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Original Research

Dimensions of Academic Performance in the Context of Nepali Higher Education Institutions

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Abstract

Academic performance is the driving force of academic institutions to carry out innovative ideas. This research aims to identify how the faculty members are practising their knowledge of academic activities to enhance academic discourses in their academic life. The academic discourses are determined by the academic activities of the faculty and these enhance the capabilities of both faculty members and students. In this regard, applying knowledge creation theory, the study explored the dimensions of academic activities practised by the faculty members in higher educational institutions. Adopting a survey method, the data was collected from 445 faculty members from four universities of Nepal. To identify the key dimensions of academic performance, factor analysis was used. The analysis identified four dimensions of academic performance as research and publication, innovation, interactive learning, and capacity building. The study claims that research and publication are less prioritized in Nepali academia while capacity building is identified as a new priority area in the context of university.

Keywords: *Academic Performance, Faculty Member, Higher Education, Innovation, Research,*

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Introduction

The academic institution plays a vital role to enhance intellectual capital of an individual. Furthermore, the intellectual capital of an individual supports in increasing the knowledge economy of a country. Davenport and Prusak (1998) highlighted knowledge as a dynamic perception, beliefs, and thought regarding situational information from expert perspective. It provides an integrated framework that helps to design for assessing, managing and incorporating information of an institution. The researcher emphasizes that knowledge is generated from the minds of individuals and is incorporated in the works they belong to. It often gets embedded in organizations in the form of documents or repositories and manages organizational practices, standards, routines, and processes. The 21st century world demands novel changes in research, teaching, and learning methodologies in higher educational institutions.

The society of 21st century is marked by rapid changes. Mostly the society demands novel changes on the educational pedagogy of the university where they are known as a human production industry (Stephens et al., 2008). The university's vision, mission and goal determined the position of university in the society, which depends on the rigorous academic activities and discourses conducted by faculty members. Therefore, focus on academic activities and discourses within classroom by faculty members determine performances. In this regard, the faculty members' engagement in different academic activities can prepare them to make universities more competitive in teaching, learning, research, and service. The reflections of academic discourses further help students to be more creative and critical in their subject matters.

The organizational structure and academic environment including leadership and cultural aspects of academic institutions play a vital role to enhance the faculty members' capability in both teaching and learning and research activities. Looney (2009) highlighted teacher efficacy as a critical construct in the process of teaching and research in an academic institution. The teaching and learning are the main academic activities of the academic institutions. In this regard, Donohoo (2016) highlighted collective-efficacy of both students and faculty members as vital to receive attention in educational setting to make faculty members more competitive through research. Hence, faculty members' beliefs can affect the motivation, ability, and perception in confronting the existing problems and challenges of academic institutions to achieve

the academic goals and objectives. The academic role of the faculty member in higher educational institutions varies by their process of conducting academic activities and academic discourses. This shows that the role of the faculty members in school level focuses more on teaching while higher educational institutions focus on the mentorship and involving the students to the research activities. Thus, the working environment, including the sharing culture and the leadership of the academic institutions plays a vital role to enhance the academic activities and discourses of the faculty members in the higher educational context. Academic institutions, particularly higher educational institutions like the universities and colleges are seen as centre of knowledge production, where diverse academic activities are carried out for the generation, diffusion, application, and preservation of individual and institutional knowledge. Faculty members, students, and researchers are integral parts of the academic institutions to enhance the academic activities and discourses. Asif et al. (2017) explained teaching and research as academic performance in universities. The faculty members, often called “guru or teacher” are the social change agent of the society. To change the society how they are practicing their knowledge of academic activities to strengthen their capabilities is important. In this context, this study examined how the faculty members are practicing academic activities to enhance academic discourse in higher educational context. Hence, universities in the world have become devoted to promoting academic activities and discourses which influence universities’ ranking and student recruitment.

Literature Review

I believe that academic performance (AP) is a key function of higher education institutions (HEIs). The universities are the places designated to conduct academic activities such as teaching, learning, conducting of academic activities, workshops, and seminars along with publication of research findings. According to Steinberger (1993), academic performance is a multidimensional concept related to the human growth and cognitive, emotional, social, and physical development. The academic performance is used to enhance the capacity of the individuals in HEIs. Fairweather (2002) and Asif et al. (2017) explained academic performance as activities like teaching and research. They focused on the academic performance of the faculty members as their teaching inside classrooms and conducting research outside the classrooms. After teaching, the

next job would be to conduct research activities, which help to generate new concepts and enhance the capacity of both the students and faculty members.

