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Trade-off Analysis in Strengthening the Criteria for Master Teacher Promotion

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A B S T R A C T

Effective master teachers constitute a valuable human resource playing a significant role not only as instructional leaders but also as educational researchers. However, the pressing demands of quality education alongside changing policies call for the need to ensure that these leaders meet competitive standards. Using the developmental-evaluative design, this study which is anchored on Criterion Theory, aims to enhance the existing criteria of the Department of Education (DepEd) in screening, selecting, and hiring Master Teacher applicants. Delphi technique and trade-offs analysis with ten expert respondents derived nine new and consensually evaluated measures (research training, research conference, publication, In-Service Training/Learning Action Cell (INSET/LAC), completed researches, best practices/innovations, qualifying examination, master's degree & awards) comprising the "Enhanced Criteria for Master Teacher Promotion" at 70-point cut-off qualification. The discriminant function model constituted data from 60 Master Teachers in the Maasin City Division and confirmed discriminatory success at 91.78% variability during model validation of 15 Master Teachers. Thus, the new criteria demonstrate the potential to assure the DepEd of competent and quality instructional leaders that the country needs today. This study recommends the adoption of the enhanced criteria as a policy. However, further evaluation is necessary to strengthen its validity before its full implementation.

RESUMO

Professores mestres eficazes constituem um recurso humano valioso, desempenhando um papel significativo não apenas como líderes instrucionais, mas também como investigadores educacionais. No entanto, as exigências prementes de uma educação de qualidade, junto a mudança das políticas, exigem a necessidade de garantir que estes líderes cumpram padrões competitivos. Utilizando o desenho desenvolvimentista-avaliativo, este estudo, ancorado na Teoria dos Critérios, visa aprimorar os critérios existentes do Departamento de Educação (DepEd) na triagem, seleção e contratação de candidatos a Professores Mestres. A técnica Delphi e a análise de trade-offs com dez especialistas entrevistados derivaram nove novas e consensuais medidas avaliadas (treinamento em pesquisa, conferência de pesquisa, publicação, Célula de Ação de Treinamento/Aprendizagem em Serviço (INSET/LAC), pesquisas concluídas, melhores práticas/inovações, exame de qualificação, mestrado e prêmios) compreendendo os “Critérios Aprimorados para Promoção de Professores Mestres” com qualificação de corte de 70 pontos. O modelo de função discriminante constituiu dados de 60 professores mestres na divisão da cidade de Maasin e confirmou o sucesso discriminatório com variabilidade de 91,78% durante a validação do modelo de 15 professores mestres. Assim, os novos critérios demonstram o potencial para assegurar ao DepEd os líderes instrucionais competentes e de qualidade de que o país atualmente necessita. Este estudo recomenda a adoção dos critérios aprimorados como política. No entanto, é necessária uma avaliação mais profunda para reforçar a sua validade antes da sua plena implementação.

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Introduction

The quality of an education system is inherently tied to the quality of its teachers, who are its most valuable resource (Gilmour & Sandilos, 2023). Teachers often exceed the overall quality of the educational system, as they are the primary drivers of student success and learning outcomes. While the system provides the framework, resources, and policies, teachers bring the curriculum to life, adapt to the unique needs of their students, and foster an environment of growth and understanding. Skilled and dedicated teachers can overcome systemic challenges, inspire students, and cultivate a love of learning that endures despite the system's limitations. Consequently, even in an imperfect educational environment, high-quality teachers can significantly elevate the overall educational experience and outcomes for students.

Given their crucial role, organizing the teacher workforce for efficiency and productivity requires careful management of individual talent and career development (Froidelyn & Batani, 2021). The system delineates two primary career paths: Master Teacher, focused on classroom teaching, and Head Teacher, designed for administrative functions. However, a recent survey and personal interviews with the Human Resource Management Officer (HRMO) in the Schools Division of Maasin City revealed that more teachers aspire to become Master Teachers rather than Head Teachers due to higher compensation and fewer duties (Mori et al., 2023). Despite this preference, data from the Schools Governance and Operations Division (SGOD) indicate that less than 15% of Master Teachers actively engage in research, and only 25% contribute to training, innovations, and best practices, suggesting a disconnect with their job description under DepEd Order (DO) No. 57, s. 1997 (De Asis et al., 2023). Apparently, the expected task of a Master Teacher is to deliver quality educational competence to their students and focus on professional development.

This issue may stem from outdated criteria, raising concerns about whether these teachers still qualify for their positions. Considering the critical role of Master Teachers in instructional advancement (Lucero & Ocampo, 2019), revisiting and enhancing the criteria for Master Teacher promotion is imperative. This study argues that developing Enhanced Criteria for Master Teacher Promotion through the Delphi and trade-offs process can lead to a competitive framework that demonstrates criterion-related validity. This approach would ensure a relevant, reliable, and need-based filtering process for the screening, selection, and hiring of Master Teachers, helping to distinguish between performing and non-performing teachers for promotion and ensuring competence and quality performance among future instructional leaders (Mori et al., 2023).

However, Underwood et al. (2015) investigated the gaps in the criteria development process by assessing literature and interviews with eco-labeling experts and found to address

this gap by enhancing the framework for sustainable strategic development. Other studies have also illustrated criteria development related to career development (Madawala et al., 2023; Manubag et al., 2023; Škrinjarić & Domadenik, 2019). Engelbrecht and Ankiewicz (2016) took the form of a literature study to determine which Continuing Professional Teacher Development (CPTD) models exist and which aspects are most suitable for facilitating the development of expert knowledge and found eight significant criteria for evaluating CPTD.

