TEACHER PERFORMANCE IN LARGE SCALE ASSESSMENT AT SCHOOL LEVEL EDUCATION

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ABSTRACT
Assessment is an educational tool that aims is to monitor and improve quality education and thus, It can be a key factor in transforming schools into places of quality learning for all students. To identify why students performed below the average, the teaching quality is one of the key components in this regard. The present study is aimed to determine the teacher performance in different content domains of mathematics at the school level. For this purpose, the achievement test 2016 which was conducted at the national level is used as a research instrument. The study included school teachers of Islamabad and Azad Jammu & Kashmir which participated in National Achievement Test (NAT) 2016. Data was gathered from National Education Assessment System (NEAS) after seeking permission from the Ministry of Federal Education and Professional Training (MOFE&PT). The collected data was analyzed by Percentage. Result of the study showed the teachers performed average in NAT 2016. Another very concerning finding is that the AJK teachers were not well prepared to teach several mathematics topics such as measurement, multiples, and numbers as they have basic content knowledge comparatively to Islamabad teachers who were quite adequately prepared to teach all topics as they have the proficient knowledge level. Results are discussed and recommendations for teachers and policy making are offered.
Keyword: Assessment, Large-Scale Assessment, Teacher Performance, National Achievement test

INTRODUCTION
Assessment holds a key position in teaching-learning process, it not only enables the teachers to judge students' performance but also make them aware of the strong and weak areas of their students, thus they are in a better position to guide them as to how to overcome their weakness and further polish their strong point along with keeping them motivated to perform better in future. (Harlen, 2006). In the area of assessment, large-scale assessments are highly discussed phenomena due to their outstanding outcomes and their influence on educational policies in many jurisdictions worldwide. Researchers identified that LSAs results helps the policymakers in making an informed policy that will have a great impact on the school system (Johansson, 2016). LSA treats students in all schools fairly and equitably by providing common 'metrics' in the form of common assessments (Phelps, 2008; O'Conner, 2009). Large-scale assessment results help in identifying students with special needs and highlighting the teacher quality (Roderick & Engel, 2001; Thurlow & Ysseldyke, 2001). Providing assessment results to students and teacher, has a strong positive effect on student achievement and teacher performance (Phelps, 2012). Furthermore, they can use the results of a large-scale evaluation to identify the need for professional development of teachers (Cizek, 2001). The presence of publicly reported large-scale evaluation results can help to discuss what constitutes an accountability system, the implementation of which is vital if the aim is to improve education, student outcomes, and teacher quality (Cizek, 2001; Ferrera, 2005; Mirazchiyski, 2013; Paton, 2013). The poor performance of the school and students with low-level competencies is the major concern of different countries in the world. The efforts were being made to develop a mechanism for monitoring and evaluating student learning outcomes at national level which is commonly known as the national assessment system (NAS) (Kellaghan & Postlethwaite,

2008). In past, different type of assessments at national level has been held in Pakistan for various Grades like for Grade 3, 4, 5, 6 and 8 aimed at evaluating the educational outcomes of students , the effectiveness of teachers and also to set the level of learning at respective grades and to help the policy maker for improving the education system. In order to establish a coherent mechanism for monitoring school performance in Pakistan, the National Education Assessment System (NEAS) was established in 2003 with bilateral donor funding. The main purpose was to monitor the overall effectiveness of the system as well as the performance of individual students through extensive evaluation and to identify key areas of intervention that would lead to   in the quality and effectiveness of the education system. The National Assessment Test (NAT) is one of the major large-scale assessments administered across the country by NEAS. Its results give valuable data to the policymakers and implementer on the performance of the education system and other factors that affects the performance of the student e.g. teacher quality (Education Monitoring, 2016).

