

## Input Requirements to Thesis Evaluation Tool Development for a Higher Learning Institution

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**KEYWORDS** Graduate School Thesis. Higher Education. Thesis Examiner's Guide. Thesis Examination. Thesis Standards and Guidelines

**ABSTRACT** Objectivity in thesis evaluation is an integral aspect of the entire thesis examination process. With an aim to developing an evaluation tool that would foster objective judgment and eliminate biases, this study analyzed input requirements to thesis evaluation tool development through content analysis of an adopted Proposed Evaluation Model and the existing university-graduate school thesis evaluation tool. The study employed the qualitative approach to research through content analysis as a method of answering the research problem. Two relevant materials were analyzed in order to arrive at meaningful qualitative descriptions that would serve as input in designing an evaluation tool. After a thorough analysis from a two-stage coding process and categorization, the findings revealed three themes considered as inputs to thesis evaluation tool development, which include: (1) technical/formal aspects of the paper, (2) format/organization and dissemination, and (3) impacts of the thesis. By understanding these inputs, designing a thesis evaluation tool will be properly informed and guided, thus creating a more comprehensive, enhanced and accurate assessment tool instrumental in recalibrating evaluation processes and outputs.

### INTRODUCTION

Research has always been an integral part of graduate education. Thesis is often considered as a formal product and capstone of a graduate work. It gives students the avenue to scheme, finish, explicate and narrate research (Aalto University School of Electrical Engineering 2020).

The process entails collaborative efforts of many people. The major advisor and the advisory committee play crucial role in this work. The collaboration of these two components with a Master's student, provide a significant professional experience and help shape the degree work and resulting thesis (University of Nebraska Kearney 2021).

At the final stage of the research and writing process, a defense is scheduled in compliance with the Graduate School timelines. The defense is structured in a process where a student presents a summary of his or her research. The student also consider describing the major findings, conclusions, and recommendations for further study, then committee members evaluate the work and ask relevant questions with emphasis on the findings, the research process, and the conclusions of the study (Minot University, Graduate School 2010).

The evaluation process is often described as a fear-inducing process (Johnson 1997), which is found to be contrary to good assessment (Biggs and Tang 2011; Brown and Knight 1994).

Further elaborating the theses evaluation process, much of the examination process is hidden behind closed doors and that there is disparity between what examiners do during evaluation, which are mostly based on personal experiences and the ideal version of what evaluators should do based on standards of what a thesis should be (Golding et al. 2014).

This sort of personal knowledge tends to be partial and incomplete (Holbrook et al. 2007). The disparity between what supervisors expect and what examiners implement can be disturbing (Denicolo 2003) and raising concerns on the idea of exact ideals in evaluating thesis manuscripts (Golding et al. 2014).

Meanwhile, the process of thesis evaluation may be done through "viva voce" or oral examination and actual reading of the manuscript. A survey of theses examination views revealed some reasons for conducting oral examination as follows: examination of candidates' understanding to come up and present a research out-

put according to standards (36%); clarification of weakness (32%); validation of authenticity (31%); enhances candidate's ideas and provision of support for publication (25%); examination of students' ability to defend the work (24%); tests students' knowledge of the broader literature (22%); examination of the candidates' oral skills (11%); serves as occasion for the final decision (11%); and it acts as a 'rite of passage' (6%) (Tinkler and Jackson 2004).

Consequently, even when a viva is part of the assessment, most examiners have already made their judgment before the oral presentation on the basis of reading the thesis (Golding et al. 2014), and the oral is merely to confirm their assessment (Denicolo 2003; Jackson and Tinkler 2001; Kyvik 2013; Trafford 2003). Further supporting this claim, it was stressed out that examiners make judgment about the quality of a thesis early in their reading. Hence, the key aspect of the assessment is what examiners do as they read a thesis (Carter 2008).

In an attempt to shed light on practices about theses evaluation process, synthesis of several articles found that though many articles have been written about thesis assessment, none provides a comprehensive, general picture of what examiners do as they assess a thesis. Hence, there is a clear need for more awareness about how a thesis is assessed (Golding et al. 2014).

