

Breadistry: A Guidebook in Enhancing Learners' Technical Skills and Performance in Bread and Pastry Production

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Abstract—The main purpose of the study is to determine the effect of the Breadistry guidebook on learners' performance in bread and pastry production. This study aims to assess the extent of the Breadistry as a guidebook relative to its components; features; learners' technical skills; and performance in bread and pastry production. The research also explores into investigating the relationship between the Breadistry guidebook and learners' technical skills. Additionally, the research demonstrates the impact of the Breadistry handbook on students' ability to make bread and pastries. The study employed experimental research to assess the relation and influence of the Breadistry guidebook on learners' technical skills and performance in bread and pastry production. Purposive sampling technique was used to one hundred twenty (120) Grade 8 students at Pedro Guevara Memorial National High School. Descriptive and inferential statistics, including weighted mean, standard deviation, Pearson *r* Coefficient, and Regression Analysis used in this study. The overview, objectives, content, safety precautionary measures, glossary of terms, layout, text, illustration, and aesthetic value as components and features of the Breadistry guidebook are very high. Furthermore, the level of learners' technical skills in terms of measuring technique, creaming, mixing method, and timing and controlling was very high. A notable relation between the Breadistry guidebook and learners' technical skills was observed. Lastly, the Breadistry as a guidebook is found to be significantly effective on learners' performance in bread and pastry production. A significant relationship between the Breadistry guidebook and learners' technical skill was noted. Thus, the null hypothesis is rejected. This implies that the Breadistry guidebook plays a crucial role in enhancing learners' technical skills in bread-making, making it an effective educational resource that directly influences their competence. No significant effect of the use of the Breadistry guidebook on learners' performance, this could be because students possess a diverse range of pre-existing skills. However, text and illustration specifically improve learners' performance in written tests. The strong influence of text and illustrations emphasizes their vital role in learner achievement. Based on these results, it was recommended to continue using and improving the Breadistry guidebook by updating content, adding practical activities, and expanding its use to other training programs. Enhance instructional strategies by making the guidebook more interactive, skills-focused, and supported with clear exercises and explanations. Encourage future research on guidebooks in bread and pastry production to highlight the role of learning materials in curriculum development.

Keywords—Breadistry, Guidebook, Technical Skills, Performance, and Bread and Pastry Production.

I. INTRODUCTION

The term 21st century skills refer to a broad set of knowledge, skills, work ethics, and character attributes that are believed by educators, school reformers, college professors, employers, and others to be critically vital to success in today's world (The Glossary of Education Reform, 2022). It contains learning and innovation skills, which relate to creativity, innovation, critical thinking, problem-solving, and cooperation; and life and career skills, which refer to flexibility and adaptability.

The Bread and Pastry Production program provides learners with more than culinary skills since it contains additional valuable learning opportunities. In addition to developing skills in preparing sweet goods, the learners also acquire a practical skills. Among the various courses, Bread and Pastry Production is a crucial area that requires hands-on training and expertise. Bread and Pastry Production has various skills that can be developed through proper training. Three of these are the preparation, production of baked products, and cleaning and maintenance of Basal and Vallacera (2022). Grade 8 TLE learners, in particular, are at a critical point in their education, where they must create a solid foundation in Bread and Pastry Production in order to prepare for their future jobs. The Grade 8 TLE learners engaged in the Bread and Pastry Production strand acquire knowledge and develop skills that not only enhance their technical proficiency but also cultivate their passion for the culinary arts.

This supplementary material called Breadistry will be made to serves as a guidebook and vital tool to develop Grade 8 learners' technical skill and performance in bread and pastry production at Pedro Guevara Memorial National High School, offering a comprehensive resource dedicated to enhancing their technical prowess in Bread and Pastry Production. Given the difficulties students encounter in remembering information, the guidebook is made to serve as a trustworthy resource to help them remember methods and strategies, especially when they are confronted with the propensity to forget the specifics of an activity. The Breadistry serves as a guidance and inspiration that equips the learners with the tools and knowledge to excel in Bread and Pastry Production.

Teachers can help to have students have quality education by improving their learning process and creating learning tools for themselves and their students. The researcher wants to find

out the effectiveness of the teacher-made guidebook called Breadistry on the technical skills and performance of Grade 8 students in Bread and Pastry Production.