The main objective of the academic output is to prepare the faculty members and their students for the research activities. Besides, another objective is to prepare them for delivering the ideas and concepts of research inside classroom along with developing new concepts. The University Grants Commission/India (2010) has identified the academic performance indicator (API) into three categories as (1) teaching, learning and evaluation related activities, (2) co-curricular, extension and professional development related activities, and (3) research and academic contributions. Their framework highlights both activities of lecturing in classrooms and conducting research activities outside the classrooms.

The knowledge is the information stored in our mind. The information is either transferred to others or cannot be transferred. The element of knowledge can be categorized to explicit and tacit by its characteristics and nature (Chen et al., 2011; Ipe, 2003). The knowledge sharing attributes of individual matters a lot in the organization (Ipe, 2003). The scholars further explained that tacit is the knowledge which is based on the concept and ideas of know-how and created through experiences of individuals. Whereas explicit is the know-what related with day to day task and job. Hence, the tacit knowledge explains the subjective phenomenon and explicit knowledge refers to the objective nature of knowledge of individual. Initially, the concepts of the tacit and explicit knowledge were derived from the concept and ideas of the theory of Polanyi (1966) and theory of knowledge creation (Nonaka & Takeuchi, 1995). Later, the perspectives of knowledge are carried in both business and academic world.

In the line of McDermott and O'Dell (2001), the organizational culture assists employees in sharing ideas, concepts, and insights among peers and coworkers. The knowledge sharing culture in organization is directly associated with leadership support and commitment. Likewise, Lin (2007) highlighted that the extrinsic and intrinsic motivation of the individual matters in knowledge sharing process in an institution. So, the influence of leadership has remarkable role in knowledge sharing processes in any institutions (Lee et al., 2010). It further enhances the learning and mentorship capabilities of the employee of institutions.

The organizational strategy determines the expected performance of any institutions (Cadez & Guilding, 2008). The strategic objectives are measured on the basis of performance (Rejc & Zaman, 2012) of an institution. In the academic context, the overall performance needs to align with teaching, learning, and research activities. Also, it can be categorized as teaching and research performance (Ter Bogt & Scapens, 2012). To be more competitive for an academic institution, research is highly valued than teaching (Newman, 2008, as cited in Cadez et al., 2017). The research, however, needs to be impactful (Parker, 2012). Gomez-Mejia and Balkin (1992) found that the number of publications in indexed journals was the key determinant of faculty recruitment and pay. The research activities of the faculty member carry out the root cause of any issue in the society, and therefore, the publication of research is widely accepted model of academic performance. Publishing in low impact journals, however, reduces the academic excellences of the researcher (Harvey et al., 2010). Hence, the teacher's effectiveness in higher educational institutions can be measured through the quality information inside classroom, students' placement, and position of the employment of graduation.

Teaching performance of a faculty member is related to the classroom activities including information inside classroom along with grades of the students, number of degrees awarded graduates, and their job position (Ter Bogt & Scapens, 2012). This performance of the faculty members is measured only at the organizational level. Therefore, the quality of education offered by individual teachers inside the classroom during teaching and interaction is dependent upon the implementation of those measures in organizational level. Similarly, student perspectives and expectations also play an important role in determining their teaching quality (Bedggood & Donovan 2012) in an academic setting.

The researchers have emphasized the value of quality of research impact and the number of papers published in high-quality index journals (Harvey et al., 2010; Sangster, 2011) to measure the performance of the academic staff in university. Other researchers (Bedggood & Donovan, 2012; Liu, 2012; Marsh & Hattie, 2002) focused on teaching quality/effectiveness, and student assessments as indicative to performance of the faculty members in academic world. We can say that the core business of a university is to teach and conduct research activities. In this regard, Schimank and Winnes (2000) explained the models of teaching and research in university as (i) pre-

Humboldtian model, which particularly focuses on teaching and research and which demands the separate institutions to conduct different activities, (ii) the integration of research and teaching in academic institution at the same time, and (iii) post-Humboldtian pattern differentiation for teaching and research. Henningsen (2006) explained that “research is carried out separately from teaching and mentioned as scientific inquiry of a researcher” (p. 404). Also, for Henningsen (2006), “The blending of teaching and research was declared as an important thought of scientific education” (p. 98). Hence, teaching, learning, research, and publication are kept as major academic activities and discourses of the faculty members in higher educational institutions. The study Chang and Chiu (2008) divided university professors’ research performance into several indexes: research project, journal article publication, book and book chapter publication, conference paper, patent acquired via research results, and academic award. Likewise, Yang (2017) highlighted that research funding, organizational climate, hardware and facilities, human resources, and library and journal resources influence the academic activities in universities.

