

# Assessment and Performance in Machine Shorthand: Basis on the Development of Instructional Material

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## Abstract

The study aimed to evaluate the performance of faculty, students, and other stakeholders in Machine Shorthand. Many Office Administration students, faculty, stenographers, and stakeholders encounter challenges with Machine Shorthand, as they are introduced to this subject only at the college level. Teaching this subject requires significant effort, focus, skill, and attention from the faculty.

A descriptive research design was employed, utilizing the revised Policies and Guidelines on Instructional Materials Development (approved via BOT Resolution No. 60, series of 2022) and the Criteria for Textbook Evaluation with a 5-point Likert scale to gather data on striking speed, reading comprehension, and transcription skills. The study implemented pre-pilot and post-pilot tests to assess performance in Machine Shorthand. Statistical tools, such as the weighted mean, were used for data interpretation. Forty-eight (48) students, along with five (5) faculty members, participated in the survey.

Results showed that the pre-pilot test achieved an overall total weighted mean score of 4.69, interpreted as "outstanding," while the post-pilot test for faculty achieved an "outstanding" interpretation with a perfect weighted mean score of 5.00 (see appendix A). The findings revealed that development of instructional materials shall be proposed for the improvement of students' performance which include learn to operate the machine shorthand through proper keyboard techniques and full understanding of the principles involved in learning. The purpose of this research that students progress in machine shorthand changes from less satisfactory in the pre-test to satisfactory in the post-test but still needs improvement.

Keywords: keyboard practice; reading comprehension; striking speed; sound pattern; transcription ability; word abbreviation

## Chapter 1 – Introduction

Machine shorthand is a professional dictation method distinct from Gregg shorthand. Although it uses symbols displayed as letters, it relies on phonetic spelling rather than traditional spelling, similar to Gregg shorthand. Unlike typewriters or computers, the machine eliminates silent letters, enables full phrases or syllables to be written in a single stroke, and automatically inserts spaces between strokes. This method is widely used in courts, legal offices, modern businesses, and government agencies. Its significance has grown as a vital tool in business communication and traditional roles such as court reporting and personal writing, including courtroom transcripts.

Ogwang (2020), an Executive Stenographer at the Uganda Business and Technical Examination Board, identified a lack of shorthand skills as a significant factor contributing to low completion rates among students, faculty, stenographers, and stakeholders in certificate and diploma programs in secretarial studies. Similarly, Rayos et al. (2016) found that while Office Administration faculty and students were competent in basic machine operations like assembly and troubleshooting, none of the respondents met the standard requirement of 40 words per minute with 95% accuracy.

In the Philippines, several colleges, including Camarines Norte State College (CNSC), offer Office Administration programs. According to Ang et al. (2021), these four-year programs aim to equip students with the skills and knowledge needed for office work. Students must develop their competencies to compete in a broader job market. Under CHED Memorandum Order No. 19, Series of 2017, the curriculum emphasizes outcomes-based education, allowing institutions flexibility in achieving program outcomes and educational objectives through customized delivery methods.

Machine shorthand courses teach students to use stenograph machines for taking dictation at speeds surpassing manual shorthand capabilities, with potential roles such as court stenographers. According to program specifications, students are expected to master letter combinations, dictation at 100-120 words per minute, and effective use of both hands. These roles demand extensive training in shorthand, equipment operation, and related tasks. Court reporters, for instance, require proficiency in stenography, English grammar, and familiarity with legal and medical concepts.

However, faculty and students often face challenges in acquiring shorthand proficiency. Agnas et al. (2018) noted difficulties in keeping pace with dictation speed, applying brief forms during dictation, and recalling abbreviations during transcription. Challenges also include unfamiliarity with the steno alphabet, slow transcription speed, and errors in retyping.

Instructional materials play a critical role in Academic success, but their inadequacy hampers skill acquisition. Machine shorthand is utilized not only by faculty and students but also by professionals like stenographers, journalists, and court clerks. Students must have knowledge in order to understand lessons and if they understand their lessons. It describes specific actions that are used by individuals, groups or organizations in multiple types of performance.

### **Objective of the Study**

The proposed modified guidelines to a good quality management approach. This aims:

1. To produce a number of instructional materials that will help faculty, students, and other stakeholders gain access to learning materials from approved revised Policies and Guidelines in terms of CNSC's classification and contents of the Instructional Material:

1.1. Preliminary Pages (Title page, Preface, About the Author, Acknowledgement/Dedication, Table of Contents, and List of Figures/Tables)

1.2. Body Chapters (objectives, brief introduction of the chapter (optional), a detailed discussion of the contents of each chapter, summary, review questions or activity guide and references of each chapter

1.3. Appendix

1.4. Glossary or index (optional)

2. To conduct of the pilot testing of the Instructional Material for evaluation:

2.1. Objectives

2.2. Content and Mechanics

### 2.3. Physical Features

### 2.4. Indexes or Glossaries

## Chapter 2 - Literature Review

This chapter discusses the related literature and studies, providing an analysis of the current state of the field. It serves as a foundation for identifying the research gap addressed by the study. The insights drawn from the reviewed literature shaped the formulation of the study's problem. Theoretical and conceptual frameworks, illustrated through paradigms, are utilized to demonstrate this conceptualization.

### *Assessment and Performance in Machine Shorthand*

In the study "Office Skills Required by Office Technology and Management students, faculty, stenographers, and stakeholders for Effective Performance in a Modern Office," Oyinloye et al. (2021) identified both hard and soft office skills as essential for the effective performance of a stenographer. Hard skills, such as operating office equipment and keyboarding, are core competencies that are critical for office work. Seidu and Oteng (2016) found that a stenographer's performance relies heavily on knowledge and skills related to office equipment, which directly impacts their performance output.

