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CORRELATING STUDENTS' PERCEPTIONS OF TEACHER EFFECTIVENESS AND STUDENT ACHIEVEMENT

Abstract

This study focused on correlating teacher effectiveness, based on five national professional standards for teacher evaluation in Pakistan (subject matter knowledge, instructional planning and strategies, assessment, learning environment, effective communication) through student's perceptions, with students achievement in English and Mathematics at secondary level (grade 9th). A Students' Perceptions of Teacher Effectiveness Questionnaire (SPTEQ) was developed to collect data from 2009 students from forty public girls and boys high/ higher secondary schools in district Khanewal. The overall reliability of the SPTEQ was a=.86. The results showed significant relationship between teacher effectiveness indicators and student achievement in English and mathematics. The results revealed that there was no difference between male and female students' perceptions about their English teacher effectiveness. These findings lead one to believe that students want to know the expectations for success in the classroom and value the teachers that provide them with concrete details.

Keywords: *Teacher effectiveness, student achievement, teaching strategies, communication, assessment, classroom environment*

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Introduction

Teacher is considered accountable for interpreting the educational guidelines into action through effective teaching to the students. Effective teacher constantly struggles to improve student learning (Suleman, Aslam, Habib, Javed, & Umbrine, 2011; Stronge, 2010). Effective teachers exhibit competence in subject matter, are committed to increase students' learning, take responsibility for supervision of the students, think analytically about their individual practices, and help students in increasing their achievement (Akiri, 2013; Ellett & Teddlie, 2003; Markley, 2004; Stronge, & Tucker, 2000; Wright, Horn & Sanders, 1997).

The demand for accountability in education has moved from managing finance program to explicit apprehensions about the excellence of classroom instruction and teachers performance (Darling-Hammond, Wise, & Pease, 1983). Identification of effective teachers is required, as the research tells that effective teachers can make considerable difference in student learning (Sanders & Rivers, 1996). Teacher effectiveness can best be judged through teacher evaluation which has assumed increasing importance during the last decade especially in advanced countries (Ellett & Teddlie, 2003). Teacher evaluation provides feedback to teachers on their teaching and offers a tool for improvement in student's learning (Peterson, 2000; Tucker & Stronge, 2003).

Teachers have been evaluated through different methods, such as observation and self-assessment, throughout the world (Keane & Labhrainn, 2005). When we look into the literature related to other data sources of teacher evaluation, students' perceptions is one of the important measures used to evaluate teacher effectiveness (Berk, 2005; Peterson, Wahlquist & Bone, 2000; Sutcliff, 2011). Students have daily contact with their teachers and have significant perspective and rating of teacher evaluation (Peterson et al., 2000). Sometime, when a student does not perform well in a test, it is generally considered that only the student is

responsible for his or her failure. In fact, with various other reasons, one of the strongest reasons might be poor teacher performance. In that case, the student, being the first stakeholder of the teaching learning process and a primary consumer of the teacher's services (Stronge, 2006), might be better able to inform about the teacher effectiveness. Peterson, Wahlquist and Bone (2000) sustained the argument that student surveys can be effective and trustworthy sources for teacher evaluation. The research tells that to have better understanding of teacher quality, engaging students to evaluate teacher performance is a best activity as the students are the direct client of the teacher (Sutcliff, 2011).

In Pakistani public educational institutions, Performance Evaluation Report (PER) previously called Annual Confidential Report (ACR) is used to evaluate teacher performance. Since the PER is used only for promotion purpose, and it does not include teacher quality indicators such as teachers' subject matter knowledge, instructional planning and procedures, learning environment, student valuation, and active communication, this research is focused on using students ratings for measuring teacher effectiveness through National Professional Standards for Teachers developed by the Ministry of Education (2009), Pakistan.