1.1 Statement of the Problem

Problem/s which were addressed by the research

This study aimed to determine the effectiveness of the Breadistry as a guidebook in bread and pastry production for the 3rd quarter.

Specifically, the study sought answers to the following questions:

1. What is the level of assessment on Breadistry guidebook components in Bread and Pastry Production in terms of:
 - 1.1 overview;
 - 1.2 objectives;
 - 1.3 content
 - 1.4 safety precautionary measures; and
 - 1.5 glossary of terms?
2. What is the level of assessment on Breadistry guidebook features in Bread and Pastry Production in terms of:
 - 2.1 layout;
 - 2.2 text;
 - 2.3 illustration; and
 - 2.4 aesthetic value?
3. What is the level of learners' technical skills in terms of:
 - 3.1 measuring technique;
 - 3.2 creaming;
 - 3.3 mixing method; and
 - 3.4 timing and controlling?
4. What is the level of learners' performance in terms of:
 - 4.1 written task; and
 - 4.2 performance task?
5. Is there a significant relationship between using Breadistry guidebook and learners' technical skills in bread and pastry production?
6. Is there a significant effect on using Breadistry guidebook on learners' performance?

II. METHODOLOGY

The study employed experimental research to assess the relation and influence of the Breadistry guidebook on learners' technical skills and performance in bread and pastry production. Purposive sampling technique was used to one hundred twenty (120) Grade 8 students at Pedro Guevara Memorial National High School. Descriptive and inferential statistics, including weighted mean, standard deviation, Pearson r Coefficient, and Regression Analysis used in this study.

III. RESULTS AND DISCUSSION

This part presents, analyzes and interprets the data gathered that showed significant difference on learners' performance in formative and summative test, significant difference on learners' performance, and significant effect on the use of problem-based learning material in contemporary issues on learners active learning and performance.

Level of the Breadistry Guidebook Components in Bread and Pastry Production

In the study, Breadistry Guidebook Components in Bread and Pastry Production was described in terms of overview, objectives, content, safety precautionary measures, and glossary of terms, and was determined by the mean and standard deviation.

Table 1 presents the overview evaluation of the Breadistry Guidebook components, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.37, and the standard deviation of 0.69 indicates that, on average, respondents strongly agree that the overview of the Breadistry guidebook helped the students understand and identify a topic's main points.

These results imply that the Breadistry guidebook is perceived as comprehensive, well-structured, and highly informative about bread and pastry production.

TABLE 1. Level of the Breadistry Guidebook Components in Bread and Pastry Production in terms of Overview

STATEMENT	Mean	SD	Remarks
The overview of the guidebook...			
...identify the important ideas of a topic after reading the overview.	4.49	0.61	Strongly Agree
...measures how well I comprehend the importance of diverse viewpoints.	4.30	0.64	Strongly Agree
...explores my confidence in identifying reliable information.	4.26	0.76	Strongly Agree
...find it easy to organize and connect information effectively.	4.35	0.78	Strongly Agree
...overall, I find overview in every topic valuable to help me understand and identify main points of a topic, making the overall meaning easily understood.	4.45	0.59	Strongly Agree
Grand Mean	4.37		
SD	0.69		
Verbal Interpretation			Very High

In connection, according to Brooks & Green (2022), one study looked at how useful overview summaries were in textbooks used by students studying bread and pastry. The findings revealed that guidebooks that gave brief and instructive explanations of critical tactics, common mistakes, and significant concepts improved students' ability to quickly absorb and apply new information.

Table 2 shows the evaluation of the Breadistry Guidebook component in terms of objectives, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.31, and the standard deviation of 0.72 indicates that, on average, respondents strongly agree that the objectives of the Breadistry guidebook are well-established and beneficial for learning or improving skills in bread and pastry production. These results imply that the Breadistry guidebook is considered high-quality and reliable in terms of its purpose and goals, ensuring that users gain the necessary knowledge and skills in bread and pastry production effectively.

