



The Effects of Teaching Style and Experience on Student Success in the U.S.A. and Bangladesh

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Abstract

In order to understand the characteristics of teachers and factors that may contribute to student success, faculty members from Bangladesh and the USA were compared to determine if there were similarities or differences in their perceptions of teaching styles and their final outcomes. Participating faculty from the USA and Bangladesh performed a self-assessment of their teaching styles using The Grasha-Riechmann teaching style survey. The current investigation explored a number of research questions such as whether teaching style depends on age, gender, number of years teaching, academic rank or highest degree earned. Statistical analysis, using independent samples *t* tests, Kruskal Wallance tests, and chi-squared, were conducted to answer the research questions. The second area of investigation involved looking for differences between a developing country and a developed country with regard to the characteristics mentioned above.

In addition to analysis of the above research questions, interactions between variables were considered, to determine any effect on each other. No significant difference was found in teaching styles based on age or gender; however, some interactions were observed based on level of education attained by the teacher, as well as number of years teaching. Notwithstanding, the results of this study showed no significant differences in teaching styles based on the age, gender, degree earned, number of years teaching, or academic rank.

Introduction

For years academicians have been exploring different approaches to improve quality of education and improve overall learning processes. Almost every factor has been analyzed such as students, parents, and socio-economic conditions, as well as school curriculum and standardized testing. But very little attention has been given to factors affecting the quality of instruction provided in the classroom. We have examined and revamped curriculums, standardized testing, and methods of teaching; but there has been very little mention of the teachers themselves. Yet teachers are the ones who are with the students for most of their learning years, which amounts to approximately 15,000 hours of schooling ^[1]. It is important to realize that teachers do matter, but what is ironic, is that there is no reliable or objective way of identifying excellent teachers ^[2]. There are different types of teachers with different teaching styles as students have different learning styles. Teachers can be categorized as novice, experienced and experts in their field. But what makes a teacher an expert or excellent teacher is not yet clearly understood. Is it their age, or could it be the number of years they spend teaching, gender or perhaps their level of education? Very few studies have been conducted that focus on the teacher, with data obtained directly from the classroom and/or the students. According to Brophy, “teachers are not merely reactors to whatever motivational patterns their students had developed before entering their classrooms, but rather are active socialization agents capable of stimulating the general development of student motivation to learn and its activation in particular situations.” ^[3].

Background

There have been numerous studies done over the years regarding teaching styles and academic achievement; this study explores a few of these studies to gain better insight into the methods used to correlate teaching styles with learning effectiveness. One of these investigations explores the interactions between variables that affect a student's capacity to learn. This study was conducted by Hattie et al, 2003, in the New Zealand school systems, and spans over 300 classrooms. Hattie observed that the student accounts for 50% of the learning experience, but what is important here, is what that student brings to the table in terms of achievement, and how he/she is influenced by their environment, including the school, principal, peers, home, and teachers. How are the parents contributing at home to improve this scenario and what levels of expectation and encouragement are the students receiving at home to improve their academic achievement? Peer pressure has an effect on the students' interest in publicly embracing learning. A student's peers may also have an effect on his or her learning; if pride in learning is not one of the values of the student's peers; he or she may not consider success in education to be important, either. ^[1] The school interaction accounts for only about five percent of the involvement with the student. It includes the finances of the school, the size of the school and the size of the classrooms. The school administrator's involvement includes the type of climate or environment he or she creates at the school. Does he/she promote student responsiveness or is it an atmosphere of bureaucratic control? All of the above items interact with one another, and influence the learning atmosphere and academic achievement of the student. The most important factor in the learning process is the extent and quality of student-teacher interaction in the classroom and beyond.

Amanda Ripley describes six characteristics that define an exceptional teacher or what constitutes a good teacher. Time after time, it was found that an excellent teacher would *set high expectations* for their students and they would constantly try to find ways to improve their effectiveness by *reevaluating methods and techniques* they are using. In addition, a successful teacher would persistently recruit students and their families to participate in the learning process. They would maintain the students focus by *checking their understanding* to ensure they are contributing to the student grasping the subject matter. An excellent teacher will exhaustively and purposefully plan for the next session or even year. Lastly, a teacher who rises above the norm will work relentlessly, ignoring the combined factors contributing to less resources and low achievements such as socio-economic background of students, reduced funding at the institution, and bureaucracy.

