

# Assessment of Academic Performance: A Shared Experience From Jazan Faculty of Medicine, Saudi Arabia and a Proposal for Systematic Monitoring and Evaluation

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## Research note

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# Abstract

## Objectives

In 2016, the government of Saudi Arabia announced its ambitious transformation vision, Saudi Arabia Vision 2030, where a new Universities System was established. The new system aims to reduce bureaucracy in the academic environment and enable objective measurement of performance via the utilization of Key Performance Indicators (KPIs). One of the challenges is related to difficulties in assessing the academic performance of faculty members, especially among medical school. The responsibilities of teaching staff working at medical schools in Saudi Arabia can be diverse and difficult to measure and varying between teaching, research, clinical, and administrative activities.

## Results

In this report, we share our experience in Jazan University Faculty of Medicine (FoM) to propose a low-cost system to monitor and evaluate the academic performance. This report provides a comprehensive description of data acquisition methods, data follow, data management, and data display. The proposed system aims to evaluate the overall academic activities through the quantification of teaching, research, administrative, clinical and professional development and community service activities to enable the relevant stakeholders to monitor KPIs achievement, ensure appropriate resources utilization, data-driven decision making and planning. Additionally, the proposed system is suitable for use in relatively new academic institutions with limited resources.

## Introduction

Since the establishment of the first university in Saudi Arabia in 1957 [1], the country has witnessed an rise in the number of state and private universities. Currently, there are 29 state universities [2] and 14 private universities [3] distributed in 13 different administrative regions in the country. Some of these universities are restricted to a specific specialty or gender. Nonetheless, the majority are available for male and female students of different nationalities residing in Saudi Arabia.

Higher state education establishments are financially supported by the government and supervised by the Ministry of Education [4]. The rise in the number of universities within recent years and the establishment of colleges within different disciplines in a centralized management system can generate bureaucracy. This centralized system can generate limitations in regard to the overall development of the academic environment [5].

One of the manifestations of the centralized management system of higher education in Saudi Arabia is the production of unified "University Regulations for Saudi Personnel Including Staff Members and the Like", which was decreed by the Council for Higher Education in 1996 [6]. These regulations have 106 articles that provide a comprehensive description concerning the administrative, academic, and employment-related duties of Saudi teaching staff in all state universities. Similar regulations have been provided for non-Saudi teaching staff in Saudi state universities [7].

The regulation articles 38 and 43 detail staff member duties and how work progress reports concerning scientific and academic activities are communicated. The main duties of academic teaching staff working in Saudi universities can be summarized as teaching, research, administration, and community services [6]. However, there is a large variability in the nature of faculty member involvement in regard to research and community services. This variability can be highly influenced by the specialties of faculty members. This variability may lead to difficulties in implementing objective and consistent measurement methods of the academic performance and an overall evaluation of academic conduct at a college level.

In 2016, the government of Saudi Arabia announced its ambitious transformation vision, Saudi Arabia Vision 2030, with an overall aim of creating a diverse and sustainable economy [8]. The governance model of achieving this vision is based on multiple steps, starting with identifying national priorities, defining executable programs and initiatives, and ensuring the program's implementation and follow-up [9]. One of the programs announced was the Human Capital Development Program, which aims to improve the overall education system in the country, including the development of university teaching staff [10].

In 2019, a royal decree established the new Universities System, replacing the older regulations governing academic work in Saudi University. The new system aims to reduce bureaucracy in the academic environment and generate further independency of universities by establishing their own regulations and financing systems. Additionally, the new system involves the utilization of Key Performance Indicators (KPIs) to evaluate an overall achievement of objectives [11].

One of the challenges that might impact the ability of academic institutions to monitor and evaluate the progress in achieving the established key indicators is related to difficulties in assessing the academic performance of faculty members. Universities in Saudi Arabia have invested their financial and manpower resources in the establishment of electronic systems dedicated to monitoring and evaluating students' performance, such as Edugate and Blackboard. However, no specific system is currently available for the evaluation of the overall academic performance of teaching staff.