TABLE 2. Level of the Breadistry Guidebook Components in Bread and Pastry Production in terms of Objectives

STATEMENT	Mean	SD	Remarks
The objectives of the guidebook...			
...were accurately defining the expected learning outcomes.	4.43	0.65	Strongly Agree
...are consistent with the content presented throughout the topic. was in line with and appropriate to the course goal.	4.36	0.73	Strongly Agree
...consists of three learning domains: knowledge, skills and attitude.	4.31	0.73	Strongly Agree
...both measurable and attainable.	4.07	0.74	Agree
...clearly outlining the objectives that helps me understand the topic.	4.41	0.66	Strongly Agree
Grand Mean	4.31		
SD	0.72		
Verbal Interpretation			Very High

In connection to the study of Adams & Johnson (2021) textbooks with SMART objectives significantly improved students' comprehension and use of baking methods. Students fared better on practical exercises due to their improved ability to track their progress and focus their learning efforts. According to the findings, having defined objectives in guidebooks promotes student achievement and instructional clarity.

Table 3 shows the evaluation of the Breadistry Guidebook components in terms of content, based on five key statements. The response were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

TABLE 3. Level of the Breadistry Guidebook Components in Bread and Pastry Production in terms of Content

STATEMENT	Mean	SD	Remarks
The content of the guidebook...			
...was relevant to my learning needs.	4.47	0.63	Strongly Agree
...included a wide range of useful words.	4.21	0.79	Strongly Agree
...explanations given for each word was clear and easy to understand.	4.39	0.81	Strongly Agree
...examples given helps me understand the meaning better.	4.13	0.78	Agree
...is valuable for enhancing my technical skills in Bread and Pastry Production.	4.36	0.68	Strongly Agree
Grand Mean	4.31		
SD	0.75		
Verbal Interpretation			Very High

The overall weighted mean is 4.31, and the standard deviation of 0.75 indicates that, on average, respondents strongly agree that the content of the Breadistry guidebook is well-structured, and highly relevant to bread and pastry production. These results imply that the Breadistry guidebook is recognized as a top-quality educational or reference material that significantly contributes to learning and mastering bread and pastry production.

Based on the study of Smith and Brown (2018) that emphasize how important the content is for bread-making instructions to explain how gluten forms and develops. According to the study, a well-written handbook should

thoroughly explain the stages of gluten formation, from combining to proofing, so that bakers understand how different mixing procedures affect the final product's elasticity and crumb structure.

TABLE 4. Level of the Breadistry Guidebook Components in Bread and Pastry Production in terms of Safety Precautionary Measures

STATEMENT	Mean	SD	Remarks
The precautionary measures of the guidebook...			
...are about more than just following rules; they are also about protecting my health and the health of people with whom I share baked goods.	4.52	0.61	Strongly Agree
...help me understand that even seemingly slight baking mistakes can have a big impact on food safety.	4.32	0.71	Strongly Agree
...is essential to prevent food borne illnesses.	4.36	0.64	Strongly Agree
...following it in baking is a sign of respect to myself and to others to have food safety.	4.33	0.70	Strongly Agree
...ensure that everyone can enjoy delicious baked goods without concern.	4.30	0.70	Strongly Agree
Grand Mean	4.37		
SD	0.68		
Verbal Interpretation			Very High

Table 4 shows the evaluation of the Breadistry Guidebook components in terms of safety precautionary measures, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.37, and the standard deviation of 0.68 indicates that, on average, respondents strongly agree that the safety precautionary measures of the Breadistry guidebook provides comprehensive, well-structured, and highly effective safety guidelines for bread and pastry production. These results imply that the Breadistry guidebook is regarded as a highly valuable and trustworthy resource for ensuring safety in bread and pastry production, helping users maintain a hygienic, secure, and accident-free work environment.

According to the study by Green & Roberts (2021), when students were given guidebooks including detailed instructions on how to handle ingredients, use equipment, and wear personal protective equipment, their adherence to safety protocols improved and the frequency of incidents reduced significantly. According to the study's findings, including detailed safety instructions in manuals increases student safety and skill development in culinary education.

Table 5 shows the evaluation of the Breadistry Guidebook components in terms of glossary of terms, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.31, and the standard deviation of 0.72 indicates that, on average, respondents strongly agree that the glossary of terms of the Breadistry guidebook is well-developed, well-structured, and highly useful for understanding key terms related to bread and pastry production. These results imply that the Breadistry guidebook is considered a high-quality reference tool, making it easier for

users to grasp essential baking terms and technical language in bread and pastry production.

