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Journal of Social Studies Education Research

Sosyal Bilgiler Eğitimi Araştırmaları Dergisi

2023:14 (4), 75-107

Exploring Expertise Criteria of University Academics

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Abstract

Given the absence of expertise criteria of academics or lecturers, we sought to explore relevant studies to formulate an informed framework of academic expertise. Academics at higher education institutions are often considered experts. Usually, academic roles comprise teaching, research, and community service. Therefore, academics' expertise should be assessed based on these roles. However, no specific criteria are currently available to address this issue. At the moment, various attempts have been directed to measure academic competence. However, it should be understood that competence and expertise require different levels of mastery of knowledge and skill acquisition. Because many scholars have argued that competence is insufficient to handle present and future challenges, developing an assessment tool for academic expertise is imperative. We aim to develop standards for identifying and determining academic expertise as a novel attempt to develop that tool. To do so, we examined the well-defined expertise theory of General Expertise Measurement (GEM) and refined it specifically for academics. A systematic review of the existing literature was conducted to identify the criteria aligning with the academic expertise. These criteria were then validated by experts to determine their significance and relevance in assessing the academic expertise. The findings revealed that several criteria emerged as highly significant and relevant for assessing academic expertise. These criteria include knowledge, experience, problem-solving abilities, skill analysis, collaboration, communication, engagement with the community, educational background, continuous improvement, intuition, recognition, research aptitude, training, understanding of the context, and self-confidence.

Keywords: *Academics, community service, expertise, research, teaching*

Introduction

Universities typically employ academics across a spectrum of expertise levels, ranging from novice to highly experienced professionals. According to Robles & Franzoni (2015), academics sometimes encounter challenges regarding imparting knowledge to their students. The inability of professional academics to manage students' performance effectively can cause stress, poor academic outcomes, and an increase in drop-out rates (Yorke & Longden, 2004). Hativa (2000)

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suggested that inadequate competence among academics can be attributed to various factors, including personality traits, characteristics, aptitudes, speech and language difficulties, associative thinking patterns, insecurity, and a lack of pedagogical knowledge. Moreover, as argued by several scholars, being competent alone may not be enough to tackle present and future challenges (McLagan, 1997; Swanson, 1994). Competence can be defined as the ability to perform tasks satisfactorily or at least at a minimally acceptable level of performance (Herling, 2000). Meanwhile, contemporary and future challenges require individuals who can adapt to change while excelling in their tasks to bring about improvements, often called experts (Swanson, 1994). Even though several criteria exist to assess the competence of academics (Pekkarinen & Hirsto, 2017; Quesada-Serra, et al., 2016; Suhaemi & Aedi, 2015; Van den Berg et al., 2006;) a lack of designed to assess academic expertise is evident. Competence typically pertains to a person's knowledge or general understanding of a specific subject, implying a broader state of knowledge or comprehension.

Therefore, in this study, "expertise" is preferred over "competence" due to its specific and focused connotation. Unlike competence, which has a general meaning, expertise encompasses advanced abilities, such as accurate judgment, deep insight and unique problem- solving strategies. Expertise is characterized by the crucial impact of highly integrated knowledge structures within a specific field, affecting an individual's abilities profoundly (Liu et al., 2022).

Academic activities worldwide cover three main aspects: teaching, research, and community service (Jackson & Marley, 2007; Schütte & Köper, 2013;). (Keerberg et al., 2014) Therefore, assessing the expertise of the academics requires the establishment of specific criteria that can effectively measure their performance in each of these activities.

The need for such assessment criteria is critical because it plays a vital role in enhancing students' academic performance, advancing the careers of academics, and elevating the prestige of universities.

The importance of measuring expertise has been recognized for a long time (Swanson & Holton, 2001, 2009). Without the ability to quantify expertise, its classification has limited utility. We aim to address the knowledge gap in general expertise by describing the criteria for academic expertise using the Generalized Expertise Measurement (GEM) framework. The GEM framework is built

upon the individual's perception and report of an employee's expertise. By utilizing the term "generalized," we wish to develop a metric that can be universally applied across various professions. HRD professionals can benefit from having access to expert materials helpful to uphold performance management, personnel selection, and training and development initiatives. While the GEM framework is designed to measure criteria for various professions, our research intends to identify particular criteria in measuring attributes for academic expertise today because limited research is available in this area.

Regarding teaching expertise, Prabowo (2022) suggests that good lecturers should possess attributes such as enthusiasm, the ability to stimulate and encourage students, warmth, task orientation, hard work, tolerance, politeness, wisdom, trustworthiness, flexibility, and adaptability.

Scholars have identified specific attributes that are critical for university educators concerning the design of curriculum and the development of instructional environments. Dhunpath et al. (2021) identified the following attributes: the ability to design a curriculum that is responsive, innovative, and relevant, being an engaged professional; and serving as an active mediator of learning. Moreover, Fullan and Scott (2014) proposed the concept of the “six Cs,” encompassing core attributes including critical thinking, creativity, character education, citizenship, collaboration, and communication. However, Germain and Tejeda (2012) employed the term “items” instead of “attributes” in their research. They identified eighteen items (attributes) for general expertise, which included factors such as Knows Work, Knows Field, Education, Qualifications, Conducts Research, Trained, and Subjective Expertise. Additionally, the attributes identified encompassed “Ambitious, Drive, Improve, Charismatic, Deduce, Intuitive, Judge, Self-Assured, Talks His/Her Way Through Situations, Assess, Self-Confidence, and Outgoing.

To be an effective university teacher, one must possess academic expertise in three primary areas: teaching, research, and community service. Additionally, establishing a curriculum is a plus. Hence, it is imperative to delve into finer-grained characteristics that delineate academic proficiency within these domains. This stands as the primary innovation of this study. Surprisingly, no research has ventured into scrutinizing the benchmarks for appraising the competency of university academics up to the present day.

We employ two approaches to identify the criteria and attributes associated with academic expertise in this study. The first approach involves reviewing preliminary studies that focus on expertise and the role of academics. The second approach encompasses seeking expert judgments to validate and confirm the vital criteria for assessing academic expertise. Through these two approaches, we aim to gather comprehensive information and insights that can serve as a foundation for developing criteria to evaluate academic expertise.