Software updates, a critical aspect of modern office technology, are vital for maintaining the performance, compatibility, and security of systems. Mathur et al. (2018) emphasized the importance of proficiency in software updates for secretarial courses and office administrators. A 2022 Educause report revealed that while many students, faculty, stenographers, and stakeholders are tech-savvy, they still face technological challenges and need institutional support in resolving technical problems.

In terms of specific skills, Adam (2015) highlighted the importance of shorthand for stenographers, noting that it enables them to transcribe spoken words quickly and accurately. Similarly, Court Reporter Edu (2022) stressed the rigorous training required for stenographers to master shorthand and use related technologies efficiently. Typing skills are also critical; Richardson (2017) found that learning formal typing procedures improves writing efficacy and productivity, with many students, faculty, stenographers, and stakeholders reporting increased words per minute after training.

According to Ragin (2020), students, faculty, stenographers, and stakeholders benefit from access to resources, such as equipment and materials, which can enhance their learning outcomes. Adalikwu (2013) further supported this by showing that the use of instructional materials significantly improves Academic performance, as it aids in understanding concepts and boosts achievement.

Okoro (2018) found that weaknesses in English, particularly spelling, contributed to poor performance in shorthand, recommending more exposure to dictation exercises and the use of specialized textbooks. The study by Armiati et al. (2018) highlighted the challenges faced by Office Administration students in mastering typing, attributing their low typing speed to limited practice opportunities. Enyekit et al. (2016) similarly pointed out the lack of teaching facilities as a barrier to improving shorthand skills.

Furthermore, Arrogante et al. (2016) found that limited reference materials and learning facilities, such as shorthand simulation rooms, hindered students' effectiveness in stenography. Nabor et al. (2014) identified common difficulties in stenography, such as difficulty transcribing shorthand strokes and taking dictation. Rayos et al. (2016) observed that while students were competent in basic machine operations, none met the required speed and accuracy standards for machine shorthand, reflecting gaps in training and proficiency.

### *Instructional Material and Implication for Training*

According to a 2016 NCES survey, the age range of college undergraduate students, faculty, stenographers, and stakeholders at both 4-year and public 2-year institutions is predominantly between 18 and 24. However, over 20% of students, faculty, stenographers, and stakeholders at 4-year institutions are aged 25 or older. Panacci (2015), in his study titled "Adult students, faculty, stenographers, and stakeholders in Higher Education: Classroom Experiences and Needs," defines traditional students as those between 18 and 22 who enroll directly after high school without significant competing responsibilities such as full-time jobs or parenting. Nontraditional students, on the other hand, are typically over 25, did not enroll immediately after high school, attend part-time, are financially independent, and juggle other responsibilities like caregiving, employment, or community involvement. Despite age differences, Academic performance between adult and traditional students is generally similar. Adult learners often perform as well as their younger peers, who are typically more engaged in social activities outside the classroom and have fewer external responsibilities (Panacci, 2015).

Imlach et al. (2017) in their study, "Age is No Barrier: Predictors of Academic Success in Older Learners," found that older students (aged 25 and above) often achieve better Academic results than younger students. In contrast, Pellizzari and Billari (2012) in "The Younger, The Better? Age-Related Differences in Academic Performance at University" found that younger students at the undergraduate level typically perform better than older students, with cognitive ability differences only partly explaining the gap. Social activities seem to play a more significant role in this disparity.

Tadese et al. (2022), in their research "Determinants of Good Academic Performance Among University students, faculty, stenographers, and stakeholders in Ethiopia," identified that students aged 20 to 24 are significantly associated with better Academic performance. In the context of gender, the International Association of Administrative Professionals (n.d.) reports that males make up only 1% of their members, with no more than 5% of the total stenographers and administrative assistants in the US, reflecting the long-standing female dominance in this profession due to historical trends and the appeal of the technical aspects of the profession to men.

A study by Asotea et al. (2021) titled "Competency Level of 4th Year Bachelor of Science in Office Administration students, faculty, stenographers, and stakeholders of Camarines Norte State College" revealed that the majority of students in the Office Administration program were female, due to the course's alignment with clerical and administrative work, though some males were also involved.

Homeschool Success (n.d.) points out that many students enter college undecided about their major and often change their major multiple times, especially early in their college years, without significant delays in graduation. However, changes made later can significantly delay their Academic progress.

Maine's Public Universities (2022) found that factors influencing student retention and persistence include initial commitment, peer support, involvement in Academic life, and quality faculty-student interactions. Daniel (2018) also highlighted that many Office Administration students fail to pass typing and keyboarding courses, often due to insufficient speed and accuracy. Her study found that only 312 out of 446 students passed a first-semester typing course at Davis College in 2014, with practice and adequate training cited as solutions.

Capistrano et al. (2021) in their study on stenography emphasized that proficiency in shorthand requires knowledge of shorthand rules, English grammar, and vocabulary, along with the ability to transcribe accurately at high speeds (40-55 words per minute), as well as take dictation at 100-120 words per minute.

The study by del Villar & Villegas (2012) on the difficulties of shorthand acquisition among Office Administration students in Camarines Norte State College recommended improving teaching strategies, providing necessary facilities, and motivating students to improve their skills in English grammar, spelling, and shorthand. Faustino (2012), in his study on factors affecting employability, stressed the importance of enhancing the skills of Office Administration students through training in computer literacy and stenography, along with developing self-confidence and communication skills.

