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Higher Education Faculty: A Study on Demographics, Pedagogy and Self-Efficacy

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ABSTRACT

Pedagogy is the art and science of teaching, it's a collection of both knowledge as well as skill which is required for teaching effectively. Teacher is an active agent in this changing society, the pedagogy too needs to change in order to meet the demands and expectation of the students and society. Successful learning is possible only with efforts of teachers and students. Faculty demographics includes years of teaching experience, department, gender, full time and part time status and education level. Efficacy is the capacity of producing a desired result or effect. Faculty efficacy can be measured by how well they can engage students, which can be done by motivating students with low interest, fostering student's creativity, and gauge students capacity to comprehend, craft good questions for students and provide appropriate challenges according to student's capacity. There is no single teaching strategy which matches with all the situations, for different groups of students different combination of strategies has to be used to increase the learning outcome, which a teacher learns only through experience. Faculty demographic factors bring about change in pedagogy and efficacy.

Design/methodology/approach - The Study was undertaken as an empirical frame work to study the role of demographics in influencing the pedagogy and efficacy of the faculty. In this context, a factor analysis was done to identify the pedagogical factors and then each of the identified pedagogical factors were tested for their association with each of the demographical factors such as age, gender, experience, course taught, marital status etc.

The main **study objectives** were to comprehend & analyze the demographic variables that influence the pedagogy and efficacy of the faculty members and to identify the pedagogical factors via factor analysis. The study also aimed on examining the efficacy of faculty's teaching approach in association with their age, teaching experience, educational level and other demographic variables.

A structured questionnaire would be developed and a survey among under-graduate and post graduate faculty would be conducted and further the responses so obtained would be tabulated and statistically analyzed using SPSS and the hypothesis formulated would be empirically tested.

KEYWORDS: pedagogy, efficacy, demography

INTRODUCTION

Teachers no more have to just perform traditional function of imparting information, as they are the active agent in changing society. Teachers should not only be open to change as they are the vehicle of change, so they play the role of mentor and organizer in the learning process. The demographics of faculty such as the education level, years of experience, gender, and age have influence on his/ her ability to reflect, explore and question their work. A successful teacher needs to have professional competencies

as well as professional characteristics. Professional characteristics will include professional values and development whereas professional competencies include knowledge, understanding and skills. The outcome of the whole teaching process depends on the ability to plan the content, method, how to lead class, marking, and evaluation process with the teaching technique together makes the teaching techniques.

Students will have a surface learning approach when the teachers focus only in transmitting knowledge but if the teaching is more student centered, the students will have deeper understanding of the subject and will be willing to adopt a deep approach towards learning. It is observed that those faculties having teacher centric approach usually adopt hard disciplinary measures than those faculties who are more student centric approach.

A teacher's awareness of his/her own approach of teaching is very important in improving teaching techniques, teaching approaches and self-efficacy beliefs change very slowly. Teachers with high efficacy beliefs use a wide variety of productive and innovative teaching techniques whereas those with low self-efficacy tend to go less for any new pedagogical methods. Teachers who are trained and have good teaching experience will not only be more student centered but will also change their beliefs about themselves as teachers.

REVIEW OF LITERATURE

There have been few studies conducted to understand the teaching pedagogies among post-graduate faculty members in order to study the association between the pedagogical practices and the educational qualification of the faculty members. Most of the studies have found that the chalk and talk pedagogy continued to dominate teaching and faculty upgradation has become easy due to technological advancements (Uthra, 2014). Studies have also looked at teachers' attitudes towards their profession at various levels; overall, teachers are generally positive about what they do for a living, but among the levels of education studied, secondary school teachers rated themselves as having the best outlook. Additionally, compared to instructors at lower levels, those at upper secondary schools had a more consistent and trustworthy demeanour (Trivedi, 2012). Another study by Lavrič (2006) focused on the teacher's reflection on their attitude towards students. The study focused on finding out the association between the faculty members' educational styles and is influence on their attitude towards students. It was found that there is a strong correlation between the faculty members' educational style and their attitude towards students. However, it was also indicated that there are other factors which are significant in building good quality relationship between the students and the faculty members in the pedagogical process.