Meanwhile, some researchers have investigated institutional policies and the purpose of the PhD oral defense (Tinkler and Jackson 2000); what happens during the PhD oral defense (Trafford 2003); and the criteria examiners use (Lovitts 2007). Other studies have addressed what examiners do but a comprehensive conclusion cannot be drawn from them. Some provide qualitative conclusions (for example, Mullins and Kiley 2002), while others provide quantitative conclusions (for example, Bourke et al. 2004). While these studies provide enlightenment on thesis assessment, it is still unclear as to what thesis examiners should do and consider do as they examine a thesis.

In light of the literature review on theses examination, it was found that some universities have established standards and guidelines in writing theses and dissertations. These guidelines highlight the most important features that graduate students should follow and incorpo-

rate when writing their paper. But in a synthesis of 30 articles Golding et al. (2014), as mentioned earlier, found that institutional criteria and instructions also offer little guidance about how a thesis will actually be assessed. Each institution offers criteria for assessing a thesis, but these tend to be: (a) inadequate; (b) vague; and (c) frequently ignored by examiners who prefer to follow their own standards (Mullins and Kiley 2002).

The foregoing literature emphasize that while theses examiners tend to be consistent on their practice, there is a need to define standards as to what quality thesis is to guide them in their evaluation. Also, it is foregrounded that although oral assessment for thesis is a significant part of evaluation of graduate students' research, the bulk of examination is inclined to the actual reading of the paper. Thus, some universities have adopted the utilization of standard evaluation tool for theses examination. For this reason, a framework for doctoral thesis evaluation was developed (de-Miguel 2010). To this end, universities like De La Salle University, Vanderbilt University, Texas A and M University, Duke University, Minot State University, Aalto University, and University of London, among others have also formulated standards, guidelines, and tools in evaluating theses outputs. These tools and standards set the parameters of evaluation and guide examiners on specific aspects and contents of the paper that should be evaluated.

In today's situation, where physical interaction and formal face-to-face is restricted, it is highly imperative that a contingency measures be adopted by universities in order to further facilitate graduate students undertaking thesis writing. This will help them advance through their work even without formal face to face oral presentation, and at the same time help evaluators save time in scrutinizing papers as they will be guided with specific indicators that they should look into while evaluating a paper. It is within this context that this study was conducted in order to develop and standardize a thesis evaluation tool for the university, which may avoid biases, personal and subjective judgment, and will contribute to holistic and ideal examination of a thesis outputs.

## Objectives

1. To analyze the requirements in designing the thesis evaluation tool for the Gradu-

ate School of the University through content analysis of an adopted proposed evaluation model and the existing evaluation tool; and

2. Determine gaps in the existing thesis evaluation tool vis-a-vis the adopted proposed evaluation model.

### METHODOLOGY

This content analysis dwells on investigating the presence or absence of certain standards and indicators for evaluating thesis manuscripts vis-a-vis a proposed evaluation framework. This study is qualitative in nature because it considered collection of data which are non-numeric. Various aspects of the existing thesis evaluation tool and the contents of the proposed evaluation framework were analyzed in order to arrive at meaningful qualitative description of the inputs that should be considered when designing a thesis evaluation tool. Results of the analysis were compared in order to look at discrepancies and gaps that must further be addressed. The existing thesis evaluation tool and the proposed evaluation framework were analyzed relative to the presence or absence of concepts and informed by pre-determined categories as indicated in the framework.

In analyzing the materials, several steps were followed. Initially, the researcher decided to code for phrases which are found in both materials through two-stage coding process. Since the

analysis utilized a proposed evaluation framework, pre-defined categories were already available. Upon clarifying the level of analysis determining pre-defined categories, decision was made to code for existence of concepts in the evaluation tools. All codified statements were reduced to categories based on their meanings. After which, decision was made on what to do with irrelevant information found in the text and the finally, results were analyzed using the quantitative approach to content analysis.

### RESULTS AND DISCUSSION

The succeeding section presents the content analysis of the various features of the thesis evaluation tool of the university and the adopted proposed evaluation framework. After conducting the content analysis of both materials, a comparison of the emerging themes and categories were done to carefully establish salient inputs to thesis evaluation tool development.