In the Philippine setting alone, addressing the gap in screening, selection, and hiring of teachers for “Master Teacher” promotion in DepEd has been an overlooked matter (Tenorio, 2022). This context leads to the conception of this study since the researcher believes that the quality of criteria will dictate the quality of Master Teachers the DepEd will have in the field. While Master Teachers enjoy high compensation, they should perform with the highest competence as expected. The poor performance of a master teacher is one factor that hinders the improvement of instructional programs in schools since this affects the management of instruction (Arche, 2022). With the problem observed, it is then necessary to review the current selection practices and scrutinize every aspect of the existing criteria used for Master Teacher promotion that is deviating and not any more consistent with the present needs of today's education system. Having objective and need-based design criteria can effectively distinguish the quality of the platform and contribute well to improving outcomes. Making changes, therefore, is necessary.

Using the trade-offs method and Delphi procedure, this study enhanced the current criteria used by DepEd for Master Teacher promotion. Improving the quality of criteria is believed to address the issues of productivity, quality, and competence among master teachers (de Jesus et al., 2019). In the long run, this intervention will shed light and direction in human resource planning and development, as well as educational management of our Curriculum Implementation Division (CID) and School Governance and Operations Division (SGOD) of our Department of Education. The CID and the SGOD are on the frontlines of instructional improvement and research and Master Teachers are their sturdy and reliable partners (Falqueza et al., 2021).

This study aimed to enhance the current criteria used by the Department of Education in the screening and selection of applicants for Master Teacher promotion by developing new criterion requirements and evaluating the existing measures using Trade-offs and Delphi procedures. This study on strengthening the Criteria for Master Teacher promotion will contribute to the improvement of the screening, selecting, and hiring practices in the "Master Teacher" field. Moreover, the findings of this study may directly or indirectly benefit the Policy-makers, Regional DepEd Officials, Superintendents, Supervisors, Principals, Teachers, and Learners because the enhanced criteria will serve as a baseline to ensure the entire field of the "Quality Education" expected across all aspects of Master Teachers in the Philippines and beyond.

Methods

Research Design. The use of a developmental-evaluative research design generally describes the nature and process of this study. Developmental, in the sense that, this study intended to enhance or strengthen the existing criteria for promotion to master teacher position. Okechukwu (2020) defined developmental research as the systematic study of designing and developing programs, processes, and products that must meet the criteria of internal consistency and effectiveness.

Research Environment. Considering that there was no restriction set on the identification of expert respondents in terms of work location, this study covered, more or less, the whole of Region VIII, Eastern Visayas. Regardless of schools or Schools Division Offices (SDOs) where the experts came from, this study ensured that the chosen experts were able to meet the qualifications set by the researcher. Maasin City Division, on the other hand, was also a target locale where the master teacher-respondents were coming from as recipients of the pilot test for validation purposes and discriminatory evaluation of the enhanced criteria.

Research Respondents and Ethics. This study identified precisely ten (10) experts as primary respondents. They came from varying positions in DepEd (master teacher, principals, division chiefs, regional supervisors, and the like) across different fields of interest (leadership, instruction, research) possessing a certain degree (at least a master's degree holder in education or educational management) of expertise in some aspects relevant to what the field expects Master Teacher to be.

With the help of some experts, a team (composed of 2 Master Teacher representatives, 1 Principal, 1 Head Teacher, and a Senior Education Program Specialist in Research) was organized by the researcher to help recognize persons of interest and conduct the negotiation with the following criteria that he/she prioritized individuals with significant expertise in education and research, ensuring diverse role representation (Master Teachers, Principal, Head Teacher, Senior Education Program Specialist). Additionally, candidates were chosen based on their experience, availability, and commitment. Despite some decline, only those willing and able to fully engage were selected. Fourteen (14) experts responded to the invitation, were consulted, and were informed about the intention of the study. These experts went through a careful assessment to know if they met specific requirements. However, other experts declined their participation due to time constraints. But ten (10) experts, with rich backgrounds and experiences, committed themselves to this study.

Expert identification leads to holding their names confidentially as part of the principles and ethics of the Delphi technique. The practice of confidentiality is considered separately dealing with the expert respondents without the knowledge of one from the other. This initial phase led expert respondents to the Delphi procedures, which required them to undergo a series of rounds for criteria development.

Furthermore, securing permits from the school's division superintendent to conduct the study and asking for agreement with experts to complete their tasks by any preferred modality were part of the ethical considerations observed in this study. The purpose and nature of this research informed the participants that whatever background and responses they share, the researcher will always keep utmost confidentiality and anonymity.

Apart from experts, another set of participants comprised of all the Master Teachers (N=75 as of SY 2019-2020) in the Maasin City Division served as respondents in the study. These Master Teachers are in a better position in the data gathering than non-master teachers. They underwent assessment for pilot testing of the criteria to test the discriminatory power of the enhanced standards or measures.

Research Instruments. For data collection, a researcher-made template for the criteria solicitation was encoded in soft copy and sent online to the expert respondents. The template reflects items for ease in organizing the information shared by the experts. However, the mode of sending responses was flexible so that others could share ideas or insights directly through messenger, email, or text. Most of the time, the modality applied for data gathering involved the use of online social media or social networking platforms. The majority of the respondents used g-mail and messenger accounts since most of them had access to the internet. Other experts also communicated by phone, either by text or call.

The inquiry reflected in the templates sent individually online were outlined items that sought rich information about Master Teachers based on findings, observations, and first-hand experiences among experts. Next, two critical questions were asked: "What do you think are the essential criteria that a Master Teacher should have in today's Department of Education? What characteristics do you think should distinguish performing and non-performing Master Teachers? These questions required the participants to answer in as many statements as possible, provided that every criterion required support or written justifications reflected from the actual situations, problems, and experiences of the experts (Xu et al., 2023).