According to Antinio, Silveria, and Belando (2015), there have been studies that have attempted to evaluate university faculty members' teaching competencies. The findings indicate that faculty members' attitudes towards the teaching profession significantly impact their competencies as faculty members in higher education and university settings. Research on the effects of training on pedagogy in higher education by Postareff, Lindblom, and Nevgi (2007) indicated that faculty members' self-efficacy, teaching style, and approach were all positively affected by pedagogical training. This was found to be particularly true in case of university and other higher education faculty members. Some of the other studies have found that the roles and competencies of faculty members are constantly changing due to changes in the corporate expectation from students (Pusnik and Zorman, 2004). The qualities of faculty members can be classified into professional attributes and competencies which consists of practiced

value, practiced development and communication abilities. The communication of faculty members with their students is greatly impacted by their psychological as well as their personality states (Brajsa, 1993). Faculty members with high levels of self-efficacy are an asset to their students and colleagues alike, and researchers have sought to identify the factors that contribute to this trait. The investigations indicated that social arguments and simulated experiences were the second most common sources of self-efficacy, behind enactive mastery (Gale, Alemdar, Cappelli & Morris, 2021). There have been many other studies that have found a strong and positive association between the teaching experience of the faculty members and their level of self-efficacy (Kim and Buric, 2020; Wolters and Daugherty, 2007). Another study by Hong (2012) found that the faculty members who have low self-efficacy at the initial stage of their teaching profession are more inclined to leave the teaching profession.

OBJECTIVES

- To identify the pedagogical factors via factor analysis.
- To understand & analyze the demographic variables which influence the pedagogy and efficacy of the faculty.
- To examine how the efficacy of faculty's teaching approach is related to his/her age, teaching experience & educational level.

HYPOTHESES

H1: There is no significant association between pedagogical factors and faculty demographic variables.
H2: There is no noteworthy association between teaching methods and the demographic variables. H3: There is no correlation between the pedagogical factors and faculty efficacy
H4: There is no noteworthy association between faculty efficacy and the demographic variables.

CONCEPTUAL FRAMEWORK

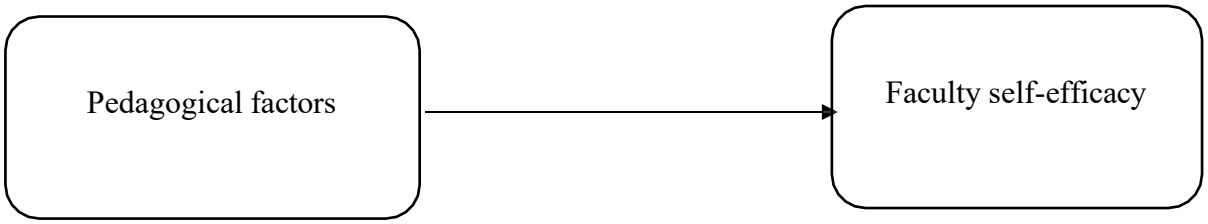

Figure 1

RESEARCH DESIGN

The research design is descriptive in nature. The questionnaire has been self-prepared based on the literature review. The questionnaires were administered to 400 faculty members of various undergraduate and postgraduate colleges and universities across Bangalore. Once the data was gathered, responses were tabulated and data analysis and interpretation was done using SPSS package.

Sampling

A sample size of 400 faculty members across UG & PG colleges in Bangalore were surveyed and their responses were collected on the basis of which the paper was developed. Stratified and Judgmental sampling was adopted.

Tools of Data Analysis

A structured questionnaire was prepared and data collected was analyzed using SPSS package.

DISCUSSION OF RESULTS AND IMPLICATIONS OF THE STUDY

Variables were identified through the literature review. A reliability test was carried out to check for internal consistency. The alpha coefficient for the 52 items is 0.738, suggesting that the items have internal consistency.

Table 1: Reliability test

Alpha	Items
.738	52

The similar variables will be grouped together via factor analysis.

The Communalities table and the Rotated component matrix are as shown below.