Research Questions

Given the background information, our research aims to identify the attributes and criteria related to academic expertise. This process will be achieved through a systematic literature review and expert panel judgment. Therefore, the researchers formulated the following research questions:

1) What attributes should academic expertise possess?
2) What criteria apply to academic expertise?

Literature Review

Academics expertise

According to the Oxford Dictionary, "an academic is a teacher or scholar who lectures in a university or institute of higher education" (Hornby, 2010). Definitions are given to identify phenomena and delineate examples from non-examples. Expertise is consensually defined as elite, peak, or exceptionally high levels of performance on a particular task or within a given domain. When someone attains such expertise, they are often called an expert or some related terms such as virtuoso, master, maven, prodigy, or genius. These labels are used to designate individuals whose performance and skill level are considered at the pinnacle of their respective fields.

An academic must perform three core roles: Teaching, Research, and Community Services (Ghannam & Mamdouh, 2007; Jackson & Marley, 2007; Keerberg et al., 2014; Schütte & Köper, 2013;). The roles of teaching, research, and community service are closely inter-related. Teaching facilitates the enduring and methodical spread of the latest scientific advancements that are constantly developing through research. This persistent effort of sharing knowledge plays a vital role in the progress of civilizations by actively contributing to community services. Through teaching, the ongoing dissemination of up-to-date science causes the overall development and

advancement of societies. Expertise is defined as attaining an elite, peak, or exceptionally high level of performance in a particular task or domain (Bourne Jr et al., 2014). The Merriam-Webster Dictionary defines an expert as someone "having, involving, or displaying special skill or knowledge derived from training or experience." Describing expertise entails compiling a comprehensive list of the expert's knowledge, skills, intentions, and accomplishments.

According to Blackmore (2000), academic expertise can be primarily understood through three analytical approaches. The first approach is a role analysis, examining the dynamics of interpersonal interactions within a professional setting. The second approach is a functional analysis, which involves observing an individual's work activities. In this context, it is critical that knowledge and understanding are objectively definable (Blackmore, 1999). Lastly, skill analysis explores an individual's capabilities and accentuates the human capacities required for optimal performance. The above analyses provide some valuable insights into the factors, contributing to establishing criteria for academic expertise, including roles, knowledge, understanding, skills, and interactions. However, several scholars have indicated that different roles within academia may require distinct set of skills. Therefore, a more comprehensive examination of these roles and a clear definition of expertise is necessary to establish the groundwork for developing the assessment criteria, identifying the level of academics' expertise.

Teaching

The first key role of an academic is teaching. This role tends to have a positive relationship with students' achievements (Podolsky et al., 2019). A key indicator used to determine expertise in various occupations is the length of practice, ranging from 5 to 15 years (Rassafiani, 2009). The studies above indicated that the academic's teaching experience influences students' performance. However, Sherwin and Gaston (2015) argue that expertise should not be equated with experience alone. They contend that expertise is linked to acquiring knowledge and development of skills (Schrader & McCreery, 2008). Moreover, expertise depends on deliberate efforts, and it has been empirically demonstrated to explain approximately 30% of performance variance in specific domains (Ericsson, 2006). Nonetheless, Hambrick et al. (2014) suggested that around 70% of the variance in performance can be attributed to factors other than experience and deliberate practice.

Teaching is a multifaceted task requiring analytical competence. It entails the capacity to analyze intricate classroom situations discern the underlying causes of problems, comprehends student behavior, and make informed decisions about the most suitable course of action (Jonsson & Lennung, 2011). Substantial experience in the classroom tends to the expertise of educators across various aspects of teaching (Berliner, 2004). Therefore, it is evident that analytical experiences play a crucial role in shaping teaching expertise.

Bowers (1980) proposed a framework for assessing teaching performance based on three factors involving the interaction between academics and students. According to Bowers, these factors include students' engagement with the topic presented by the teacher, the teacher's ability to communicate the topic effectively, and the level of attentiveness displayed during the instruction. These factors collectively contribute to assessing the quality of teaching and the effectiveness of the teacher-student interaction.

Research

The role of research is another vital aspect of an academic's responsibilities. The correlation between teaching quality and research has been a subject of ongoing discussion in educational institutions and the wider public (Lindsay et.al., 2002; Robles, 2016). A study conducted by Palali et al. (2018) found that students enrolled in Master's programs taught by lecturers with high-quality research publications performed better than those taught by lecturers solely concentrating on quantity instead of the quality of their publications. Research collaboration serves as a platform for experts to share their expertise, allowing participants to understand various assets and skills needed to achieve their goals (Ross et al., 2010). An individual's expertise is identified through their ability to disseminate information to members of expert committees (Garrett et al., 2009). One effective way to determine an individual's level of expertise is by obtaining information from the appropriate expert and conveying the necessary information to the relevant individuals.

According to Blackmore (2000), analyzing research expertise is difficult due to academics' diverse skills and techniques and the difficulty in gathering information. This perspective aligns with the viewpoint of Gealy et al. (1997), who attributed the inconsistency in assessing people's expertise to a lack of interest in participating in surveys on occupational competence standards. However, Kyvik (2013) reported that the researcher's skills can still be identified based on the roles or

functions they perform, which include (1) networking, (2) collaborating, (3) managing, (4) conducting, (5) publishing, and (6) evaluating research. These roles and functions can be fulfilled through independent or group research, presenting the results at scientific meetings, publishing in journals, providing references, and applying research outcomes in the learning process (Suryaman, 2018).

Community Service

The final aspect of an academic's threshold role is community service. As in the quality of research and teaching, the effectiveness of teaching is also affected by the participation of academic staff in community service with an impact on the local area where it is situated (Keerberg et al., 2014). Professionals in academia are expected to participate in activities benefiting the community and the surrounding environment, enhancing the prestige and credibility of their institution, and their own standings as academics in the region (Keerberg et al., 2014). Community service comprises various indicators. Proficiency in providing guidance to the public, addressing social and environmental issues, documenting community service work, and applying knowledge gained from lectures can be viewed as measures of academics' competence. Thus, these academics can fulfill their community service function (Suryaman, 2018). Hardina (2002) also acknowledged that an academic's ability to fulfill their community service role could be assessed by their capacity to use analytical methods to identify community problems, plan interventions, and conduct evaluations.