A more comprehensive description of teaching styles can be found in Dr Grasha's book, *Teaching with Style* ^[4]. In it, he examines a variety of subjects regarding teaching style, from how to assess teaching styles, to how the classroom climate is affected by the teaching style of the instructor. He touches on virtually every topic imaginable that could affect the academic outcome of a student. Dr. Grasha also pointed out that, although two teachers may read the same exact guidelines, and attempt to follow the same instructions, of "how to present information in the classroom" the final result will be very different, due to "the unique ways in which we understand, interpret and execute such guidelines." Furthermore, this is what he claims defines the styles of teachers.

Studies have shown that people prefer to learn in different ways or they may have different learning style preferences. Dunn & Griggs found that factors that affect these differences could include age, culture, religion, nationality, etc. Studies have found that when students learn using their learning styles preferences, their achievement results are significantly higher than when they don't utilize their preferences. Their strengths are measured on a test, identified and transferred to a computer program that generates a personalized prescription for each student for how they should focus their study habits. In addition, the authors suggest the use of a learning instrument to identify the learning styles of adolescents, mainly because many of their behaviors are misinterpreted; therefore, their traits and preferences are usually misunderstood as well ^[5].

Guild reported, "Every educational decision is evaluated based on its impact on individual students' learning." ^[6]. She suggests that there is a link between culture and learning style, and educators need to familiarize themselves with the various patterns of style preferences. Furthermore, she also brings our attention to the fact that "if instructional decisions were based on an understanding of each individual's culture and ways of learning, we would never assume that uniform practices would be effective for all". Teachers who understand and embrace these differences will be able to "offer opportunities for success to all students.

Rezler suggested that teachers need to find out the learning preferences of their students in order to capture the attention of the entire class and to be able to "match these preferences with suitable learning conditions" ^[7]. A Learning Preference Inventory (LPI) was used to identify the learning preferences of students so that the teaching style may be adjusted to accommodate their needs.

In chapter 3 of her book, Irene Sanchez also emphasized the need for identifying learning preferences between Hispanic and Native American students, then adjusting the teaching methods to accommodate the student's learning preference. In today's diverse classroom, teaching methods need to provide more instructional classroom activities to tap into the higher level of cognition of these minority students. ^[8]

Methods

The current study used the forty question Grasha-Riechmann teaching style survey to determine teaching styles of 45 faculty members from two different universities. Of these faculty members, 23 of them were from Khulna University, Bangladesh, and 22 from the University of Michigan-Flint (UMF). Using the responses to survey questions about their individual teaching styles, a score was issued for each of the following five categories; (1) Expert, (2) Formal authority (3) Personal Model, (4) Facilitator and (5) Delegator. They were numbered from highest to lowest, with (1) being the highest and (5) being the lowest. These scores were recalculated by assigning a ranking to each variable as shown in Table 1 and summed into a final category, entitled Total Score of Teaching Style. The total score calculation was necessary as individual faculty had multiple teaching styles with strong bias towards a particular style.

Table 1: Values Used in Teaching Score Calculation

Expert Rating	Recoded Numerical Value	Authority Rating	Recoded Numerical Value	Personal Model Rating	Recoded Numerical Value
4-4.99	9=High	4-4.99	7=High	4-4.99	5=High
3-3.99	6=Moderate	3-3.99	5=Moderate	3-3.99	3=Moderate
2-2.99	3=Low	2-2.99	3=Low	2-2.99	1=Low
Facilitator Rating	Recoded Numerical Value	Delegator Rating	Recoded Numerical Value		
4-4.99	3=High	4-4.99	2=High		
3-3.99	2=Moderate	3-3.99	1=Moderate		
2-2.99	1=Low	2-2.99	0=Low		

The teaching styles data was calculated by assigning each category a value and adding them together for each participant. Parametric tests were conducted to compare two variables at a time. An independent samples t-test was also conducted to test the following hypotheses (Ho)

- 1) The Teaching Style does not differ based on the type of degree earned.
- 2) The Teaching Style does not change based on age (under 45, 45+).
- 3) The Teaching Style does not change based on gender (Male vs. Female).
- 4) The Teaching Style does not differ based on number of years teaching.
- 5) The Teaching Style does not differ based on the academic rank of the instructor (Lecturer, Adjunct, Assistant Professor, Associate Professor, and Professor).

Results

The Kruskal Wallis test was used to compare the independent variable of degree earned (Bachelor, Masters of Arts, Masters of Science, Doctor of Philosophy, Doctor of Philosophy 1 & 2), to the dependent variable teaching style, to determine if there was a difference in the styles based on degree attained. Figure 1 shows the teaching style score of faculty with different academic degrees. Teachers with a Bachelor or Bachelor of Pharmacology had an average ranking of between 24.83 and 29.83, whereas teachers with a PhD and PhD 1&2 had an average ranking of between 21.94 and 24.00. No significant difference was found [$H(5) = 3.901, p > .05$] indicating that the groups did not differ significantly from one another. Type of degree attained did not seem to influence the teaching style, which was determined through a self-assessment survey, the Grasha-Riechmann teaching style survey.