The responsibilities of the academic staff members working at medical schools in Saudi Arabia can be diverse and difficult to measure. Faculty of medicine teaching staff can be heavily involved in the provision of medical and surgical services in addition to other teaching and research duties. In this report, we share our experience in Jazan University Faculty of Medicine (FoM) to propose a low-cost system to monitor and evaluate the academic performance of faculty members. This report provides a comprehensive description of data follow, data acquisition methods, data management, and data display. The proposed system aims to evaluate the overall academic activities through the quantification of teaching, research, administrative, clinical and professional development and community service activities of faculty members to enable the relevant stakeholders to monitor KPIs achievement, ensure appropriate resources utilization, data-driven decision making and planning. Additionally, the proposed system is suitable for use in relatively new academic institutions, such as Jazan University, with the utilization of already available infrastructure and brief training.

## Methods

### Description of the work environment

Jazan FoM was established in 2001 as the only school of medicine in the Jazan region, southwest of Saudi Arabia, and on the northern borders of Yemen. At the time of the writing of this report, the number of registered medical students is 955 and the number of teaching staff members is 130, working within 11 different academic departments. The administrative hierarchy of FoM, which is similar to other faculties in the country, comprises a deanship, vice-deanships, and departments, where each administrative body has its own administrative responsibilities. Nonetheless, the majority of academic responsibilities are carried out at a departmental level where the dean and vice-deans are the regulating and supervising bodies.

The responsibilities of academic staff members in medical schools include the active participation of all members in teaching, research, clinical, and administrative activities. The clinical activities provided by the teaching staff of Jazan FoM vary between laboratory, preventive and curative health services. Additionally, academic staff members are required to attend activities related to Continuous Professional Developments (CPDs) and participate in scientific conferences and meetings.

### Description of collected variables

The responsibilities of the academic staff members in medical schools vary greatly. However, they can be briefly summarized, as is displayed in Table 1. The eight main domains are proposed and detailed descriptions of the activities required within each domain are given. Additionally, different levels, where activities requiring higher effort needed to be achieved are classified as higher levels, have been suggested in order to enable the weighting of each activity. Nonetheless, due to the variability of clinical and community services depending on the specialties, no level classification was made.

### Description of variables collection method and data flow

The performed activities detailed in Table 1 can be performed on and off campus. Therefore, it is the duty of each faculty member to keep a record of each performed activity in addition to providing evidence to enable verification. As a part of the

Quality Assurance System in Jazan FoM, the Faculty Academic File (FAF) has been developed as the main method for measuring the academic performance of faculty members.

The FAF has five main sections, where each section has a specific function. The first section is a detailed report of all activities listed in Table 1 and is completed by the teaching staff on an annual basis. The second section involves the provision of evidence concerning reported activities, such as a list of publications and research projects details, attendance and contribution to administrative work, committees, and certifications pertaining to activities within CPDs and conference domains, official timetables, and clinical contribution reports within healthcare facilities. The third section involves the verification of reported activities, which is performed by the Heads of Departments (HoDs). HoDs are requested to provide a score up to 100 depending on reporting completion and evidence provision. Teaching staff members who have limited reporting and limited provision of supporting evidence are given lower scores than members who have better reports. The fourth section involves reporting the score estimated via HoD back to the teaching staff to allow rebuttal or endorsement of the score or to provide an additional chance to provide further reporting and supporting evidence. The fifth and last section involves the FoM dean's final verification.

A summary of the data flow is shown in Figure 1. By the beginning of the last month of each academic year, the Teaching Staff Unit emails all teaching staff members in the college with a request to complete the FAF. Upon the completion of the verification process, the filled in FAFs are returned to the Teaching Staff Unit to perform the required data management and analysis, followed by the production of the annual academic performance report.

#### Description of data management and display

All completed FAFs are verified by the Teaching Staff Unit to ensure the accuracy of the data entered by the teaching staff. After the verification process, incorrect data are indicated and corrected before data entry. Only verified and correct data are incorporated into the data analysis. Reports of teaching staff not adhering to the FAF reporting policy are produced by the Teaching Staff Unit and communicated with the Dean of the Faculty for monitoring and decision making.

Microsoft Excel 2010 was used for data entry and analysis. The developed Excel file is labeled "Academic Performance Database" and the Teaching Staff Unit is considered its owner. All reported information within the FAFs is extracted into the Academic Performance Database, where all extracted data, apart from identification data of the teaching staff members, are entered in a numerical format to enable the performance of the required statistical descriptive analysis.