Expertise

After discussing the role of academics, the general definition of expertise will be addressed to establish the basic framework to identify an academic's expertise. Dreyfuss and Dreyfus (1980) introduced the concept of skill acquisition to outline the developmental stages necessary for expertise, comprising five distinct phases. The first stage is known as the *novice* phase, wherein individuals can only follow instructions without any practical experience. The second stage is an *advanced beginner* phase, in which individuals can improve their understanding of a relevant context through hands-on experience (Dreyfus, 2004). According to Dreyfuss and Dreyfus (1980), the last three stages are called *competent*, *proficient*, and *expert*. The *competent* level is characterized by the ability to solve problems using established patterns after gaining substantial experience in real-world situations. The *proficiency* stage involves the capability to navigate

various conditions by determining appropriate actions. Finally, the highest stage is the *expert* level, pertaining to individuals who can intuitively function based on analytical principles, such as rules, guidelines, and maxims, to grasp the overall situation. Experts demonstrate a high skill in a specific domain (Alexander et al., 2004). The effectiveness and efficiency in solving novel problems are often related to expertise (Brophy et al., 2005). Moreover, Peña (2010) mentioned that expert thinking comprises both analytic processes, such as hypothetic–deductive reasoning, and non-analytic processes, such as pattern recognition. Specifically, (Manasse, 1985) presented a set of distinct characteristics for describing experts' skills and performance. These characteristics follow.

1. Volition. It is regarded as a personal principle that enables individuals to take appropriate actions in certain situations based on subjective principles instead of solely relying on predefined rules (Kitcher, 2003). It also implies having a clear understanding and purpose in one's actions, which can be articulated when convincing others about their course of action.
2. Analytics. This characteristic involves efficiently and effectively solves problems by leveraging available information and applying knowledge and understanding attained through education and training. Experts can employ their analytical skills to tackle complex problems even without prior experience.
3. Intuitive. Intuition refers to the capacity to reflect on past intellectual experiences and recognize patterns to inform decision-making. Intuition often emerges due to previous intense and explicit analytical thinking.
4. Visionary. Visionary denotes possessing self-awareness and the ability to identify, mobilize, and coordinate complementary skills and resources. As identified by Manasse (1985), these characteristics can contribute to distinguishing experts and their exceptional skills and performance.

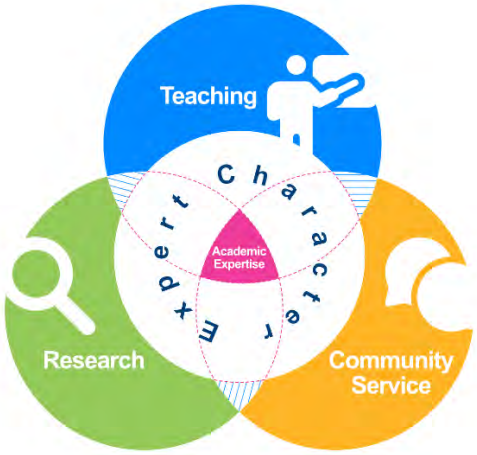
Given the vitality of expertise in organizational development, some scholars have revised the assessment criteria for identifying experts. Germain and Tajeda (2012) provided a comprehensive overview of these criteria and have developed their own framework, called the GEM. The GEM comprises 18 basic attributes that can be employed to identify an expert in a broader sense. For this study, we adopted the development methodology of the GEM and modified it to establish a more specific set of criteria for identifying academic expertise.

Dimensions of Expertise Academics

As discussed earlier, an academic should assume three main roles: teaching, research, and community services. Therefore, the expertise of the academics can be determined based on these roles. Hence, with the basic idea of GEM, we have specified the attributes to identify expert characteristics for academics' roles to develop an assessment criterion for their academic expertise. In the endeavor to assess academic expertise, the three roles mentioned can be viewed as the three dimensions comprising the character of an academic expert (see Figure 1).

Figure 1.

A Conceptual Framework of Academic Expertise



Method

Research Design

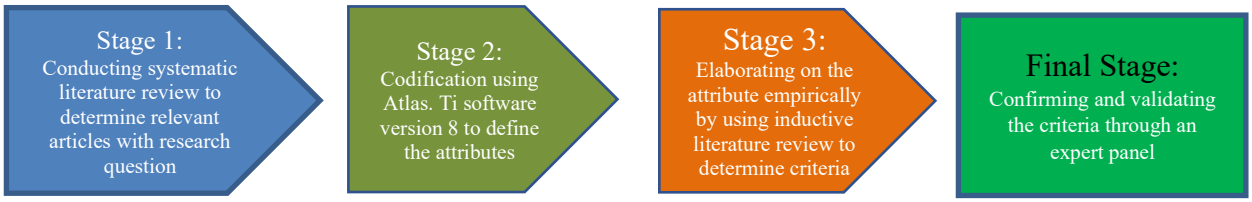
Systematic review method is used in this study to collect and analyze non-numerical data to comprehend ideas and viewpoints from a panel of experts. The information gathered in this study is derived from document analysis, through examining factual data. To ensure the inclusion of pertinent empirical materials, we employed a thematic analysis and content analysis techniques. These techniques were chosen because of the clearly defined research issue in the current study, and its suitability was supported by Busetto et al. (2020), Sutton et al. (2015), and Aspers and Corte (2019). A relevant article addressing a research issue pertaining to academic expertise was selected from the systematic review of the literature.

The next step involves evaluating the article's citation using the relevant academic expertise criteria. Codification comprises several attributes and will now be further qualified. The following words are used to describe characteristics that academic expertise frequently employs: "analyze," "intuition," "experience," and others. Data from previous literature must be used with the inductive literature review technique to further explain the characteristics shared by each academic expert. This technique is a good choice because it can elucidate the meaning of the data from a large collection of sources to identify the source and establish a connection for developing a theory (Bernard, 2011; Sabharwal & Miah, 2022).

Once a characteristic is identified as potentially meeting the criterion for academic expertise, it undergoes a validation process by an expert panel. This method proves particularly valuable when empirical data contains errors, or the analysis material is slow-moving and necessitates expert opinions. Moreover, the method allows specialists to elaborate on crucial topics (Hohmann et al., 2018; Veugelers et al., 2020). The research process can be divided into the following stages:

Figure 2.

