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Message from the Editor

I am very pleased to publish second issue in 2017. As an editor of International Online Journal of Primary Education (IOJPE), this issue is the success of the reviewers, editorial board and the researchers. In this respect, I would like to thank to all reviewers, researchers and the editorial board. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to International Online Journal of Primary Education (IOJPE), For any suggestions and comments on IOJPE, please do not hesitate to send mail.

Prof. Dr. Şule AYCAN
Editor

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PUBLIC VS PRIVATE QUALITY EDUCATION AT PRIMARY LEVEL IN PAKISTAN

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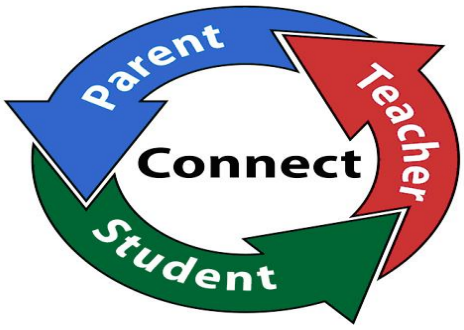
ABSTRACT
Pakistan is an ethnically and religiously diverse country of over 190 million people. There are 22.6 million boys and girls out of school that's nearly half (44%) of all children in the country. This study was designed to assess comparative quality measures of primary level education at both public and private institutions of Pakistan. This study based on secondary data specially focused on ASER Pakistan Survey Report 2015 that was conducted in 146 rural districts of Pakistan, covering 83,755 households in 4,217 villages throughout the country. Detailed information was collected on 258,021 children (59% males, 41% females) aged 3-16 years. Out of these 219,609 children aged 5-16 years were tested for language and arithmetic competencies. It was found that Public schools lacking with trained teaching staff, well equipped classrooms and good policy and administration. While the other hand private schools deficient of well-educated staff, good infrastructure and self-motivation. It was recommended that the Government needs to realize this situation and to equalize the standards of public and private sector to achieve vigorous quality education at this level.
Key words: Primary education, Quality measures, Public vs private, Realize situation, vigorous education

INTRODUCTION

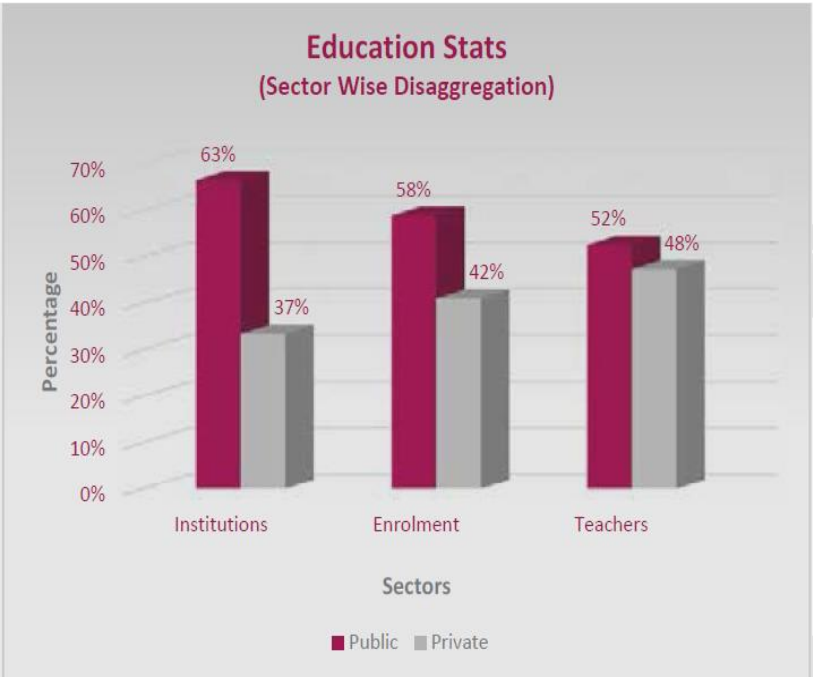
Pakistan, officially known as the Islamic Republic of Pakistan appeared on the map of the world on 14 August 1947. It covers an area of about 796,096 km2 and shares its borders with China, India, Iran and Afghanistan.