Microsoft Excel enables the performance of several statistical testing methods to summarize and compare the staffs' academic performances. To enable the performance of the statistics necessary to evaluate and monitor this performance, three main basic formulas were utilized. Firstly, totals of event in each measured domain were used either at a departmental level or according to each teaching staff. Secondly, the average of each contribution was calculated to allow comparisons between departments with variable staff numbers. Finally, ranking, either on departmental level or on faculty level, was performed to assess teaching staff activity rankings in specific domains. Nonetheless, to enable appropriate ranking, the levels described in Table 1 were incorporated into the ranking system to enable an appropriate comparison between teaching staffs depending on their effort. Additional file 1 is an example of how each activity was weighed within the research domain, where these weights can be changed, which is automatically reflected on the overall ranking [see Additional file 1].

In 2020, the total number of observations extracted from collected FAFs exceeded 5000 and were inserted into the Academic Performance Database. To enable easier navigation and a display of performance analysis, the developed database display comprises three main components. The first component is a main sheet with all the entered data of the entire teaching staff. This main sheet additionally serves as a source of data with all formulas applied. The second component is an interface sheet designed to facilitate navigation between different generated sheets using the hyperlink function [see Additional file 2]. The third and final component consists of several sheets generated according to all icons displayed in the main interface, where every icon is hyperlinked to a sheet presenting specific information.

To enable an easier display and sorting of data, several display methods have been utilized via the available Excel functions. As displayed in Figure 2, Pivot tables and charts were used to provide numerical and visual representations of data. The Pivot table summarizing the number of teaching staff members with ongoing research activities is used to enable the assessment of variation between departments. In addition to numerical summary, the charts provide an easier visualization of faculty member characteristics, such as age, nationality, gender, departments, and academic titles. Finally, adding slicer icons enables easier comparisons between departments according to the measured teaching staff characteristics.

## Limitations

The proposed academic performance monitoring, though conveniently administered via the widely available Microsoft Excel, requires substantial and continuous administrative work and data collection. FAF is currently designed in the Microsoft Word format to enable easy form completion and the addition of requested documents. However, more effort should be invested onto converting the document into an online and secure low-cost method in order to enable easier completion of the file. Finally, this proposed system, though able to provide fair judgment of the quality of certain domains, is currently lacking the ability to incorporate variables related to the quality of teaching, as well as the quality of clinical and community services.

## Abbreviations

CPD: Continuous Professional Development, FAF: Faculty Academic File, FoM: Faculty of Medicine, HoD: Head of Department, KPI: Key Performance Indicators.

## Declarations

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Ethical approval and informed consent: Not applicable.

Consent for publication: Not applicable.

