



## The influence of grit and cooking confidence as perceived by grade 10 on cooking skills

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### Abstract

This study determined the connection between grit, cooking confidence, and cooking skills as perceived by Grade 10 Cookery students. It investigated the level of grit in terms of passion and perseverance; cooking confidence in terms of comfortable usage and techniques and cooking skills experience; and cooking skills in terms of cooking skills and procedures and food and preparation techniques. Descriptive analysis (means, standard deviations, frequencies, and percentages), correlation analysis, and multiple regression were used to analyze the data. The data showed that the perceived level of Grit in terms of Passion was high, and students were highly persistent in achieving their long-term goals in terms of Perseverance. The perceived level of Cooking Confidence of the students in terms of Comfortable Usage and Techniques and Cooking Skills Experience was somewhat confident in using different cooking techniques and skills based on the average mean. Perceived level of Cooking Skills in terms of Cooking Skills and Procedures and Food and Preparation and Techniques revealed that students considered themselves as good. The data further showed that grit positively and significantly correlated with cooking skills, and cooking confidence highly positively correlated to cooking skills. Lastly, it was evident that only cooking confidence had an influence on the cooking skills of the students.

**Keywords:** Grit, cooking confidence, cooking skills, cookery

### Introduction

The country's secondary school curricula include a course known as Technology and Livelihood Education (TLE). It provides high school students with real-world experience, technological knowledge, and proficiency in a variety of areas such as entrepreneurship, home economics, and other aspects of technology. The efficiency of TLE depends on the acquisition of knowledge and information, the successful application of processes, the development of work ethics, and the acquisition of life skills (Ssemugenyi, 2023) <sup>[44]</sup>. All TLE specialized areas are taught in K–12 curricula in accordance with the performance standards and learning objectives outlined in the TESDA Training Regulations (TR). The learning competencies of all TLE courses are aligned with the TESDA Training Regulations which enable the students to obtain certification for employment (SEAMEO-INNOTECH, 2015). The Technical Education and Skills Development Authority, or TESDA, is the only certifying body and the only education agency that has earned the esteemed ISO 9001:2008 certification, a testament to their accomplishments in quality management. This certification shows that TESDA's services and programs meet international standards (TESDA, 2012). Cookery is one of the specializations offered in TLE. As stipulated in the cookery curriculum guide, the course covers topics such as basic concepts in cookery, use of tools and equipment, maintenance of tools and equipment, mensuration and calculation, interpretation of technical drawings and plans, and occupational health and safety procedures (OHSP). Some of the skills that they will learn in the area of cooking are how to make sandwiches, salads, desserts, and egg dishes (DepEd, 2016). Cooking skills have been defined as the capacity to carry out operations connected to food preparation, including washing, peeling, and chopping before cooking. Additionally, cooking is also a useful life skill that has been associated with better diet

quality, including greater consumption of fruits and vegetables, and an enhanced understanding of what constitutes a healthy meal (McGowan *et al.*, 2017) <sup>[33]</sup>. In the acquisition of skills, predictors of success like grit and cooking confidence are a must. Grit is a universal predictor of life success regardless of context, individual character or occupation, and the trait-level perseverance and passion an individual has to pursue long term goals. It is also associated with important positive individual and organizational outcomes that involve persistence in pursuing set goals such as higher efficacy and retention (Van Zyl, 2020) <sup>[47]</sup>. Gritty people rarely get tired or distracted from their goals and they can easily adapt to setbacks (Ceschi *et al.*, 2016) <sup>[7]</sup>. On the other hand, confidence refers to the state of mind that enables individuals to move outside their bounds and inspires belief inside oneself (Greenacre *et al.*, 2014). It implies that having confidence is the first step toward achieving goals. People develop their beliefs and characterize themselves as self-confident as a result of their experiences, learning, and action. Confidence in cooking and using basic skills influences what and how a person cooks, which in turn, may influence the person's diet quality (Lavelle, *et al.*, 2017) <sup>[25]</sup>. However, ensuring the effective mastery of knowledge and skills, while offering engaging practical learning experiences, poses substantial challenges. The provision of high-quality education is one of the main challenges which is frequently impeded by subpar facilities, tools, and technology that do not meet the criteria required to support students enrolled in TLE topics (Gregorio, 2016) <sup>[27]</sup>. In the field of Cookery, lack of focus, financial constraints, inflation price of basic commodities, and the delayed procurement or replacement of damaged tools or equipment in the laboratory were observed by Grade 10 Cookery teachers that could have possibly affected students' grit and cooking confidence in their cooking skills. It is within this premise that this research study was conceived,

