.571
2.51 – 3.50	Moderate	56	80
1.51 – 2.50	Low	1	1.43
1.0 – 1.50	Very Low	0	0
	Total	**70**	**100%**
Overall Mean		**3.27**	
Interpretation		**Moderate**	
	SD	**0.34**	

Specific Indicators of Intrinsic Motivation	**M**	**Interpretation**		**SD**
I perform the different skills in Food Management because:				
1. What I learned in food management is interesting and exciting.	3.43	Moderate		0.65
2. It may increase my educational information.	3.07	Moderate		0.71
3. I think the course content of food management is significant to me.	3.26	Moderate		0.70
4. I gain satisfaction once I learn new things about food management.	3.29	Moderate		0.66
5. I like making an attempt to learn new lessons in food management.	3.69	High		0.67
6. I'd like to develop a lot of my food-management skills.	2.49	Low		0.79
7. It makes me think hard.	3.36	Moderate		0.72
8. I think it is fascinating to prepare, cook, present, and store the different dishes.	3.21	Moderate		0.63
9. I consider the lessons in food management are beneficial to me.	3.26	Moderate		0.70
10. I want to execute food-management skills well during the activities.	3.64	High		0.57

Table 2 shows the mean frequency, percentage, and mean distributions of participants' levels of extrinsic motivation. It can be gleaned from the table that as a whole, the participants assessed their extrinsic motivation as "moderate" which was supported by the overall mean of 2.98 which means that the participants are motivated with judgments about achieving, grades, or external rewards. The forty-seven (47) or 67.14% of the seventy (70) participants were reported to have moderate extrinsic motivation, six (6) or 8.57% attained high extrinsic motivation and seventeen (24) or 24.29% of the participants were found to have low extrinsic motivation.

This finding is supported by Baker (2004) that being intrinsically motivated involves performing an activity with the intention of attaining some separable consequence, such as receiving an award or gaining approval.

Table 2. Frequency, Percentage and Mean Distributions of Participants' Level of Motivation (Extrinsic)

Range	Interpretation	F	%
3.51 – 4.0	High	6	8.571
2.51 – 3.50	Moderate	47	67.14
1.51 – 2.50	Low	17	24.29
1.0 – 1.50	Very Low	0	0
	Total	**70**	**100%**
Overall Mean		**2.98**	
Interpretation		**Moderate**	
	SD	**0.48**	

Specific Indicators of Extrinsic Motivation		M	Interpretation		SD
I perform the different skills in Food Management because:					
1. I want to spend time on things that will bring improvement to my grades.		3.36	Moderate		0.74
2. I will get special privileges from my food management instructor.		3.06	Moderate		0.80
3. I want my classmates to think that I am smart.		2.44	Low		0.86
4. I want my classmates to think that I am good at food management.		2.97	Moderate		0.85
5. My parents will be pleased with me.		2.91	Moderate		0.93
6. If I perform the different food management skills, my instructor will compliment me.		3.04	Moderate		0.77
7. I think that the foremost essential goal is to realize high marks within the course.		3.07	Moderate		0.75
8. I want to get good ratings in my performance tasks.		3.53	High		0.77
9. My instructor will be pleased with me.		2.89	Moderate		0.89
10. When I do my best, I want my instructor to praise me.		2.57	Moderate		0.97

Table 3 shows that as a whole, the participants reported a "moderate" self-efficacy as indicated by the overall mean of 2.82. This means that the student participants generally believe their capabilities to achieve a goal outcome to a moderate extent. It is, therefore, essential for instructors to facilitate the development of self-efficacy in the classroom if they would aim for students' optimal learning. Even if the indicators of self-efficacy were perceived as "moderate", this finding points to the need to enhance their self-efficacy to a desired level.

This finding supports the assertion of Macalisang D. & Bonghawan, R. (2024) in their study which claimed that self-efficacious students tend to plan, monitor, and regulate themselves while engaging in tasks; hence, they are able to persist longer, try hard, and show interest in the activities.