Competing Interests: None

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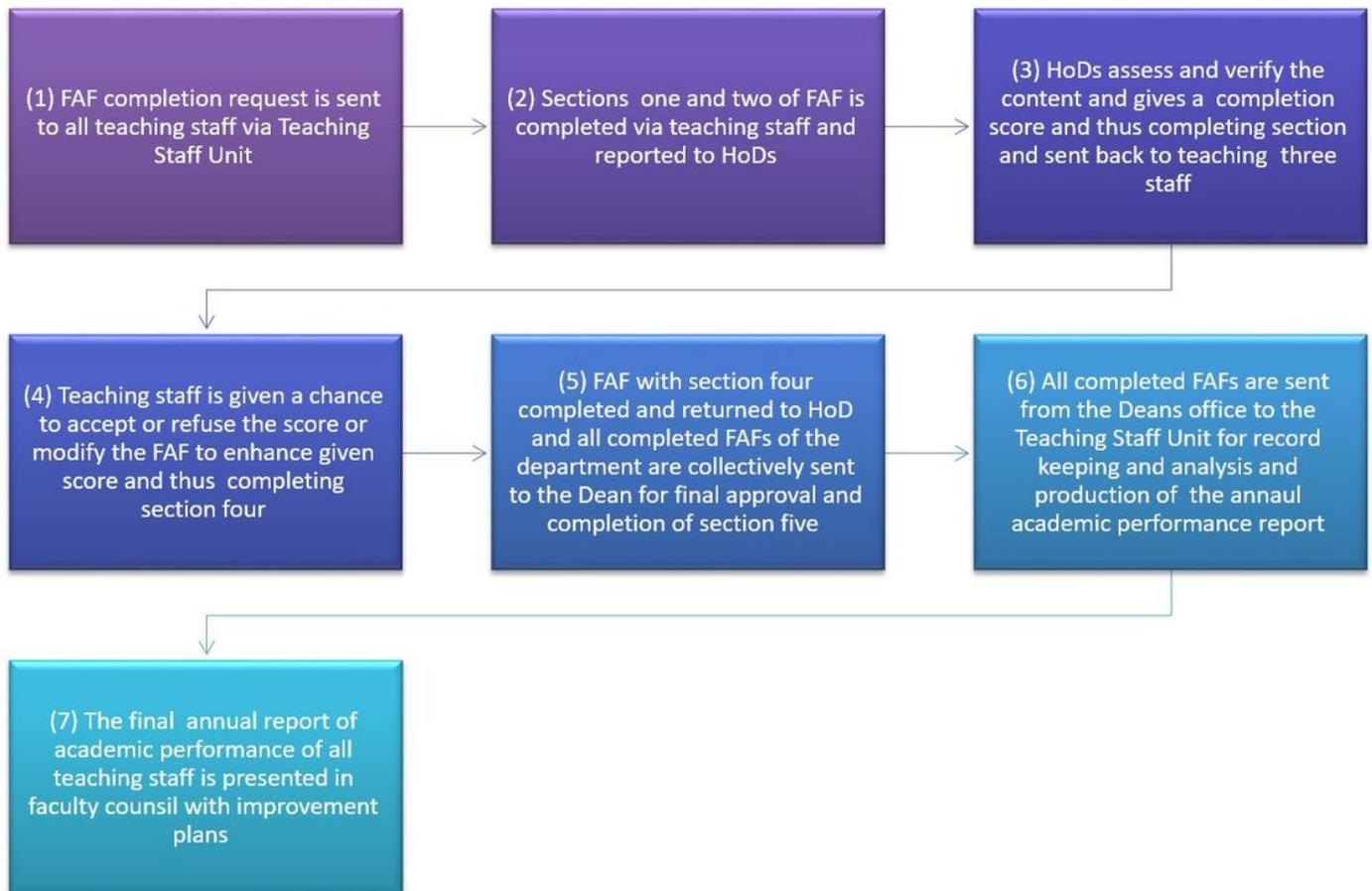
## Tables

**Table 1: Summary of academic responsibilities in Faculties of Medicine, Saudi Arabia:**

Domain	List of activities and classification levels	Description
Administrative	<p>Level 1: University administrative post.</p> <p>Level 2: Dean/Vice Dean/Department Health.</p> <p>Level 3: Units/Committees Head.</p> <p>Level 4: Membership of councils and committees.</p>	<p>Total number of posts/memberships on an annual basis within each level. Categorization within levels is justified by the variability of responsibilities, as higher positions have a higher number of tasks.</p>
Teaching and counseling	<p>Level 1: Lectures/Clinical Bedside Teaching sessions.</p> <p>Level 2: Practical/tutorials/seminars.</p> <p>Level 3: Student academic/vocational counseling sessions.</p> <p>Level 4: Course design, development and reporting.</p>	<p>Total number of activities performed on annual basis.</p> <p>Categorization is based to how teaching the load is estimated according to the regulations. For example, a one-hour lecture is equivalent to a two-hour practical session.</p>
Clinical Services	<p>Ward rounds.</p> <p>Clinics.</p> <p>On call duties.</p> <p>Surgical operations.</p> <p>Laboratory duties.</p> <p>Field visits.</p>	<p>Total number of hours spent performing specific activities on a yearly basis.</p> <p>No categorization is made here, as the clinical load of each type is presumed to be equal.</p>
Publications	<p>Level 1: Publication as a single/first author (ISI journals).</p> <p>Level 2: Publication as single/first author (books and chapters).</p> <p>Level 3: Publication as co-author (ISI journals/books).</p> <p>Level 4: Publications in Non-ISI journals (regardless to authorship order).</p> <p>Level 5: Number of yearly citations.</p>	<p>Total number of publications on a yearly basis.</p> <p>Categorization is made based on the involvement of the teaching staff and according to role and type of publication and impact.</p>
Research	<p>Level 1: Securing financial funding/grants for conducted research.</p> <p>Level 2: Being a principal investigator.</p> <p>Level 3: Being a supervisor of student research.</p> <p>Level 4: Being a co-investigator.</p>	<p>Total number of performed research projects on a yearly basis.</p> <p>Categorization is made depending on the degree of involvement and the ability to secure funding for the performed research activities.</p>
Conferences	<p>Level 1: Oral presentation/being a key-note speaker.</p>	<p>Total number of activities on a yearly basis.</p>

