

# A Systematic Inspection into the Criteria of Lecturer Performance in Educational Domain

Osama H. Al-Masri, Sulfeeza Mohd Drus, Ahmad Aabed Al-Hayy AlDalaien

**Abstract:** This paper is to survey researchers' efforts in response to the most number of criteria of lecturers' performance into various domains, connecting the research insights from the literature into a consistent taxonomy, and figuring out the gaps on this vital research area. The fundamental search is relating to 1) personnel evaluation especially lecturer; 2) education-related; 3) criteria and applications (methods). Web of Science, ScienceDirect, and IEEE Xplore are reliable sources that can cover education and technical literature. The final number of studies is 78. Five articles are reviews to characterize the evaluation criteria for specific specializations. An another group (73/78) is research articles that include diverse evaluation criteria and domains. Most domains covered criteria, such as knowledge, skills, experience, and qualification.

**Keywords:** Personnel evaluation, Lecturer assessment, Lecturer appraisal, Taxonomy, Survey, Application, Education

## I. INTRODUCTION

In Institution of Higher Learning (IHL), the studies of methods and techniques for teaching and learning have been greatly attracted by many of researchers. Therefore, it is a need to see how the university ability especially lecturers as instrumental part of institution [1]-[4].

In short, a study analysis suggests that recruitment within an academic environment is a complex issue and, thus, human resources and/or other authorities need to take appropriate measures when recruiting [5].

Measuring the performance of lecturers received little attention compared to the performance of students at higher education level. Monitoring and tracking lecturers career path and success in higher institution is crucial to the management of the university and indirectly to lecturers themselves [6]. The lecturers who match the qualifications usually are the important staff and excellent employee of company [7], [8]. However, Assessment is a tool used to measure lecturer's performance [9]-[11].

This study aims to survey studies on personnel and lecturer's evaluation conducted by HRs or evaluators to examine lecturer's performance.

The criteria are significant to measure lecturer's capability and can determine the gaps arising from categorizing domains into classes according to application outcome of a study and intersection between domains and evaluation criteria, as well as motivation for investigation. However, studies such as lecturers evaluating students, or assessment of schools' teachers are excluded from this study. The taxonomy will survey the lecturers i.e., assistant professors, senior lecturers i.e., associate professors, and professors who work in any higher education institutions (HEI). The studies investigated are from 2008 to 2018 and are classified into (1) evaluation criteria, (2) domains and (3) applications resulted from the studies. It could benefit universities' HR and education management by improving the lecturer's performance [6], [12], investigating assessment methods [13]-[16]. The significant aim of this study are (1) classifying research studies through identifying a taxonomy. It is relevant to the lecturer's performance especially in education domain and (2) to specify the motivations to do the research, the challenges that face the researchers and the recommendations provided by the researchers.

## II. SYSTEMATIC REVIEW PROTOCOL

It includes two sections as follows.

### A. Information Sources

"Lecturer evaluation" is a significant keyword in this investigation. Three reliable sources or databases were selected for search: (1) ScienceDirect (SD) which presents science and technical articles, (2) IEEE Xplore library of engineering and technology for technical articles, and (3) Web of Science (WoS) that contains cross-disciplinary articles in the science and the social science. This procedure is to include the applications and the criteria of the education domain and views of the researchers' efforts.

### B. Search and Eligibility Criteria

Two processes have been applied in this section, (1) investigation in the literature sources, (2) screening and filtering. It is to choose the studies that are relevant to the study field. Two stages of screening and filtering (1) it eliminated duplications and not relevant articles by reading and analyzing the title and the abstract of each article; (2) it filtered articles from the first stage using a comprehensive reading of each. The studies used same eligibility criteria. Search was conducted on June 2015. Seventy-eight article is the final set number of the search. The result of full-text reading is 35 from SD, 27 from WoS and 16 articles from IEEE Xplore.

**Revised Manuscript Received on September 22, 2019.**

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Fig. 1 illustrates criteria used in filtering process. Any article that matched the mentioned criteria was included. In this study, the authors set an initial target of mapping the space of research on lecturer's evaluation into a general taxonomy. Articles were eliminated if they did not fulfil the eligibility criteria at each stage. The examples of exclusion: (1) articles are non-English; (2) elementary and high school teachers; and (3) teachers evaluate students.