The national professional standards for teachers in Pakistan are highly compatible with the teacher quality indicators used throughout the world. The researcher has studied the methods in which students observe teaching effectiveness and in what way these perceptions affect on learning. There are limited studies that examined the secondary school students' perceptions of teaching effectiveness. The researchers, could not find, any study that correlated students perceptions of teacher effectiveness with their achievement scores in Pakistan. To fill this gap, the researchers used five standards (subject matter knowledge, instructional preparation and strategies, evaluation, learning environment and effective communication) and developed a Students' Perceptions of Teacher Effectiveness Questionnaire (SPTEQ) and correlated with

9th graders achievement score in English and Mathematics achieved in the Board of Intermediate & Secondary Education Multan 2014 annual examination.

Taking students' perceptions of teacher effectiveness is very important element of measuring teacher effectiveness. Students are the first stakeholders who have direct knowledge about classroom practices on a regular basis (Stronge, 2006). Students are central component of the school system and the schools achieve their objectives through students. Student's views about the teacher performance can reflect the real elements of teachers' content knowledge, communication skills, instructional methods, behavior with students, and acceptance of criticism (Keane & Labhrainn, 2005). This study is useful for teachers to identify areas of strengths and weaknesses in their teaching and thereupon remedy those weaknesses identified while building on their strength; they can modify their teaching activities according to the student's views for effective learning. This study is helpful both for teachers and students to improve teaching learning process. The evaluation results can help the teachers to improve their instructional responsibility, commitment to teaching, and fulfill their desire for the class to do well. It is beneficial for students to enhance their learning. Describing relationship between students' perceptions of teaching effectiveness and students' achievement will offer teachers recommendations that will be supportive to revising their teaching strategies. It will also help the teachers to reflect how to deliver effective teaching regarding subject matter knowledge, instructional strategies, assessment, learning environment and effective communication that intend to encourage secondary school students to improve significant learning. The results of this study might be helpful for the policymakers to think about using students' perceptions for teacher evaluations.

Research Questions

1. What are the students' perceptions of teacher effectiveness in English and mathematics?
2. What is the relationship between students' perceptions of teacher effectiveness and their achievement in English?
3. What is the relationship between students' perceptions of teacher effectiveness and their achievement in mathematics?

Conceptual Framework of the Study

The present study was conducted to describe relationship between students' perceptions of teacher effectiveness and student achievement. This study focused on using five factors (subject matter knowledge, instructional planning and strategies, assessment, learning environment, and effective communication) to correlate teacher's effectiveness score obtained from student's perceptions.

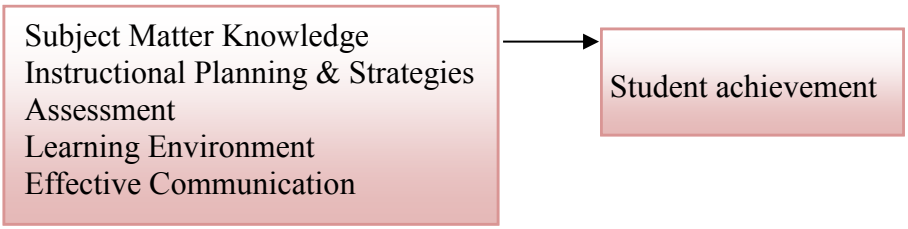

Figure1. Conceptual framework of the study

Teacher Evaluation and National Professional Standards in Pakistan

Teacher evaluation offer all educators with regular criticism that can help them develop as influential instructor. Through evaluation, it is possible to separate worthwhile instructing from

insufficient educating. Teacher evaluation system is determined whether teachers have met educational objectives. In Pakistani public educational institutions, Performance Evaluation Report (PER) is used to evaluate teacher performance. Zia (1994) argued that the Annual Confidential Report (ACR) is the only one and primary means of assessing the secondary school teachers' performance. A teacher is unable to be considered for promotion due to incomplete or poor comments given by the head teacher on the PER. This report is perceived a purposeless function and considered a formality to filling the evaluation form. The characteristics which are evaluated in PER do not focus on the specific responsibilities that relate to teaching and learning. Giving specific important to that point, the Ministry of Education developed national professional standards.