Finally, Agnas et al. (2018) identified challenges in shorthand transcription, particularly in keeping up with dictation speed and correcting errors, as well as issues with reading transcribed shorthand due to unfamiliarity with the alphabet and abbreviations.

### *Machine Shorthand*

In Ibrahim's (2021) study, "Influence of students, faculty, stenographers, and stakeholders' Perceived Cognitive Difficulties on Interest in Shorthand and Choice of Office Option in Colleges of Education in North East Nigeria," it is highlighted that in Nigerian colleges of education, the National Commission for Colleges of Education (NCCE) designates certain courses as core, with machine shorthand being one of these essential courses. All business education students, faculty, stenographers, and stakeholders must complete and pass this course to graduate. The NCCE aims to produce well-qualified professionals capable of teaching business subjects in secondary schools, fostering vocational business education, and training skilled stenographers who contribute to vocational development (Ibrahim, 2021).

In Valiente's (2022) study, "students, faculty, stenographers, and stakeholders' Assessment and Performance in Machine Shorthand: Basis on the Development of Instructional Materials," it is emphasized that machine shorthand has become increasingly vital in business communication and other fields like court reporting. It is a specialized skill that involves using a machine to transcribe speech quickly and accurately, often in a single-hand motion, and requires significant practice and familiarity.

Corral (n.d.), in the University of Rizal System's Module 1 for Machine Shorthand, outlines that the course aims to help students, faculty, stenographers, and stakeholders become familiar with the steno machine, learn its components, and understand how to use it effectively. The course also covers shorthand symbols, abbreviations, and dictation techniques.

According to the Luminex Steno Machine Manual and Student User Guide (2018), constant use and practice of the steno machine help students, faculty, stenographers, and stakeholders become more proficient in setting up, assembling, and troubleshooting the machine.

Rayos et al. (2016), in their study "Machine Shorthand Competencies of Bachelor of Science in Office Administration at the University of Rizal System, AY 2016-2017," suggest that the curriculum committee consider offering machine shorthand over two semesters, provide more stenotype machines for each campus, and create accessible laboratories for practice. They also recommend that students, faculty, stenographers, and stakeholders attend court hearings and observe court stenographers to gain hands-on experience.

Musa and Salleh (2021), in their study "The Relevance of Shorthand in the Modern Office From the Perspective of Human Resource Managers and Office Technology and Management Lecturers: A Case Study of Nigerian Colleges of Education in North-Eastern States," point out that while shorthand skills are valuable for stenographers, the allocation of credit hours for practical shorthand training is insufficient for effective teaching.

Nonye and Elemchi (2018), in "Resource Provision for Effective Implementation of Office Technology and Management Programmes in Public Colleges of Education in Enugu and Ebonyi States," emphasize that the availability of adequate facilities and equipment is crucial for developing competent graduates. Without proper teaching resources, training becomes theoretical, and students are ill-prepared for the workforce.

The studies by Valiente (2022) and Rayos et al. (2016) are relevant to the present research as they both explore the proficiency levels of office administration students, faculty, stenographers, and stakeholders in machine shorthand and suggest ways to improve skills. Similarly, studies by Adam (2015) and Capistrano et al. (2021) focus on the essential skills and knowledge required for shorthand proficiency. Other research, including studies by Okoro (2018), Musa & Salleh (2021), Armiami et al. (2018), Daniel (2018), Enyekit et al. (2016), Nonye & Elemchi (2018), Arrogante et al. (2016), Agnas et al. (2018), and Nabor et al. (2014), discusses challenges in shorthand education,



such as insufficient practice time, lack of materials, and inadequate facilities. Additionally, the works of Richardson (2017), Adalikwu (2013), del Villar & Villegas (2012), and Faustino (2012) highlight methods to enhance shorthand proficiency, including improving typing skills, providing proper materials and facilities, and offering seminars and training.

In contrast, the studies by Panacci (2015), Imlach et al. (2017), Pellizzari & Billari (2012), and Tadese et al. (2022) differ from the current research as they focus on the impact of age categories of college undergraduate students, faculty, stenographers, and stakeholders on Academic performance, while Asotea et al. (2021) examined the sex distribution of college students, faculty, stenographers, and stakeholders. Additionally, studies such as Oyinloye et al. (2021) addressed the office skills required for stenographers in modern offices, Seidu & Oteng (2016) highlighted the importance of knowledge in operating office equipment, and Mathur et al. (2018) emphasized the significance of software updates.

To bridge the gap, the above-mentioned literature and studies relate to the skills and knowledge necessary for office workers, secretarial students, faculty, stenographers, and stakeholders, the challenges in learning shorthand, and potential ways to improve their Academic performance. However, limited research has been conducted on shorthand proficiency, particularly focusing on manual shorthand. Most of the available machine shorthand studies are outdated and come from other countries. No recent studies have examined the machine shorthand proficiency of office administration students, faculty, stenographers, and stakeholders, especially in Camarines Norte. Therefore, this study aims to explore and establish the relationship between the availability of instructional materials and machine shorthand proficiency. The focus of this research will be to assess the current proficiency levels in machine shorthand of 3rd and 4th year Office Administration students, faculty, stenographers, and stakeholders, specifically regarding assembly, troubleshooting, speed, and transcription skills. The study will also identify the challenges encountered by students, faculty, stenographers, and stakeholders in learning shorthand and propose a logical framework to enhance their proficiency based on the study's findings.