together with the fact that there had not been much research focusing on this aspect, especially with Filipinos Grade 10 students in Cagayan de Oro City. This study aimed to conduct a systematic assessment on the levels of grit and cooking confidence as perceived by Grade 10 Cookery students in Misamis Oriental General Comprehensive High School (MOGCHS) regarding their skills in cooking. This study correspondingly intended to determine the connection between the grit, cooking confidence, and cooking skills of the mentioned participants. It also aimed to provide initial research framework that could be useful for similar future research undertaking.

## Methods

**Research Design:** The current study was quantitative in nature in the form of survey research. It was intended to examine the influence between the variables. Quantitative research is the systematic investigation of phenomena through the collecting of numerical data and the application of statistical, mathematical, or computer tools. The positivist paradigm serves as the foundation for quantitative research and supports methods based on statistical breakdown that incorporate additional techniques such as inferential statistics, hypothesis testing, mathematical exposition, randomization, blinding, structured protocols, and questionnaires with a limited range of prearranged answers (Lee, as cited in Slevitch, 2011)<sup>[42]</sup>.

On the other hand, surveys are a type of data collection instrument used in quantitative research. There are two broad categories of surveys: questionnaires and interviews. The descriptive nature of survey research approach depends on the data collection procedure, which entails gathering data from a representative sample of the total respondents in order to generalize the results on the whole population under investigation.

**Research Setting:** The present study was conducted face-to-face to the students who are currently residing in Cagayan De Oro City, particularly, students of Misamis Oriental General Comprehensive High School (MOGCHS).

**Respondents of the Study:** The respondents of the study were the Grade 10 students of Misamis Oriental General Comprehensive High School who were taking the Cookery subject during the period of this research. A total of 152 randomly select students were the subjects of this research.

**Data Gathering Procedure:** The researcher requested approval to carry out the study in writing and obtained a letter of recommendation from the college's dean and the researcher's advisor. Before performing the study and distributing the questionnaire, a letter was sent to the superintendent of the school's division of Misamis Oriental. Once a letter of endorsement had been obtained, the researcher gave it to the principal of the school where the study took place.

The content validity of the questionnaires was reviewed by professionals and all study procedures were approved by the Department and College Dean. All respondents of the study were given informed consent. If the respondents agreed to participate, he or she was considered a respondent of the study.