Table 3. Frequency, Percentage and Mean Distributions of Participants' Level of Self-efficacy in Food Management

Range	Interpretation	F	%
3.51 – 4.0	Excellence	29	41.43
2.51 – 3.50	Good	26	37.14
1.51 – 2.50	Fair	15	21.43
1.0 – 1.50	Poor	0	0
	Total	**70**	**100.%**
Overall Mean		**3.20**	
Interpretation		**Good**	
	SD	**0.71**	

Level of Self-efficacy in Food Management	M	Interpretation	SD
1. I can always manage to solve difficult problems in my food management subject if I try hard enough.	2.93	Moderate	0.84
2. If someone opposes me, I can find the means and ways to get what I want in this subject.	2.83	Moderate	0.76
3. It is easy for me to stick to my aims and accomplish my goals in my food management subject.	2.80	Moderate	0.83
4. I am confident that I can deal efficiently with unexpected events in the food management subject.	2.77	Moderate	0.76
5. I can handle unforeseen situations in my food management subject because I am resourceful.	2.56	Moderate	0.79
6. I can solve most problems in the food management course if I invest the necessary effort.	2.79	Moderate	0.81
7. I can remain calm when facing difficulties in my food management subject because I can rely on my coping abilities.	2.73	Moderate	0.85
8. When I am confronted with problems during our performance tasks in food management, I can usually find several solutions.	3.03	Moderate	0.80
9. If I am in trouble during our performance tasks in food management, I can usually think of a solution.	2.73	Moderate	0.82
10. I can usually handle whatever challenges in my food management subject that comes my way.	3.04	Moderate	0.95

Table 4. It can be seen from the table that as a whole, the participants were given a rating of "good" in their food preparation (μ = 3.20) which means that they demonstrated a good performance in this skill. Even if there is a homogeneity of "good" rating in all the food preparation skills, among the five specific indicators of food preparation, washing raw ingredients with clean water got the highest mean (μ = 3.41) and the statement that necessary tools, utensils and equipment in cooking are sanitized based on the required task got the lowest mean (μ = 3.13).

This finding finds consonance with what Chavez et al. (2006) asserted that one way of keeping food clean is by washing fresh produce with clean water before using it. Although the items in food preparation are relatively good, the indicator with a lower mean is connected to their proper sanitation practice of the necessary tools, utensils, and equipment in preparing food. The importance of proper sanitation can be appreciated when one realizes that contaminated equipment and utensils may cause food-borne disease outbreaks.

Table 4. Frequency, Percentage and Mean Distributions of Participants' Level of Food Management Skills (Food Preparation)

Range	Interpretation	F	%
3.51 – 4.0	Excellence	29	41.43
2.51 – 3.50	Good	26	37.14
1.51 – 2.50	Fair	15	21.43
1.0 – 1.50	Poor	0	0
	Total	**70**	**100.%**
Overall Mean		**3.20**	
Interpretation		**Good**	
	SD	**0.71**	

Specific Indicator of Food Preparation	M	Interpretation	SD
1. Necessary tools, utensils, and equipment in preparing food are sanitized based on the required task.	3.13	Good	0.80
2. Ingredients are gathered according to the exact quantity type required.	3.16	Good	0.83
3. Ingredients are set up according to the precise quality required.	3.14	Good	0.82
4. Ingredients are set up according to the precise quantity required.	3.14	Good	0.77
5. Raw ingredients are washed with clean water.	3.41	Good	0.75

Table 5. It can be seen from the table that as a whole, the participants had a "good" performance ($\mu = 3.12$) in their food production. The figures point to the need to enhance the students' food production to the desired standard. Among the five specific indicators of food production, following the workstation's hygienic procedures according to legal requirements got the highest mean ($\mu = 3.33$). Although their performance in food production is relatively good, the indicator with the lowest mean is connected to selecting sauces that are specific to dish preparations (2.94).

An unhygienic kitchen is more likely to attract food contaminants that attack food supplies. They may be microscopic germs that are not visible to one's eyes. An unclean kitchen acts as the breeding place for diseases and could lead to food poisoning and other illnesses. Hence, it is quite natural and essential that the kitchen should be clean at all times Adling, N. M. J. & Malinao, R. J. L. (2022).