Table 2: Communalities

Items	Initial	Extraction
I know how to assess student performance in a classroom	1.000	.562
I can adapt my teaching based on what students understand or do not understand	1.000	.613
I am aware of all the activities in the classroom	1.000	.543
I can easily anticipate potential problems	1.000	.679
Moving around in the classrooms helps me draw students attention	1.000	.780
I reinforce positive behaviour in the class	1.000	.697
I use appropriate disciplinary procedures in the class	1.000	.669
I start my classes on time everytime	1.000	.554
I give real examples in my class	1.000	.576
I use lots of non-traditional methods of teaching	1.000	.736
I frequently give homework to my students	1.000	.747
I give notes to my students	1.000	.725
I display appropriate sense of humour in my class	1.000	.575
I encourage students to respect others opinions	1.000	.633
I am always approachable to students	1.000	.642
I keep a short distance from students	1.000	.660

Table 3: 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	3.374	21.088	21.088	3.374	21.088	21.088	2.235	13.971	13.971
2	2.150	13.440	34.528	2.150	13.440	34.528	2.147	13.418	27.388
3	1.830	11.438	45.966	1.830	11.438	45.966	2.113	13.209	40.597
4	1.621	10.131	56.097	1.621	10.131	56.097	1.968	12.297	52.895
5	1.315	8.219	64.316	1.315	8.219	64.316	1.827	11.421	64.316
6	1.012	6.325	70.641						
7	.930	5.811	76.452						
8	.758	4.735	81.187						
9	.613	3.830	85.017						
10	.543	3.392	88.409						
11	.514	3.212	91.621						
12	.397	2.482	94.103						
13	.368	2.301	96.404						
14	.239	1.491	97.895						
15	.202	1.262	99.157						
16	.135	.843	100.000						

Extraction Method: Principal Component Analysis.

Table 4: Factors and Factor loadings

Factors	**Dimension**	**Items**	**Factor Loading**
F1	**Classroom management**	I start my classes on time every time	**0.725**
		I can adapt my teaching based on what students currently understand or do not understand	**0.691**
		I frequently give homework to my students	**0.624**

		I am always approachable to students even outside the class and willing to help them	**0.579**
F2	**Emotional Intelligence**	I believe moving around in the classroom helps me draw students' attention	**0.853**
		I encourage students to respect others opinions	**0.674**
		I display appropriate sense of humour in my classes	**0.579**
F3	**Lesson Presentation**	I know how to assess student performance in a classroom	**0.707**
		I give real life examples in my class	**0.668**
		I use lots of non-traditional methods of teaching in my class	**0.589**
		I reinforce positive behaviour in class	**0.582**
F4	**Distance with students**	I keep a short distance from the students	**0.799**
		I give notes to my students	**0.699**
		I can easily anticipate potential problems	**0.533**
F5	**Student Discipline**	I am aware of all the activities in the classroom	**0.649**
		I use appropriate disciplinary measures in my classes	**0.623**

Five different pedagogical factors were identified which could be adopted by every faculty. The 5 factors identified were "Classroom management", "Emotional Intelligence", "Lesson presentation", "Distance with students" & "Student discipline".

Once the Factor Analysis was done, an Independent sample t-test & an ANOVA test was run to determine if there was any significant relation between these 5 pedagogical factors and the faculty demographics.

I. CAUSAL RELATIONSHIP BETWEEN PEDAGOGICAL FACTORS AND FACULTY DEMOGRAPHIC VARIABLES.

H1: There is no significant association between pedagogical factors and faculty demographic

variables.

When a one-way ANOVA test was run between the five pedagogical factors namely classroom management, emotional intelligence, lesson presentation, distance with students and student discipline and gender of the faculty, it was found that there was no significant difference between pedagogical factors and the gender of the faculty. This indicates that there is no significant difference between male and female faculty members in terms of the pedagogical factors. Hence, it can be said that the pedagogical factors do not vary with gender of the faculty which implies that the pedagogical factors are gender insignificant.

When a one-way ANOVA test was run between the five pedagogical factors and the age of the faculty members, it was found that only two pedagogical factors differed with the age of the faculty i.e. emotional intelligence and distance with students. It was seen that faculty members below the age of 25 years has lower emotional intelligence as compared to faculty members above the age of 25 years. It was also found that faculty with an age group of 21-25 years and faculty with an age of >40 years seem to maintain maximum distance with the students, however faculty with an age group of 26-40 years maintain less distance with students.

When a one-way ANOVA test was run between the five pedagogical factors and the faculty designation it was found that only one pedagogical factor differed with the faculty designation i.e. lesson presentation. It seems that senior lecturers have the best course presentation, followed by assistant professors and professors, while associate professors have ordinary and mediocre presenting skills. When a one-way ANOVA test was run between the five pedagogical factors and the faculty experience it was found that only one pedagogical factor differed with the faculty experience i.e. classroom management. It was found that faculty who have more than 12 years of experience and those who have just joined the institution and served 1-2 years seems to have highest classroom management, however faculty who have served between 3 to 12 years of experience seem to have low classroom management.