TABLE 5. Level of the Breadistry Guidebook Components in Bread and Pastry Production in terms of Glossary of Terms

STATEMENT	Mean	SD	Remarks
The glossary of terms of the guidebook...			
...are especially useful for me when reading because they offer a quick reference for new terms.	4.47	0.63	Strongly Agree
...helps me to quickly look up definitions without disrupting the flow of my reading.	4.27	0.64	Strongly Agree
...provide clear and concise explanations, making it easier for me to understand the meaning of complex terms.	4.28	0.80	Strongly Agree
...is valuable resource for those interested in learning about the subject matter.	4.23	0.72	Strongly Agree
...makes the content more accessible and interesting to read.	4.31	0.77	Strongly Agree
Grand Mean	4.31		
SD	0.72		
Verbal Interpretation	Very High		

Thompson and Stevens (2021) explored how including glossaries in bread and pastry guidebooks affects students' grasp of technical jargon. According to the study, students who used guidebooks with extensive glossaries were able to quickly become acquainted with industry-specific jargon, hence improving their comprehension and ability to apply approaches. Students reported that having easy access to definitions and explanations improved their educational experience and cleared up any doubts during hands-on exercises. The study's findings suggest that clear glossaries are required for effective culinary education.

Level of the Breadistry Guidebook Features in Bread and Pastry Production

In the study, Breadistry Guidebook Features in Bread and Pastry Production was described in terms of layout, text, illustration and aesthetic value and was determined by the mean and standard deviation.

Table 6 presents the evaluation of the Breadistry Guidebook features in terms of layout, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

TABLE 6. Level of the Breadistry Guidebook Features in Bread and Pastry Production in terms of Layout

STATEMENT	Mean	SD	Remarks
The layout of the guidebook...			
...is simple to follow	4.44	0.64	Strongly Agree
...including line and paragraph space, was suitable.	4.27	0.65	Strongly Agree
...makes it easy to navigate and find specific topic.	4.32	0.71	Strongly Agree
...including the structuring of the chapters is logical and facilitates a smooth reading flow.	4.27	0.72	Strongly Agree
...emphasized visual appeal.	4.39	0.66	Strongly Agree
Grand Mean	4.34		
SD	0.68		
Verbal Interpretation	Very High		

The overall weighted mean is 4.34, and the standard deviation of 0.68 indicates that, on average, respondents strongly agree that the layout of the Breadistry guidebook is exceptionally well-organized, user-friendly, and aesthetically pleasing for readers. These results imply that the Breadistry guidebook is considered high-quality and well-designed, making it an accessible and efficient resource for learning bread and pastry production.

The results from the study of Megawati (2022) that emphasizes the importance of increased student comprehension in bakery courses, claiming that traditional modules made up of text, pictures, and videos are insufficient for optimal learning. Using the ADDIE technique, the researchers developed interactive learning content for e-learning platforms. The design phase focused on creating an intriguing interface with aspects such as home, instructions, and key menu items. The study found that well-structured, interactive material improves student engagement and comprehension in bakery education.

TABLE 7. Level of the Breadistry Guidebook Features in Bread and Pastry Production in terms of Text

STATEMENT	Mean	SD	Remarks
The text of the guidebook...			
...covers a range of topics and techniques related to Bread and Pastry Production.	4.42	0.68	Strongly Agree
...provided a personal touch to the experience.	4.18	0.63	Agree
...encouraged me to learn more about the technical skills.	4.23	0.73	Strongly Agree
...is well-organized, making it simple to find the information I need.	4.28	0.71	Strongly Agree
...helps me feel connected with the subject matter.	4.25	0.73	Strongly Agree
Grand Mean	4.27		
SD	0.70		
Verbal Interpretation	Very High		

Table 7 shows the evaluation of the Breadistry Guidebook features in terms of text, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.27, and the standard deviation of 0.70 indicates that, on average, respondents strongly agree that the text of the Breadistry guidebook is well-developed, clear, and highly effective in conveying information about bread and pastry production. These results imply that the Breadistry guidebook is high-quality, well-structured, and informative making it a valuable resource for mastering bread and pastry production.

Supported by the study of Sari et al. (2021) that aimed to improve training resources for puff pastry cooking by producing a demonstration film for Pastry and Bakery classes. The researchers evaluated the video's feasibility and usefulness in communicating advanced baking techniques. The findings revealed that the text of the material significantly increased students' understanding and ability to replicate the operations, highlighting the importance of multimedia aspects in teaching guidebooks for bread and pastry production.