	<p>Level 2: Poster presentations.</p> <p>Level three: Conference organization and facilitation.</p> <p>Level 4: Attendance.</p>	<p>Categorization is made based on the assumption of the effort needed to perform a task within each level.</p>
CPDs	<p>Level 1: Being a speaker.</p> <p>Level 2: Being an organizer.</p> <p>Level 3: Being an attendant.</p>	<p>Total number of activities on a yearly basis.</p> <p>Categorization is made based on the assumption of effort needed to perform a task within each level.</p>
Community service	<p>Administrative post/committee memberships of bodies outside the university (e.g., Ministry of Health).</p> <p>Clinical charity services.</p> <p>Public health campaigns.</p>	<p>Total number of activities on yearly basis.</p>

## Figures



**Figure 1**

A summary of the data flow concerning assessment of academic performance of teaching staff at Jazan FoM.

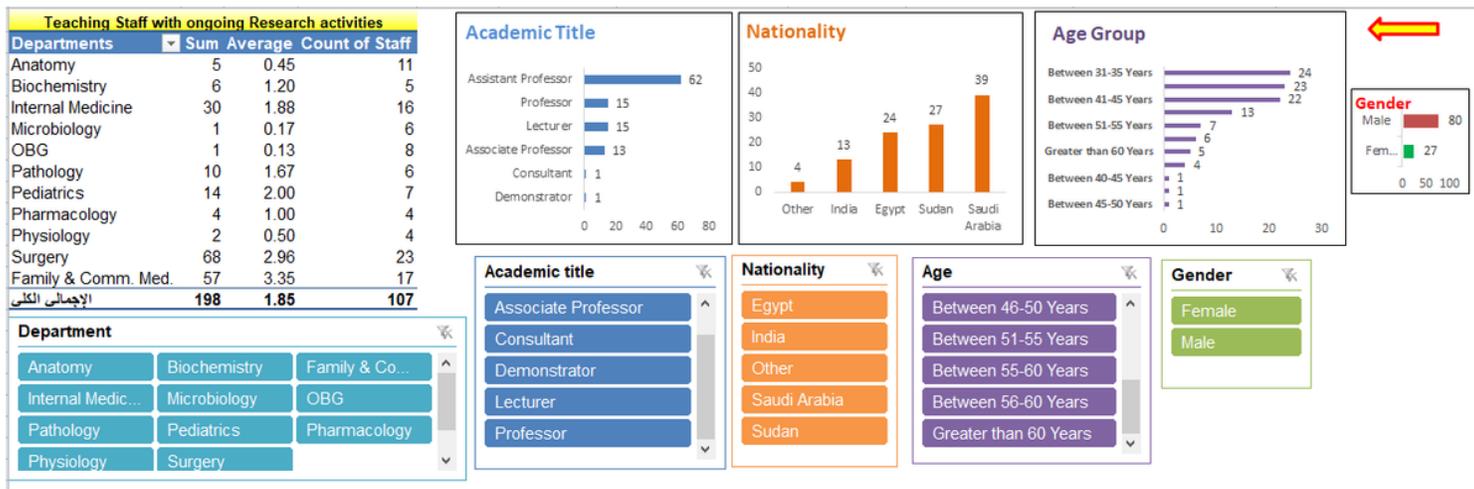


Figure 2

Example of Pivot tables and charts used to provide numerical and visual representations of data.

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [AdditionalFile1.docx](#)
- [AdditionalFile2.png](#)