The Location of Pakistan is of vital importance in South Asia. It connects the Eastern world with the West. It has friendly and trade relations with China, a growing economic and tech giant, in its north. Afghanistan in its west. India, which shares long historical and cultural relations with Pakistan, lies in its East. It has a coastal belt of about 700 km, which connects it to the Middle East and provides a trade route through the Arabia Sea.

Currently Pakistan is on the sixth number with respect to world population. Its man-power is another one of its resources. People who are daring and passionate make up to about 18.5 million of this country. Primary education is most important first stage of compulsory education, coming between early childhood education and secondary education. Primary education usually takes place in a primary school or elementary school. In some countries, primary education is followed by middle school, an educational stage which exists in some countries, and takes place between primary school and high school. According to (Sabil and YuanTong Kai 2017) "In addition to being a right, basic primary education underpins the success of society. Every year of primary education increases a person's productivity and reduces their dependence on social resources. The goal of education is to enable children to learn, realize their full potential, and participate meaningfully in society. In spite of increasing enrolment rates, too many children are learning far less than what they are taught about or what they ought to learn in school" According to (NCHD-National Commission for Human Development) In Pakistan, the situation of primary education is very grief as there are 19 million primary school age children. Out of which almost



half are still out of school. According to an estimate, gross enrollment rate in schools is 70% but almost 50% children get dropout of schools before reaching the fifth class. Only one third of the 50% survivors pass the primary education.