TABLE 8. Level of the Breadistry Guidebook Features in Bread and Pastry Production in terms of Illustration

STATEMENT	Mean	SD	Remarks
The illustration of the guidebook...			
...significantly increase my interest and engagement with the content.	4.46	0.74	Strongly Agree
...were well- integrated with the written content.	4.24	0.74	Strongly Agree
...enhanced the overall enjoyment of the book.	4.28	0.71	Strongly Agree
...clearly explain the concepts offered in the content.	4.37	0.66	Strongly Agree
...cover all essential aspects of the topics discussed in the guidebook.	4.36	0.70	Strongly Agree
Grand Mean	4.34		
SD	0.71		
Verbal Interpretation	Very High		

Table 8 shows the evaluation of the Breadistry Guidebook features in terms of illustration, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.34, and the standard deviation of 0.71 indicates that, on average, respondents strongly agree that the illustration of the Breadistry guidebook is clear, detailed, and highly effective in supporting learning and understanding. These results imply that the Breadistry guidebook is considered well-executed, informative, and essential for learning, making the material more engaging and accessible for its users.

Based on the findings of the study of Arida (2023) it suggest that utilizing detailed illustrations in teaching materials not only enhances comprehension but also boosts learners' confidence in executing complex baking tasks.

TABLE 9. Level of the Breadistry Guidebook Features in Bread and Pastry Production in terms of Aesthetic Value

STATEMENT	Mean	SD	Remarks
The guidebook for Bread and Pastry Production promoted...			
...the use of illustrations and graphics to effectively supports the content and provide value to the reading.	4.49	0.61	Strongly Agree
...enhancing my technical skills.	4.23	0.65	Strongly Agree
...the fonts and colors used in the guidebook as easy to read and attractive to look at.	4.36	0.66	Strongly Agree
...organized and easy to understand.	4.33	0.65	Strongly Agree
...enhanced contentment with the design	4.23	0.62	Strongly Agree
Grand Mean	4.33		
SD	0.64		
Verbal Interpretation	Very High		

Table 9 shows the evaluation of the Breadistry Guidebook features in terms of aesthetic value, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.33, and the standard deviation of 0.64 indicates that, on average, respondents

strongly agree that the aesthetic value of the Breadistry guidebook enhances its usability and appeal, making it an inviting and effective resource for learning bread and pastry production. These results imply that the Breadistry guidebook enhances its usability, making it not only informative but also visually pleasing and engaging for learners and professionals in bread and pastry production.

In connection, Carter and Green (2021) found that aesthetic value is vital in making educational materials more successful since it attracts students' attention and allows for a more enjoyable learning experience.

Level of Learners' Technical Skills

In this study, learners' technical skills were described in terms of measuring technique, creaming, mixing method, and timing and controlling and was determined by the mean and standard deviation.

TABLE 10. Level of Learners' Technical Skills in terms of Measuring Technique

STATEMENT	Mean	SD	Remarks
Measuring liquid and dry ingredients...			
...allowed me to measure the ingredients correctly and accurately.	4.59	0.57	Always
...correctly improves the overall quality of baked goods.	4.33	0.66	Always
...with precise measuring tools allows me to achieve consistent result every time I follow a recipe.	4.28	0.73	Always
...incorrectly might lead to major problems.	4.29	0.78	Always
...properly is essential in general.	4.33	0.70	Always
Grand Mean	4.36		
SD	0.70		
Verbal Interpretation	Very High		

Table 10 shows the evaluation of the learners' technical skills in terms of measuring technique, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.36, and the standard deviation of 0.70 indicates that, on average, it indicates an agreement of the learners on the level of technical skills in terms of their measuring technique. These results imply that the learners are highly competent and precise in measurement techniques, demonstrating strong technical skills that contribute to accuracy, consistency, and quality in their field, such as bread and pastry production. Precise ingredient measurement is required for the proper consistency in pastries. Their findings emphasize the need of accuracy in pastry making, demonstrating that even minor variations in component amounts can result in significant variances in texture and flavor (Johnson & Lewis, 2020).

Table 11 shows the evaluation of the learners' technical skills in terms of creaming, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.32, and the standard deviation of 0.71 indicates that, on average, it indicates an agreement of the learners on the level of technical skills in

terms of their creaming technical skills. These results imply that the learners are highly skilled and knowledgeable in the creaming method, demonstrating precision, efficiency, and consistency in their baking techniques, which leads to high-quality bread and pastry production.