Data Gathering Procedure. Once the researcher-made template was ready, and the experts already gave their consent and approval, the gathering of data immediately started. The conduct properly accompanied a set of proper documents such as an approval sheet from the division office and dissertation committee. Timelines, on the other hand, were fixed and observed to communicate with the experts.

Using the procedure of the Delphi technique, the researcher sent first the templates/questions to the experts for compliance with the needed data. Transcribing the verbatim responses led to thematic analysis, thus, enumerating criteria as a summary of statements accompanied with justifications. Some experts expressed a unique proposal, while others have commonalities. In presenting the suggestions, the experts represented only letters (A-J), and all the verbatim responses were analyzed to obtain the core ideas of the experts. Analyzing the verbatim responses of the experts led to the structure of major components and

subcomponents. These components, comprising six (6) major components and ten (10) subcomponents, were accurate and distinct statements discussed contextually and conceptually.

Consolidating or summarizing all the components ensures that distinct criteria are in place for Master Teacher promotion. Justified statements reflected the experts' rationalization of the need to include the criteria for evaluating today's aspiring Master Teachers. This summary of subcomponents now reflects the experts' distinct criterion list composed of nine (9) different criterion subjects for evaluation such as (1) Attendance to action research training; (2) Presented completed research in research conference to communicate findings for policy-making; (3) Disseminated research through publication in journal, bulletin and policy note for replication and knowledge sharing; (4) Proponent of in-service education and training (INSETs) or learning action cells (LACs) to empower teachers on research-based interventions as form of mentoring/TA; (5) Completed action researches approved by School Division Research Committee (SDRC); (6) Develop best practices and innovations that enrich pedagogy; (7) Undergo written examination to test competence across aspects of teaching; (8) Earn master's degree; and (9) Recognized for outstanding professional and personal qualities.

In the second phase of sending the questionnaire, the experts received the derived criterion list for them to rank according to how they treat each criterion in terms of value and impact towards strengthening “selection quality.” The general ranking is essential to assess the degree of importance to which this particular criterion deserves to be part of the enhancement of existing DepEd Criteria for Master Teacher promotion.

Data Analysis Procedure. For the treatment of data, this study utilized descriptive analysis comprising frequency counts, rank, summation ranks, and mode for the descriptive type of data during the Delphi and Trade-offs processes. This study employed multivariate statistical tests, specifically the discriminant function analysis. This is to assess the extent to which the new indicators/criterion can discriminate between performing and non-performing Master Teachers.

The parameters of the model were the result of the specific factors identified in the Delphi process and finalized during the trade-off analysis. In determining parameters, weights, or point systems were assigned based on the consensus of experts. These parameters became the measure components of the enhanced criteria for the promotion to the Master Teacher position.

Model/Criterion Verification. After finalizing the new criteria as a result of the trade-off analysis, the newly 'Enhanced Set of Criteria' was pilot-tested to all Master Teachers (N=75) of the Maasin City Division. The results of the assessment underwent discriminant function analysis to test the discriminatory power of the new criteria. Of this population, sixty (60) master teachers were selected randomly for the discriminant model formulation, while the remaining fifteen (15) comprised the model validation. With the approved consent, the

validation process using discriminant analysis started to adequately assess if the model could significantly distinguish performing and non-performing Master Teachers.

The classification procedure of Master teachers was a result of categorizing them as "performing" and "non-performing" master teachers using the actual points obtained against the standards required in the enhanced criteria for the promotion. This categorization was validated using the discriminant function model. Centroid value served as the cutting score to discriminate performing (equation value > centroid) and non-performing (equation value < centroid) master teachers. Match and mismatch decisions by comparing actual points and score-based models strengthen the value and the discriminatory success of the newly enhanced criteria. Through this process, this study verifies who among the master teachers are "truly" qualified and "really" deserving of the position.

The results of the discriminant analysis provide verification or justification for the capacity, usability, quality, practicality, relevance, and effectiveness of the newly "Enhanced Criteria for Master Teacher Promotion" in choosing competitive master teachers. Relatively, the quality criteria will contribute meaningfully to the personnel selection system of DepEd to ensure that quality personnel is hired or promoted in the field.

Results and Discussion

Table 2 shows the ranking of the proposed criteria and illustrates how each expert regards each criterion component in terms of value and impact towards strengthening the "selection quality." The overall ranking is essential to determine the degree of importance to which this particular criterion deserves inclusion in enhancing the existing DepEd Criteria for Master Teacher promotion.

Results indicate that research presentation (Σ=30) stands out as the essential aspect of becoming a Master Teacher. This aspect should constitute a significant part of their anticipated duties as instructional leaders, as it was not well-emphasized in their current job description. Participation in a research conference helps demonstrate Master Teachers' research potential and commitment to contributing to policy decisions. Master Teachers can leverage such experiences to effectively embrace the challenges of their position productively (Ye & Zhou, 2022).

Attendance in formal Training in Action Research as Capacity-building secured the second position in the ranking (Σ=31) among the suggested criteria. Exposure of teachers to at least one formal training session would accredit them to the research tasks required for the position. A certificate of training would enhance their readiness and esteem for research engagements, providing individuals with a foundation in the "what's and how's" of research (Schihalejev et al., 2021).

Table 2.