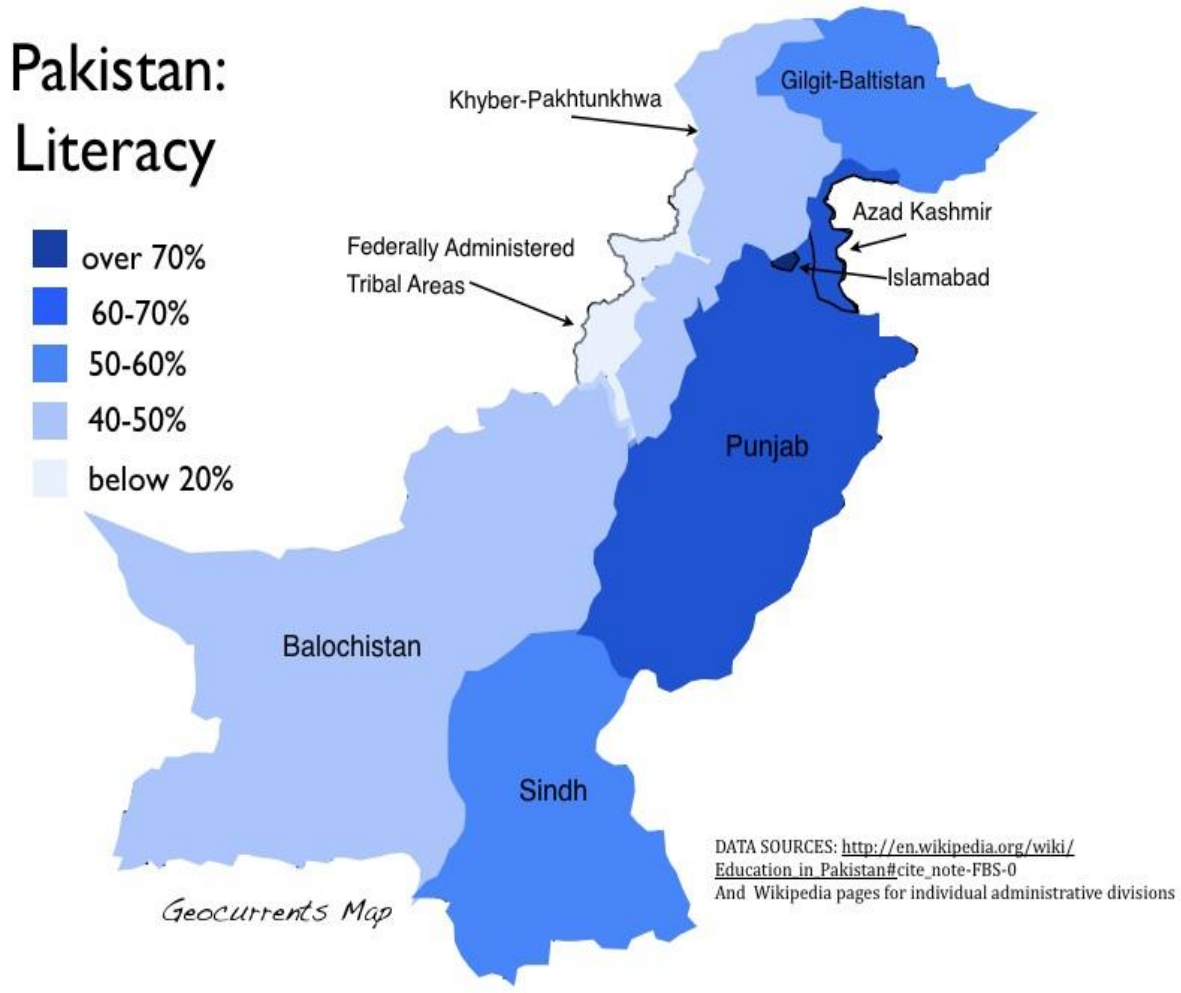
Quality of school, geographical condition, and fees structure is main factors which affect the poor households to decide their children send to government school, private school, or no school. Many studies shows that most of the households shows interests for private schools and not more agree to send their children to the Government schools. Lowering private school fees or distance or raising measured quality raises private school enrollments, partly by transfers from government schools and partly from enrollments of children who otherwise would not have gone to school. The strong demand for private schools is consistent with evidence of greater mathematics and language achievement in private schools than in government schools. These results strongly support an increased role for private delivery of schooling services to poor households in developing countries.

In Pakistan there are different types of institutions available like private and public institutions, technical institutions, and madrasas (religious institutions). These institutes are having the triangle of three main pillars; consisted of Teachers, Students, and parents. Our study focused on two main types of schools in Pakistan that is public and private school system. Now a days private schools are becoming more favorite and attractive for majority of the students due to their better education systems, test criteria and knowledge creation and evaluation standards, which comparatively very cheap but inefficient are losing their attraction. Parents prefer to send their children in private schools and avoid public schools. The main objective of this study is to investigate why people prefer high charging private schools over free public schools (That charge nothing)? We use secondary data collected by ASER Pakistan through survey method applied from the target respondents of private and public schools in random regions of Pakistan. The results show that five main factors emerge as important determinants of private school choice. These include the socioeconomic status of the household, the degree of a school's accessibility, the cost of schooling, parents' perceptions of school quality, and their perceptions of the available employment opportunities in the region. As we move forward towards the recently adopted Sustainable Development Goals (SDGs) 2030, this study is very important to highlight the comparative issues in these two sectors to take the remedial measures for ensuring quality education in the country.