TABLE 11. Level of Learners' Technical Skills in terms of Creaming

STATEMENT	Mean	SD	Remarks
The creaming method showed in the guidebook...			
...helped me conduct the creaming method properly.	4.45	0.58	Always
...is easy to grasp the creaming procedure.	4.25	0.71	Always
...allows me to make a soft and chewy texture rather than dense and hard.	4.44	0.68	Always
...is essential for creating a light and airy texture in baked products.	4.18	0.75	Often
...was a valuable skill because it contributed greatly to the success of many recipes.	4.29	0.78	Always
Grand Mean	4.32		
SD	0.71		
Verbal Interpretation			Very High

White and Green (2019) also examine the impact of creaming sugar and butter on the flakiness and tenderness of baked goods. Their findings suggest that appropriate creaming is required to give pastries a flaky, delicate texture. A product that has been over- or under-creamed may have a rough texture or be unevenly flaky.

Table 12 presents the evaluation of the learners' technical skills in terms of mixing method, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.37, and the standard deviation of 0.68 indicates that, on average, it indicates an agreement of the learners on the level of technical skills in terms of the mixing method. These results imply that the learners are highly skilled and knowledgeable in various mixing methods, demonstrating precision, efficiency, and consistency, which leads to high-quality bread and pastry production.

TABLE 12. Level of Learners' Technical Skills in terms of Mixing Method

STATEMENT	Mean	SD	Remarks
The mixing method showed in the guidebook...			
...enables me to do the mixing method correctly.	4.63	0.53	Always
...is simple to understand.	4.25	0.69	Always
...are essential for achieving the desired texture of baked products.	4.40	0.73	Always
...states that over mixing might lead to tough and dense results.	4.23	0.68	Always
...outlined that understanding those methods is a key to success in baking.	4.33	0.67	Always
Grand Mean	4.37		
SD	0.68		
Verbal Interpretation			Very High

In connection, according to Johnson & Lee (2018), extended mixing times cause too much gluten to form, making the dough tougher and giving bread and pastries unappealing textures. Their findings underscore the importance of

monitoring mixing time in order to establish a balance between dough elasticity and gluten expansion, which is vital for producing the highest possible product quality.

Table 13 presents the evaluation of the learners' technical skills in terms of the timing and controlling, based on five key statements. The responses were measured using a Likert scale, and the results are expressed in terms of mean scores, standard deviations (SD), and verbal interpretations.

The overall weighted mean is 4.26, and the standard deviation of 0.69 indicates that, on average, it indicates an agreement of the learners on the level of technical skills in terms of timing and controlling. These results imply that the learners are highly competent in managing time and process control, ensuring efficiency, precision, and high-quality results in bread and pastry production or other technical applications.

TABLE 13. Level of Learners' Technical Skills in terms of Timing and Controlling

STATEMENT	Mean	SD	Remarks
Timing and controlling is...			
...important because I have found that keeping a tight eye on baking times and temperature helps me avoid over baking and under baking.	4.41	0.65	Always
...essential for accurate timing, which have a direct impact on the quality of the finished product.	4.33	0.65	Always
...a key element in baking process, allowing for better planning in the baking area.	4.34	0.76	Always
...enable me to master the art of creating delicious and visually appealing baked goods.	4.22	0.73	Always
...essential for producing consistent outcomes in baking.	4.38	0.63	Always
Grand Mean	4.26		
SD	0.69		
Verbal Interpretation			Very High

In connection, Anderson and Smith (2018) found that baking temperature had a significant impact on bread quality, including crust color, texture, and crumb structure. According to their findings, higher temperatures result in a darker crust and less baking time, whereas lower temperatures result in a lighter crust and more baking time. For the greatest bread quality, perfect temperature control is required.

Level of Learners' Performance in Bread and Pastry Production

In the study, learners' performance in Bread and Pastry Production was described in terms of written test and performance task and was determined by frequency, percentage, mean score and standard deviation.

Table 14 evaluates learners' performance in bread and pastry based on their written test scores, categorized into different performance levels. The interpretation considers frequency, percentage distribution, mean score, standard deviation (SD), and descriptive value.

The findings indicate that students generally performed at approaching proficient level, with a mean score of 10.14. While a significant portion (64%) achieved good or higher, nine-twenty-fifths (36%) still require additional support.