Table 5. Frequency, Percentage and Mean Distributions of Participants' Level of Food Management Skills (Food Production)

Range	Interpretation	F	%
3.51 – 4.0	Excellence	23	32.86
2.51 – 3.50	Good	35	50
1.51 – 2.50	Fair	12	17.14
1.0 – 1.50	Poor	0	0
	Total	**70**	**100%**
Overall Mean		**3.12**	
Interpretation		**Good**	
	SD	**0.64**	

Specific Indicators of Food Production	M	Interpretation	SD
1. Various dishes are being prepared according to its standard recipes using a range of cooking procedures.	3.14	Good	0.77
2. Dishes are prepared or cooked accurately.	3.01	Good	0.86
3. Sauces that are specific to dish preparations are selected.	2.94	Good	0.76
4. Cooked dishes are flavored in accordance with the required palatability of the dishes.	3.17	Good	0.70
5. The workstation's hygienic procedures are followed according to legal requirements.	3.33	Good	0.72

Table 6. It can be gleaned from the table that as a whole, the participants assessed their food preparation as "good" with an overall mean of 3.09 which means that they demonstrated good performances in their food production. Among the five specific indicators of food presentation, using suitable plates or platters according to standard design got the highest mean (μ = 3.29). The items in food presentation is relatively good but the indicator with the lowest mean is connected to cooking dishes that are presented attractively using suitable garnishes within the required timeframe (μ = 2.99). The figures point to the need to enhance the students' food presentation to the desired standard.

According to Michel, Charles et al. (2015), using the plate as a canvas is the key in mastering the art of plating. A plate should engage the senses and draw the diner into it much as a painting will draw the observer. The dish should be carefully planned to balance tastes, textures, colors, and cooking methods.

Table 6. Frequency, Percentage and Mean Distributions of Participants' Level of Food Management Skills (Food Presentation)

Range	Interpretation	F	%
3.51 – 4.0	Excellence	22	31.43
2.51 – 3.50	Good	37	52.86
1.51 – 2.50	Fair	10	14.29
1.0 – 1.50	Poor	1	1.43
	Total	**70**	**100%**
Overall Mean		**3.09**	
Interpretation		**Good**	

SD	**0.62**

Specific Indicators of Food Presentation	**M**	**Interpretation**	**SD**
1. Suitable plates or platters are used according to standard design.	3.29	Good	0.73
2. Cooked dishes are presented with garnishes that offer contrast.	3.14	Good	0.75
3. Cooked dishes are presented attractively using suitable garnishes within the required timeframe.	2.99	Good	0.75
4. Basic principles in plating dishes are observed.	3.00	Good	0.74
5. Foods are layered to add height	3.04	Good	0.73

Table 7. Serves as evidence that as a whole, the participants were assessed to have "good" skills which means that they demonstrated good performances in their storing. It is also important to mention that among the food presentation skills an overall mean of 3.14. Among the five specific indicators of storing, proper storing of cooked dishes in accordance with First in First out (FIFO) operating procedures got the highest mean (μ = 3.26). The items in storing are relatively good but the indicator with the lowest mean is connected to food packing of dishes that are clearly labeled with the product description (μ = 3.06). According to Somoray (2016), proper storing includes storing new products behind the old products and it is always important to use First in First out (FIFO) method of storing.

Table 7. Frequency, Percentage and Mean Distributions of Participants' Level of Food Management Skills (Storing)

Range	**Interpretation**	**F**	**%**
3.51 – 4.0	Excellence	26	37.14
2.51 – 3.50	Good	29	41.43
1.51 – 2.50	Fair	15	21.43
1.0 – 1.50	Poor	0	0
	Total	**70**	**100%**
Overall Mean		**3.09**	
Interpretation		**Good**	
	SD	**0.67**	