LITERATURE REVIEW

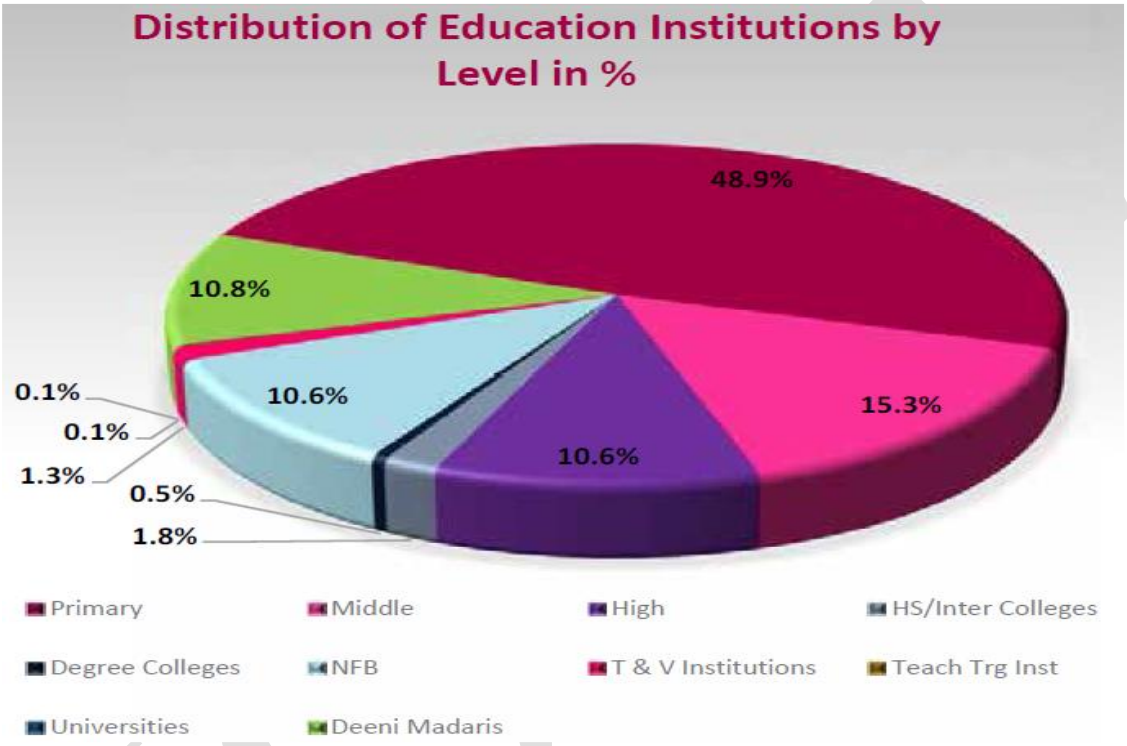
"Strengthening the quality of education has become a global agenda at all educational levels and more so at the primary level. The quality of basic education is important not only for preparing individuals for the

subsequent educational levels but to equip them with the requisite basic life skills. Quality education also ensures increased access and equality and it is mainly due to these reasons that various international Forums and Declarations have pledged improvements in quality of education (Ministry of Education, Government of Pakistan Report 2013)". Strengthening the quality of education has become a concern of paramount importance in education. The Universal Declaration of Human Rights (1948) declared primary education as the basic human right of all people. Accordingly, all nations prioritized universal access to



education. The developed, and many developing, nations have attained universal or near universal access to primary education. Now the focus is on the quality of students' learning. The concern is valid not only for nations who have attained the quantitative targets, it is also valid for nations still striving for expansion of educational access. It has been established that access and quality are not sequential elements. Quality is rather considered, in the light of growing evidence, a means for achieving the universal access and equity of education regardless of gender, location, race, religion, and social class (Hoy, et al, 2000). Pakistan is a signatory of the Universal Declaration of Human Rights (1948) and many other declarations down to the World Declaration on Education for All (1990), the World Education Forum: Dakar Framework for Action 2000, the Recife Declaration of E-9 Countries 2000 and the Beijing Declaration of E-9 Countries on ICT and EFA 2001 till Millennium Development Goals (MDGs) 2015.