List of proposed criteria and their rank according to experts

List of proposed criteria	Expert A	Expert B	Expert C	Expert D	Expert E	Expert F	Expert G	Expert H	Expert I	Expert J	Sum	Rank
1. Attended formal training in action research as Capacity-building	4	3	1	1	5	2	5	4	3	3	**31**	**2**
2. Presented completed research at a research conference to communicate findings for policy-making	2	2	2	4	1	3	3	3	5	5	**30**	**1**
3. Disseminated research through publication in journals, bulletins, and policy notes for replication and knowledge sharing	9	7	6	9	2	9	4	2	4	6	**58**	**6**
4. Proponent of INSETs or LACs to empower teachers on research-based interventions as a form of mentoring/TA	8	6	3	2	4	8	8	7	9	9	**64**	**8**
5. Completed action research approved by SDRC	3	1	4	3	7	1	2	5	6	4	**36**	**3**
6. Developed best practices and innovations that enrich pedagogy	1	4	5	7	3	7	6	1	8	8	**50**	**4**
7. Underwent written examination to test competence across aspects of teaching	7	5	7	5	6	4	9	6	1	7	**57**	**5**
8. Earned a master's degree	5	9	9	8	9	6	1	9	7	2	**65**	**9**
9. Recognized For outstanding professional and personal qualities	6	8	8	6	8	5	7	8	2	1	**59**	**7**

Note: 1 is the highest rank

Applicants can earn a score by having Social Development Research Center (SDRC)-approved research and developing innovations that enrich pedagogy, which are also significant criteria for promotion to the Master Teacher position. Based on this finding, experts anticipate that applicants' involvement in research and innovation should be viewed as a natural task rather than an additional burden. It is through this perspective that they can lead and empower teachers in developing instructional practices effectively (Cao & Li, 2022). A unique criterion suggested by experts is that Master Teacher applicants must pass a written examination to test competence across aspects of teaching, ranking fifth. Providing aspirant master teachers with a qualifying assessment enables them to understand the level of pedagogical preparation required for the position. The test measures will provide baseline data to identify applicants who are "masters" in terms of pedagogical expertise. The test will distinguish qualified applicants and ensure that the applicant for the Master Teacher position is indeed qualified. Teachers' involvement in publications (journals, research bulletins, and policy notes) enabling the spread of new knowledge and interventions for comprehensive communication ranks sixth.

The dissemination of findings through print is a scholarly activity that Master Teachers can model for others to emulate (Ye, 2022). Learning from research through journals, bulletins, and policy notes helps other teachers become well-informed and encourages them to utilize results, findings, and recommendations for possible replication and adaptation (Ellis et al., 2023). Awards received, being a proponent of INSET, and holding a Master's Degree are the last three criteria proposed by experts, respectively. Distinctions are significant for attesting to how deserving applicants must be in the position (Anderson & Taner, 2022). Being outstanding in their field ensures that Master Teachers maintain quality teaching performance. Additionally, being a proponent of in-service training shows the applicants' readiness to empower teachers, especially in research-based innovations (Long, 2019). Mentoring of skills is something they learned from their advanced studies. Experiences in thesis writing can boost one's self-esteem and prove one's worth as a Master Teacher with strong knowledge and expertise (Kowalczuk-Walędziak et al., 2019). In this study, experts declared consensus in just one round of fielding the list of new criteria, as all of them (N=10) agreed on incorporating each suggested criterion component into today's new Master Teacher promotion policy. This agreement implies that these experts considered each proposed criterion as timely and highly relevant for inclusion in the enhancement of DepEd's current guidelines used for Master Teachers' promotion (Homberg et al., 2021).

Table 3.

Experts' decision on the inclusion of the suggested criterion for master teacher promotion

Suggested Criteria	AGREEMENT	DISAGREEMENT
	No. of Experts (N=10)	No. of Experts (N=10)
1. Attend formal Training in action research as capacity-building	10	0
2. Presented completed research at a research conference to communicate findings for policy-making	10	0
3. Disseminated research through publication in journals, bulletins, and policy notes for replication and knowledge sharing	10	0
4. Proponent of INSETs or LACs to empower teachers on research-based interventions as a form of mentoring/TA	10	0
5. Completed action research approved by the SDRC	10	0
6. Develop best practices and innovations that enrich pedagogy	10	0
7. Undergo written examination to test competence across aspects of teaching	10	0
8. Earn a master's degree	10	0
9. Recognized for outstanding professional and personal qualities	10	0

This agreement further implies that each criterion component has the potential to ensure that the "quality" sought by the DepEd is at the core of the scrutiny process for Master Teacher applicants. In other words, the qualifications sought are precisely what the actual field needs, as these criteria are initially identified by experts based directly on their observations, first-hand experiences, and surveys about the actual occurrences in the field (Pamuk, 2021).

Trade-offs between the Existing and Proposed Criteria.

Experts continue to evaluate the criteria by comparing the existing and proposed sets to gain a better understanding of the disparity between the two. Assessing the differences and levels of quality among the criteria is crucial for deciding whether to remove, retain, or replace a specific criterion in the proposed set as compared to the existing criteria (Link et al., 2020). It is evident that, according to the experts, a majority of the indicators (6 out of 12 or 50%) require a "Modify." This implies a need to revise the existing criteria to make them more responsive and relevant to the position of Master Teachers.

Table 4.

Evaluation of the existing criteria

Existing criteria in DepEd	**Expert A**	**Expert B**	**Expert C**	**Expert D**	**Expert E**	**Expert F**	**Expert G**	**Expert H**	**Expert I**	**Expert J**	**Mode**
Bachelor's degree with MA units	Rm	Rt	M	M	M	M	M	M	M	Rm	**Modify**
Very satisfactory performance for the last 2 years.	Rt	Rt	Rm	M	Rm	M	Rt	M	M	M	**Modify**
3 years experience in DepEd	M	Rt	M	Rt	Rt	Rt	M	Rt	Rm	Rt	**Retain**
Introduced/initiated IMs, strategy, and IGP which has been adopted or used by the school	M	M	M	Rt	M	M	M	Rt	M	Rt	**Modify**
Served as subject coordinator	Rt	Rt	Rt	Rm	Rm	Rt	Rt	Rt	Rt	Rt	**Retain**
Served as a demonstration teacher	Rm	Rt	Rt	Rt	Rt	Rt	Rm	Rt	Rt	Rt	**Retain**
Served as chairman of the committee	Rt	M	Rm	M	M	Rm	Rt	Rm	Rm	Rm	**Remove**
Initiated educational research	M	Rt	M	Rt	M	M	M	M	M	M	**Modify**
Community project/program	Rm	M	Rm	M	M	Rm	Rm	Rm	Rt	Rm	**Remove**
Served as trainer/learning facilitator	M	M	M	Rm	Rt	Rt	M	M	Rm	M	**Modify**
Winning coach of any contest	M	Rt	Rm	M	Rm	Rm	Rt	Rt	M	Rt	**Retain**
Authorship in books/articles	M	M	Rt	Rm	Rm	M	Rm	M	M	Rm	**Modify**