## The Research Instrument

### The researcher used the following measures

- **Demographic Data Form:** This was used to gather relevant personal information such as age, gender, and course of the respondents.
- **Grit – O Scale:** This is a psychometric tool to measure individual's perseverance and passion for long-term goals. It consisted of two subscales: Consistency of Interest and Perseverance of Effort (Duckworth *et al.*, 2007)<sup>[18, 21]</sup>. This adopted standardized tool was used to measure the Grit of the students. The 12-item questionnaire measured the two components of interest, passion (6 items, e.g., "I have overcome setbacks to conquer an important challenge") and perseverance (6 items, e.g., "I often set a goal but later choose to pursue a different one.") on a 5- point Likert scale ranging from 1 ("Not like me at all") to 5 ("Very much like me"). The Grit-O scale showed acceptable levels of internal consistency with Cronbach's alphas of 0.84 on both scales (Duckworth *et al.*, 2007)<sup>[18, 21]</sup>. The said scale was developed by foreign authors.
- **Cooking Confidence Scale:** An instrument developed by Condrasky *et al.*, (2011)<sup>[10]</sup> was used to measure the level of confidence of the participants about performing various cooking techniques. The 10- item questionnaire measured the two components of interest, comfortable usage and technique (5 items, e.g., "Using knife skills in varied recipes") and cooking skills experience (5 items, e.g., "Grilling") on a 5-point Likert scale, ranging from 1 (Not confident at all) to 5 (Completely confident). A scaled score was calculated by taking the mean of the 10 survey items. High scores indicated high confidence in cooking. It had an internal reliability of 0.88,  $p < .001$ . This instrument was modified by the researcher to suit to the context of the study.
- **Cooking Skills Questionnaire:** The cooking skills questionnaire made by Lavelle, Fiona, *et al.*, (2017)<sup>[25]</sup> was used to measure the cookery skills of the respondents. The 14-item questionnaire measured the two components of interest, cooking skills and procedure (8 items, e.g., "Chop, mix and stir foods, for example chopping vegetables, dicing an onion, cubing meat, mixing and stirring food together in a pot/bowl") and food preparation techniques (6 items, e.g., "Bake goods such as cakes, buns, cupcakes, scones, bread, etc., using basic/raw ingredients or mixes") on a 7-point Likert scale ranging from 1 (Very poor) to 7 (Very good). It had internal consistency reliability ranging from 0.78 to 0.93 across all cohorts. This instrument was modified by the researcher to suit to the context of the study.

**Statistical Treatment of the Data:** The data was analyzed using Statistical Package for the Social Sciences version 20 (SPSS v.20) by Preacher and Hayes, 2010. Missing values was conducted followed by imputation to replace values that appeared to be missing at random. Then, descriptive analyses (means, standard deviations, frequencies, and percentages) were performed to explore the respondents' demographics. Second, correlation analysis to assess the relationship among the variables was done. All predictor

and criterion variables were screened for the underlying assumptions of linearity, normality, and homoscedasticity, as well as for multivariate outliers. After the preliminary analysis was conducted, multiple regression analysis was then utilized to examine the influence of Grit and Cooking confidence among Grade 10 students' Cooking Skills.

- **Descriptive Statistics:** Descriptive statistics are brief informational coefficients that summarize a given data set, which can be either a representation of the entire population or sample of a population. It is broken down into measures of central tendency and measures of variability.
- **Correlation:** Correlation analysis is a statistical research technique that identifies interesting relationships between two variables or datasets (Kumar & Chong, 2018). These relationships help the researchers realize the relevance of attributes concerning the target class to be predicted.
- **Multiple Regression Analysis:** Multiple linear regression is a statistical method used to understand the relationship between multiple predictor variables and a response variable. Predictor variables can be either continuous or categorical. The relationship between the predictor variables and the response variable is expressed by a linear equation of the form:  $y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_px_p + \epsilon$ , where  $y$  is the predicted value,  $x_j$  are the predictor variables,  $\beta_j$  are the coefficients, and  $\epsilon$  is the error term. However, before performing the multiple linear regression, it is

necessary first to make sure that the following assumptions were met or satisfied: (1) linearity, (2) homoskedasticity, (3) independence of errors, (4) normality, and (5) independence of independent variables.

**Data presentation, analysis and findings**

This chapter presents the results yielded by the data analyses of this study. The current study aimed to assess the levels of grit and cooking confidence of Grade 10 Cookery students at a general comprehensive high school regarding their skills in cooking.

**Table 1:** Demographic Profile of the respondents.

Variable	Category	Frequency	Percentage
Gender	Male	57	38%
	Female	95	62%
Age	14-16	124	82%
	17-19	28	18%
	20-22	0	0%
	23-25	0	0%
	26 and over	0	0%

The respondents' demographic profile is summarized in Table 1. Most of the participants were female (62%) between the ages of 14 to 16 years (82%). A biographical questionnaire was used to gather biographic information of the respondents.