The past studies highlighted the different aspects of the academic performance. Most of the researchers highlighted the overall academic performance of the higher educational institutions. None of the researcher(s) highlighted the key activities and academic discourses of the faculty members in academia in enabling intellectual capital of both individual and institutions. The faculty members are the social change agent of the society. In this context, to change the society how they are practicing their knowledge of academic activities to strengthen their capabilities highly matters. Hence, this research was carried out to foster the key competencies of faculty members to accelerate the academic activities and practices to their academic life.

Methodology

The survey method was used as a methodology to conduct this research. The tool was developed through the Delphi method. The Delphi method is a popular process to achieve consensus on the important issues or complex social problems with the help of subject experts and practitioners in the particular field (Linstone & Turoff, 2002). The Delphi process carried out the local knowledge, norms, and values on the social context (Paudel, 2019). The data was collected from 445 teaching staff employed at four universities of Nepal. The reliability and validity of a tool was tested before collecting

the data. Many statistical tools are available to measure reliability and internal consistency of the data. The Cronbach's alpha coefficient was used to check the consistency of the instrument. "For an instrument to be used, its internal reliability coefficient- Cronbach's alpha (α) must be at least 0.7" (Santos, 1999), since all of the dimensions of knowledge management have the value greater than 0.7 and satisfy this condition. To ensure validity, the study followed Creswell (2008) and observed whether the questionnaire measures what it intends to measure or not. Among many types of validity, construct, content, and criterion validity are three principal validities that the study considered (Babbie, 2001; Cohen et al., 2018; Huck, 2012). Before data collection, the tools validation process was tested. The factor analysis was used to identify the dimensions of academic performance.

Exploring Factors

The factor or dimension is used to group the similar variables to provide the meaning and justify the factors. Factor analysis is a multivariate statistical technique, which is used for the resolution of a set of a large number of variables in terms of relatively few hypothetical variables, called factors (Rummel, 2007; Shenoy & Madan, 1994). Such analysis is also used to find ways of condensing information which is contained in a number of original values into only a few dimensions. Factor analysis attempts to explain the correlations among the variables by yielding only a small number of underlying factors, which contain all the essential information about the linear interrelationships among the variables concerned. According to Shenoy and Madan (1994), factor analysis results serve three main purposes, (1) to identify the underlying, or latent, factors which determine the relationship between observed variables; (2) to clarify the relationship between the variables; and (3) to provide a classification scheme, in terms of which data scores on various rating scales are grouped together.

As the current study combined two scales previously used for different populations in a different setting, it required a determination of psychometric properties by means of factor analysis. Lewis-Beck (1994) stated that factor analysis takes the form either in exploratory factor analysis, or of confirmatory factor analysis. After satisfying all the conditions of the factor analysis, the researcher identified the different dimensions of knowledge management and academic performance. According to Field (2005); Foster

et al. (2006); Field (2009); Yong and Pearce (2013), the conditions are: (a) Data type: Interval Scale, five or more point Likert scale, (b) sample size >100 , (c) correlation of items > 0.3 , (d) retention of item loading values ≥ 0.3 , (e) eigen value > 1 , (f) retaining factors; at least 3 items in per dimension, (g) Kaiser-Meyer-Sampling Adequacy > 0.5 , (h) average of extraction of communalities > 0.5 . The output of the factor loading is presented in Annex.

Based on the final rotation, the factors of academic performance are named as research and publication, innovation, interactive learning, and capacity building. The factors with the key variables are presented in the Table 1.