This study particularly focused on teacher performance in NAT 2016. Presently, for effective national development education had adopted as an instrument per excellence by different countries, unfortunately, it is found that the teaching quality is one of the core educational problems. In our national educational policy it is reflected that in all educational planning efforts teachers education will continue to be given a major emphasis (NEP, 2009) because no education system can rise above the quality of its teachers. Keeping it, this research is conducted to highlights the teacher effectiveness at National level.

REVIEW OF LITERATURE

The term Large-scale assessment (LSA) refers to a program conducted by public or private bodies, in which a large number of students and teachers are based on (representative) samples of a particular age and level assessed using tests or other instruments (Nagy, 2000). Popham (2001), directs 'an annual collection of student achievement points that will allow the public and education policy makers to see if teachers are performing satisfactorily. Lewis (2000), described LSA as a "feedback loop" that incorporates new, reliable, and accurate information into the policy processes. For mapping educational progress and shaping countries' educational policies Large-scale international assessment studies such as Trends in International Mathematics and Science Study (TIMSS) or the Program for International Student Assessment (PISA) are essential evidence (Ababneh et al., 2016; Klemencic, 2010; Lockheed, & Wagemaker, 2013; Paine, & Zeichner, 2012; Sjoberg, 2015; Tobin et al., 2015). New science standards at the national level were adopted by Germany. In 2004 (Naumann, 2005; Steffen & Hößle, 2014), New guidelines for teacher training developed by Jordon and Efforts to improve science teacher education following poor TIMSS and PISA results in New Zealand are just a few examples of policy changes based on international assessments (Ababneh et al., 2016; Tobin et al., 2015). Almond (2002), considers LSA assistance related to program decision-making and system level in order to promote development, efficiency and accountability to relevant stakeholders e.g. the presence of results can also invite and generate talks about change in education and teaching and learning. LSA assessment of student achievement in education providing different type of information such as equating educational programs, providing accountability measures, and evaluating achievement at a broad curriculum level (The Council of Ministers of Education, Canada [CMEC], 2008; Taylor & Tubianosa, 2001). The main slogan of the world bank in the 1980's and 1990.s were summarize by these three word "Examine, assess and compare " consistent with its emphasis on human capital development (Lockheed & Vespoor, 1990). The World Bank's advice to countries, especially developing countries, to improve education service delivery was basically: Beginning in the 1960s and expanding significantly in the 1990s, formalized the trend toward comparative studies of educational outcomes and other forms of student testing and increased national participation in national assessments? In recent years, excellence in international assessment and World Bank support for technical and financial assessment of   student learning   have contributed   to   the   spread   of the second   form of assessment, national assessment. To   improve   student   effectiveness   and   teacher   quality, assessment of these non-standard cognitive performances (and sometimes attitudes and behaviors) is often supported by bilateral or multilateral donor agencies have been sponsored or endorsed by the state itself (Benavot & Tanner, 2007).

Several studies have indicated that knowledge of mathematics affects students' learning at all school levels (Met-zler & Woessmann, 2010; Park & Leung, 2003). Mathematic pedagogy is also found

to be one of the strongest predictors of student achievement (Hill, Rowan, & Ball, 2005). Quite a few studies have also suggested positive effects of teacher experience and teacher education on student achievement (Greenwald, Hedges, & Laine, 1996). Monk and King (1994) reported that teachers' subject matter preparation in mathematics and science does have a positive impact on student achievement in those subjects. Similarly, Goldhaber and Brewer (1997) concluded that teachers' subject-specific training has a significant impact on student test scores in mathematics and science. Teachers' professional development is another critical factor in school improvement and student learning. Indeed, professional development helps teachers acquire knowledge and skills that they bring into action in classroom practice (Borger & Tillema, 1993; Cohen & Hill, 2000)