**Problem 1:** What is the perceived level of grit of the respondents in terms of Perseverance and Passion?

**Table 2:** Perceived level of Grit in terms of Passion

Variables		1	2	3	4	5	Mean	Interpretation
		Very much like me	Mostly like me	Somewhat like me	Not much like me	Not like me at all		
1	New ideas and projects sometimes distract me from previous ones.	31	52	42	23	2	2	Mostly like me
2	My interests change from year to year.	60	54	16	0	0	2	Mostly like me
3	I have been obsessed with a certain idea or project for a short time but later lost interest.	47	36	35	25	9	2	Mostly like me
4	I often set a goal but later choose to pursue a different one.	35	41	42	25	9	3	Somewhat like me
5	I have difficulty maintaining my focus on projects that take more than a few months to complete.	36	40	45	26	5	3	Somewhat like me
6	I become interested in new pursuits every few months.	31	50	41	24	6	3	Somewhat like me
Overall							2	Mostly like me

Table 2 shows the perceived level of Grit of the respondents in terms of Passion. As reported in the table above, most of the items obtain 3 mean score which is interpreted as "Somewhat like me". However, the average mean is 2 indicating that the perceived level of Grit of the students in terms of passion was high. The findings connote that during academic years, students were likely to pursue multiple personal goals. It also shows that if a task or activity that the students deemed important or as something they liked, they tended to devote time and energy. According to Duckworth, *et al.*, (2007) [18, 21], although those goals may or may not be related to their passion, progressing on those goals requires

perseverance and consistency, that is to be gritty. Vallerand, *et al.*, (2003) argued that having a passion for an activity is one of the processes that motivate individuals to maintain engagement toward their long-term goals. According to Bouizegarene *et al.*, (2018) [4], the time spent in the university represents an important window in adulthood in which they develop their senses of self through their engagement in different school activities. Moreover, the facets of grit can help better understand why the different types of passion are differentially related indicators of goal progress, psychological well-being, and psychological distress in the context of higher education (Curran, *et al.*, 2015) [13].

**Table 3:** Perceived level of Grit in terms of Perseverance

Variables		1	2	3	4	5	Mean	Interpretation
		Not like me at all	Not much like me	Somewhat like me	Mostly like me	Very much like me		
1	I have overcome setbacks to conquer an important challenge	1	12	33	74	32	4	Most likely me
2	Setbacks don't discourage me.	4	20	59	47	22	3	Somewhat like me
3	I am a hard worker.	1	8	35	51	57	4	Most likely me
4	I finish whatever I begin.	1	12	21	52	66	4	Most likely me
5	I have achieved a goal that took years of work	3	16	46	37	50	4	Most likely me
6	I am diligent.	2	6	36	67	41	4	Most likely me
Overall							4	Most likely me

In Table 3, the respondents' perceived level of grit in terms of perseverance is reflected. According to Duckworth, grit is defined as passion and perseverance for long term goals. It is the level of drive that individuals demonstrate to reach their goals over the long term and reflects trait-level perseverance and passion for long-term goals. Perseverance of effort is the extent to which an individual applies effort throughout challenges (Datu *et al.*, 2016) [14, 15]. In this study, findings revealed that the average mean is 4 which means "Most likely me". As reflected in Table 3, it shows that most of the students are highly persistent in achieving their long-term goals based on the average mean above. The result of this study supported most of the research findings indicating that perseverance is a relatively stronger predictor

in the attainment of long-term goals. Other studies also suggested that perseverance of effort was a consistent predictor of students' academic achievement, while consistency of interest did not show any relation to achievement. However, Egalite, *et al.*, (2016) found no significant relationship between students' grit scores and behavioral measures such as "persistence, conscientiousness, or ability to delay gratification. Those who showed high levels of persistence also showed lower scores on the Grit Scale.

**Problem 2:** What is the perceived level of cooking confidence of the respondents in terms of comfortable usage and techniques and cooking skills experience?