#### Inputs Emanating from the Analysis of the Model Framework

Table 1 portrays the emerging themes from the content analysis of the adopted model framework. In order to arrive at meaningful themes, the contents of the model framework were codified, grouped into pre-determined categories and provided explorative description and analysis

**Table 1: Emerging themes from the content analysis of the model framework**

<i>Coding</i>	<i>Pre-defined categories</i>	<i>Finding themes</i>
Clarity of the problem Originality Pertinence Relevance	Problem under investigation	Technicality of the paper
Adequate methodology Correct specification Parsimonious application Replicable methods Understandable results Significance Usefulness	Methods of research used	
Presentation Documentation	Analysis of the results	
Adjusted to scientific standards Clarity of presentation Adequacy of defense	Formal aspect of the paper	
Screening in the field of research	Presentation and public defense	Format and dissemination
	Impact of the thesis	Pertinence/relevance of the thesis

of the inputs to be considered by thesis evaluators in assessing a thesis manuscript.

The researchers coded each of the criteria found in the model framework for the first-cycle coding. In the second-cycle coding, the codes were grouped according to the pre-determined categories, namely (1) problem under investigation, (2) methods of research used, (3) analysis of the results, (4) formal aspect of the paper, (5) presentation and public defense, and (6) impact of the thesis. Finally, after thorough analysis of the categories, three themes surfaced which are: (1) technicality of the paper, (2) format and dissemination, and (3) pertinence and relevance of the thesis.

**Inputs Emanating from the Analysis of the Existing Tool**

The next stage of analysis centered on analyzing the existing thesis evaluation tool of the university. The same two-stage coding process was employed to the identified codes (criteria). Initially, there were 16 codes identified from the evaluation tool that were used for the second-cycle coding, from which seven categories were formed, namely: (1) problem under investigation, (2) methodology utilized, (3) results and presentation (4) organization, (5) clarity of presentation, (6) use of appropriate resources, and (7)

relevance and contribution of the thesis (Table 2). Finally, the researcher identified three data-describing themes emanating from the seven categories, which are: (1) formal aspect of the paper, (2) format and organization, (3) impact to the field of discipline.

**Comparison of the Themes Derived from the Analysis of Both Materials**

Table 3 presents a side-by-side comparison of the themes obtained from the careful analysis of the contents of the adopted model framework for thesis evaluation and from the contents of the existing evaluation tool of the university-Graduate School. Surprisingly, analysis of both materials resulted to almost similar themes which are “technicality of the paper and formal aspect of the paper,” “Format and dissemination and Format and Organization,” and “Pertinence/rel-

**Table 3: Comparison between the themes derived from the analysis**

<i>Comparison between emerging themes</i>	
Model framework	Existing tool
Technicality of the paper	Formal aspect the paper
Format and dissemination	Format and organization
Pertinence/relevance of the thesis	Impact to the field of discipline

**Table 2: Emerging themes from the content analysis of the existing evaluation tool of the university**

<i>Coding presence/absence</i>	<i>Categorizing</i>	<i>Finding themes</i>
Documentation	Novelty of study	Problem under investigation Formal aspect the paper
Chapter division	Contribution to the field of science/problem	
Style	Appropriateness of methods	Methodology utilized
Novelty of study	Correctness of data interpretation	
Contribution to the field of science/problem	Effectiveness of tools used	Results and presentation
Appropriateness of language	Logical presentation	
Appropriateness of concepts	Logical presentation of details	Organization
Neatness of the thesis	Chapter division	
Logical presentation	Style	Format and organization
Logical presentation of details	Neatness of the thesis	
Premium of primary source	Appropriateness of language	Clarity of presentation
Appropriateness of methods	Appropriateness of concepts	
Correctness of data interpretation	Mastery of presentation	Use of appropriate resources Formal aspect of the paper
Effectiveness of tools used	Ability to answer	
Mastery of presentation	Premium of primary source	Relevance and contribution of the thesis results Impact to the field of discipline
Ability to answer	Documentation	
	Novelty of study	
	Contribution to the field of science/problem	

evance of the thesis and Impacts to the Field of Discipline.” Meanwhile, while the analysis revealed almost similar themes, it can be noted that there is quite a conceptual difference between the second theme which is “Format and dissemination and Format and Organization” placing emphasis on the relevance of thesis dissemination through oral defense.