Table 1*Factor of Academic Performance*

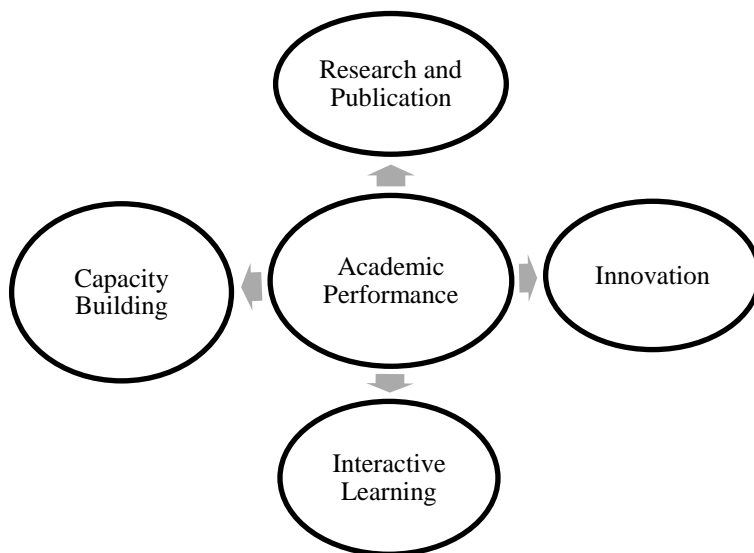
Factors	Items Name	Factor Loading			
		1	2	3	4
Research and Publication	Involvement in Research	0.879			
	Bringing Research Insights to Classroom	0.875			
	Mentoring through Technology	0.600			
	Conversion of Theory into Practice	0.530			
	Number of Publications	0.515			
	Interaction with Students	0.433			
Innovation	Quality Information Inside Classroom		0.844		
	Classroom Environment		0.783		
	Case-based Learning		0.702		
	Focuses on Activities		0.430		
Interactive Learning	Preparation of Lesson Plan of Semester			0.790	
	Preparation of Lesson Plan of Topics			0.755	
	Use of e-Portal During Class			0.613	
Capacity Building	Generation of New Knowledge				0.715
	Involvement of Students in Research				0.700
	Technology in Classrooms				0.673

Dimensions of Academic Performance

The factor loading loads the final factors of academic performance as shown in table 4 in the Annex. After loading, the naming process was done. The name for the dimensions of academic performance was given based on the key word indicated by the items/variables from belonging factor. It is presented in the figure 1.

Figure 1

Dimensions of Academic Performance



The first factor of the academic performance is research and publication within higher educational institutions of Nepal. There are six items under this factor. The first item of this factor is research activity which is used to enhance problem-solving capacity. These days, research is the most integral part of the university which helps to accelerate the capability of academic excellence in day to day life problems. The second item emphasizes the new knowledge which is carried out to the classroom through research activity. The third variable of this factor is concerned with modern technology which is being used to assist research activity. The fourth item of this factor is the conversion of theoretical concept into practice through research activity. The fifth item of this factor is a number of publications, which measures the key integral components of the academicians in the university. The sixth item of this factor

incorporates the dissemination of knowledge, ideas and concepts of the society. It is assumed that modern society is informed by publication and dissemination of knowledge by the academicians, which plays a vital role to change the society and enhance social awareness on different types of social issues.

The second factor of academic performance is innovation. This factor includes four items related to the innovation in the higher educational context. The first item of this factor is concerned with need based contextual information inside the classroom. The faculty member can transfer the worthy information inside the classroom only after having a deep search within the context or subject matter. The second item of this factor is concerned with the classroom environment. It mainly focuses on student-centric, technology friendly, etc. that helps the students to learn easily. The third item of this factor is concerned with case-based learning rather than lecturing method. The fourth item of this factor emphasizes the theoretical knowledge into practical one by developing activities and simulators.

The third factor of the academic performance is interactive learning, which is the most important activity of the university. There are three items under this factor. The first item of this factor focuses on lesson plan commencement by the faculty members before starting new sessions/semesters. The second item of this factor focuses on developing and designing of the activities of the different classes. The third item of this factor concerns with the usage of e-portal and technology which helps to be familiar with international trends of teaching and learning methodology.

The fourth factor of the academic performance is capacity building which is the primary objective of the educational institutions. The organizational leadership matters to enhance the capacity of the faculty member in higher educational context. There are three items under this factor. The first item of this factor is concerned with research activity that is used to enhance the capacity of an individual. The second item of this factor focuses on the involvement of students into research activity that directly helps to accelerate the capacity of students. The third item of this factor emphasizes classroom having technology that directly helps to enhance the capacity of both faculty members and students in the higher educational context. The organizational context and culture are increasing the knowledge sharing, mentoring, and disseminating process in higher educational institutions. In the same way, the organizational leadership matters to

manage required technological infrastructure to make both faculty members and students technology friendly.