Legend: Rm – Remove; Rt – Retain; M – Modify

The present criteria do not sufficiently emphasize the importance of research as fundamental in promoting a classroom teacher to the rank of master teacher. While it mandates applicants to have authorship in books or articles, its significance can be overshadowed by other criteria. This implies that amending the existing criteria is a modern approach to enhancing research practices in the Department of Education.

The impact of such changes would likely be favorable for instructional leaders and policy-makers. Future Master Teachers are expected to already possess the knowledge, skills, and attitudes (KSAs) required for conducting research, as mandated for the improvement of school services (Clark, 2023; Bean & Melzer, 2021).

However, some existing criteria are deemed necessary to retain (N=4), namely: (i) 3 years of teaching experience, (ii) coordinators, (iii) demonstration teaching, and (iv) being a winning coach. These qualities are considered essential for master teachers at present.

Results also reflect that these indicators remain significant and relevant responsibilities of master teachers according to their job descriptions. Retaining these four criteria suggests that there is still a need for teachers to fulfill their usual roles as "subject coordinators," as it aligns with their primary responsibilities as instructional leaders and technical assistance providers.

The three-year service requirement is also considered essential, as adequate exposure as classroom teachers remains a necessity for understanding the fundamental principles of the teaching-learning process (Casinillo & Guarte, 2018; Casinillo & Casinillo, 2021). Given that school-based tasks are still allowed, teachers can achieve accomplishments as demonstration teachers and coaches.

Exposure to these tasks can help improve the implementation of a specific subject across all aspects of instruction (Postholm, 2019). Conducting demonstration teaching as part of their current duties and responsibilities (D.O. 57 s. 1997) attests to mastery of content and pedagogy (Darling-Hammond, 2017).

As instructional leaders, master teachers' work revolves around nurturing both teacher and learner performance (Malik et al., 2019). Being a coach is relevant as it connects to curriculum enrichment and strengthens development for competitions (Renzulli & Reis, 2021). Master teachers become frontliners in nurturing competent learners to compete and bring pride to their schools (Constant, 2022).

Possessing skills as a teacher-coach is necessary not only for professional development but also to prove one's worth in the position. On the contrary, "committee chairmanship" and "leader of a community project" are criteria to be "removed." Experts argue that these two indicators are no longer useful or consistent with the current plans and initiatives of every division office. Organizing a committee led by a chairperson is a practical way to manage tasks, delegate authority, and make decisions in the delivery of activities, which is already a common practice in management (Timm & McLaren, 2019). Committee chairmanship, as a promotion

criterion, is no longer considered something 'unique or exemplary' for one to become a master teacher.

Similarly, being a leader of a community project as a promotion criterion does not guarantee master teachers' competitiveness in teaching. Literature (Baker, 2020; McKenzie et al., 2022; Clark, 2023) may have confirmed positive outcomes when schools and communities work together, but the potential of school-community involvement remains not fully realized. Thus, attaching community involvement as a qualification is nowadays impractical, more or less.

Experts Decision of Replacing Criteria Subject to “Modify” or “Remove.”

The trade-off analysis on criteria evaluated by the experts this time leads to another evaluative report involving decisions on which standards in the new criterion list could best refine a particular existing criterion component subject to 'Modify.'

Table 5.

Evaluation of new criteria by the experts

Existing Criteria	**Decision made**	**Replacement taken from the New Criteria (Consensus from experts)**	**No. of Experts who suggested** (N=10)
Bachelor’s degree with MA units	Modify	#8 – Earn master’s degree	7
Very satisfactory performance for the last two years.	Modify	#9 – Recognized for outstanding professional and personal qualities	5
Introduced/initiated IMs, strategy, and IGP which has been adopted or used by the school	Modify	#6 – Develop best practices and innovations that enrich pedagogy	6
Initiated educational research	Modify	#5 – Completed action research approved by SDRC #2 –Presented in a research conference	6
Served as trainer/learning facilitator	Modify	#4 – Proponent of INSETs or LACs to empower teachers on research-based interventions as a form of mentoring/TA	6
Authorship in books/articles	Modify	#3 – Disseminated research through publication in journals, bulletins, and policy notes.	5
Chairman of committee	Remove	#7 – Undergo written examination to test competence across aspects of teaching	5
Lead a community project	Remove	#1 – Attend formal training in action research as Capacity-building	6

This process describes a filtering approach in which experts scrutinize and judge each proposed criterion to carefully select the most suitable and capable criterion that would actively enhance the existing criteria. Consensus among experts in decision-making reveals the outcomes of the procedure treated in the trade-offs. Results disclosed that each criterion subject to "modify" has its distinct replacement, as suggested by experts. It is notable that the nature of the alternatives and the ones being replaced is almost parallel. Relatively, nothing has changed regarding the responsibilities concerning the job description of master teachers (Kovacs et al., 2021). However, the significant difference lies in their complexity. Alternatives have demonstrated higher expectations or demands compared to the set of existing criteria, making the former much more challenging to comply with than the latter.