**Table 4:** Perceived level of Cooking Confidence in terms of Comfortable Usage and Techniques and Cooking Skills  
A. Comfortable Usage and Techniques

Variables		1	2	3	4	5	Mean	Interpretation
		Not confident	Slightly confident	Somewhat confident	Fairly confident	Completely confident		
1	Using knife in varied recipes.	0	0	1	2	2	4	Fairly confident
2	Using basic cooking techniques.	16	6	16	9	12	3	Somewhat confident
3	Steaming ideal foods that needs moisture, that should be soft and silken.	20	14	31	29	35	3	Somewhat confident
4	Sauteing small amount of fat in a hot pan while tossing ingredients around to enhance flavors in a dish by browning the surface area of food.	46	33	52	62	39	3	Somewhat confident
5	Stir-frying small pieces of food in a hot pan or wok, cooked in small quantity of oil over high heat for a brief period of time, stirring constantly.	70	99	52	50	64	3	Somewhat confident
Overall							3	Somewhat confident

**B. Cooking Skills Experience**

Variables	1	2	3	4	5	Mean	Interpretation
	Not confident	Slightly confident	Somewhat confident	Fairly confident	Completely confident		
1 Grilling	4	1	5	4	3	3	Somewhat confident
2 Poaching	11	22	19	14	13	3	Somewhat confident
3 Baking	40	45	36	31	36	3	Somewhat confident
4 Roasting	45	53	46	67	52	3	Somewhat confident
5 Stewing	52	31	46	36	48	3	Somewhat confident
Overall						3	Somewhat confident

Table 4 displays the perceived level of cooking confidence of the students in terms of Comfortable Usage and Techniques and Cooking Skills Experience. Further investigation of Table 4 indicates that students were somewhat confident in using different cooking techniques and skills based on the average mean. Several research

showed that participants were most confident in microwaving, re-heating leftovers, boiling, baking, and grilling foods. The lowest confidence levels were associated with poaching, stewing, and sautéing. Even though they reported being confident using simmering, steaming, deep frying, stir-frying, and roasting, only a few of them were

very experienced with these cooking techniques. One research suggested that young adults aged from 19 to 34 years old had less cooking confidence than other age groups. Additionally, students that referred to a limited skill to cook were among those living away from their parents. Moreover, lack of cooking skills might be related to decreasing cooking knowledge shared between parents and their children as well as within the school setting. In line with the study of Kowalkowska, *et al.*, (2018), cooking

skills were higher in students who cooked more often, feeling more confident, enjoying more, and indicating the personal interest as the main motivation to learn how to cook. It was significantly better in females than in males, and in older students than younger students.

**Problem 3:** What is the perceived level of cooking skills of the respondents in terms of Cooking Skills and procedures and Food Preparation and Techniques?

**Table 5:** Perceived level of Cooking Skills in terms of Cooking Skills and Procedures and Food Preparation and Techniques

Variables		1	2	3	4	5	6	7	Mean	Interpretation
		Very Poor	Poor	Never	Rarely do it	Fair	Good	Very Good		
1	Chop, mix and stir foods, for example chopping vegetables, dicing an onion, cubing meat, mixing and stirring food together in a pot/bowl	1	3	2	7	17	52	70	6	Good
2	Blend foods to make them smooth, like soups or sauces' (using a whisk/blender/food processor, etc.)	4	6	12	24	30	40	36	5	Fair
3	Steam food (where the food doesn't touch the water but gets cooked by the steam)	1	2	8	17	29	47	48	6	Good
4	Boil or simmer food (cooking it in a pan of hot, boiling/bubbling water)	2	1	5	8	22	37	77	6	Good
5	Roast food in the oven, for example, raw meat/chicken, fish, vegetables, etc.	3	1	7	32	29	50	30	5	Fair
6	Roast food in the oven, for example, raw meat/chicken, fish, vegetables, etc.	2	5	10	42	26	42	25	5	Fair
7	Fry/stir-fry food in a frying pan/ wok with oil or fat using the hob/gas rings/hot plates	2	1	5	14	22	44	64	6	Good
8	Microwave food (not drinks/liquid) including heating ready-meals	3	9	15	22	36	38	29	5	Fair
Overall									6	Good