The professional standards for teaching clarify the characteristics of teaching and help teachers in identifying their professional needs. In this proposed study five standards from National Professional Standards for teachers in Pakistan have been selected on which students will evaluate teacher effectiveness. *Subject matter knowledge* includes the way that the teacher gives the students better understanding of concepts. An effective teacher should be in a position to provide fully comprehension of knowledge and skills to the learner (Liakopoulou, 2011). Teachers are committed to assist through various techniques in constructing and gaining knowledge to learners (Ministry of Education, 2009). The effective teacher should focus on understanding and meaning of the content. An effective teacher demonstrates skills to convey the knowledge according the objectives of national curriculum and usability of the subject in practical life (McBer, 2000). Effective learning takes place when students gain the knowledge based on intellectual practices (Liakopoulou, 2011).

For effective learning, a teacher needs to develop effective *instructional planning and strategies* to support students learning (Chang, 2010). Effective teachers employ multiple teaching

strategies to engage students in learning process (Stronge & Tucker, 2000). Effective teachers use individual work as well as small group activities, and engage the student's in classroom discussion. Effective teachers focus on improving student-teacher interaction and provide the students the opportunities of participation in learning and maximize their achievement occur (Hall & Walsh, 2002).

Assessment is an integral part of learning process. An effective teacher is one who observes the poor performance of the students and makes improvements (Akiri, 2013). It is the most important activity to help in student's learning. Through assessment teacher helps the students to understand where they are wrong and where they need improvement (Brown, 2005). Through evaluation, instructors search for increases in learning, gaps in information and areas of misconception (McBer, 2000). Effective teacher knows and understand how to use different types of assessments and observation system (Ministry of Education, 2009).

Effective teacher establishes *learning environment* in the class where students collaborate naturally. Effective learning environment in classroom enhances pupil progress (Good & Brophy, 1997). Effective teachers organize the classroom to promote learning and interaction where students feel comfortable and relax in terms of accessibility (Rubio, 2009). The effective teacher knows and understands how to create supportive, safe, and respectful environment for effective learning. The classroom is an enormously complex place requiring vast teacher knowledge and understanding as well as skills and abilities in coping with emerging problems (Ali, 2011).

Communication is the central component to unlock all the doors to successful fulfilling the learning objectives. It is a key that allows the students to feel understand. Teachers have the capacity to utilize instructional and data correspondence advances for educational module improvement, direction, appraisal and assessment of learning results (Chang, 2010; Ministry of Education,

2009; Sutcliff, 2011). Bibi (2005) argued that good communication starts with effective listening. Facial expression and tone of voice are important to effective communication. For effective communication, it is essential for the teacher to have comprehensive knowledge of both subject matter and their learners. Effective communication enables the teacher to make the subject matter comprehensible to the students. Poor communication interprets the simple information to difficult words. Effective learning has not taken place unless effective communication. Effective communication processes supported the efficient learning.

Measuring Teacher Effectiveness through Students' Perspectives

Student's perceptions on teacher effectiveness may provide valuable insight to teachers to seek new ways to motivate learners (Change, 2010). Peterson, Wahlquist, and Bone (2000) held the argument that student surveys can be effective and trustworthy data sources for teacher evaluation. The authors stated that students answered to the variety of items with purpose, committed, and reliable values. The students articulated the views were differing in its importance from one teacher to another. The responses of teachers and managers are positive.

Keane and Labhrainn (2005) found that evaluation system results improvement. There are many sources to evaluate teacher performance. So for as concern with the course design (objectives, content, methods and assessment or grading practices in assessment), the students are not competent to evaluate teacher performance but in terms of the value of the transfer of instruction it is usually decided that only students are in a position to provide feedback. This paper concludes that student's evaluation of teaching is generally reliable and valid source of teacher evaluation.

Dilshad (2010) researched nature of teacher education from students' viewpoint through survey research. The author gathered the information from students through questionnaire addressing five measurements of training quality specifically, learners, learning environment, substance, courses of action and results. These five measurements indicated sensibly great nature of learners however low nature of substance, learning environment, procedure and results.