The "Enhanced Criteria for Master Teacher Promotion" is the outcome of the Delphi procedure conducted with the experts and finalized through trade-off analyses between the existing and suggested criteria. Specific parameters suggested for measuring the requirements for master teacher promotion quantitatively are indicated. The process of standardizing the point system and altering the ranking procedure revealed that the majority of experts (N=7) suggest adopting the current Registry of Qualified Applicants (RQA) system developed for Teacher-I, II, and III positions, where an applicant must obtain at least 70 points to qualify. Experts (N=7) emphasize that a 70-point requirement is already competitive enough to ensure that the selected Master Teachers are competent to meet the standards.

This requirement is significantly higher than the twenty-five (25) points target stipulated in the old criteria (DO 57 s.1997), which is minimal and relatively easy to achieve, even without any well-deserved accomplishments. Such a low point target could be the reason why some Master Teachers today do not fulfill the required expectations adequately. Expanding from the eleven (11) standards in the current criteria set to thirteen (13) pertinent obligations/requirements, the new criteria are predominantly focused on research accomplishments. This shift makes the filtering process more rigorous, competitive, relevant, robust, and challenging for all aspiring Master Teachers (Breyer et al., 2022). Thus, it becomes the obligation of aspiring master teachers to be research-equipped to make a difference in today's academic community.

Table 6.

Enhanced criteria and parameters for master teacher I promotion

Criteria	Parameters		Means of verification
	Minimum requirement	***Points/Weight***	
Educational Qualification	at least a Master's Degree with a Thesis	Basic requirement	-Diploma -Transcript of Record (TOR) -Copy of the thesis
"Outstanding" Teacher Award	one (1)	Basic requirement	-Certificate of Recognition -Evaluation rating of the division /Regional/Nat'l Selection Committee

Years of service as T-III	at least three (3) years	Basic requirement	Updated service record
Master teacher's test*	Passed	Basic requirement	Copy of Approved Application Form Certification of rating Certification of passing the test
Presented at a research conference	At least one (1) research conference (but shall not exceed 10 points)	**International** – 5 pts. per entry **National** – 4 pts per entry **Regional** -3 pts per entry **Division** – 2 pts. per entry	Copy of approved research paper Copy of acceptance Certificate of recognition as presenter
Subject coordinator	at least for one (1) school year	5	Special order signed by PSDS Action plan signed by PSDS Accomplishment report Certificate of Recognition
Served as a demonstration teacher	At least 1 demo lesson	10- three or more demo lessons 7-two demo lessons 4-one demo lesson	Copy of approved lesson plan(s) Copy of observer's rating sheet Certificate of Recognition
Innovation & best practices	One (1) innovation adapted to at least a school level	15-Region 12-Division 9-District 6-School	Accomplishment report Proof of utilization Approval sheet from SGOD research results
Completed research approved by SDRC	at least two (2) in every 1 school year	15 -10 & up researches 12 -8 researches 9 -6 researches 6 -4 researches 3pts-2 researches	Copies of completed research Action plan signed by SH/PSDS Approval sheet from SDRC Appendices/MOVs
A proponent of conducted INSETs or LACs	at least one (1) conducted proposal	10- five or more 8-four proposals 6- three proposals 4- two proposals 2-one proposal	Approved proposal(s) Activity completion report with pictures Attendance sheets Certificate of Recognition
Dissemination through publication (*Journals-with ISSN; Policy Note-Region approved; Research Bulletin-division)*	at least one (1) research study (but shall not exceed 15 points)	**Journals** – 5 pts per study **Policy Note** (Regional)– 2 pts per study **Bulletin** – 1 pt. per study	Certificate of Recognition Copy of published work
Attended training on action research	Only one at least school-level	10-Nat'l/Int'l 8-Region 6-Division 4-District 2-School	Certificate of Participation Narrative report of learning Copy of research output of training
Winning coach	Winners in all levels are terms credited but total points shall not exceed 10 points	10-National 5-Regional 3- Division 1- District	Certificate of Recognition
T O T A L		**100 Points**	

Note: *To qualify for the position, a master teacher applicant must obtain a total points of not lower than **70** points; *Master Teacher Test is under recommendation for crafting and subject to the validation process; Basic requirement means a minimum requirement for the position.*

The discriminant function analysis examines the relative importance of each criterion in the Enhanced Criteria for Master Teacher Promotion in discriminating between performing and non-performing Master Teachers. The coefficients of the discriminant function measure the net effect of an individual variable when all other variables are held constant (Hayat Bhatti et al., 2020). An Eigenvalue (11.034) evaluates the magnitude of discriminant analysis. Hu et al. (2019) emphasized that a large Eigenvalue is associated with a strong function, implying that there is more variation between the groups than within the groups. This result aligns with the canonical relation, demonstrating the correlation between the discriminant scores and the dependent variable. The high correlation (0.958) indicates that the function discriminates well between performing and non-performing master teachers, accounting for a substantial 91.78% effect size.

On the other hand, Wilks' Lambda indicates how good the discriminatory power of the model is. The lower the value, the higher the proportion of explained variance of the dependent variable. Results yielded an overall Wilks' Lambda of 0.083 (chi-square = 129.363; df=12; p-value<0.001), implying that the discriminant function (or composite predicting variables) accounts for 91.7% of the variance (calculated as (1-Wilks'λ)*100) in determining performing or non-performing Master Teachers, suggesting that the discriminating power of the model is good. Results for the test of equality of group means revealed that 77% (10 of 13) of the criteria showed a significant difference (p-value<0.05) between the means of the two groups, indicating that these variables are responsible for discriminating against performing and non-performing master teachers.