**Food Preparation Techniques**

Variables		1	2	3	4	5	6	7	Mean	Interpretation
		Very Poor	Poor	Never	Rarely do it	Fair	Good	Very Good		
1	Bake goods such as cakes, buns, cupcakes, scones, bread, etc., using basic/raw ingredients or mixes	4	6	12	24	30	40	36	5	Fair
2	Peel and chop vegetables (including potatoes, carrots, onions, and broccoli)	3	3	2	5	13	29	97	6	Good
3	Prepare and cook raw meat/poultry	0	2	5	11	22	52	60	6	Good
4	Prepare and cook raw fish	4	1	7	14	24	47	55	6	Good
5	Make sauces and gravy from scratch (no ready-made jars, pastes or granules)	1	4	10	22	23	51	41	5	Fair
6	Use herbs and spices to flavor dishes	0	2	6	7	17	45	75	6	Good
Overall									6	Good

The term “cooking skills” is described as a combination of mechanical and physical food preparation skills used at home, such as chopping vegetables, or cooking rice (Short, 2003) [39]. According to Jomori, *et al.*, (2018) [28], cooking skills are the ability to perform tasks that are related to preparation of food, which requires preliminary procedures to its cooking, such as washing, peeling, and chopping. Studies have shown that cooking confidence and knowledge are fundamental factors to the development of cooking skills. Thus, lack of cooking confidence in executing certain cooking tasks is considered a barrier to performing cooking skills. Table 5 above shows that students considered

themselves as good when it came to cooking skills and procedures and food preparation and techniques based on the average mean. Based on the study of Jones, *et al.*, (2014), having enough time for food preparation activities was most consistently mentioned as motivators to food preparation, while the most consistently reported barriers of food preparation was, they did not believe they had enough time to shop for foods or to cook, nor did they feel confident about cooking techniques. Kubota and Freedman (2009) reported similar findings.

**Problem 4:** Is there a significant relationship between grit and the cooking skills of Junior High School students?

**Table 6:** Correlation between Grit and Cooking Skills of Grade 10 Cookery students

Variables	Mean	Standard Deviation	Grit
Grit	3	0.4	
Cooking Skills	6	0.8	.191*

**Note:** \*Correlation is significant at the 0.05 level (2-tailed). N=152, \*p<0.05; \*\*p<0.01)

The table above shows the correlation of all the variables. Results show that Grit positively correlates with cooking skills ( $r=.191^*$ ). This implies that an increase in passion and perseverance also increased the cooking skills of the students. The mean score was also computed. As the table above shows, the level of grit of the students is average ( $M=3$ ). This means that the students initially excelled in pursuing their long-term goals, but over time, they might have experienced a shift in focus and engaged in alternative pursuits. Furthermore, the computed mean for cooking skill is  $M=6$  which means that students self-reported their cooking skills as good. Grit consists of passion and persistence in achieving long-term goals (Duckworth, *et al.*, 2014) [17]. Gritty individuals will set their goals and pursue this despite experiencing various setbacks. They are also willing to devote more time and effort in achieving the goals they have set (Kalie, *et al.*, 2019). However, some research indicated that low grit has an impact on a student's academic performance. They prefer completing organizational assignments rather than academic assignments, preferring to complete assignments at the end of time, always cheat on friends' assignments, and often skip class (Caesari *et al.*, 2013). Results show that Grit positively and significantly correlated with the cooking skills ( $r=.191^*$ ), thus, rejecting the null hypothesis. This implies that an increase in passion and perseverance also increased the cooking skills of the students. Cooking requires skills. It requires understanding measurements and using the proper utensils. It involves operating kitchen appliances correctly and knowing what appliances to use for different recipes. It is a fun way to develop skills that can transfer into new jobs or hobbies. The skills required to cook are skills that can be useful in other areas of life. It can build the students' confidence they need to be successful. However, an  $r$  of 0.191 implies that some relationship between grit and cooking skills, were weak, albeit a very weak one.  $R^2$  yielded 3.61% which means that grit accounted for some influence in the cooking skills of the students but was insufficient and still warranted further study on other factors that might have a stronger effect. Lowery *et al.*, found that individuals who identified cooking as a strong skill were typically very positive about cooking. They were not only willing to attempt new recipes but were also willing to adapt to new styles or techniques with regards to cooking. However, those that did not identify themselves as having strong cooking skills were much more reluctant to try new things, and if attitudes were poor regarding cooking, these individuals were very likely to avoid certain foods and food groups altogether.