The Stages of Exploring the Criteria of Academic Expertise



Data and Source of the Data

The data in this study comes from numerous articles addressing academic expertise and the criteria for its attainment. The data for this research were sourced from relevant publications that were published between 2005 and 2022. The search was conducted on multiple scientific bibliographic databases, including Science Direct, Wiley Online Library, and Web of Science. The articles were chosen because they address academic expertise that is pertinent to the phenomena of expert criteria in an era of rapid technological innovation and frequent change. The study demonstrates how expert traits can grow in tandem with rapid technology advancements. In this setting, the

requirements for becoming an expert are no longer exclusively based on knowledge and experience, but also on the ability to adapt to continuing technological advances. This emphasizes the importance of a commitment to continuous learning and development in order to sustain the status of an expert amidst the dynamics of change. A total of 22 articles (twenty two) were selected as the data source for this study. Seven of these articles were subjected to a systematic literature review for analysis.

Data Analysis

The following phase involves employing expert judgment to examine and validate the identified criteria. The process comprises the following steps: (i) choosing and inviting a panel of experts, (ii) conducting the first round of the questionnaire, (iii) gathering and analyzing the results from the first round's questionnaire, (iv) providing feedback on the responses received from the expert panel, and (v) presenting and analyzing the second round of the questionnaires (Germain et al., 2022).

The expert panel selection was based on the criteria outlined in scientific publications and academic expertise (Grant & Kinney, 1992). The experts were tasked with determining the relevance of criteria dichotomously, classifying them as either "relevant" or "irrelevant." An accessible text form was also provided to allow the experts to express their opinions. The "relevant" feedback means that the criteria are represented comprehensively and identified as academic expertise, while "irrelevant" means the opposite. According to Krosnick et al. (2005), the dichotomous scales offer better precision in meaning and require less interpretive effort than rating scales. Moreover, they provide higher reliability than rating scales based on absolute metric scales (Alwin, 2007).

Findings

The Attributes of Academic Expertise

In the initial stage of the study, seven relevant articles addressing the issue of academic expertise were retrieved using a systematic literature review. From those articles, a total of 24 key attributes for identifying academic expertise were extracted. These attributes were then transformed into codes, allowing for an analysis of their frequency of occurrence within the selected articles. Finally, the analysis was conducted using Atlas.ti software to determine the significance of each

attribute. The details that depict the findings of this analysis could be seen from Table 2 (placed in the appendixes).

Out of the 24 attributes identified, the attribute "*knowledge*" demonstrates the highest frequency of occurrence, appearing 28 times across six out of the seven articles. Following "knowledge," the attributes "*experience*," "*problem-solving*," and "*skills*" are found in five articles with frequencies of 24, 16, and 11 appearances, respectively.

Indeed, "*Experience*" is widely recognized as critical in developing expertise. It substantially enhances a person's tacit knowledge (Palmer et al., 2005). Additionally, an individual's experience implicitly influences the level of exposure to learning in a particular subject area and the impact of implicit assumptions held by experts in that field (Feist, 2013). Therefore, experience is considered fundamental in acquiring and refining expertise.

Among the identified attributes, eleven attributes appeared more than five times across multiple articles: "*analysis*," "*collaboration*," "*communication*," "*community member*," "*education*," "*improvement*," "*intuition*," "*recognition*," "*research*," "*training*," and "*understanding situation*." These attributes are crucial to an academic's ability to fulfill their responsibilities. For instance, in the context of teaching and learning activities, lecturers and students converse. Effective communication skills are necessary for instructors to successfully convey knowledge to students during these interactions. Students' enthusiasm for a specific scientific topic can be influenced by both the subject matter itself and the lecturer's ability to engage and generate interest in the material. Lecturers must use their intuition, analytical abilities, and classroom environment to understand the challenges faced by pupils. A comprehensive understanding of classroom dynamics enables lecturers to respond appropriately, even when deviating from strict regulations, and they can quantitatively assess the impact of their actions. This ability, known as volition, has been identified in previous studies as one of the characteristics of an expert. Collaboration is another skill that academics naturally possess to research on top of analysis. Collaboration among researchers in the same field allows for sharing ideas and pursuing joint projects, serving as an essential indicator of researcher expertise.

The attribute of "*self-confidence*" appears fewer than five times but is mentioned in multiple articles. Meanwhile, the attributes "*self-assured*," "*ambitious*," "*outgoing*," é-"*deduce*," "*judge*,"

and "*assess*" are only found in one article and are not widely spread across the other articles. According to Germain and Tejeda (2012), "*self-confidence*" is important when identifying an expert, reflecting motivation, enthusiasm, and technical skills. It is worth noting that Germain and Tejeda (2012) make a distinction between "*self-confidence*" and "*self-assured,*" even though both attributes correspond to the enterprising dimension of the Self-Directed Search (SDS) typology developed by Holland (1959).

The attribute of recognition is closely linked to the social aspects that often serve as criteria for expertise (Agnew et al., 1997). For example, service users, radiologists, and computer scientists tend to assume that professionals in their respective fields possess expertise. Recognition is typically supported by objective evidence, such as certificates issued by professional associations. However, recognition can also be subjective, as communities may perceive someone as an expert based on their professional status, even without concrete evidence. According to LaFrance (1997), Professional or Social group membership is a distinguishing feature of individuals with expertise, as they possess specialized knowledge in a particular subject. Therefore, membership in such groups can be an early indicator of professional academics, specifically when the number of academics is at the observation level of expertise.

According to Herling (2000), problem-solving ability is crucial to expertise. However, this key factor is interconnected with other important factors, including knowledge, skill analysis, collaboration, communication, community membership, education, institutional support for improvement, research capabilities, training, understanding of the situation, and self-confidence (Noor et al., 2019).

In the third stage of the study, an inductive literature review was conducted, identifying 43 relevant criteria (Q1–Q43) obtained from 12 relevant articles. These criteria corresponded to 22 of the total of attributes previously defined. The details of this mapping could be seen from Table 3 (placed in the appendixes).

Two characteristics, "*outgoing* and *ambitious*", only appear in one article and have a coding result of 1. This situation supposedly demonstrates how the teaching and research dimensions are irrelevant. Therefore, these findings confirm the lack of strong relevance for coding with results under two and only in one article in developing academic expert qualities.