## Theoretical Framework

The theoretical framework outlined below serves as the foundation for supporting the researchers' study. It presents a theory that is relevant to the current investigation and provides data to validate the study's findings. This section illustrates the importance of the theory in relation to the research, clarifying how theory and research are interconnected. It helps the researchers interpret their findings and understand how the theoretical framework guides their analysis.

Robert M. Gagne's (1974) Instructional Design Theory provides a comprehensive approach to instruction and teaching, detailing strategies educators can use to achieve learning objectives. This theory is adaptable, considering the content being taught and the diverse learning styles of students. Instructional design encompasses various methods, models, and strategies tailored to meet the specific needs of learners.

Gagne's theory establishes a direct link between instructional materials and students' learning outcomes. These outcomes include the development of higher-order thinking skills, effective learning strategies, and positive attitudes toward learning. The theory assumes that well-designed instructional materials help develop intellectual skills in students, faculty, stenographers, and stakeholders by guiding them step by step through concepts, rules, and principles. This approach enhances problem-solving abilities, as learners are able to analyze situations and develop plans to address them. The theory emphasizes the importance of "eliciting performance," "providing feedback on performance," and "offering learning guidance" in supporting discovery learning.

This instructional design theory aligns with the study by exploring the relationship between teaching methods, instructional materials, and the Academic proficiency of students, faculty, stenographers, and stakeholders. Providing adequate instructional resources—such as textbooks, steno machines, simulation labs, and other learning aids—along with appropriate teaching methods will positively impact the proficiency of students, faculty, stenographers, and stakeholders in machine shorthand. For the Office Administration department, supplementing these resources with additional steno machines, laboratory rooms, instructional materials, and alternative teaching methods, alongside training and seminars, will enhance machine shorthand proficiency. students, faculty, stenographers, and stakeholders will gain knowledge through lectures supported by sufficient instructional materials, while developing skills through practical applications in lab rooms and simulation offices.

Exposure to immersion programs, such as internships in courtrooms, will provide real-world experience, helping them prepare for future careers. The use of alternative teaching tools and methods, while differing from traditional approaches, remains acceptable as long as it fulfills the objectives outlined in the course syllabus, aligning with both the CMO No.19 series of 2017 and Gagne's Instructional Design Theory.

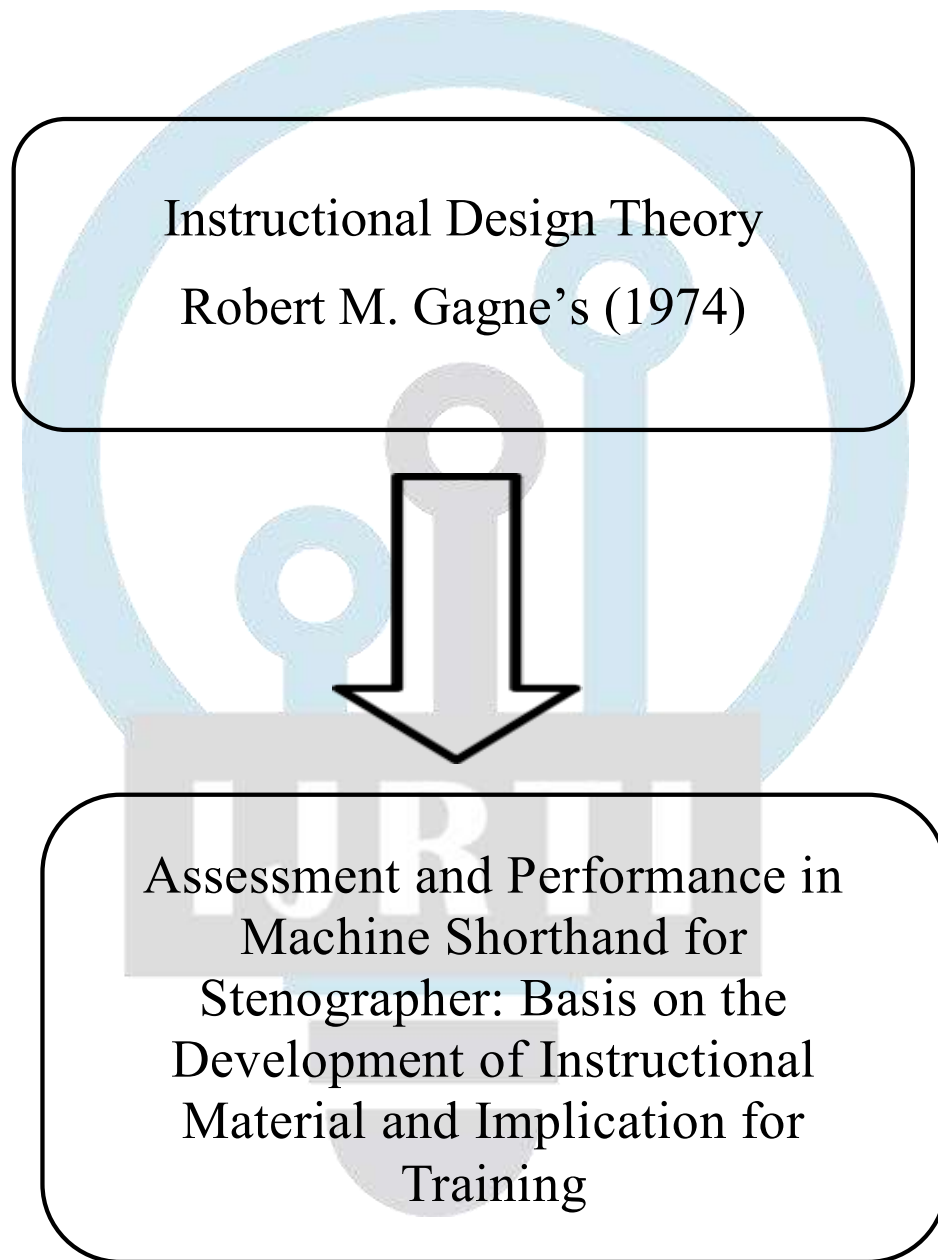


Figure 1

Theoretical Paradigm

## Chapter 3 - Methodology

This chapter presents the review of the research design, the population of the study, sampling procedures and techniques, sampling instruments, data collection, and tools for data analysis that were used to answer the research's objectives. This chapter elaborates on how the research was realized, its procedures, and its methods.