Figure 2 shows a comparison between numbers of years teaching experience and teaching style scores. There was no correlation between number of years of teaching experience and score.

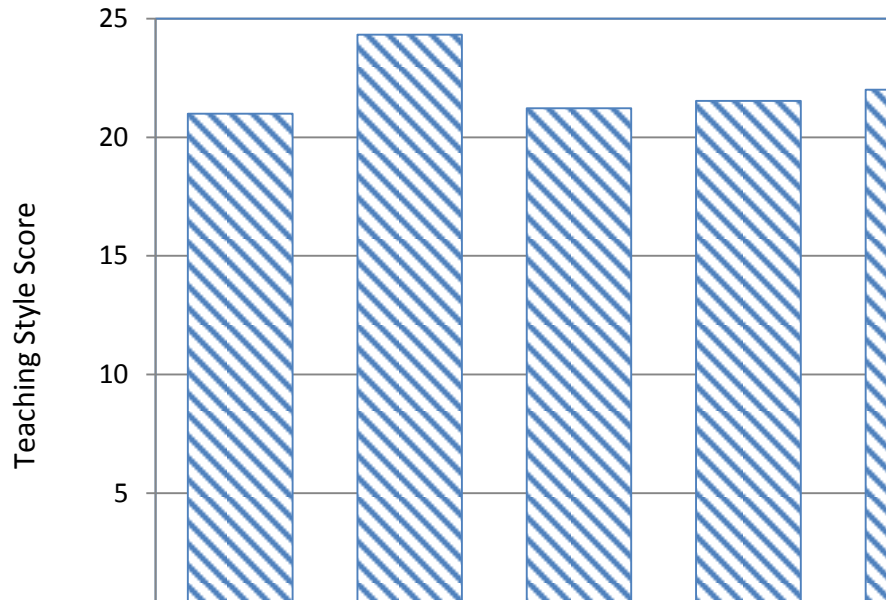


Figure 1: Teaching Style Score of Faculty with Different Degrees

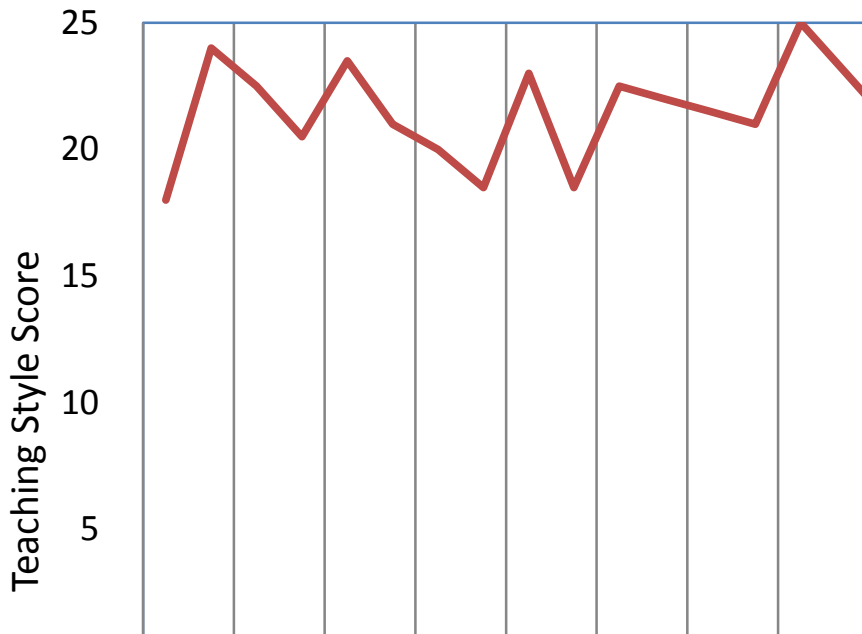


Figure 2: Teaching Style Score Based on Number of Years Experience

Figure 3 shows the relationship between highest degree and number of years of teaching experience showing that faculty with PhD degrees has largest number of years of teaching experience.