This implies that learners have a solid foundation in bread and pastry production theory but need further refinement in their written test performance to reach full proficiency. With

additional practice and learning, they can achieve a higher level of mastery.

TABLE 14. Level of Learners' Performance in Bread and Pastry Production in terms of Written Test

Score	Frequency	Percentage	Descriptive Value
41 – 50	12	10%	Outstanding
31 – 40	28	23%	Very Satisfactory
21 – 30	37	31%	Satisfactory
11 – 20	40	33%	Fairly Satisfactory
1. 10	3	3%	Did Not Meet Expectations
Mean Score	25.81		
SD	10.14		
Descriptive Value	Satisfactory		

It was discovered that when students are obliged to present a detailed written analysis of their techniques, their performance in practical baking improves. According to the study, students who do well on written assessments approach practical activities with greater accuracy and comprehension, which improves their overall performance (Davis & Smith, 2021).

TABLE 15. Level of Learners' Performance in terms of Performance Task

Performance Task	Mean Score	SD	Descriptive Value
Performance Task 1	23.05	34.19	Very Satisfactory
Performance Task 2	24.98	1.78	Very Satisfactory
Performance Task 3	23.94	2.46	Very Satisfactory
Grand Mean Score	23.99		
SD	2.81		
Descriptive Value	Very Satisfactory		

Table 15 evaluates learners' performance in bread and pastry based on their performance task scores, categorized into different performance levels. The interpretation considers frequency, percentage distribution, grand mean score, standard deviation (SD), and descriptive value.

The findings indicate that students generally performed at a very satisfactory level, with a grand mean score of 23.99. This implies that Learners have achieved a competent and reliable level of skill in practical baking tasks, demonstrating efficiency, consistency, and adherence to industry standards in bread and pastry production.

In line with the study of According to Harris and Parker's (2017), regular performance assignments in bread and pastry courses significantly improve students' technical abilities. According to the study, students' accuracy, consistency, and overall performance on final assessments improved dramatically when they practiced difficult actions such as shaping bread or laminating dough under time constraints.

Significant Relationship on using Breadistry Guidebook and Learners' Technical Skills in Bread and Pastry Production To test the relationship between Breadistry Guidebook and learners' technical skills in Bread and Pastry Production data were treated statistically in Minitab 14 using Pearsons R. The major findings were presented in the following table.

Presented in Table 16 is the relationship between Breadistry guidebook and learners' technical skills in bread and pastry production. The results include Pearson correlation

coefficients (r-values), p-values, and sample size (N=120) for each relationship.

TABLE 16. Test of Relationship on using Breadistry Guidebook and Learners' Technical Skills in Bread and Pastry Production

Breadistry Guidebook (IV)	Measuring Technique	Technical Skills (DV)		
		Creaming	Mixing Method	Timing and Controlling
Components				
Overview:				
Pearson				
Correlation	0.421	0.546	0.517	0.568
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Objectives:				
Pearson				
Correlation	0.482	0.461	0.390	0.493
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Content:				
Pearson				
Correlation	0.497	0.502	0.461	0.614
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Safety				
Precautionary				
Measures:				
Pearson				
Correlation	0.460	0.369	0.388	0.422
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Glossary of Terms:				
Pearson				
Correlation	0.531	0.576	0.462	0.540
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Features				
Layout:				
Pearson				
Correlation	0.515	0.444	0.500	0.498
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Text:				
Pearson				
Correlation	0.598	0.544	0.549	0.577
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Illustration:				
Pearson				
Correlation	0.560	0.509	0.518	0.507
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120
Aesthetic Value:				
Pearson				
Correlation	0.417	0.528	0.526	0.459
p-value	0.000*	0.000*	0.000*	0.000*
N	120	120	120	120

Note: * p < .05

The results show a significant positive relationship between Breadistry guidebook's components and features and learners' technical skills in terms of measuring technique, creaming, mixing method, and timing and controlling. This indicates that the quality and effectiveness of the Breadistry guidebook have a direct and meaningful impact on learners' technical skills in bread and pastry production.

The Breadistry guidebook is an essential and effective educational tool that significantly contributes to learners' technical skill development in bread and pastry production, particularly in measuring, creaming, mixing, and timing/control techniques.