### Research Design

The study employs a mixed-methods research design, integrating both qualitative and quantitative approaches. A qualitative approach focuses on gathering descriptive data to analyze the proposed instructional material in terms of content, structure, and alignment with CNSC's classification standards. Also, quantitative approach collects numerical data from evaluations during pilot testing to determine the instructional material's effectiveness, usability, and satisfaction level among faculty, students, and other stakeholders.

### The Population of the Study

The population includes one (1) University of Saint Anthony, two (2) Camarines Sur Polytechnic Colleges - Nabua, (1) Catanduanes State University, one (1) OAS Community College faculty members who evaluate instructional material in their teaching, forty-eight (48) Office Administration 2<sup>nd</sup> year students 2nd Semester, SY 2022-2023 who use this material as part of their learning process were asked to participate in the evaluation. Administrators, curriculum developers, and Academic professionals contributing to material classification and quality improvement.

### Sampling Instrument

The study utilized the following instruments for data collection: a semi-structured instrument designed to evaluate the instructional material's objectives, content and mechanics, physical features, and optional features like indexes or glossaries; and for qualitative insights from faculty and students about material effectiveness and alignment with CNSC guidelines; and criteria-based tools for assessing pilot-tested instructional materials, focusing on specific elements such as preliminary pages, body chapters, appendix, and glossary/index.

### Sampling Procedures and Techniques

A purposive sampling method was utilized to select participants based on their relevance to the study objectives. The criteria include faculty members and students actively involved in instructional material development or evaluation. students, faculty, stenographers, and stakeholders enrolled in courses requiring material usage. Stakeholders with expertise in curriculum design and instructional material standards.

## Data Collection

The data collection process was conducted in three phases: Review of CNSC's revised policies and guidelines to align the instructional material with the institution's classification and content standards; distribution and implementation of the instructional material to selected students, faculty, stenographers, and stakeholders for feedback and evaluation; and collection of feedback using interviews, and evaluation rubric to identify strengths, weakness, and areas for improvement.

## Tools for Data Analysis

### 1. Quantitative Data Analysis:

1.1. Descriptive Statistics: Used to analyze numerical data from survey responses, focusing on weighted mean.

1.2. Inferential Statistics: Used to determine the results from pilot testing.

### 2. Qualitative Data Analysis:

2.1. Thematic Analysis: Applied to interview data to identify insights, and suggestions related to instructional material development and evaluation.

2.2. Content Analysis: Focusing on aligning the instructional material's content with CNSC's revised guidelines.

Scale	Interval	Interpretation
5	4.51 - 5.00	Outstanding (O)
4	3.51 - 4.50	Exceeds Expectations (EE)
3	2.51 - 3.50	Meets Expectations (ME)
2	1.51 - 2.50	Failed to Meet Expectations (FME)
1	1.00 - 1.50	Needs Improvement (NI)

Using Descriptive Statistics, the quantitative data collected through the Likert-scale criterion for textbook evaluation that provides summarizes a great deal of pertinent information; an outline that the teacher can use in planning courses, units and lessons; enables students, faculty, stenographers, and stakeholders to take home in the convenient from most of the materials needs to learn the course; and provides a common resource for the faculty, students, faculty, stenographers, and stakeholders (Ravina, 2002). This 5-point rating scale example from Forbes Advisor also leverages numbers for results quantification. (Trisca, 2024)

#### Chapter 4 - Action Steps

Part 1 Produce instructional materials that will help faculty, students, stenographers, and other stakeholders gain access to learning materials from approved revised Policies and Guidelines in terms of CNSC's classification and contents of the Instructional Material (see Appendix B. Instructional Materials developed)

## Chapter 5 - Findings

### Part 2 Pilot test of the Instructional Material for evaluation

Table 1  
Objectives

Criterion	Pre-Pilot Test		Post-Pilot Test	
	WM	Student Interpretation	WM	Faculty Interpretation
1 Objectives are clearly stated	4.69	O	5.00	O
2 Objectives are achievable and measurable	4.65	O	5.00	O
3 Objectives are consistent with the approved syllabus	4.63	O	5.00	O
4 Objectives include cognitive domains	4.56	O	5.00	O
5 Objectives include affective domains	4.60	O	5.00	O
6 Objectives include psychomotor domains	4.54	O	5.00	O
7 Objectives are consistent with the institutional VMGO	4.60	O	5.00	O
Average Weighted Mean	4.61	O	5.00	O

*Legend: 4.51-5.00=Outstanding (O); 3.51-4.50=Exceeds Expectations (EE); 2.51-3.50=Meets Expectations (ME); 1.51-2.50=Failed to Meet Expectations (FME); 1.00-1.50=Needs Improvement (NI)*

The pre-pilot test revealed areas needing improvement, with an average mean of 4.61. After implementing the recommendations, the post-pilot test results consistently showed a perfect 5.00 weighted mean, reflecting significant improvement. Criteria such as clarity, and measurability.