Finding and Discussion

This study analysed four predictors of academic performance as research and publication, innovation, interactive learning, and capacity building. According to Steinberger (1993), academic performance is a multidimensional concept related to human growth and cognitive, emotional, social, and physical development. The academic performance is used to enhance the capacity of individuals. Fairweather (2002), Marsh and Hattie (2002), and Asif et al. (2017) explained academic performance as teaching and research. They focused on the academic performance of faculty member as teaching activities inside the classroom and conduction of research outside the classroom. After the commencement of teaching, it helps to conduct the research activities that would help to generate new concepts and enhance the capacity of both students and faculty members.

The framework developed by the UGC/India (2010) highlighted both lecturing in classroom and conduction of research activities outside the classroom as equally important. The main objective of academic output is to prepare both the faculty members and the students to the research activities. Besides, these deliver the ideas and concepts of research inside classroom and development of new concept. These days, the innovation helps to develop new knowledge and it enhances the capacity of individual in the context of educational institutions.

Hilman and Abubakar (2017) mentioned academic performance as student related academic achievement and non-student related academic achievement. Student related academic attainment contains student's academic status, classes of degree, and graduation rates as indicators for assessing university performance (Hilman & Abubakar, 2017). Non-student is related academic achievement that consists of having competitive positions, innovation, organizational agility, sustainability, and market share (Hilman & Abubakar, 2017). The major objectives of the university are to teach, make active participation of the learners along with faculty members to the research activities, produce new knowledge which is required to the society and nation, and enhance the individual and organizational capacity. In some context, the previous finding is totally different than the current study. Hazelkorn (2015), for example, stated

that most of higher education institutions used peer review and accreditation as their performance assessment. Hazelkorn (2015) focused only on the research rather than other activities in the institutions. Likewise, Pinilla and Munoz (2005) focused on graduation rate as a variable for assessing university performance. In my opinion, only the graduation rate of the university cannot measure the academic performance of the academic institutions.

The academic institutions of the 21st century strive for innovations and production of new knowledge. The most common model of the higher education system 'Humboldt' and 'Neoliberalism' are in practice (Reiners, 2014). There is ample evidence that research is valued more highly than teaching (Cadez et al., 2017). This model further emphasizes the new way of practicing academic activities in academia, which impacts to identify the dimensions of academic performance. The organizational culture, leadership of educational institutions, adaptation of technology, sharing culture of individual are different at other universities. In this context, the overall academic performance is determined by teaching, learning, research, publication, generation of new knowledge, and capability of solving problems. The way of practising academic activities differently, such as usage of simulators, case base learning, technological integration in classroom, and organizational leadership, matters in establishing the different dimensions of academic performance in the context of Nepali higher educational institutions.

Conclusion

The organizational leadership, culture, environment, distinct academic culture, notion of knowledge creation activities and readiness to accept and adopt technology in academic institutions are dimensions of academic performance. The practice behaviour identifies four dimensions of academic performance, i.e. research and publications, innovation, interactive learning, and capacity building. The practices of different academic activities by the faculty members determine the dimensions of academic performance in the Nepali higher educational context. Involvement in different academic activities such as carrying out research, presenting papers in conferences, organizing workshops and seminars, publishing research papers in national and international indexed journals, and using interactive methods in classrooms makes faculty members innovative. Innovative ideas and concepts have their importance to

generate new knowledge. It is crucial to solve problems of academic institutions and society. Universities can identify their strengths and prioritize their area of research along with appropriate process to increase academic excellence of the faculty members. Enhancing academic excellence of the faculty members leads to high academic performance of graduates, thereby creating a better economic status of the society and the nation as well.