But Pakistan, despite policy statements and target setting in various education policies and five-year plans is still far below universal primary education access and retention. The priority is thus, still on the expansion of basic educational opportunity to all. However, with the emerging international agenda of quality education, Pakistan has also readdressed the educational target setting by adopting a two-pronged approach based on quantitative expansion along with quality enhancement, particularly since the 7th Five Year Plan. The National Education Policy 1998 has included many elements and strategies for improving quality at elementary level. The central message of SAP-II and EFA beyond DAKAR is Quality Education and that the access is not sustainable without quality (Govt. of Pakistan, 2000).



What is ASER (Annual Status of Education Report?)

ASER - The Annual Status of Education Report is the largest citizen led; household based initiative that aims to provide reliable estimates on the schooling status of children aged 3-16 years residing in all rural and few urban districts of Pakistan.

Education system of Pakistan:

The Constitution of Islamic Republic of Pakistan, 1973 lays down that "State shall be responsible for eradication of illiteracy and provision of free and compulsory education up to secondary level, within minimum possible time" (Article 37-B, 1973 Constitution of Pakistan)

The article 25A – Right to Education – of the Constitution says that: "The State shall provide free and compulsory education to all children of the age of five to sixteen years in such manner as may be determined by law."

The education system of Pakistan is comprised of 303,446 institutions and is facilitating 47,491,260 stude nts with the help of 1,723,790 teachers. The system is composed of 191,065 public institutions and 112,38

1 private institutions. The public sector is serving 27.69 million students to complete their education whi le the remaining 19.80 million students are in private sector of education. 37% of private educational insti tutions are serving or facilitating 42% of students which hints at a slightly higher per-institution enrollme nt ratio in the private sector compared to the public sector. In the last decade, we have witnessed increase d public interest and trust in the private sector, with the result that the share of private sector is increasing gradually.

Pakistan among other countries of world has signed the Sustainable Development Goals Agenda. Goal 4 of SDGs relates to quality education and lifelong learning. Various levels and dimensions of monitoring frameworks have been defined to better monitor the SDG-4 at national and global levels. The monitoring system that provides in-depth specifics of education system provide greater opportunities to policy makers for their unique circumstances and development priorities. As Pakistan was unable to achieve the Education for All (EFA) agenda by 2015, the pounding significance and unfinished business of EFA would be integral part of new agenda.

On the EFA Development Index (EDI) published in EFA Global Monitoring Report 2015, Pakistan lies at the bottom with Bangladesh, in the region, and is considerably below in comparison to Sri Lanka. A similar picture is painted by the gross enrolment ratios that combine all education sectors, and by the adult literacy rate measures.