The attribute "*understanding situation*" comprises three criteria explicitly mentioning the keyword "navigate any work-related situation." Interestingly, these criteria have different outcomes in separate dimensions. While deemed irrelevant in the research and community service dimensions, they are considered relevant in the teaching dimension. However, the attribute "*self-confidence*" is only relevant in the teaching dimension while deemed irrelevant in the research dimension. These findings align with the expectation that teaching and learning activities involve interactions, requiring self-confidence in this dimension. Conversely, activities such as academic writing, surveys, and collaboration, which are more prevalent in the research dimension, may require a different level of self-confidence.

In the final stage, the expert judgment process confirmed the selection of 29 critical criteria deemed relevant to academic expertise, as presented in Table 2 (placed in the appendixes). These criteria form the foundation for determining academic expertise, and individuals who possess these criteria can be considered academic experts in their respective fields. Furthermore, the criteria reflect the qualities and characteristics of an expert in how they fulfill their primary responsibilities as lecturers and assist students. Furthermore, the criteria reflect the qualities and characteristics of an expert in how they fulfill their primary responsibilities as lecturers and assist students.

Indeed, the attributes identified in the study encompass qualities that contribute to effective teaching and academic expertise. These attributes include engaging classroom presence, emphasizing real-world learning, sharing best practices, and fostering a lifelong love of learning, which is essential for creating a positive and impactful educational experience.

Good academic expertise can significantly influence a student's life, classroom learning, and long-term success. It is crucial for individuals considering a career in education to explore these qualities of good academic expertise. Research conducted by the Economic Policy Institute supports the notion that competent teachers are the most influential factor in student achievement in the classroom. Their impact surpasses the significance of facilities, school resources, and even school leadership.

As mentioned, academics fulfill three leading roles: teaching, research, and community service. Therefore, it is vital to identify academic expertise based on these three dimensions. Our study adopts the basic idea of the GEM to specify the attributes that can be used to identify expert

characteristics within each of these roles. By doing so, an assessment criterion for academic expertise can be developed.

The Criteria of Academic Expertise

In the final stage of the study, the expert judgment process confirmed the selection of 29 critical criteria deemed relevant to academic expertise, as depicted in Table 1. These criteria form the foundation for establishing academic expertise. Consequently, scholars with these criteria can be considered academic experts in their respective fields. Furthermore, the identified criteria reflect the characteristics and qualities of an expert in the way they fulfill their primary responsibilities as lecturers, particularly in assisting students. In this stage, we aim to confirm whether all 43 criteria are relevant or irrelevant. Table 1 illustrates the result of the confirmation based on the judgment from the expert panel.

Table 1

Expert Panel Confirmation

No	Criteria	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Result
1.	Q1.1 - They have years of teaching experience.	X	✓	✓	✓	✓	Relevant
2.	Q2.1 - They have been recognized for their academic contributions by their boss, peers, student, etc.	X	✓	✓	✓	✓	Relevant
3.	Q3.1 - They have been involved in professional or social group membership.	X	X	X	✓	✓	Irrelevant
4.	Q4.1 - They can navigate any work-related situation.	X	✓	X	✓	✓	Relevant
5.	Q5.1 - They have an outgoing personality	X	✓	X	X	✓	Irrelevant
6.	Q6.1 - They have good communication skills.	✓	✓	✓	✓	✓	Relevant
7.	Q7.1 - They can use appropriate media to express ideas effectively.	✓	X	✓	✓	✓	Relevant
8.	Q8.1 - They are capable of making self-improvement.	✓	✓	X	✓	✓	Relevant
9.	Q9.1 - They know their field, both explicitly and implicitly.	X	✓	✓	✓	✓	Relevant
10.	Q10.1 - They no longer rely on rules or guidelines.	✓	X	X	X	X	Irrelevant
11.	Q11.1 - They can use analytic approaches where problems occur.	✓	✓	✓	✓	✓	Relevant
12.	Q12.1 - They can make a topic interesting for their students.	✓	X	✓	✓	✓	Relevant
13.	Q13.1 - They can make the students familiar with the topic.	✓	✓	X	✓	✓	Relevant
14.	Q14.1 - They are able to enhance the student's level of attentiveness during a course.	✓	✓	X	✓	✓	Relevant
15.	Q15.1 - They have a Higher Education teaching certificate.	X	✓	X	X	✓	Irrelevant
16.	Q16.1 - They can discern factual information from academic-related situations easily.	X	✓	X	✓	✓	Relevant
17.	Q17.1 - They have the academic qualification required.	✓	✓	✓	✓	✓	Relevant
18.	Q18.1 - They have received the previous education necessary to study in their field.	✓	✓	X	✓	✓	Relevant
19.	Q19.1 - They are trained in their field of study.	✓	✓	X	✓	✓	Relevant
20.	Q20.1 - They are self-assured.	✓	✓	X	X	✓	Relevant

21.	Q21.1 - They have self-confidence.	✓	✓	X	X	✓	Relevant
22.	Q22.1 - They can influence the field of research activities in their community.	✓	✓	✓	✓	✓	Relevant
23.	Q23.1 - They have proven their quality of research.	X	✓	✓	✓	✓	Relevant
24.	Q24.1 - They negotiate and navigate any work-related situation.	X	✓	X	X	X	Irrelevant
25.	Q25.1 - They distribute information to members of expert committees.	✓	✓	✓	✓	✓	Relevant
26.	Q26.1 - They identify the level of expertise required to create a network file showing the level of knowledge possessed by others and update the information's validity.	✓	✓	X	X	✓	Relevant
27.	Q27.1 - They can educate themselves in the area of popular knowledge in their field of interest.	✓	X	✓	X	✓	Relevant
28.	Q28.1 - They can educate themselves in the area of state-of-the-art academic topics in their field.	✓	✓	✓	✓	✓	Relevant
29.	Q29.1 - They have several international and local research collaboration activities.	X	✓	✓	X	✓	Relevant
30.	Q30.1 - They conduct research related to their field.	✓	✓	✓	✓	✓	Relevant
31.	Q31.1 - They have the required academic qualifications.	✓	✓	✓	✓	X	Relevant
32.	Q32.1 - They have received previous education related to their field.	✓	✓	X	✓	✓	Relevant
33.	Q33.1 - They have been trained in their fields of study.	✓	✓	X	✓	✓	Relevant
34.	Q34.1 - They are self-assured.	✓	✓	X	X	X	Irrelevant
35.	Q35.1 - They possess self-confidence.	✓	✓	X	X	X	Irrelevant
36.	Q36.1 - They are ambitious about their academic activities.	X	✓	X	X	✓	Irrelevant
37.	Q37.1 - They have contributed to their field of research's impact on the community.	X	✓	✓	✓	✓	Relevant
38.	Q38.1 - They contribute to Human-capital capacity building through real work- environments.	✓	✓	X	X	✓	Relevant
39.	Q39.1 - They have social cohesion for sustainable development on which regional innovation depends.	X	X	X	X	✓	Irrelevant
40.	Q40.1 - They can navigate any work-related situation.	X	✓	X	✓	X	Irrelevant
41.	Q41.1 - They can find topics that have an impact on the community	✓	X	✓	X	✓	Relevant
42.	Q42.1 - They can easily discern the facts when problematic situations occur.	✓	✓	✓	X	✓	Relevant
43.	Q43.1 - They have the ability to assess whether academically related situations are important or not.	✓	✓	X	X	X	Irrelevant