Teacher quality is a key determinant of student learning and achievement. Numerous research studies have shown that at any school level the student learning is highly affected by the teacher knowledge and its teaching quality (Metzler & Woessmann, 2010). One of the important component required for a quality teaching is teacher's content knowledge (Hill, Rowan, & Ball, 2005). Monk and King (1994) reported that for student achievement the teacher curriculum preparation play a significant role. Similarly, Goldhaber and Brewer (1997) concluded that a student can scores better if their teacher have significant subject preparation. For better school environment and student learning subject specific training is one of the important components which helps the teacher to acquire the knowledge and skills that required for quality teaching in the classroom (Cohen & Hill, 2000). To improve teacher quality by promoting professional development and growth assessment is increasingly recognized as a valuable tool it can be used not only as a vehicle for accreditation and qualification, but also as a tool for learning (Cochran-Smith, 2005).

Objective of the Study

To understand why students in NAT performed below the average, the current study aimed to identify the teacher performance in NAT 2016. Specifically, the study will seek to answer the following questions:

Research Question 1: To identify the teacher performance in different domains of Mathematics in Grade 4 at NAT 2016

Research Question 2: To compare the teacher performance of AJK and Islamabad in different domains of Mathematics in Grade 4 at NAT 2016.

Research Hypotheses

To find an answer to the above stated research questions, the researcher hypothetically stated these:

- There is no significant difference in the performance of teachers in different content domains of Mathematics in Grade 4 at NAT 2016.
- There is no significant difference in the teacher performance of AJK and Islamabad in NAT 2016.

RESEARCH METHODOLOGY

This study is descriptive in nature. A quantitative method was used to evaluate the teacher performance. Data was obtained from subject teacher of Math's of grade 4th who participated in pervious NAT 2016 in Islamabad and AJK. NAT sample was created by using stratified sampling method. In this study, teacher performance scores were gotten from math cognitive achievement tests which were designed for NAT 2016. The sample assessment test will be collected from the coordinator of mathematics in the national assessment system for education. Demographics data of the representative sample was collected from National Director NEAS. The first reason why this achievement test is selected for this study is that it the only national assessment test conducted in Pakistan. Therefore, the findings will be applicable at the national level. The achievement contained objective items, Grade 4 mathematics subject test contained 50 items. For item analysis, the correct response was coded as 1 and 0 as the wrong response.

Table No. 1 Detail of item included in NAT 2016 Mathematics achievement test

Subject	Grade	Objective Items	Domains
Mathematics	Grade 4	50	Numbers, factors, multiples, common and decimal fractions, Measurement and information handling.

Table No. 2 Items distribution content-wise

Content	ITEMS
Numbers	5,9,10,11,13,16,17,18,21,24,30,31,32,33,34,42,45,48
Factors	12,20
Multiples, Common And Decimal Fractions	6,22,25,27,29,35,36,37,43,44,46,49
Measurement	1,2,4,7,15,19,23,26,38,39,40,41,47,50
Information Handling	3,8,14,28

Population

The population of this study is that only those teachers who participated in NAT 2016 from AJK and Islamabad.

Grade	Area	Subject	Teacher
Grade 4	AJK	Mathematics	92
	ICT		64

Sample

The stratified random technique was used to select the teacher those who participated in NAT 2016 from AJK and Islamabad

Grade	Area	Subject	Teacher
Grade 4	AJK	Mathematics	44
	ICT		28

Data Analysis

To analysis the data the researcher use percentage of total score obtained, which is indicative of the teacher performance (content knowledge).In order to provide a basis for interpretation, scores were categorized into four performance levels. 'Below Basic', Basic, Proficient and Advanced"- indicating the performance level of a teacher in different domain

Knowledge level	Score Range (%)	Performance
Below basic	0-34	Poor
Basic	35-74	Average
Proficient	75-89	Good
Advanced	90-100	Excellent

RESULTS

Table No. 3 Overall Performance Percentage of Teachers

Content	Items	Number of Response	Performance Percentage
Number	18	1296	54.86%
Information Handling	4	288	59.72%
Measurement	14	1008	50.39%
Factor	2	144	61.80%
Multiples	12	864	56.39%

Table 3 provides a brief description of the different domains, the number of items, responses and the performance percentage. The above table showed that the teacher performance on the basis of the level of knowledge in different content domains. The above table highlighted that teachers performed average in the NAT 2016. As the have the basic knowledge in different content domains of mathematics.