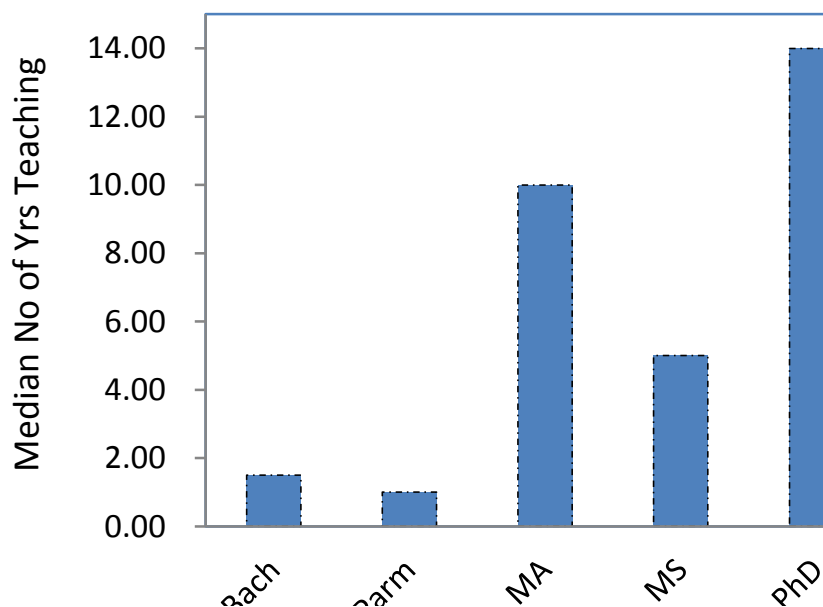


Figure 3: Relationship between Number of Years Teaching and Highest Degree

Table 2: Statistical Analysis of Teaching Scores Based on Academic Degrees

Highest Degree	Means	Std. Deviation	t	df	Significance
Bachelors Degree	21.00	6.25	-	2	-
Bachelor of Pharmacology	23.00	4.35	-0.455	4	-0.124
Master of Arts	24.33	3.05		4	
Master of Science	21.22	2.11	2.004	10	1.33
PhD	21.53	2.35		23	
PhD 1&2	22.00	n/a	-0.192	2	-2.097

Table 3: Statistical Analysis of Teaching Score Based on Age and Gender

Age	N	Mean	Standard Deviation	t	df	Significance (2-tailed)	Mean Difference	Std.Error Difference
Below 45	32	21.62	3.07	0.407	43	0.686	-0.37	0.92
45 and Above	13	22.00	1.91					
Gender								
Male	37	21.70	2.93	0.157	43	0.876	-0.17	1.094
Female	8	21.87	2.03					

Independent samples t-test between faculty with age below and above 45 did not show any significant difference, $t(43)=0.407$, $p=.686$. The sample means show that the mean teaching style scores of faculty with age below 45 were similar to the mean teaching style scores of faculty with age 45 or above. The observed difference between the means was 0.375. Another test conducted between male and female faculty members also did not show any significant difference, $t(43)=0.157$, $p=.876$. The sample means show that the mean teaching style scores of males and females are similar. The observed difference between the means was 0.1723.

Table 4: Statistical Analysis of Teaching Score Based on Experience and Rank

Years of Teaching Experience	N	Means	Standard Deviation	t	df	Significance (2-tailed)	Mean Differenc	Std.Error Difference
10 or Less years	25	21.52	3.28	0.572	43	0.570	-0.480	0.838
More than 10 yrs	20	22.00	2.02					
Academic Rank								
Junior	23	21.21	3.35	1.029	40	0.310	-0.887	0.862
Senior	19	22.10	1.852					

An independent samples t-test did not reveal any statistically significant difference between number of years of experience and teaching score, $t(43)=0.572$, $p=.57$. The sample means show that the mean teaching style scores obtained by people with 10 or fewer years of teaching experience was similar to the mean teaching style scores obtained by people with more than 10 years of teaching experience. The observed difference between the means was 0.48. Independent samples t-test between academic rank also did not show any statistically significant difference, $t(40)=1.029$, $p=.31$. The sample means show that the mean teaching style scores obtained by juniors is similar to the mean teaching style scores obtained by seniors. The observed difference the means was 0.89.

Comparative statistical analysis between Bangladeshi and USA faculty teaching styles are presented in Table 5 and 6. Significant correlation between professors was observed who rated themselves as delegator, facilitator, formal authority and experts ($p < 0.05$) as shown in Table 6.

Review of the above analysis shows the Expert category resulted in $p < .05$, which means the null hypothesis is rejected. Therefore, we must go to table number 5 to compare the means of teachers' ratings in the Expert category M .05 (Bangladesh), and M 1.75 (USA). For the group labeled Formal Authority it was found that $p < .05$, which means the null hypothesis is rejected. We will compare the means in Table 5 under the group Formal Authority to find that M 1.60 (Bangladesh) and M 3.00 (USA). In the group Personal Model, no significant correlation was observed ($p > 0.05$, 0.219). If we look at the group labeled Facilitator, we find that $p < .05$, so we must therefore compare the Means of this group in Table 5, M 8.6 (Bangladesh), and M 18.99 (USA). For the group labeled Delegator we have significant results in that $p < .05$, so we will be rejecting the null hypothesis and comparing the Means of the group in Table 5 M 9.3 (Bangladesh) and M 23.60 (USA).