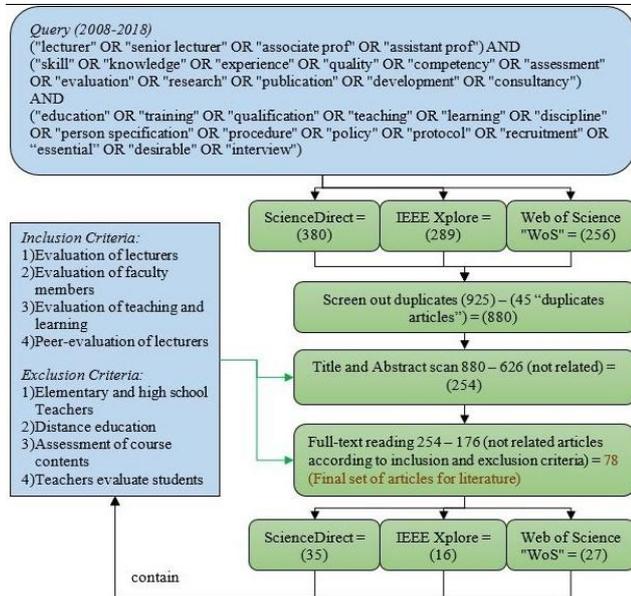


Fig. 1 Flow chart of the query with inclusion criteria presented in the current study

### III. TAXONOMY RESULTS

The search process in the three databases resulted in 925 articles, which are 380 from SD, 289 from IEEE Xplore and 256 articles from WoS. A total of 45 duplicates in the 3 databases were removed to be resulted 880 articles. Then, 626 have been deleted as a result of reading the title and abstract, that then limited to 254 articles. Eventually, the final number of articles is 78 articles. It is obtained by reading the 254 and deleting 176 articles then a comprehensive reading and analyzing was conducted to specify the major purposes of them. Only (5/78; 6.41%) are reviews that identify the evaluation criteria that are relevant to diverse domains to be discussed and described later. The largest portion of articles are research articles (73/78; 93.59%) that applied diverse studies.

#### A. Review Articles

The criteria utilized in the evaluation were categorized and grouped into diverse domains. Five of seventy-eight article are reviews of personnel evaluation. The biggest group is the Medical domain that has (3/5) articles. Two reviews carried out in surgical training highlighted criteria such as teaching and publications [17], and person specification, curriculum, and experience of surgical trainers criteria as in [18]. Some factors such as published papers, oral/poster publications, an intercalated degree and high score are used in an evaluation for getting an academic position as senior lecturer or senior clinical fellowship [19]. While, in higher education domain as in [20], [21], a review of literature on criteria used to evaluate academic personnel

and staff. In [20], various criteria such as research assistant who successfully graduate from doctorate programme, international experience, academically valid foreign language ability, and has high research and reporting capability have been used. Unlike [21], the study highlighted reviews of academic staff criteria such as highly-qualified academic, workshops teaching of engineering and experience of industry [21].

#### B. Research Articles

Over (73/78) articles, each domain has several studies that described criteria for evaluating personnel, as well as, methods and categories utilized in lecturer's evaluation are provided. According to the literature survey, domains are categorized into 5 domains which are Medical (10/73), Manufacturing (1/73), Industry and Business (4/73), Nursing (2/73), and Education domains that has (56/73) of articles. The description of studies is explained as follow:

##### 1) Medical Domain:

It is the second major numbers of studies (10/73), which includes 5 classes. First class is Residential Care Sector with (2/10) articles included. According to [22], [23], approach is a novel technique for automating process of ranking applicants' CVs by employing a fuzzy based agent approach (Fuzzy Sets) and a neuro-fuzzy based agent approach (Neural Networks), respectively. Second class that is Deaneries for Plastic Surgery that includes (1/10) article for specialist registrar positions. All Deaneries stated that candidates must fulfill all essential criteria in order to be shortlisted (determined from person specification sheet) [24]. Third class is related to Anaesthesia medical with a single article [25]. Fourth class is General Medical as in [26], [27], criteria used are such general and specific experiences, soft and basic skills, working knowledge, qualifications, training and years of management experience [27]. Third study is for medical consultant position, criteria are qualification, management and administrative experience, teaching and research experience [28]. Fourth study is for consultant post. Criteria are communication skills, team working, leadership and professionalism [29]. Last study is to assess medical professionalism using online survey [30]. Last class is Neurological Surgeons that uses academic metrics to compare productivity of researchers [31].