II. CAUSAL RELATIONSHIP BETWEEN TEACHING METHODS AND THE DEMOGRAPHIC VARIABLES.

H2: There is no significant association between teaching methods and the demographic variables.

The teaching methods that were considered in this study were roleplay, group discussions, debates, assignments, mini projects, student presentations, mid-term tests, seminars, guest lectures, subject related workshops, digital aids and mentoring. When a one-way ANOVA test was run between the teaching methods and the experience of the faculty members, it was found that there is a significant association between the faculty experience and only one teaching method i.e. usage of mentoring in the class. It is found that faculty with lesser years of experience tend to adopt mentoring in the classroom as compared to faculty with more number of years of experience.

There is a substantial correlation between the faculty's course and the use of group discussions as a teaching technique, according to a one-way ANOVA test conducted between the teaching methods and the course. It is found that faculty who teach PG courses tend to organize more GD's in the class, however faculty who teach UG courses tend to organize the least number of GD's. There is a strong correlation between the course content and the instructors' use of digital displays (e.g., LCDs, movies, etc.) and other digital pedagogical tools. It is found that faculty who teach PG courses tend to use more of digital displays in the class, however faculty who teach UG courses tend to use digital displays least

number of GD's.

III. CAUSAL RELATIONSHIP BETWEEN THE PEDAGOGICAL FACTORS AND FACULTY EFFICACY

H3: There is no correlation between the pedagogical factors and faculty efficacy Table 5: Descriptive Statistics showing Mean

Pedagogical factors	Mean	Std. Dev	N
Classroom Mgt	4.23	.559	400
Emotional Intelligence	4.49	.483	400
Lesson Presentation	4.36	.519	400
Distance with Students	3.96	.767	400
Student Discipline	4.29	.465	400
The Total Efficacy of Faculty	39.00	6.081	400

Table 6: Correlation between the pedagogical factors and faculty efficacy

Pedagogical factors	P. Corr	Sig.	N
Classroom Mgt	.149	.359	400

Emotional Intelligence	-.012	.943	400
Lesson Presentation	.346*	.029	400
Distance with Students	-.185	.253	400
Student Discipline	.086	.597	400
The Total Efficacy of Faculty	1		400

From the above table, it can be found that the only pedagogical factor which influences faculty efficacy is Lesson presentation. It can be seen that there is a positive correlation between the extent of faculty efficacy and their lesson presentation ability. If the faculty are really good at lesson presentation in their classes their total efficacy also increases.
Therefore, for this pedagogical factor H3 is rejected.

IV. CAUSAL RELATIONSHIP BETWEEN FACULTY EFFICACY AND THE DEMOGRAPHIC VARIABLES.

H4: There is no significant association between faculty efficacy and the demographic variables.

Table 7: Association between faculty efficacy and the course taught.

ANOVA

Efficacy level

	Sum of Squares	df	Mean Square	F	Sig.
Between Grp	2.103	4	.526	2.398	.049
Within Grp	7.672	35	.219		
Total	9.775	39			

From the above table, it can be seen that there is an association between faculty efficacy and the course taught. It was seen that PG faculty have the highest efficacy followed by UG faculty who seem to be having the lowest efficacy. Therefore H4 is rejected.

Conclusion

In this research paper a factor analysis was done to reduce the pedagogical variables into 5 factors which are classroom management, Emotional intelligence, Lesson presentation, Distance with students & Student discipline. A series of tests were conducted to identify the relationships between the identified pedagogical factors and the demographic variables. Some of the demographical variables which have an association with the five pedagogical factors were age, course taught, faculty teaching training and faculty designation. However experience, gender and marital status do not seem to have an association with any of the pedagogical factors.

It was found that there is a significant association between the faculty experience and usage of mentoring in the class. It was found that faculty with lesser years of experience tend to adopt mentoring in the classroom as compared to faculty with more number of years of experience. The use of group discussions as a teaching approach is significantly correlated with the courses taught by the faculty. In the educational process, both students and teachers must take part.

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