Based on the expert panel's judgment, the study confirms that out of the initial 43 criteria, 29 criteria are considered very important and relevant to academic expertise. These criteria encompass various aspects of teaching, research, and community service. Here is a summary of the 29 identified criteria:

(1) They have a minimum of five years of experience in teaching at higher education institutions, including designing and delivering high-quality material; (2) They should be recognized for their teaching skill by their supervisors, peers, students, and experts in the same field; (3) They can skillfully handle any teaching-related tasks; (4) They exhibit good communication skills in delivering the teaching materials; (5) They use appropriate media to express their ideas effectively

in teaching sessions; (6) They continuously develop their teaching-related expertise and knowledge to stay up-to-date; (7) They have current knowledge of their field; (8) They can analytically solve the problems and reflect; (9) They can excitingly deliver the topic to the students; (10) They familiarize students with the topic; (11) They can grab the attention of their students while delivering the materials; (12) They may have a Doctoral degree; (13). They have relevant training to improve their expertise in the field; (14) They have pertinent training in teaching for higher education; (15) They demonstrate confidence in delivering the teaching materials for students and attract their attention; (16) They substantially contribute to the field of research; (17) They display the high quality of research; (18) They effectively communicate their research projects to the members of expert committees; (19) They can update and validate the information regarding the expertise of others in their field of research; (20) They expand their practical knowledge and implement it in their research; (21) They are aware of state-of-the-art research topics in their field; (22) They have substantial research collaboration activities both internationally and nationally; (23) They productively conduct research related to their field; (24) They have a Doctoral degree related to their field of research; (25) They have pertinent training in research methods; (26) They substantially contribute to the community related to their expertise; (27) They conduct human-capital capacity-building activities in the community; (28) They can influence and convince the community for a better life; (29) They can identify the social problem in the community and provide solutions.

In contrast, the remaining 14 criteria are considered unimportant and irrelevant. It is important to note that these criteria were not selected arbitrarily but instead through a thorough assessment process based on objective reasons provided by the expert panel. The distribution of criteria often serves as an initial indicator of fundamental academic expertise, t ultimately forming the foundation for achieving academic excellence. The judgment of the further confirms this initial indication.

Discussion

From the results of data analysis, the research problem mentioned earlier can be answered that to become an academic expert, one must have criteria per the three pillars of education: teaching, research, and community service.

The study has successfully identified 29 criteria that define academic expertise. This finding represents a redefinition of the criteria for academic expertise, aligning with previous scholars' efforts to establish the ideal formulation of such criteria.

The current re-evaluation of teaching in higher education highlights the need for further insights into how university teachers develop their expertise, considering its crucial role in academic work (Cordova et al., 2014; Mercieca, 2017). Existing research has already identified specific criteria for becoming an academic expert in the field of research. These include staying updated on state-of-the-art research topics, engaging in national and international collaborations, conducting productive research in their field; holding a relevant doctoral degree, and making substantial contributions to their community based on their expertise (Germain & Tejeda, 2012). However, the present study's findings indicate the existence of several additional criteria that contribute to the understanding of becoming an academic expert. In addition to the previously mentioned studies, Esen et al. (2020), Gaskins-Scott (2020), and Veytia-Bucheli et al. (2020) have also explored the criteria for academic expertise. Furthermore, these studies highlight the importance of personality traits and social skills as characteristics of expert college instructors. Therefore, these scholars' research findings have been incorporated into the 29 criteria identified in the present study. On top of that, the current research indicates a need for further development of the characteristics required to become an academic expert, particularly within the framework of the GEM. The GEM scheme recognizes the presence of various attributes or items that define a general expert. In the GEM scheme several attributes or items exist for a general expert. These attributes encompass objective and subjective elements. They include "Knows Work, Knows Field, Education, Qualifications, Conducts Research, and Trained, Ambitious, Drive, Improve, Charismatic, Deduce, Intuitive, Judge, Self-Assured, Talks Their Way Through Situations, Assess, Self-Confidence, and Outgoing," identified as the 12 objective and subjective expertise items of the GEM. These items indicate a type of expertise that lacks concrete proof but could be the outcome of a carefully crafted image portrayed by the expert. These items signify the deliberate manipulation of perceptions to convey expertise even when skill is absent.

This study effectively revealed that not all the attributes mentioned in the GEM are relevant to academic expertise. It does not necessarily imply that the GEM theory is incorrect but may be biased or overly encompassing when applied to academic expertise. Additionally, previous

research has identified "visionary" as a characteristic of an expert (Conger & Kanungo, 1988). Yet "visionary" does not emerge among the attributes associated with academic expertise in this particular study. Therefore, this research provides evidence that being a “visioner” is not essential for attaining academic expertise.

Paudel (2021a) conducted multiple recent studies to help validate the analysis findings. The method is widely recognized as a valuable approach to reaching a consensus on the important issues or complex social problems, employing the expertise of subject matter experts and practitioners within a specific field (Linstone & Turoff, 2002). Through factor analysis, four distinct factors associated with the academic performance of the faculty members were identified: research and publication, innovation, interactive learning, and capacity building.

In a separate study, Paudel (2021b) and Jeyaraj et al. (2021) also explored the dimensions of academic performance. The researchers employed a survey methodology to conduct their study. Their research findings indicated that faculty members’ involvement in various academic activities could enhance universities’ competitiveness in teaching, learning, research, and service.