In the context of the Enhanced Criteria for Master Teacher Promotion, discriminant function analysis offers a robust approach to evaluating the relative importance of each criterion. As noted by Nandi et al. (2019), the discriminant function coefficients represent the net effect of each individual variable when controlling for all other variables. This is critical in understanding which criteria are most influential in differentiating between performing and non-performing Master Teachers.

This implies that master teachers who are performing in their position can be reliably distinguished from those who are not through the following standards (Smith, 2020): outstanding award, innovation, master's degree, completed research, Proposed INSET/LAC, demonstration teaching, publication, research training, participation in research conferences, and years of teaching.

On the other hand, the model excluded “Coordinatorship" and winning coach as non-significant (p-value>0.05) discriminators. However, criteria validation still included these components for pre-classification purposes since this study respects the decision of experts in retaining these two as a relevant part of enhanced criteria. In the discriminant model, eight (8) criteria came out with positive coefficients, namely: award (0.713), innovation (0.440),

master's degree (0.392), completed research (0.181), LAC/INSET proponent (0.140), demonstration teaching (0.025), publication (0.022), and training (0.022). On the other hand, a presenter in a research conference (-0.029) and years of teaching (-0.222) yielded negative coefficients.

Table 7.

Discriminant analysis of the enhanced criteria for promotion

Model Summary

N	Eigenvalue	% of Variance	Cumulative	Canonical correlation	Wilk's lambda	Chi-square	df	p-value
60	11.034	100.0	100.0	.958	.083	129.363	12	0.000

Equality of Group Means & Unstandardized Coefficients*

Criterion	Unstandardized Coefficients	Wilks λ	F*	df1	df2	p-value	Description
Masters Degree	.392	.660	29.916	1	58	.000	Significant
Awards	.713	.536	50.112	1	58	.000	Significant
Years of Teaching	-.222	.828	12.023	1	58	.001	Significant
Research Conference	-.029	.435	75.188	1	58	.000	Significant
Subject Coordinator	.002	.962	2.320	1	58	.133	Not Significant
Demo-Teaching	.025	.706	24.202	1	58	.000	Significant
Innovation	.440	.166	292.320	1	58	.000	Significant
Completed Research	.181	.319	123.983	1	58	.000	Significant
INSET	.140	.536	50.230	1	58	.000	Significant
Publication	.022	.459	68.446	1	58	.000	Significant
Research Training	.022	.713	23.343	1	58	.000	Significant
Winning Coach	.015	.955	2.704	1	58	.106	Not Significant

Classification Results**	*Predicted Group Memberships*	
	Performing (N=12)	*Non-Performing (N=48)*
Original Groups	12 (100%)	48 (100%)
Cross-validated groups	12 (100%)	46 (95.85%)

*Note: *Significance level at p<.05*
*** 100% of the original sample was correctly classified while 96.7% of cross-validated grouped cases were correctly classified*
**** Function at group Centroid: Performing=6.532; Non-Performing=-1.633; Weighed centroid=4.899 (unequal cases)*

This is understood in the aspect that attendance to research conferences and years of teaching experience reduce the threshold value that discriminates against performing and non-performing master teachers, making them more similar in the evaluation of documents concerning these two criteria.

Given this result, these two variables are the least discriminating variables for this group of respondents. Data show less variability of scores among respondents in their teaching experience (M=5.67; SD=1.72) and as a presenter in a research conference (M=1.48; SD=2.52), making them the least discriminating variables of the model. Meanwhile, the classification results of the discriminant analysis intend to show the amount of accuracy among predicted group memberships (1-performing; 0-non-performing).

Classification of the group cases in the original sample showed 100% accuracy, while, in the cross-validated group cases, around 96.7% were accurately categorized. Predicted group membership values in the cross-validated sample showed that the model has higher specificity (100%) than sensitivity (95.8%) but with a minimal gap. More or less, there are fewer false positives than false negatives in this model.

Furthermore, computation on the value of weighted centroid (c=4.899) in this model provides an optimal cutting score between performing and non-performing groups, considering that the number of observations/cases between groups is not equal. The value of centroid as a baseline intends to classify performing (equation value > centroid) and non-performing (equation value < centroid) master teachers based on the discriminant function model (Ward, 2022). Looking deeper, the discriminant analysis shows that awards, innovation, and master's degree criteria have the highest prediction capabilities.

These three are the defining characteristics that greatly influence the discriminatory function of master teachers (Dixon et al., 2021), particularly in the Maasin City Division. Studies that focus on the refinement and validation of evaluative criteria in educational settings often acknowledge that not all criteria initially considered significant remain so after rigorous statistical testing.

For instance, research by Rider et al. (2023) demonstrated that certain professional activities, such as conference participation and minor leadership roles, may not significantly impact the overall evaluation of teacher performance. This is consistent with the current study's finding that "Coordinatorship" and "Winning Coach" were not significant discriminators, reinforcing the notion that some criteria, although valued, may not contribute meaningfully to distinguishing high and low performers.

However, some literature contrasts with the decision to retain non-significant criteria in the evaluation model. Salaga & Juravich, (2020) argue that including non-significant variables in discriminant analysis models can dilute the predictive accuracy and reduce the model's efficiency. Their research suggests that the exclusion of non-significant variables could streamline the evaluation process and lead to a more focused and effective assessment framework. This viewpoint challenges the current study's approach, suggesting that retaining "Coordinatorship" and "Winning Coach" might introduce unnecessary complexity without contributing to the model's discriminative power.

Conducting a validation of the function model is necessary to verify its discriminatory power. The process comprised Master Teachers (N=15), whose data were not part of the model formulation. The discriminant function equation derived the model-based classification of master teachers based on the summation computation value compared to the weighted centroid (c=4.899) when data from each Master Teacher substituted each term in the equation (Bouveyron et al., 2019). Meanwhile, pre-classification is based on the actual total points obtained by each master teacher directly from the parameters of the existing criteria. Comparing the outcomes of pre-classification and model-based classification led to the Match (+) and Mismatch (-) decisions based on whether consistencies exist between the two forms of classification (Table 8).