Specific Indicators of Storing	**M**	**Interpretation**	**SD**
1. Fresh and processed foods are stored by applying the correct storing techniques.	3.19	Good	0.75
2. Optimum quality is maintained in the correct temperature.	3.11	Good	0.83
3. Food packing of a dish is clearly labeled with the product description.	3.06	Good	0.87
4. Food packing of a dish is clearly dated.	3.07	Good	0.82
5. Cooked dishes are stored in accordance with First In First Out (FIFO) operating procedures.	3.26	Good	0.74

Table 8. Shows the findings that only extrinsic is significantly related to the student's self-efficacy. The level of intrinsic motivation is "weakly correlated" (r= .334, p=.005) with their self-efficacy. However, their extrinsic motivation is "highly correlated" (r=.613, p=.000) to their self-efficacy. From this evidence, the null hypothesis can be rejected.

Data show that students who are intrinsically and extrinsically motivated also have high self-efficacy. This implies that self-efficacy has long been recognized to play an essential role in students' motivation and learning. The higher the extrinsic motivation, the greater the tendency for the students to believe in their capacity to perform.

Extrinsic motivation can be a useful and effective tool for people to stay motivated in tasks. It is best applied in situations where people have little initial interest in performing the activity or in cases where basic skills are lacking, but these rewards should be kept small and should tie up directly to performing a specific behavior (Morris, Laurel S., et al. (2022).

Table 8. Result of the Test of Relationship between Motivation and Self-efficacy

MOTIVATION			
	Measures	**Intrinsic**	**Extrinsic**
SELF-EFFICACY			
	Pearson Correlation	.334**	.613**
	Sig. (2-tailed)	.005	.000

Table 9 illustrates the result of the test of the relationship between motivation and self-efficacy with food management skills. Pearson correlation was run to find out if motivation and self-efficacy were significantly related to their food management skills. The figures point out that the student's intrinsic motivation, extrinsic motivation, and self-efficacy scale are significantly related to their food preparation skills. Furthermore, the data also show that intrinsic and extrinsic motivation and self-efficacy scales are significantly related to their food presentation skills.

This finding implies that the higher the motivation and self-efficacy, the higher their performance in food preparation and food presentation skills. This is consistent with the theoretical guideline of Bandura that self-efficacy has been recognized to play an important role in students' motivation. Data also revealed that intrinsic motivation and extrinsic motivation are significantly related to their food production skills but not to their self-efficacy. Findings also show that intrinsic motivation and extrinsic motivation are significantly related to their storing skills but not to their self-efficacy.

As observed by the researcher the students who excel in their overall food management course are those who have initiative and are motivated. It is possible that although these students have food management skills, they do not believe in their capacity to prepare, produce, present, and store food.

Table 9. Result of the Test of Relationship between Motivation and Self-efficacy with Food Management Skills

Food Management	MOTIVATION	SELF-

Skills	Measures	**Intrinsic**	**Extrinsic**	EFFICACY
Preparation	Pearson Correlation	.442**	.376**	.323**
	Sig. (2-tailed)	.000	.001	.006
Production	Pearson Correlation	.385**	.275*	.220
	Sig. (2-tailed)	.001	.021	.067
Presentation	Pearson Correlation	.378**	.329**	.270*
	Sig. (2-tailed)	.001	.005	.024
Storing	Pearson Correlation	.358**	.243*	.226
	Sig. (2-tailed)	.002	.043	.060
OVERALL FOOD MNG'T SKILLS	Pearson Correlation	.429**	.336**	.286*
	Sig. (2-tailed)	.000	.004	.016

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

4. Conclusion

The learning process is an endless lifelong. Hence, motivation signifies a reason that underlies behavior characterized by willingness and decision. Intrinsic motivation is animated by personal enjoyment, interest, or pleasure. The researcher's arguments advanced earlier are partly confirmed. Students who have higher motivation demonstrate better food-management skills. This finding implies that students' goals to develop food-management skills are related to their reasons for engaging with a task. Poor performance on food-management tasks is more likely to contribute to reduced motivation. This implies the need to improve students' motivation and self-efficacy in the said course as a crucial element in the development of their food-management skills.

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6. Conflict of Interests

The authors declares no conflict of interest regarding the publication of this paper.

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