Meanwhile, several other studies by Morgan, 2014, Anderson et al (2022), Battista et al (2022), and Wahyudi (2022) have explored the attributes of experts in the field. Their findings indicate that teachers' beliefs, values, and emotions toward creativity and art integration can change through reflection, training, and practice. These factors are considered fundamental to the development of teachers as creative educators. Furthermore, the results demonstrate that teachers can embrace new ideas about creativity, adapt their teaching strategies, and start taking creative risks within their classrooms with appropriate support and guidance. Finally, this situation highlights the importance of fostering an environment that encourages and nurtures teachers' creative development.

According to Fantaye et al (2022), their research focused on two main aspects: the attributes of excellent clinician teachers and the barriers that hinder the recognition and reward of their performances and achievements. Most relevant papers on this topic were found to be from the US context, while relevant papers were scarce from the Canadian context. Furthermore, the international focus on the attributes of excellent clinician teachers and barriers to their recognition and rewards has declined since 2010. In terms of cognitive attitudes considered for recognition

and rewards, the study identified common traits such as "provides feedback," "excellent communication skills," "good supervision," and "organizational skills." Nonetheless, regarding non-cognitive attributes, attributes like "stimulates," "passionate and enthusiastic," and "creates a supportive environment" were commonly mentioned as criteria for recognition and rewards of clinician teachers. Germain and Tejeda (2012) are among the researchers who have explored the attributes of experts in general. In their research, they identified relevant to academic expertise: self-assured, ambitious, outgoing, deduce, judge, and asses. Even though the attributes "judge" and "assess" were not extensively discussed, they appeared 7 and 5 times consecutively. Other essential attributes associated with academic expertise include the following: knowledge, experience, problem-solving, skill analysis, collaboration, communication, community members, education, improvement, intuition, recognition, research, training, understanding the situation, and self-confidence.

A total of 16 attributes have been identified as necessary for assessing theoretical knowledge supported by the occurrence of these attributes in 7 articles. The expert panel's confirmation of the significance of these attributes aligns with their frequency and distribution. Cordova et al. (2014) explored how confidence in prior knowledge, self-efficacy, interest, and prior knowledge interact during conceptual change learning. Mercieca (2017) developed a theoretical framework for a community of practice, particularly focusing on its relevance to higher education in the context of societal and institutional changes. Noor et al. (2019) discussed the benefits and challenges of cloud-based knowledge management systems and their impact on knowledge. Finally, López Sánchez and Godoy-Caballero (2019) confirmed the positive effects of the flipped classroom approach on students' knowledge, skills, and engagement.

The study's findings unveil several novel aspects:

1. Novelty in Criteria for Academic Expertise: The study has identified 29 distinct criteria that redefine the concept of academic expertise. While previous research had emphasized criteria such as staying updated on research topics, conducting productive research, and holding relevant degrees, this study adds new dimensions to the understanding of academic expertise. It incorporates findings from Esen et al. (2020), Gaskins-Scott (2020), and Veytia-Bucheli et al. (2020) that highlight the significance of personality traits and social skills as attributes of expert college instructors.

2. Re-evaluation of the GEM Framework: The study reveals that not all attributes from the General Expertise Model (GEM) are relevant to academic expertise. This suggests that the GEM framework, which includes attributes like "Knows Work," "Education," and "Charismatic," may not be suitable for evaluating academic expertise. The study's insights challenge the applicability of the GEM theory in the context of academic expertise.
3. Visionary Not a Prerequisite: While previous research had identified "visionary" as a characteristic of an expert, this study indicates that being a "visioner" is not essential for attaining academic expertise. This finding dispels the notion that visionary attributes are a fundamental requirement for academic expertise.
4. Factors Influencing Academic Performance: Paudel's (2021a) study highlights four distinct factors affecting the academic performance of faculty members: research and publication, innovation, interactive learning, and capacity building. This underscores the importance of these factors in evaluating the effectiveness of academic professionals.
5. Enhancing Universities' Competitiveness: Paudel (2021b) and Jeyaraj et al. (2021) emphasize that faculty members' involvement in various academic activities can enhance universities' competitiveness in teaching, learning, research, and service. This underscores the role of faculty members in improving the overall quality of higher education institutions.
6. Teachers' Creativity Development: Studies by Morgan, Anderson et al. (2022), Battista et al. (2022), and Wahyudi (2022) indicate that teachers' beliefs, values, and emotions regarding creativity and art integration can evolve through reflection, training, and practice. These studies emphasize the need for fostering an environment that encourages teachers' creative development.
7. Attributes of Excellent Clinician Teachers: Fantaye et al. (2022) explore the attributes of excellent clinician teachers and the barriers to their recognition and reward. This study identifies common traits such as "provides feedback," "excellent communication skills," and "creates a supportive environment" as criteria for recognition and rewards. This research provides insights into the evaluation of clinicians' performance.
8. Attributes Associated with Academic Expertise: Germain and Tejeda (2012) have identified attributes like self-assured, ambitious, outgoing, deduce, judge, and assess as relevant to academic expertise. Additionally, attributes like knowledge, experience, problem-solving,

collaboration, communication, and self-confidence are associated with academic expertise. These attributes contribute to the multifaceted understanding of academic excellence.

9. Theoretical Knowledge Assessment: Sixteen attributes have been identified as necessary for assessing theoretical knowledge, supported by their frequent occurrence in relevant literature. These attributes, including self-efficacy, interest, and prior knowledge, play a crucial role in understanding how individuals acquire knowledge and expertise.

This study also reveals valuable recommendations for the academics. Several studies, such as Cordova et al. (2014), Mercieca (2017), Noor et al. (2019), and López Sánchez and Godoy-Caballero (2019), provide valuable recommendations and insights for academia. These findings align with the criteria discussed in this study, offering practical guidance for educational institutions and professionals.

Conclusion

The study identified the characteristics that connect to the nature of academic expertise. For instance, problem-solving, understanding situations, and being a community member are vital and highly useful academic abilities. A closer examination of the data may reveal that a community member has a relationship with recognition that is intimately connected to their abilities, communication abilities, and knowledge. It has been discovered that analytical skills, experience, intuition, knowledge, and skills are all highly correlated with the capacity to understand circumstances and solve difficulties. These standards are frequently used as a preliminary indicator to assess academic proficiency. Furthermore, the criteria finally form the foundation for the applicability of such a quality in determining a person's level of academic skill.