Table 5: Paired Sample Statistics Between Bangladesh and USA

Teaching Style	Mean Score (Bangladesh/USA)	N	Correlation	Sigma
Delegator	9.30/ 23.60	40	0.305	0.190
Facilitator	8.60/ 18.99	40	0.096	0.687
Personal Model	4.00/5.15	40	0.360	0.118
Formal Authority	1.60/ 3.00	40	0.371	0.108
Expert	0.05/ 1.75	40	0.970	0.000

Table 6: Paired Sample t-test between Bangladesh and USA

Teaching Style	Mean	t	df	Sigma (2-tailed)
Delegator	-14.30	-8.814	19	0.000
Facilitator	-10.35	-8.073	19	0.000
Personal Model	-1.15	-1.272	19	0.219
Formal Authority	-1.40	-2.833	19	0.011
Expert	-1.70	-3.747	19	0.001

It is important to point out that the data collected in this study was based solely on each teacher's self- assessment of their own teaching styles, and may contain some error, as some of them may not have accurately assessed their styles. The study also did not include any ratings from students, parents, peers or administrators regarding individuals teaching style. However, it is obvious that there are many different types of teaching styles; some of which may be difficult to describe, because teachers who embrace certain styles may demonstrate characteristics that are inherent to their personality. As Curry ^[9] pointed out in his study, there is too much confusion in the definition surrounding the conceptualization of learning styles and too much variation in the

instrumentation used to measure cognition and various learning styles. The same is true of teaching styles – using a self-administered survey to determine whether a professor is an expert or a Delegator is only their own perception of how they view themselves. This assumption could lead to some very confounding results. This makes it very difficult to mimic all of the styles of teaching. Still, studies have shown that teachers who demonstrate certain characteristics tend to have students who perform much better academically. Some of these teaching characteristics include: setting high standards for their students, holding them accountable for their performance, re-evaluating, self-assessing, showing compassion, and monitoring – all of the characteristics that define metacognitive strategies. Although these strategies account for a good portion of the academic success of the student, having a good teacher only accounts for part of the equation. A student has to provide part of the equation as well, by having the right attitude, being motivated to learn, and being disciplined in his/her study habits. However, the number of years a professor has been teaching, and the level of degree held, may also have an effect on student success.

When comparing how the teachers rated themselves in Bangladesh versus the United States as Experts, Formal Authority, Personal Model, Facilitator or Delegator we observed an interesting phenomenon. What was observed was that in all of the cases where $p < .05$, the teachers in the US rated themselves significantly higher than the teachers in Bangladesh. As the scale goes down below personal model, it seems that teachers from the USA rated themselves more in the role of delegator or facilitator than those in Bangladesh. It is possibly due to a difference in education norms between the two countries, or it could possibly indicate that teachers in the USA do not see their roles the same as teachers in Bangladesh. When the means of the two teaching styles are compared in the Expert and Formal Authority Category, there is not as great a difference as seen in the two previously mentioned categories. To determine the actual meaning behind these results will require additional testing to validate the differences observed.

Summary and Conclusion:

In this study, when we compared the teachers' academic ranking to how they rated their own personal teaching style, an interesting interaction between some of the variables was discovered. It was observed that teachers with less experience teaching and holding a lower academic rating than some of their counterparts, rated themselves at the same level or higher than teachers holding a senior level position with a higher level degree. This could be due to the teacher being more enthusiastic about their profession or it could be a misconception based on the ego of the instructor, believing they are far more superior than is actually the case. One way to resolve this deficiency in the study would be to have the students rate their professors' teaching styles and to correlate the results with students' test scores or final grades. However, in addition to teaching style, number of years teaching, and the degree earned, a teacher's job satisfaction may have an effect on student performance as well.

The current study showed that teachers had higher performances in years 1, 5, 10, and 17, with lower performances in years 3, 9, 11, and 20. The specific reasons for this variation in performance are not known at this time and can be investigated in a future study. Teaching style and the number of years teaching account for just a small fraction of what makes a good teacher, and further studies should be conducted, to address additional areas that have been discussed in

this paper, such as gender, age, and the level of the degree earned. An analysis of the reliability of the instruments used in collecting the data for this study is highly recommended as well.

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