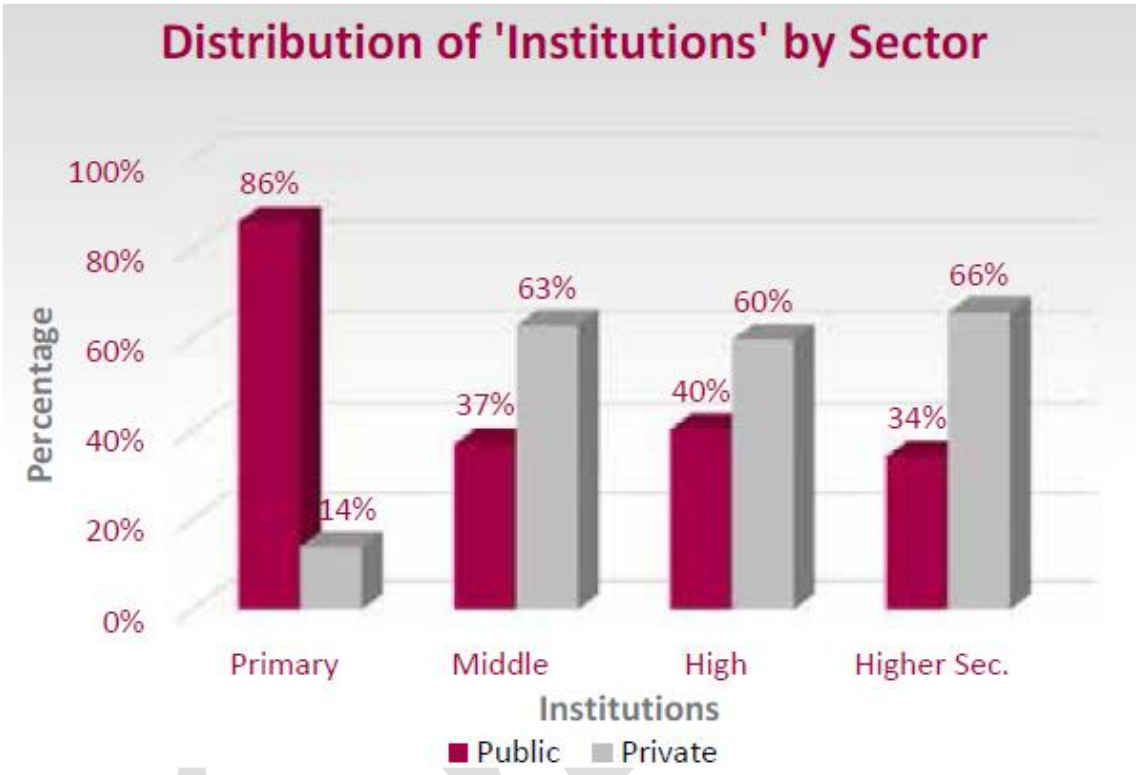
The Global Competitiveness Index (GCI) shows, Pakistan's performance is weak, on the health and education related elements of competitiveness, when compared with other countries in the region like India, China, Bangladesh, Sri Lanka and Malaysia. The distribution of education institutions in percentage according to above mentioned categories is shown in forthcoming figure.

There are no separate preprimary institutions in public sector. The figure reflects that the major part of our education system, that is 49%, is shared by primary schools The universities have the least share in educa tion system i.e., 0.05%. There are only 163 universities in Pakistan. According to a Report released by ASER in 2015 "A review of education system of Pakistan" is comprised of 260,903 institutions and is facilitating 41,018,384 students with the help of 1,535,461 teachers. The system includes 180,846 public institutions and 80,057 private institutions. Hence 31% educational institutes are run by private sector while 69% are public institutes. Pakistan has expressed its commitment to promote education and literacy in the country by education policies at domestic level and getting involved into international commitments on education. In this regard national education policies are the visions which suggest strategies to increase literacy rate, capacity building, and enhance facilities in the schools and educational institutes. MDGs and EFA programmes are global commitments of Pakistan for the promotion of literacy. A review of the education system of Pakistan suggests that there has been little change in Pakistan's schools since 2010, when the 18th Amendment enshrined education as a fundamental human right in the constitution. Problems of access, quality, infrastructure and inequality of opportunity, remain endemic.

Formal System of Education at Government Level in Pakistan Pre-Primary

In formal education system, there are a number of stages. Pre Primary Schooling: Pre-primary education is functional and managed in schools throughout country. Public schools provide pre-primary education as part of socialization process. The students attending pre-primary class are called Kachi. National Education EFA Action Plan Policy, 1998-2010 provided recognition to Kachi class as proxy for early childhood education. According to National Education Policy, 1998-2010, the Kachi class will be introduced as formal class in the primary schools. The age group for pre-primary is <3>5. In Pakistan

there are no separate institute in public sector. The total enrollment at pre-primary stage is 8.748 million. Public sector has an enrollment of 4.532 million (52%) whereas the private sector has 4.212 million (48%) enrollment. Since there is no separate allocation of teacher to the primary level in the public sector, their number is not reported. Whereas the private sector has separate teacher for this level of education and their number are 2.785 in the private sector.