Ferguson (2010) stated that university administrators argued that students' responses in colleges and universities improve teaching and learning. The same is true in elementary and secondary schools. Ferguson (2010) used a large sample of secondary school classroom students to measuring effective teaching. The data from 1264 English Language Arts classrooms and 1094 math classrooms was analyzed to inspect how strongly the teachers differ on demonstrating the levels of teaching quality. This study found that students' responses were consistent, valid, and constant over time at the classroom level. This discussion demonstrated that student perceptions and information that composed by other methods can amount learning results and students' opinions can prove best input to improve teaching and learning in elementary, middle and high schools.

Based on the literature, the researcher concludes that using students' ratings about teacher effectiveness might be a valid measure to be used in Pakistani public school context. Researcher has not been able to find out study that used students' perceptions of teacher effectiveness and correlated with students' achievement in English and Mathematics. This study aims to describe the relationship between student's perceptions using five professional standards of teaching (subject matter, instructional planning and strategies, assessment, learning environment and effective communication) to evaluate teacher performance and student's achievement.

Methodology

It was a correlational study that employed teacher effectiveness indicators as independent variables and student achievement as dependent variable. All the boys and girls high schools in District Khanewal were population of the study. Using the stratified convenience sampling technique, 2009 boys and girls across 40 public high schools were selected as the sample of the study.

Instrumentation

A Students' Perceptions of Teacher Effectiveness Questionnaire (SPTEQ) was developed by the authors of the study to get students' perceptions of teacher effectiveness. The SPTEQ was developed in English, and then translated in Urdu language. The SPTEQ is a five point Likert scale comprises 29 items with five factors namely: *subject matter knowledge* (6 items), *instructional planning and strategies* (6 items), *assessment* (consisting 5 items), *learning environment* (consisting 7 items), and *effective communication* (consisting 5 items). The dimensions of the factors were scaled as Never (1), Rarely (2), Sometime (3), Often (4), and Always (5), meaning that the students' perceptions as *never* would indicate that their teacher never demonstrated effectiveness in that item and standard, and students' perceptions as *always* would indicate that their teachers always demonstrated effectiveness in that particular item and that standard.

A pilot study was conducted during May, 2014. The researcher took the questionnaires to 200 respondents in six schools (three male and three female) by herself. The purpose of this pilot testing was to understand whether the students understood the items in the Student Perceptions of Teacher Effectiveness Questionnaire (SPTEQ) correctly, or if they required further clarifications. Overall, the students were satisfied with the

language and the content of the SPTEQ. The pilot study revealed SPTEQ was reasonably reliable with Cronbach alpha (α) as .79.

Data Collection

Data collection on SPTEQ started during the month of August, 2014. The researcher contacted to the principals / headmasters and headmistresses of the 40 girls and boys secondary/higher secondary schools of district Khanewal that were participating in the study. The researcher discussed with each of the head teacher, the nature of the study and confidentiality issues over telephone and requested them to let their teachers and students of grade 10 participate in the study. After their permission, the researchers collected data from students. Students were asked to complete each questionnaire keeping in mind the relevant teacher who taught English or mathematics when they were in grade 9. The students took approximately 30 minutes to answer the questionnaires. In this way, the researchers were able to collect 4018 questionnaires (2009 for English and 2009 for mathematics) of students across forty Schools. The response rate was 92%.

Another type of score used for collecting student achievement data were the tests scores of English and mathematics given to the 9th graders by the Board of Intermediate and Secondary Education (BISE) Multan during the annual exams conducted in March-April 2014. The BISE Multan is the responsible body for conducting exams for secondary and higher secondary classes among schools and colleges. Board of Intermediate and Secondary Education Multan announced the result (9th grade) annual 2014 on 21, August 2014. Students' achievement scores in English and Mathematics were gained online (from BISE Multan website) according to their roll numbers they provided on the SPTEQ. All ethical issues in the research were kept in mind. All information collected from respondents was analyzed in a collective manner only so as not to expose any individual response.