##### 2) Manufacturing Domain:

It has a single article including criteria used for recruitment and selection like job description specification [32].

##### 3) Industry and Business Domain:

The number of articles is four of seventy-three article. As in [33], competencies are core business skills, critical thinking, problem solving, decision management, working with others, innovation, leadership, oral and formal communication skills, performance, organizational skills, and work ethics. Second study is conducted in UK for recruitment of high-quality staff. Most important criteria of

personnel/job specification are qualification and experience, as well as, personal characteristics, competitive, negotiable salary and intelligence. There is an issue that no standard explains the procedure to measure which criteria have more importance than others to evaluate applicants [34]. There is another studies [35] and [36] conducted to determine which personnel selection methods are used in New Zealand organizations and personnel consulting firms regardless the criteria that could be used to evaluate the applicants.

#### 4) Nursing Domain:

It has (2/73) articles. First study is conducted in UK to evaluate and recruit neonatal staff nurses by using shortlisting procedures [37]. [38] is in the department of health at Edinburgh Napier University's Faculty in UK [38].

#### 5) Education Domain:

It is the major articles collected was in the Education domain (56/73), which consisted of 8 classes that are categorized based on research study design as shown in Fig. 2. First class includes studies that are qualitative [39], [40], [41]-[43]. Second class is quantitative [44]-[52]. Third class is Mix Qualitative and Quantitative research design that includes (7/56) articles [13], [53], [54]. Criteria in [55] are to rank 16 desirable qualities of lecturer by order of importance. [56] is to recognize pertinent professional development programs for improving Malaysian Polytechnic Technical Lecturers' Competency which are measured depending on significance level of knowledge, and performance. Last two studies are case studies, as in [15] and [57]. Fourth class is online that includes (5/56) articles and classified into three sub-classes: quantitative, mix qualitative and quantitative, and others [58]-[62]. Fifth class named Model with (5/56) articles. Outcomes are models or conceptual models as displayed in [1], [8], [63], [65]. Sixth class is Case-Study that includes (4/56) articles as in [11], [14], [66], [67]. Seventh class is Others that has a single study (1/56) which is a report explained in [68]. Last class is Developments that includes largest portion of articles (19/56) [3], [6], [7], [9], [10], [69]-[76]. Application of study implemented Fuzzy ELECTRE method [12]. Last study of single technique is to design AHP for evaluating and specifying adequate tools of teaching and learning [2]. Second category is Integration Techniques that includes a study provides an algorithm for precise mapping of an appropriate candidate(s) for a particular job (personnel prioritization) [77]. Last three studies of taxonomy are Fuzzy-based applications as implemented in [4], [5], [78]. Last study uses same criteria as in [12] to select five academic staff utilizing the method named fuzzy analytic hierarchy process (FAHP) [5].

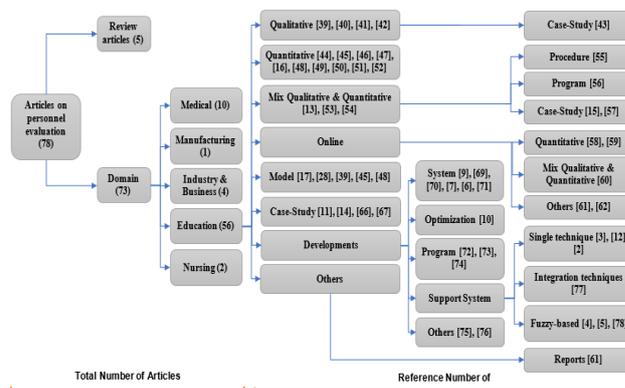


Fig. 2 A taxonomy of personnel evaluation that reviewed in the literature discussion

The objective of this review is to demonstrate updated outcomes and highlight research trends related to evaluation of lecturer's performance. The current systematic review varies from preceding reviews in terms of newness. In addition, it concentrates on the literature rather than on domains and evaluation criteria. Moreover, it suggests a taxonomy representing the related literature. The advantages of developing the literature taxonomy in a particular research field or an emerging area could be described as follow:

#### 1) The publications are organized and taxonomized.

It assists a fresh researcher to overcome enormous number of studies that can confuse him/her, hence he/she may fail to acquire an overview of the field. The studies often are reviews or test of tools. It is utilized in lecturer's evaluation using significant criteria. The taxonomy as depicted in Fig. 2, could regulate these various studies into a meaningful, consistent and manageable layout.