Primary Schooling:
This stage consists of five classes' I-V and enrolls children of age 5-9 years. Since independence, the policy makers pronounced to make primary education free and compulsory. According to Pakistan Integrated Household Survey (PIHS) 1998-99, the gross participation rate was 71 percent in 1999, for male it was 80 percent and for female it was 61 percent. For urban female it was 92 and for rural it was 50 percent. The lowest participation rate observed for rural female in Sindh Province that was 33 percent. The net enrolment rate was 42 percent, for urban male it was 47 percent and 37 percent for rural female.

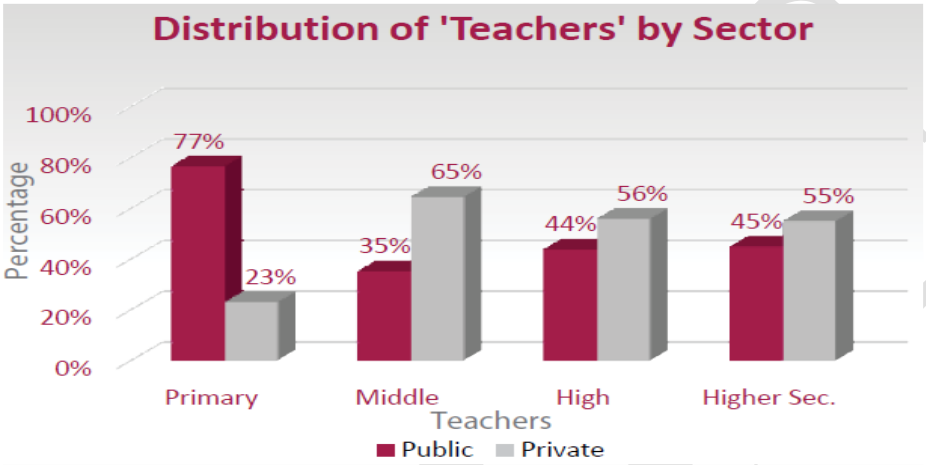
Middle Schooling:
The middle schooling is of three years duration and comprised of class VI, VII and VIII. The age group is 10-12 years. The participation rate at middle school was about 34 percent during 2000-2001. Males were 36 percent and females were 33 percent.

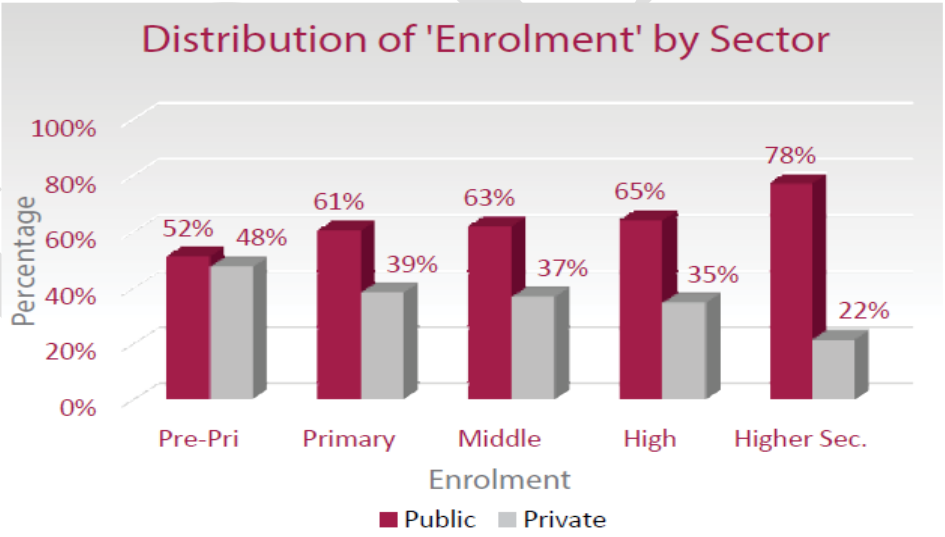
High Schooling:
The high school children stay for two years in classes IX and X. The Board of Intermediate and Secondary Education conducts the examination. A certificate of secondary school is awarded to the successful candidates. The participation rate at high school was about 22 percent in 2000-2001 of which, 24 percent were males and 20 percent were females. Vocational Education is normally offered in high

schooling. There are varieties of trades offered to the students and after completion of the course they get jobs as carpenters, masons, mechanics, welders, electrician, refrigeration and similar other trades. There are 498 vocational institutions with an enrolment of about 88 thousand in 2001-2002.