TABLE 17. Test Effect on using Breadistry Guidebook on Learners' Performance in Bread and Pastry Production

Breadistry Guidebook (IV)	Learners Performance (DV)	
	Written Task	Performance Task
Components		
Overview:		
t-value	1.41	0.13
p-value	0.160	0.894
N	120	120
Objectives:		
t-value	0.35	0.44
p-value	0.729	0.659
N	120	120
Content:		
t-value	0.25	0.80
p-value	0.800	0.426
N	120	120
Safety Precautionary Measures:		
t-value	1.22	0.09
p-value	0.226	0.925
N	120	120
Glossary of Terms:		
t-value	0.82	0.80
p-value	0.412	0.424
N	120	120
Features		
Layout:		
t-value	0.62	0.52
p-value	0.538	0.603
N	120	120
Text:		
t-value	2.28	1.15
p-value	0.024*	0.252
N	120	120
Illustration:		
t-value	2.00	1.15
p-value	0.048*	0.253
N	120	120
Aesthetic Value:		
t-value	1.73	0.36
p-value	0.087	0.716
N	120	120

Note: * p < .05

The association between visualization approaches and students' skill performance in bread and pastry making among Grade 8 students was explored using a descriptive correlational method. The study discovered a link between the use of visualization techniques and students' ability to maintain instruments, take measurements, and follow safety protocols. The study found that incorporating visual elements into guidebooks increases practical skills and comprehension in bread and pastry courses (Arida, 2023).

Significant Effect on using Breadistry Guidebook on Learners' Performance in Bread and Pastry Production

To test the effect Breadistry Guidebook on learners' performance in Bread and Pastry Production data were treated statistically in Minitab 14 using Regression Analysis. The major findings were presented in the following table.

Presented in Table 17 is the effect of Breadistry guidebook on learners' performance in bread and pastry. The results include Pearson correlation coefficients (r-values), p-values, and sample size (N=120) for each relationship.

The results show no significant effect of Breadistry guidebook's components on learners' performance in terms of written test and performance task. It also shows no significant effect of Breadistry guidebook's features on learners' performance in terms of performance task. In addition, it shows no significant effect of Breadistry guidebook's features in terms of layout and aesthetic value on learners' performance in terms of written test. On the other hand, it shows a significant effect of Breadistry guidebook's features in terms of text and illustration on learners' performance.

This indicates that the Breadistry guidebook revealed a significant positive effect of the Breadistry guidebook's text and illustrations on learners' performance in the written test. This indicates that clear, well-designed text and supportive visuals in the guidebook can effectively enhance students' understanding and written performance. Although other components, features, and aesthetic aspects of the guidebook showed no significant impact on performance tasks or written tests, the strong influence of text and illustrations highlights their crucial role in supporting learner success.

In contrast, it was discovered that requiring students to submit a thorough written and performance analysis of their techniques increases their performance in practical baking. According to the study, students who perform well on written and performance assessments approach practical activities with greater precision and comprehension, which improves their overall performance (Davis & Smith, 2021).

IV. CONCLUSION AND RECOMMENDATIONS

Based on the findings above, the following conclusions were drawn:

A significant relationship between the Breadistry guidebook and learners' technical skills was shown. Therefore, the null hypothesis was rejected. This indicates the Breadistry guidebook contributes to learners' technical skills, confirming that the guidebook is an effective educational resource in bread and pastry production.

No significant effect was shown in the use of the Breadistry guidebook on learners' performance in terms of the written test and practical task. Therefore, the null hypothesis was accepted. It is concluded that the Breadistry guidebook's design and structure of the Breadistry guidebook are not enough by themselves to improve learning outcomes.

In the formulated conclusions from the findings, it was recommended that:

Bread and Pastry Production teachers may continue using and further enhance the guidebook as a primary educational resource in bread and pastry production. Efforts should focus on updating and enriching the content to maintain its effectiveness, and on integrating more practical activities, detailed procedures, and illustrative examples to further strengthen learners' technical proficiency. Expanding its use to broader training programs or similar courses is also encouraged to maximize its impact.

Bread and Pastry Production teachers may review and enhance the content, instructional strategies, and practical engagement elements within the guidebook. Future improvements should focus on making the learning materials more interactive, skills-based, and instructionally rich, rather than relying solely on design and layout. Additional support materials, such as guided exercises, practice tasks, and clearer explanations, should be incorporated to better support learner achievement.

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