Theses examinations have been decades-long practices in academic institutions. Though there are agreed upon criteria for assessment, they tend to be general and sometimes vague (Phillips 2021). Hence, from a study involving thesis examiners it was unveiled that examiners need to have some more detailed criteria to be used in evaluating a thesis (Nightingale 1984).

Technical aspects of a thesis paper are a prime consideration during assessment. Among others, it includes in its technical structures the paper “introduction” detailing the relevance, significance, and rationale of the problem under investigation. The problem statement is one of the focal points considered by thesis examiners during an examination that should substantially make an original contribution to the body knowledge (Francis 1976; Phillips 1993; Phillips and Pugh 2005) and should be original (Lovitts 2007).

The pieces of “literatures” that holistically shaped the theoretical and conceptual frameworks also form part of the technical aspect of the paper. It was reported based on study of 255 thesis examiners’ reports that alongside problem statement, theoretical framework, literature review and conclusions are also the focus of thesis assessment (Hansford and Maxwell 1993). In view of the holistic approach to writing a manuscript, it was further identified that a dissertation should be “well-written and well organised and components are seamlessly connected” (Lovitts 2007)” which was further accorded stressing how thesis examiners are appreciative of thesis works which are *logically presented, focused, and succinct* (Johnston 1997) *further supporting* the theme on “format and organization derived from the content analysis.

Meanwhile, it was explained that “impact” is important because it helps keep us focused on the overall purpose, rather than the process, of research (Rapple 2021). That however difficult it is to measure, impact is significant not only at the researcher level but also to funding agencies, in case of funded research and to the society in general (Rapple 2021).

The aforementioned simply explicate how thesis examination should be performed. But while there are qualities, standards, and criteria carefully considered when evaluating thesis manuscripts, it was found that standards or guidelines set by institutions are not followed by examiners who tend to follow their own standards of evaluation (Mullins and Kiley 2002). In a synthesis of 30 articles, it was revealed that institutional criteria and instructions also offer little guidance about how a thesis will actually be assessed (Golding et al. 2014). Each institution offers criteria for assessing a thesis, but these tend to be: (a) inadequate; (b) vague; and (c) frequently ignored by examiners who prefer to follow their own standards (Mullins and Kiley 2002). Hence, the need to define standards as to what quality thesis is to guide examiners in their evaluation.

In view of the vision to upgrade quality of research outputs and at the same time recalibrate evaluation protocol, there is a need to clarify, define, and identify evaluation standards and criteria. Therefore, the result of this content analysis is an initial step towards defining more comprehensive standards and articulating set of appropriate criteria which can further be translated into a well-crafted thesis evaluation tool. From this, assessment practices and quality of research outputs will be improved, thus elevating the calibre of knowledge contribution to the field of science.

## CONCLUSION

From the emerging themes emanating from the content analysis, it was revealed that as inputs to thesis evaluation tool development, the following should be considered: (1) Technicality of the paper which encompass problem under investigation, methodology used, presentation of results and analysis, and use of appropriate resources; (2) Format, Organization of Contents, and Dissemination which cover clarity of presentation and adequacy of defense; and impact of the thesis highlighting the unique contribution to the field of science or body of knowledge.

## RECOMMENDATIONS

Based on the salient findings emanating from the analysis and grounded on the conclusions formulated, the following are recommended for

future research endeavors: (1) In order to develop more comprehensive thesis evaluation tool, a thorough analysis of other evaluation systems utilized in other universities be considered so as to arrive at holistic understanding of how thesis evaluation process is done in well-established universities; and (2) Perspectives from seasoned thesis evaluators and practicing researchers should be incorporated in identifying inputs to thesis evaluation development.

### LIMITATIONS

The study only limits to analyzing requirements to thesis evaluation tool as informed by the content analysis of two relevant materials. Hence, it does not capture perspectives and thesis examination practices from other institutions and academicians.

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**Paper received for publication in October, 2021**  
**Paper accepted for publication in October, 2021**