Table 2  
Content and Mechanics

Criterion	Pre-Pilot Test		Post-Pilot Test	
	WM	Student Interpretation	WM	Faculty Interpretation
1 The content is relevant	4.81	O	5.00	O
2 The content is accurate	4.71	O	4.80	O
3 The content is presented at a variety of cognitive levels	4.69	O	5.00	O

The content includes adequate development of higher order thinking skills	4.67	O	5.00	O
The organization and selection of topics or units fit the sequence of the course syllabus	4.69	O	5.00	O
The organization of topics is flexible, permitting variation in sequence	4.60	O	5.00	O
The concepts within chapters are well-organized and explained	4.60	O	5.00	O
The approach is suitable to a wide range of student abilities	4.60	O	5.00	O
The style of writing can be easily understood by the student	4.63	O	5.00	O
Sample problems are presented with adequate explanations for student's mastery of certain concepts and principles	4.52	O	5.00	O
The text vocabulary is clear	4.58	O	5.00	O
New concepts are explicitly linked to student's prior	4.60	O	5.00	O
Abstract concepts are accompanying illustration through concrete examples	4.58	O	5.00	O
Average Weighted Mean	4.64	O	4.98	O

*Legend: 4.51-5.00=Outstanding (O); 3.51-4.50=Exceeds Expectations (EE); 2.51-3.50=Meets Expectations (ME); 1.51-2.50=Failed to Meet Expectations (FME); 1.00-1.50=Needs Improvement (NI)*

In the pre-pilot test, areas like student-friendly style and vocabulary relevance scored 4.64. However, after revising the textbook, these aspects improved, achieving a 5.00 weighted mean in the post-pilot evaluation. The textbook's revised content is now comprehensive, accurate, and diverse, catering effectively to students, faculty, stenographers, and stakeholders' cognitive and developmental needs.



Table 3

## Physical Features

Criterion	Pre-Pilot Test		Post-Pilot Test	
	WM	Student Interpretation	WM	Faculty Interpretation
1 Illustration and drawings are relevant to the content of the text	4.79	O	5.00	O
2 Pictures are clear and of good quality	4.67	O	5.00	O
3 Captions for illustrations are well-written and appropriate	4.75	O	5.00	O
4 Illustrations are appropriately placed within the text	4.69	O	5.00	O
5 Module is attractive	4.75	O	5.00	O
6 Printed module is clear, legible, and free of typographical errors	4.71	O	5.00	O
7 Page layout is appealing	4.77	O	5.00	O
Average Weighted Mean	4.73	O	5.00	O

*Legend: 4.51-5.00=Outstanding (O); 3.51-4.50=Exceeds Expectations (EE); 2.51-3.50=Meets Expectations (ME); 1.51-2.50=Failed to Meet Expectations (FME); 1.00-1.50=Needs Improvement (NI)*

Physical layout and design, such as illustrations, captions, and module readability, improved significantly. The pre-pilot weighted means was 4.73, and the post-pilot test achieved a perfect 5.00, indicating successful implementation of layout and improvements.

Table 4

## Indexes or Glossaries

Criterion	Pre-Pilot Test		Post-Pilot Test	
	WM	Student Interpretation	WM	Faculty Interpretation
1 Glossary is accurate and complete	4.77	O	5.00	O
2 Index is accurate and complete	4.77	O	5.00	O
Average Weighted Mean	4.77	O	5.00	O

*Legend: 4.51-5.00=Outstanding (O); 3.51-4.50=Exceeds Expectations (EE); 2.51-3.50=Meets Expectations (ME); 1.51-2.50=Failed to Meet Expectations (FME); 1.00-1.50=Needs Improvement (NI)*

The inclusion of accurate and complete indexes and glossaries was a noted improvement, reflected in the perfect 5.00 weighted mean during the post-pilot test. This enhancement made the textbook more user-friendly and accessible for students, faculty, stenographers, and stakeholders.

## **Chapter 6 – Discussion**

### **Conclusion**

The evaluation and revision of the instructional textbook for Machine Stenography highlighted the significance of improvement and stakeholder collaboration in achieving educational excellence. Key insights gained from the study include importance of alignment with standards; student-centered design; and collaboration drives quality.

The findings can inform future practices by encouraging a standardized, collaborative process for textbook evaluation and revision. Policies mandating alignment with updated educational standards, plagiarism checks, and expert reviews can ensure high-quality learning materials.

This study has strengthened the understanding of structured feedback and iterative revisions contribute to material development. As an educator, the process reinforced the need for designing resources that are not only comprehensive but also accessible and engaging for learners.

### **Recommendations**

For Educators may provide training to ensure effectively used of the revised instructional material in Shared Service Facility. Incorporate active feedback from faculty, students, stenographers, and others.

For Stenographers may allocate resources for regular updates of learning, ensuring compliance with standards and trends in machine shorthand.

For Community may promote to introduce machine shorthand training to enhance employability and skill development.

### Short-term Recommendations.

Align the instructional material with course syllabi and distribute it to students.

Train educators, students, and stenographers on the updated textbook.

Incorporate a system to collect structured feedback from users (educators, students, and stenographers) after each training for continuous improvement.

### Long-term Recommendations

Establish a regular review for the textbook to maintain its relevance and compliance.

Expand the instructional material to include online resources, interactive modules, and multimedia content for blended learning approaches.