Table 8.

Validation of the enhanced criteria for promotion

Validation case no.	Pre-Classification	Classification based on model	Decision
1	Non-performing	Non-performing	+
2	Performing	Performing	+
3	Performing	Performing	+
4	Performing	Performing	+
5	Non-performing	Non-performing	+
6	Performing	Performing	+
7	Performing	Performing	+
8	Non-performing	Non-performing	+
9	Non-performing	Non-performing	+
10	Non-performing	Non-performing	+
11	Non-performing	Non-performing	+
12	Non-performing	Non-performing	+
13	Performing	Performing	+
14	Performing	Non-performing	-
15	Non-performing	N Non-performing	+

Legend: + (Match); – (Mismatch)

Results of the comparison revealed that there are more matching classifications (N=14 or 93%) than mismatched groupings (N=1 or 6%). There are more consistencies observed in both forms of classification of master teachers than inconsistencies (Case 14), implying that the discriminatory capacity of the function model is strong, resulting in a high discriminatory success of the significant criteria. This suggests that the model is capable of consistently discriminating against non-performing master teacher applicants (see sample validation in Table 9). Literature supports this effectiveness, as noted by Guedes and Gomes, (2023), who highlight that discriminant function analysis excels when variables distinctly separate groups, leading to high classification accuracy. This is echoed by Khan et al., (2019), who emphasize

that well-designed models with accurately identified variables show strong predictive power and consistency.

Additionally, Slinger et al. (2023) argue that including significant criteria is crucial for enhancing the model's discriminatory power, a finding consistent with the study's results. Bir-Jmel et al. (2024) further corroborate this by discussing how the use of well-chosen variables improves model performance. Thus, the literature supports the study that a discriminant function model with relevant criteria achieves high classification accuracy and effective differentiation between performing and non-performing master teachers.

Table 9.

Additional validation of a sample enhanced criteria

Criterion	Actual points[1]		Model coefficients	Sum based on the model[2]	
	MT1	MT2		MT 1	MT 2
Master's degree	0	0	0.392	0.000	0.000
Award	0	0	0.713	0.000	0.000
Years as T3	6	4	-0.222	-1.332	-0.888
Research conference	0	8	-0.029	0.000	-0.232
Div. demo-teaching	4	7	0.025	0.100	0.175
Innovation	0	12	0.440	0.000	5.280
Completed researches	3	12	0.181	0.543	2.172
LAC/INSET proponent	2	8	0.140	0.280	1.120
Publication	0	0	0.022	0.000	0.000
Action research training	8	10	0.022	0.176	0.220
TOTAL PTS	**27**	**78**		**-0.233**	**7.847**
Performing or Not	**Not performing**	**Performing**		**Not performing**	**Performing**

[1]Categorization of actual points is based on the total points set by DepEd (score > 70, Performing)
[2]Categorization of Sum points from the model is based on the threshold value defined by the centroid (C=4.899; Sum > 4.899, Performing)

Given its discriminatory power, the Enhanced Criteria for Master Teacher Promotion strengthens its value, potential, and relevance, as asserted in this study. This becomes valid and reliable for use as the basis in the process of screening, selection, and hiring of master teachers who can effectively perform the duties and responsibilities prescribed for the position. Thus, modeling the new and competitive criteria with good discriminatory power helps ensure that the "quality" filtering procedure is delivered, acquiring the most "fitting" and most "qualified" personnel for the Master Teacher position in the Department of Education.

When these kinds of master teachers are in place throughout the field, quality instructional leaderships are performed collaboratively and effectively with the CIDs and

SGODs (Bush, 2020). This is their primary goal—to enrich the quality of education in all schools across the country (Jana, 2020). Well-designed selection criteria and predictive models with strong discriminatory power are essential for reliably identifying the most qualified master teachers, as supported by studies (Tang et al., 2022).

These teachers, when effectively positioned, significantly enhance instructional leadership and collaboration within educational divisions, ultimately improving the quality of education (Palacio & Digo, 2024).

Conclusion and Recommendations

The Enhanced Criteria for Master Teacher Promotion developed through a trade-off procedure, results in competitive criteria that effectively discriminate between performing and non-performing master teachers. Affirming the Criterion Theory, the discriminant function model demonstrates criterion-related validity, providing the model-based classification of master teachers with a quality, relevant, reliable, and need-based filtering process for an improved policy of screening, selection, and hiring of master teachers.

This new set of criteria, with discriminatory success, ensures both competence and quality performance among future instructional leaders that the Department of Education needs today. The study suggests that DepEd school divisions are highly encouraged to reevaluate, assess, pilot-test, and incorporate ideas to strengthen the validity of the newly "Enhanced Criteria for Master Teacher Promotion," subject to the approval of higher authorities before formally adopting them in the policy of screening, selection, and hiring of master teachers. If DepEd approves the potential of the newly enhanced criteria, every SDO may be encouraged to apply the new model to guide them in the search for the most qualified individuals for the Master Teacher positions.

For future research, further model verification procedures could be undertaken using a larger set of Master Teachers from other Division offices across the region. Simultaneously, more experts may be involved nationwide to enrich both content and validity. Additionally, further studies related to criteria development using trade-offs and discriminant analysis are necessary to contribute more insights into the scarcity of literature, especially on aspects that promote research and instruction.

Furthermore, it is strongly recommended that for future studies, one may include non-master teachers since their opinions may also be useful in enhancing the Master Teacher criteria, which is considered as the study's limitation.

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