The findings of this study hold substantial implications, particularly in the context of establishing benchmarks for academic expertise. The criteria elucidated in this research not only provide a comprehensive framework but also stand validated, having been meticulously defined by experts in the field. This validation process was fortified through the rigorous application of a systematic literature review, lending credibility to the criteria's relevance and accuracy.

When put into practice, the criteria unearthed in this study carry substantial weight in the deliberation and designation of academic experts slated to impart knowledge within higher

education institutions. The careful consideration of these criteria becomes imperative in the meticulous process of selecting individuals to assume the role of academic experts.

Consequently, these findings present a compelling case for institutional stakeholders responsible for the recruitment and promotion of academic experts to conscientiously factor in the aforementioned criteria. By integrating these criteria into their decision-making processes, these stakeholders can ensure that the individuals chosen not only possess the required subject matter expertise but also align with the proven benchmarks of academic proficiency. This, in turn, fosters an environment of excellence and quality within higher education institutions, enhancing the overall learning experience and scholarly rigor.

Following the results of this study, it is suggested that the following recommendations should be made. For a more comprehensive review, it would be more profound to include more databases and more publication types, track references from each publication, extend the period of publications, expand and specify more detailed and rigorous search string.

Acknowledgement

This research was fully funded by the Indonesia Endowment Fund for Education (LPDP), Ministry of Finance, Republic of Indonesia.

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Appendixes

Table 2

Attributes of Academic Expertise Found in the Articles

		Identifying Teacher Expertise an Examination of Researcher's Decision Making (article 1)	Measurement of expertise (article 2)	Framework for expert finding (article 3)	Identifying experts for engineering (article 4)	Finding experts in online forums (article 5)	Task performance assessment (article 6)	Collaborative research (article 7)	Totals
1	○ ambitious	0	1	0	0	0	0	0	1
2	○ analyze	2	1	0	1	0	0	1	5
3	○ assess	0	5	0	0	0	0	0	5
4	○ attitudes	0	2	0	0	0	0	0	2
5	○ charismatic	0	4	0	0	0	0	0	4
6	○ collaboration	0	0	1	0	0	0	7	8
7	○ communication	1	1	0	0	7	0	0	9
8	○ community member	4	0	0	0	3	0	0	7
9	○ deduce	0	4	0	0	0	0	0	4
10	○ education	0	8	0	0	0	1	0	9
11	○ experience	13	7	0	1	1	2	0	24
12	○ improvement	4	2	0	0	0	0	0	6
13	○ intuition	0	4	0	0	1	0	0	5
14	○ judged	0	7	0	0	0	0	0	7
15	○ knowledge	8	11	3	2	2	0	2	28
16	○ outgoing	0	1	0	0	0	0	0	1
17	○ problem-solving	4	8	1	1	0	0	2	16
18	○ recognition	8	1	0	0	0	0	0	9
19	○ research	0	2	0	0	1	0	5	8
20	○ self-assured	2	2	0	0	0	0	0	4
21	○ self-confidence	1	3	0	0	0	0	0	4
22	○ skill	5	3	1	1	1	0	0	11
23	○ training	4	3	0	0	0	1	0	8
24	○ understanding situation	0	2	0	0	0	0	6	8
	Total	55	82	6	6	16	4	23	192

Table 3

Mapping Attributes into Criteria

Attributes found by Systematic Literature Review	**Matching Criteria (Q1-Q43) to the Attributes**	Total Number of Atlas.TI coding results
1. Analyze	Q11. They can use analytic approaches where problems occur.	5
2. Collaboration	Q29.They have several international and local research collaboration activities.	8
3. Communication	Q6. They have good communication skills. Q12.They can make a topic interesting for their students. Q13.They can make the students familiar with the topic. Q14.They are able to enhance the student's level of attentiveness during a course. Q25.They distribute information to members of expert committees.	9
4. Community member	Q3. They have been involved in professional or social group membership. Q34.They are self-assured. Q22.They can influence the field of research activities in their community.	7
5. Education	Q17. They have the academic qualification required. Q18. They have received the previous education necessary to study in their field. Q19.They are trained in their field of study. Q31.They can make the students familiar with the topic.	9
6. Experience	Q1.They have years of teaching experience.	24
7. Improvement	Q8.They are capable of making self-improvement. Q27.They can educate themselves with popular knowledge in their field of interest. Q28.They can educate themselves in the area of state-of-the-art academic topics in their fields of interest.	6
8. Intuition	Q10. They no longer rely on rules or guidelines. Q26.They identify the level of expertise required to create a network file showing the level of knowledge possessed by others and update the information's validity.	5
9. Knowledge	Q9. They know their field, both explicitly and implicitly. Q32.They have received previous education related to their field.	28
10. Problem-solving	Q42. They can easily discern the facts when problematic situations occur. Q38. They contribute to Human-capital capacity building through real-work environments or practical training.	16
11. Recognition	Q2. They have been recognized for their academic contributions by their boss, peers, and students.	9
12. Research	Q22. They can influence the field of research activities in their community. Q23. They have proven their quality of research. Q30.They conduct research related to their field. Q37.They have contributed to their field of research's impact on the community.	8
13. Skill	Q7. They can use appropriate media to express ideas effectively.	11
14. Training	Q15. They have a Higher Education teaching certificate. Q33. They have the required academic qualifications.	8
15. Understanding the situation	Q4. They can navigate any work-related situation. Q24. They negotiate and navigate any work-related situation. Q40. They can navigate any work-related situation. Q41. They can find topics that have an impact on the community.	8
16. Self-assured	Q20.They are self-assured.	4
17. Self-confidence	Q35.They possess self-confidence. Q21. They have self-confidence.	4
18. Ambitious	Q36. They are ambitious about their academic activities.	1
19. Outgoing	Q5. They have an outgoing personality.	1
20. Deduce	Q16.They can discern factual information from academic-related situations easily.	4
21. Judge	Q39.They have social cohesion for sustainable development on which innovation in a region depends.	7
22. Asses	Q43.They have the ability to assess whether academically related situations are important or not.	5