### Future Action Research

Investigate the impact of incorporating advanced technological tools, such as software-based shorthand simulators, on faculty, student, stenographer performance.

Examine alternative instructional approaches (e.g., gamification or peer learning) to further enhance machine shorthand training.

### Limitations

The study focused on the assessment and performance in machine shorthand for stenographer: basis on the development of instructional material and implication for training. The area of the study covers the one (1) University of Saint Anthony, two (2) Camarines Sur Polytechnic Colleges - Nabua, (1) Catanduanes State University, one (1) OAS Community College. A total of five (5) faculty members who evaluate instructional material in their teaching, forty-eight (48) 2<sup>nd</sup> year Bachelor of Science in Office Administration students enrolled in the 2nd Semester, Academic Year 2022-2023 who use this material as part of their learning process were asked to participate in the evaluation and serve as the respondents.

The researcher conducted the study from November 2024 - December 2024. The researcher began the process by finding data to provide the basis and begin working with, planning what has to be done during the research and consulting with the professor. The action research was then submitted for checking and approval by the professor. The researcher consequently arranged the information gathered from the pilot test, analyzed the results, and finished the research with the conclusion and recommendations.

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## Appendices

### Appendix A. Survey Questionnaire

#### Pre-Pilot Test

##### Criteria for Textbook Evaluation

<b>Title of the IM:</b>	Machine Shorthand: Mastery Precedes Proficiency
<b>Date Pilot Testing:</b>	May 23, 2023
<b>Course/Block/Year:</b>	BSOA 2-A
<b>Covered Period:</b>	2nd Semester, SY 2022-2023

Criterion		Rating					WM
		1	2	3	4	5	
<b>1</b>	<b>Objectives</b>						<b>4.61</b>
1.1	Objectives are clearly stated	0	1	3	6	38	<b>4.69</b>
1.2	Objectives are achievable and measurable	0	1	2	10	35	<b>4.65</b>
1.3	Objectives are consistent with the approved syllabus	0	1	2	11	34	<b>4.63</b>
1.4	Objectives include cognitive domains	0	1	2	14	31	<b>4.56</b>
1.5	Objectives include affective domains	0	1	2	12	33	<b>4.60</b>
1.6	Objectives include psychomotor domains	0	1	5	9	33	<b>4.54</b>
1.7	Objectives are consistent with the institutional VMGO	0	1	4	8	35	<b>4.60</b>
<b>2</b>	<b>Content and Mechanics</b>						<b>4.64</b>
2.1	The content is relevant	0	1	1	4	42	<b>4.81</b>
2.2	The content is accurate	0	1	2	7	38	<b>4.71</b>
2.3	The content is presented at a variety of cognitive levels	0	1	2	8	37	<b>4.69</b>
2.4	The content includes adequate development of higher order thinking skills	0	1	1	11	35	<b>4.67</b>
2.5	The organization and selection of topics or units fit the sequence of the course syllabus	0	1	2	8	37	<b>4.69</b>
2.6	The organization of topics is flexible, permitting variation in sequence	0	1	3	10	34	<b>4.60</b>

2.7	The concepts within chapters are well-organized and explained	0	1	4	8	35	<b>4.60</b>
2.8	The approach is suitable to a wide range of student abilities	0	1	3	10	34	<b>4.60</b>
2.9	The style of writing can be easily understood by the student	0	1	4	7	36	<b>4.63</b>
2.10	Sample problems are presented with adequate explanations for student's mastery of certain concepts and principles	0	1	5	10	32	<b>4.52</b>
2.11	The text vocabulary is clear	0	1	4	9	34	<b>4.58</b>
2.12	New concepts are explicitly linked to student's prior	0	1	3	10	34	<b>4.60</b>
2.13	Abstract concepts are accompanying illustration through concrete examples	0	1	4	9	34	<b>4.58</b>
<b>3</b>	<b>Physical Features</b>						<b>4.73</b>
3.1	Illustrations and drawings are relevant to the content of the text	0	0	2	6	40	<b>4.79</b>
3.2	Pictures are clear and of good quality	0	1	2	9	36	<b>4.67</b>
3.3	Captions for illustrations are well-written and appropriate	0	0	2	8	38	<b>4.75</b>
3.4	Illustrations are appropriately placed within the text	0	0	2	11	35	<b>4.69</b>
3.5	Module cover is attractive	0	0	2	8	38	<b>4.75</b>
3.6	Printed module is clear, legible, and free of typographical errors	0	0	3	8	37	<b>4.71</b>
3.7	Page layout is appealing	0	0	2	7	39	<b>4.77</b>
<b>4</b>	<b>Indexes or Glossaries (Optional)</b>						<b>4.77</b>
4.1	Glossary is accurate and complete	0	0	3	5	40	<b>4.77</b>
4.2	Index is accurate and complete	0	0	3	5	40	<b>4.77</b>
<b>Total Rating (Weighted Mean)</b>						<b>4.69</b>	
<b>Remarks</b>							

## Post-Pilot Test

## Criteria for Textbook Evaluation

<b>Title of the IM:</b>	Machine Shorthand: Mastery Precedes Proficiency
<b>Date Pilot Testing:</b>	September 27, 2024
<b>Course/Block/Year:</b>	University of Saint Anthony, Camarines Sur Polytechnic Colleges - Nabua, Catanduanes State University, OAS Community College faculty members
<b>Covered Period:</b>	1st Semester, SY 2024-2025