**Problem 5:** Is there a significant relationship between cooking confidence and the cooking skills of Junior High School students?

**Table 7:** Correlation between Cooking Confidence and Cooking Skills of Grade 10 Cookery Students

Variables	Mean	Standard Deviation	Cooking Confidence
Cooking Confidence	4	0.6	
Cooking Skills	6	0.8	.711**

\*\*Correlation is significant at the 0.01 level (2-tailed). N=152, \*p<0.05; \*\*p<0.01)

The table shows that Cooking Confidence is found to be highly positively correlated to cooking skills ( $r=.711^{**}$ ). The findings of the study imply that involving students in meal preparation would not only influence their willingness to try an array of food, but it could also improve their overall confidence in cooking recipes. Young adulthood is a period that is marked by important changes in most students, such as leaving home, developing decision-making autonomy (Nelson, *et al.*, 2008) [34], and having responsibility for food purchasing and preparation (Ansari, *et al.*, 2012) [1]. According to Jomori, *et al.*, (2018) [28], cooking skills is defined as application of an individual's knowledge to perform tasks related to cooking which range from planning of menus and shopping for ingredients to preparation. Thus, because cooking requires so many skills, it builds confidence as the student learns and improves. The findings of this study were similar to the study conducted by Zahr, *et al.*, (2017) [50]. They developed a program called Project CHEF, a hands-on cooking and tasting program offered in Vancouver public schools, on students' food preferences, cooking skills, and confidence. Students who participated in Project CHEF developed key cooking skills such as cutting vegetables and fruits, using a knife confidently, measuring ingredients, and preparing a balanced meal. Overall, through these skill-building activities, students felt more confident cooking the recipes introduced in the program. Similar associations have also been reported in evaluation of cooking programs.

**Problem 6:** Do grit and cooking confidence significantly influence the cooking skills of Junior High School students?

**Table 8:** Multiple Regression Analysis of Grit, Cooking Confidence and Cooking Skills of Grade 10 Cookery Students

Predictor	Criterion	R Square	Beta	SD	Pvalue
Grit	Cooking Skill	0.036	0.034	0.40	0.576
Cooking Confidence		0.506	0.704	0.64	0.000

**Note:** Beta = standardized coefficient, \*\*p<0.001, N=152

The table above shows the summary of findings. Cooking skill was regressed on grit and cooking confidence of the students to test the hypothesis. The results revealed that only the cooking confidence had a significant influence on students' cooking skill ( $B=0.704$ ,  $p=0.000$ ). Moreover, the  $r^2 = .506$  depicts that the model explains 50.6% of the variance which means that cooking confidence accounted for influence in the cooking skills of the students. There are limited studies explaining the relationship of grit and cooking skills. In terms of grit, researchers did not observe any significant relationship with cooking skills.

**Conclusion and recommendation**

Based on the results of the study, it was evident that only cooking confidence had an influence on cooking skills. Currently, there is limited research on the relationship of grit and cooking skills. As a result, the relationship of grit and cooking confidence are not well documented.

Furthermore, the findings suggest that students participating in cooking classes gained confidence in their abilities to prepare food. The present study was only limited to 152 Grade 10 students. For further studies, it is suggested that more respondents be added to represent the total population. The future researcher could also explore more factors that could influence the cooking skills of the students.

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