#### 2) The taxonomy can disclose the gaps in specific fields, highlighting the weak and strong points of research coverage.

In addition, it helps researchers to discuss emerging works with others through development papers, comparative studies and reviews on lecturer evaluation.

Therefore, based on investigating and analyzing the contents of the literature, most of lecturer's evaluation studies contain motivations behind the evaluation, challenges to the success of the evaluation and recommendations to mitigate these obstacles and issues relating to the lecturer's evaluation.

#### A. Motivations

This part provides the motivations extracted and discussed in the literature.

#### 1) Importance of Personnel and Lecturer Evaluation:

Assessing the lecturers is a pertinent to HR and whom responsible in quality assurance of the higher institutions [13]. In a college environment, lecturer's assessment implemented as a measurement of performance [1]. In addition, it performs an essential role in appraising



performance of HRs to possess a good spirit and to be loyal to institutions perfectly [78]. Assessment helps to compare academic staff cross-internationally rather than focus from single country, especially in pharmacy academia as in [61].

## 2) Motivation Regarding to Reviewing Current Methods of Evaluation:

The evaluation is significant in development the quality and its assurance in activities of faculty or university. It is implemented in developing pedagogical training of university lecturers through an internal quality system [70]. The study [64] suggested Continuing Professional Development Programmes (CPDP) to evaluate conceptions of teaching and learning for the lecturers.

## B. Challenges

Recently, benefit in lecturer evaluation has increased in spite of the field still faces problems and issues into diverse significant aspects.

### 1) Challenges on Tools and Methods of Evaluation:

This point explains problems and issues faced by researchers in utilizing tools and methods.

In [9], creating API web service data tool for lecturer assessment is an issue. Otherwise, intelligent techniques like artificial neural networks, genetic algorithms etc. are supposedly benefited in the next work [78]. When information collected on the professors' qualities, the methods should be carefully taken in account of as described in [13]. Feedback from the students is considered a problem of classification set [69].

### 2) Challenges on Evaluation Criteria:

The challenges appeared when selecting crucial parameters like knowledge duplication capability, skill, expertise loyalty and so on to be theoretically concerned in the model as conducted in study [78]. Number of publications is one of the major limitations for assessing junior lecturers as in the healthcare practice [60].

## IV. RECOMMENDATIONS

The study [78] has contributed a model to improve the HRs performance through university assessment, or higher education as in [72], or to increase the lecturers' understanding towards research [43]. Measurement of course evaluation for lecturers will make improvements on the teaching and learning methods [69]. In addition, it can be improved the teaching quality by programs of pedagogical university training [55].

## V. LIMITATIONS

In this review, identification of the database sources was difficult despite of it covers a broad group and reliable. In addition, the growing progress in this field has influenced on the timeliness of the review due to the studies at a certain duration might not cover expected impact or real usage.

## VI. CONCLUSIONS

According to appropriate case-studies used in lecturer evaluation, a lot of evaluation criteria can be adopted by various areas and domains. The contribution of this article is to survey the literature and taxonomizing it. Evaluation criteria can be drawn from Large number of studies that categorized into two different categories of studies, domains and applications. Recently, researchers has given attention to education domain including evaluation criteria such as skills and knowledge. Moreover, the studies obviously point out gaps as well as concerns and challenges of lecturer evaluation in the literature. Moreover, many researchers have recommended suggestions and recommendations to resolve existing and expected problems. It opens numerous opportunities for research to adopt new criteria and domains, therefore, for research in this trend, researchers should consider the next case. The case is a taxonomy of lecturer evaluation that based on cross-over domains and criteria which researchers adopt studies according to approaches into diverse related domains (e.g. biotechnology).

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