Criterion		Rating					WM
		1	2	3	4	5	
<b>1</b>	<b>Objectives</b>						<b>5.00</b>
1.1	Objectives are clearly stated	0	0	0	0	5	<b>5.00</b>
1.2	Objectives are achievable and measurable	0	0	0	0	5	<b>5.00</b>
1.3	Objectives are consistent with the approved syllabus	0	0	0	0	5	<b>5.00</b>
1.4	Objectives include cognitive domains	0	0	0	0	5	<b>5.00</b>
1.5	Objectives include affective domains	0	0	0	0	5	<b>5.00</b>
1.6	Objectives include psychomotor domains	0	0	0	0	5	<b>5.00</b>
1.7	Objectives are consistent with the institutional VMGO	0	0	0	0	5	<b>5.00</b>
<b>2</b>	<b>Content and Mechanics</b>						<b>4.98</b>
2.1	The content is relevant	0	0	0	0	5	<b>5.00</b>
2.2	The content is accurate	0	0	0	1	4	<b>4.80</b>
2.3	The content is presented at a variety of cognitive levels	0	0	0	0	5	<b>5.00</b>
2.4	The content includes adequate development of higher order thinking skills	0	0	0	0	5	<b>5.00</b>
2.5	The organization and selection of topics or units fit the sequence of the course syllabus	0	0	0	0	5	<b>5.00</b>
2.6	The organization of topics is flexible, permitting variation in sequence	0	0	0	0	5	<b>5.00</b>
2.7	The concepts within chapters are well-organized and explained	0	0	0	0	5	<b>5.00</b>

2.8	The approach is suitable to a wide range of student abilities	0	0	0	0	5	<b>5.00</b>
2.9	The style of writing can be easily understood by the student	0	0	0	0	5	<b>5.00</b>
2.10	Sample problems are presented with adequate explanations for student's mastery of certain concepts and principles	0	0	0	0	5	<b>5.00</b>
2.11	The text vocabulary is clear	0	0	0	0	5	<b>5.00</b>
2.12	New concepts are explicitly linked to student's prior	0	0	0	0	5	<b>5.00</b>
2.13	Abstract concepts are accompanying illustration through concrete examples	0	0	0	0	5	<b>5.00</b>
<b>3</b>	<b>Physical Features</b>						<b>5.00</b>
3.1	Illustrations and drawings are relevant to the content of the text	0	0	0	0	5	<b>5.00</b>
3.2	Pictures are clear and of good quality	0	0	0	0	5	<b>5.00</b>
3.3	Captions for illustrations are well-written and appropriate	0	0	0	0	5	<b>5.00</b>
3.4	Illustrations are appropriately placed within the text	0	0	0	0	5	<b>5.00</b>
3.5	Module cover is attractive	0	0	0	0	5	<b>5.00</b>
3.6	Printed module is clear, legible, and free of typographical errors	0	0	0	0	5	<b>5.00</b>
3.7	Page layout is appealing	0	0	0	0	5	<b>5.00</b>
<b>4</b>	<b>Indexes or Glossaries (Optional)</b>						<b>5.00</b>
4.1	Glossary is accurate and complete	0	0	0	0	5	<b>5.00</b>
4.2	Index is accurate and complete	0	0	0	0	5	<b>5.00</b>
<b>Total Rating (Weighted Mean)</b>						<b>5.00</b>	
<b>Remarks</b>	<i>I will recommend this book be used by our students in USANT; The work is really a comprehensive one. The details are complete and consistent with the standard format of the machine stenography; The Instructional Material is very comprehension that it caters the learning needs of the students of Machine Stenography. - Office Administration Faculty of University of Saint Anthony, Camarines Sur Polytechnic Colleges - Nabua, Catanduanes State University, OAS Community College</i>						

## Appendix B. Instructional Materials developed

### LESSON 1 UNDERSTANDING THE MACHINE SHORTHAND

#### Objective/s:

- Understand the origins and evolution of machine shorthand as a form of speedy writing;
- Understand the technological advancements that have shaped the design, functionality, and features of steno machines;
- Understand the significance of ergonomics and proper body positioning while using a steno machine;
- Differentiate machine shorthand from other shorthand systems and its applications in professional fields; and
- Develop proficiency in using shorthand terminology for effective communication and understanding within the machine shorthand community.

#### Content Outline:

1. *The History of Machine Shorthand*
2. *Evolution of Steno Machine*
3. *The Importance of Working Comfortably and Effectively*
4. *What is a Machine Shorthand?*
5. *Acronyms and Definition of Terms*

Read the following articles and answer the given questions.

#### 1.1 The History of Machine Shorthand

Machine shorthand was invented in 1910 by Ward Stone Ireland, who constructed a typing machine that could type numerous characters or even an entire word with a single keyboard. The modern shorthand machine to American inventor Ward Stone Ireland. He was using a typewriter when he realized the enormous potential of the device to produce many characters, or even a whole word, with a single keystroke. In 1910, after experimenting for a while with various keyboards, they patented a device. He founded the Universal Stenotype Company, which produced the device, and instructed educators to use the machine's shorthand system.

#### 1.2 Evolution of Steno Machine

The *Stenograph Shorthand Machine* was invented in 1879. In 1877, Bartholomew Miles invented the first effective shorthand machine. Later, the machine was developed and patented in 1879 and 1884. As late as 1937, official reporters used Bartholomew's company, the United States Stenograph Corporation of East St. Louis, Illinois. The ten keys could be pressed one at a time (a letter at a time), resulting in a Morse code-like succession of dots and dashes.



Source: *History of Writing Machines*; Stenograph L.L.C. <https://www.stenograph.com/history-writers>