No information was disclosed about the name of any school and individual. All ethical issues regarding research were observed in letter and spirit.

Data Analysis

A quantitative approach (correlational research) was used in the study. The data collected from the questionnaires were entered into a spreadsheet and exported into SPSS version 20 by the researcher. The data were examined for missing values and rechecked by the researcher to avoid input error. Each question was labeled as item one, two, three through question twenty-nine. For Mean, standard deviations, and reliabilities, see Table 1.

Table 1: Reliability of the Questionnaire (SPTEQ)

Scales	**# Items**	**M**	**SD**	**α**
Subject Matter Knowledge	6	20.90	3.61	.72
Instructional Planning and Strategies	6	19.44	3.28	.73
Assessment	5	17.88	3.51	.69
Learning Environment	7	24.65	3.54	.70
Effective Communication	5	16.61	3.48	.72
Overall	29	19.90	3.48	.86

Descriptive statistics were calculated for student students' perceptions of teacher effectiveness in English as well mathematics. Table 2 shows that the students perceived that their teachers showed highest level of effectiveness in creating learning environment (M=24.65, SD=4.546), followed by subject matter knowledge (M=20.90, SD=3.615), instructional planning and strategies (M=19.44, SD=3.283), and assessment (M=17.88, SD=3.515). The students perceived that their teachers demonstrated the lowest level of effectiveness in effective communication (M=16.62, SD=3.485). The mean value describes that the students perceived their teachers *often* demonstrated effectiveness.

Table 2: *Descriptive Statistics - Teacher effectiveness in English and Mathematics (N=2009)*

Scales	**Items**	**English**		**Mathematics**	
		M	S.D.	M	S.D.
Subject Matter Knowledge	6	20.90	3.61	20.68	3.58
Instructional Planning & Strategies	6	19.44	3.28	19.14	3.24
Assessment	5	17.88	3.51	17.49	3.53
Learning Environment	7	24.65	4.54	24.34	4.81
Effective Communication	5	16.62	3.48	16.43	3.61
Overall	29	19.77	3.68	19.613	3.75

Table 2 also shows that the students perceived that their math teachers' demonstrated effectiveness in creating learning environment (M=24.34, SD=4.811), followed by demonstrating subject matter knowledge (M=20.68, SD=3.582), instructional planning and strategies (M=19.14, SD=3.249), and assessment (M=17.49, SD=3.533). The teachers perceived that their teachers demonstrated lowest level of effectiveness in effective communication (M=16.43, SD=3.612). The mean items of the teachers' effectiveness scale in table 2 shows that the students perceived their teachers demonstrated in mentioned indicators accuracy *often*.

Further, the relationship between teacher effectiveness scales and student achievement in English and mathematics was calculated. Results in Table 3 showed all the five scales of teacher effectiveness showed significant relationship with student achievement in English with probability value less than .05. The highest relationship was found between learning environment scale and students' achievement scores in English (.49), followed by

effective communication (.45), and assessment (.44), subject matter knowledge (.42) respectively. The least positive significant relationship was found between teacher effectiveness score on instructional planning and strategies and student achievement in English (.37). (See Table 3).

Table 3: *Relationship between teacher effectiveness and student achievement (N=2009)*

Scales	**Items**	**English**	**Math**
		r	**r**
Subject matter Knowledge	6	.42*	.44*
Instructional Planning & Strategies	6	.37*	.42*
Assessment	5	.44*	.49*
Learning Environment	7	.49*	.52*
Effective Communication	5	.45*	.48*

For mathematics, the highest relationship was found between learning environment scale and students' achievement scores in mathematics (.52), followed by assessment (.49), effective communication (.48), and subject matter knowledge (.44) respectively. The least positive significant relationship was found between teacher effectiveness score on instructional planning and strategies and student achievement in mathematics (.42).