Table No. 4 Comparison of teacher performance in AJK and ICT

Content Domain	Area	Items	Number of response	Correct response	Wrong response	Performance Percentage
Number	AJK	18	792	345	447	43.56%
	ICT		504	366	138	72.61%
Information Handling	AJK	4	176	85	91	48.29%
	ICT		112	87	25	77.67%
Measurement	AJK	14	616	233	383	37.82%
	ICT		392	275	117	70.15%
Factor	AJK	2	88	45	63	51.02%
	ICT		56	44	12	78.50%
Multiples	AJK	12	528	221	307	41.85%
	ICT		336	267	69	79.46%

Table 4 shows the teachers of Islamabad performed better in NAT 2016 comparative to AJK teachers. It identify that Islamabad teachers performed good as they the proficient knowledge level in the following content domains: information handling (77.67%) factor (78.50%) and multiples (79.46%) and basic level of knowledge in number (72.61%) and measurement (70.15%).

Whereas the AJK teachers performed average as they have a basic level of knowledge in all the content domains; Numbers (43.56%), Information Handling (48.29%), Measurement (37.82%), Factor (78.50%), Multiples (79.46%).

DISCUSSION

The finding of this study clearly shows that overall teachers performed average as a whole in National achievement test. The differences between the two areas, results highlighted that AJK teachers due to their basic content knowledge were not very well prepared to teach several mathematics topics such as measurement, multiples, and numbers, while ICT teachers were quite adequately prepared to teach all topics. Between AJK and ICT the differences of preparedness were found to be statistically significant. The results needs serious attention from Educators and policymakers because teacher should be very well-prepared at this level to teach all topics of the curriculum. As previous studies have shown that student achievement is highly affected by the teachers' preparation and subject knowledge (Eide, Goldhaber, & Brewer 2004; Greenwald, Hedges, & Laine, 1996; Hanushek & Rivkin, 2006; Nye et al., 2004). Quite a few research studies have been conducted concerning teacher performance in National Large Scale Assessment. This study concludes that for quality teaching which lead to remarkable result of a student it is mandatory to enhance the subject specific knowledge of a teacher. According to Güven and Akçay (2010), a sufficient experience and knowledge of teachers helps to deliver lessons to students' efficiently Alharbi et al. (2015) highlight that among the critical determinants of the student learning process teacher quality is on the top. According to this research, student success is highly dependent on teacher qualifications, and qualifications include being well-educated when engaging in the teaching and learning process. Qualified teachers are likely to teach students outside of a school or classroom environment without comprehension problems. All these previous findings support the current research. Teacher quality is an important factor in the teaching and learning process.

CONCLUSION

The purpose of this study was to assess the teacher's performance in NAT 2016. The finding indicated that teachers performed average in the NAT 2016. The knowledge level of the teachers is basic in different content domains of mathematics. Very concerning, however is that the AJK teacher was not prepared to teach multiple mathematics topics such as measurement, multiples, and numbers as they have low knowledge level comparatively to Islamabad teachers who were quite adequately prepared to teach all topics as they have the proficient knowledge level. For effective teaching-learning process the

content knowledge of a teacher is highly important. Historically, researchers have focused on many aspects of education, but for the most part paid little attention to how teachers should understand the subjects they teach. Moreover, when researchers, educators, and policy makers have focused on the subject of teachers, it has often been assumed that advanced study of that subject is important. It concentrates on what teachers need to prepare content for, not what kind of content they need to learn. Keeping in view the importance of content knowledge, teacher education curriculum needs to be revisited, evaluated and revised keeping in the view the demand of the current age.it need to be more subject specific.

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