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Annex**Table 1***Output of KMO*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.790
Bartlett's Test of Sphericity	Approx. Chi-Square	8467.198
	Df	253
	Sig.	0.000

Table 2*Output of Communalities*

Communalities			
Items	Description of Items	Initial	Extraction
AP_1	I prepare lesson plans for each Semester/Year before the commencement of academic calendar.	1.000	0.568
AP_2	I prepare my lessons before entering the classroom.	1.000	0.525
AP_3	I encourage students to use different e-portals to familiarize them with global trends of teaching and learning.	1.000	0.478
AP_4	During the class time I manage interaction sessions among students.	1.000	0.411
AP_5	I use different types of information technology to make my lessons effective.	1.000	0.500
AP_6	I convert theoretical knowledge into the practical by designing activities.	1.000	0.504
AP_7	All my publications are based on my research studies.	1.000	0.547
AP_8	The classroom environment plays a vital role in sharing knowledge among learners.	1.000	0.656
AP_9	I maintain quality information inside the classroom.	1.000	0.740
AP_10	I frequently use case-based learning method rather than lecturing.	1.000	0.631
AP_11	Market research is essential before developing the courses for students.	1.000	0.267
AP_12	Modern technology helps to mentor students easily.	1.000	0.574
AP_13	Interaction in the classroom helps me disseminate	1.000	0.563

	knowledge and ideas easily.		
AP_14	Classroom without technology cannot make active participation of learners.	1.000	0.594
AP_15	Research helps me to generate new knowledge.	1.000	0.605
AP_16	I convert theoretical knowledge into practical through research.	1.000	0.540
AP_17	I involve my students in my research activities.	1.000	0.507
AP_18	I am involved in industry-based research.	1.000	0.937
AP_19	Involving in research activities helps me increase my problem-solving capacity.	1.000	0.829
AP_20	My classroom activities are student centric.	1.000	0.975
AP_21	Number of publications matters much for the academic excellence of an academician.	1.000	0.936
AP_22	Through research I generate knowledge, bring that knowledge to classroom.	1.000	0.819
AP_23	I transfer knowledge to the community by publishing articles in the journals and newspapers.	1.000	0.972
Total Extraction			14.697
Average Extraction			0.638
Extraction Method: Principal Component Analysis.			

Table 3*Output of Total Variance Explained*

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.642	28.878	28.878	6.642	28.878	28.878	3.077	13.379	13.379
2	2.387	10.379	39.257	2.387	10.379	39.257	2.762	12.011	25.390
3	1.860	8.089	47.346	1.860	8.089	47.346	2.536	11.027	36.417

4	1.360	5.913	53.259	1.360	5.913	53.259	2.165	9.413	45.830
5	1.247	5.421	58.680	1.247	5.421	58.680	2.158	9.384	55.215
6	1.182	5.140	63.820	1.182	5.140	63.820	1.979	8.606	63.820
7	0.982	4.272	68.092						
8	0.890	3.871	71.963						
9	0.848	3.685	75.648						
10	0.741	3.220	78.868						
11	0.669	2.911	81.778						
12	0.638	2.773	84.552						
13	0.601	2.612	87.163						
14	0.562	2.445	89.609						
15	0.519	2.255	91.863						
16	0.432	1.880	93.744						
17	0.423	1.840	95.583						
18	0.374	1.628	97.211						
19	0.332	1.442	98.653						
20	0.288	1.254	99.907						
21	0.012	0.052	99.958						
22	0.007	0.029	99.988						
23	0.003	0.012	100.000						
Extraction Method: Principal Component Analysis.									

Table 4
Final Factor of AP Loaded by Factor Analysis

Rotated Component Matrix ^a					
		1	2	3	4
AP_19	Involving in research activities helps me increase my problem-solving capacity.	0.879			
AP_22	Through research I generate knowledge, bring that knowledge to classroom.	0.875			
AP_12	Modern technology helps to mentor students easily.	0.600			
AP_16	I convert theoretical knowledge into practical through research.	0.530			

AP_21	Number of publications matters much for the academic excellence of an academician.	0.515			
AP_13	Interaction in the classroom helps me disseminate knowledge and ideas easily.	0.433			
AP_9	I maintain quality information inside the classroom.		0.844		
AP_8	The classroom environment plays a vital role in sharing knowledge among learners.		0.783		
AP_10	I frequently use case-based learning method rather than lecturing.		0.702		
AP_6	I convert theoretical knowledge into the practical by designing activities.		0.430		
AP_1	I prepare lesson plans for each Semester/Year before the commencement of academic calendar.			0.790	
AP_2	I prepare my lessons before entering the classroom.			0.755	
AP_3	I encourage students to use different e-portals to familiarize them with global trends of teaching and learning.			0.613	
AP_15	Research helps me to generate new knowledge.				0.715
AP_17	I involve my students in my research activities.				0.700
AP_14	Classroom without technology cannot make active participation of learners.				0.673
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. ^A					
a. Rotation converged in 5 iterations.					

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