Findings

The purpose of this study was to measure the relationship between teacher effectiveness scores, based on students' perception, and student achievement. The study found that, in overall, majority of the students rated their teachers as effective, representing that they *often* demonstrated effectiveness on the teacher effectiveness standards. All the five scales of teacher effectiveness were significantly correlated with student achievement in English as well as Mathematics. Male students

demonstrated significantly higher level of perceptions of their English teacher's effectiveness on instructional planning and strategies, and effective communication, whereas female students perceived classroom environment of their teachers was better than the classroom environment of male teachers as perceived by male students; however, Male and female students did not significantly differ on achieving scores in English as well as in Mathematics.

Conclusions

The results of the Students Perceptions of Teacher Effectiveness Questionnaire (SPTEQ) indicated that majority of the students perceived their teachers as effective, representing that their *often* demonstrated effectiveness. The study results are a source of inspiration and useful for teachers. As the Ministry of Education, (2009) indicated that teachers are able to use instructional and information communication technologies for curriculum enrichment, instruction, assessment and evaluation of learning outcomes. Further, five scales of teachers' effectiveness (subject matter knowledge, instructional planning and strategies, assessment, learning environment and effective communication) were significantly correlated with student achievement in English as well as Mathematics. Evaluating the teachers' teaching styles can help the teachers to amend their teaching style to teach effectively, which results in purifying student's examination scores (Kangahi, Indoshi, Okwach, & Osodo, 2012).

Discussion

The first research question was 'what are the perceptions of secondary school students about their teacher's effectiveness (in English and Mathematics) based on five national professional standards (subject matter knowledge, instructional planning and strategies, assessment, learning environment, effective

communication). The results of the Students Perceptions of Teacher Effectiveness Questionnaire (SPTEQ) indicated that majority of the students perceived their teachers as effective teachers. Majority of the students were agreed that secondary school teachers had command over subject matter knowledge, instructional planning and strategies, assessment, learning environment, and effective communication. The study concluded that teacher can teach in effective way by enhancing teaching competencies and impart knowledge.

The results indicated that students perceived that their teachers demonstrated relatively lower level of effective communication both in English and Mathematics. Communication is the central component to unlock all the doors to successful fulfilling the learning objectives. Bibi (2005) concluded that poor communication interprets the simple information to difficult words and this results inefficient learning. It is a key that allows the students to feel understand. To improve student achievement, effective communication must provide to students. In the 21st century we have been observe to great advancement in information and communication technologies. As Aziz, (2010) concluded that the teachers who deliver the contents of lessons in effective way, were noted for their good results. Effective communication in teaching makes changes in students' grades, inspiration, and assertiveness (Young 2008).

Results of the study showed that all the five scales of teacher effectiveness, namely: subject matter knowledge, instructional planning and strategies, assessment, learning environment, effective communication showed significant relationship with student achievement in English and Mathematics. These results were consistent with the findings of the studies conducted by Ojimba (2013) that teacher quality and student's achievement were significantly correlated.

Based on the results and conclusions of the study, the researchers recommend that to achieve better achievement scores

of the students, at secondary level, teacher training programs, short courses, and seminars should be organized on regular basis to refresh the knowledge of the teachers. It is recommended that, students' perceptions at secondary level should also be used to evaluate secondary school teachers side by side PER. Communication is the essential element for successful fulfilling the learning objectives. To achieve this objective, it is necessary for the teachers to understand, how effective communication in class can be use that may contribute to the academic success of students. Both in English and Mathematics, the least positive significant relationship was found between teacher effectiveness score on instructional planning and strategies and student achievement in English and Mathematics. It is another week competency of the teachers that was reported by the students. It is critically important for teachers to use appropriate material, technology, and resources while teaching. Teachers should be trained in such a way that they can understand every teaching methods, its proper use in a particular situation and particular discipline. It is recommended that more emphasis should be put on using the appropriate material, technology, and resources during training by the expert teacher trainers. Since this research is limited to students' achievement in English and Mathematics, further studies might be conducted to correlate teacher effectiveness score based on students' perceptions with students achievement in other subjects such as physics, chemistry, biology and so on.

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