Higher Secondary Education:

The higher secondary stage is also called the "intermediate stage" and is considered a part of college education. Higher Secondary Education consists of classes XI to XII.





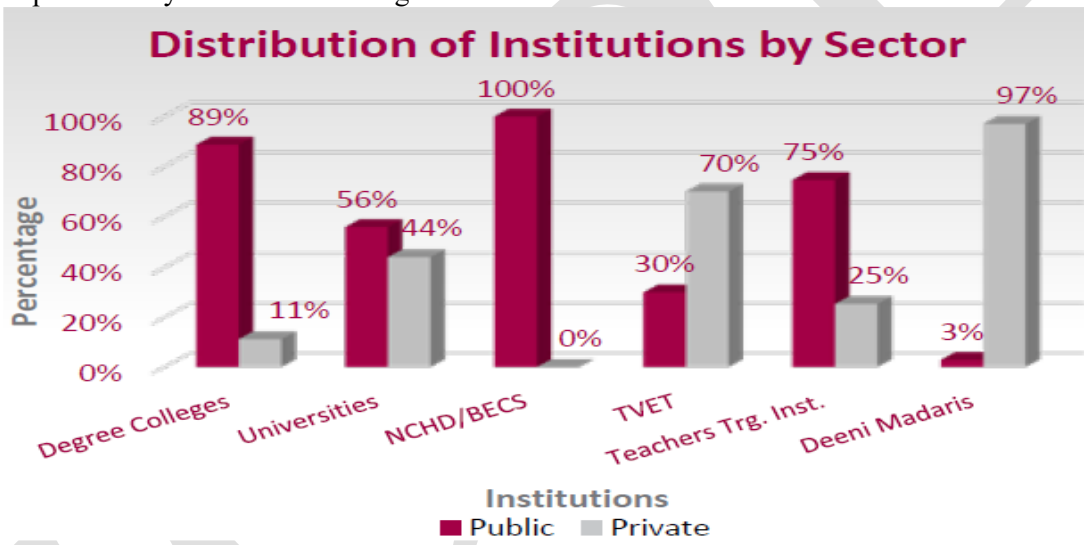
During two years stay in this cycle of In Pakistan there are a total of 145,829 primary schools, out of these 125,573 (86%) are in the public sector, whereas, 20,256 (14%) are in the private sector. The primary stage of education in Pakistan enrolls 18.751 million learners/students. Out of which 11.461 million (61%) are in public sector and 7.290 million (39%) are in private sector. Out of the total enrolment at primary stage, 10.471 million (55%) are boys and 8.280 million (45%) are girls. The total number of primary teachers are 422,797 of which 324,561 (77%) are in public sector, whereas 98,236 (23%) are in private sector

education, a student at the age of 16 years in this stage can opt for general education, professional education or technical education.

The Board of Intermediate and Secondary Education (BISE) conducts the examination and awards a Certificate of Higher Secondary School Education (HSSC). According to 1979 Education Policy, all schools were to be upgraded to higher Secondary Schools. Middle sections of high schools were to be linked with primary schools (designating elementary education). This system has limited success and some problems were experienced. Keeping in view the problems this system is being introduced gradually.

Higher Education:

To obtain a degree, 4 years of higher education after 10 years of primary and secondary schooling is required. Students who pass their first-degree stage are awarded a Bachelor's degree in arts or science, typically at the age of 19 years. In order to complete an honors course at Bachelor's degree level an additional one year's study is required. Further, a two years course is required for Master's degree who have completed two years Bachelors' degree.



A doctoral degree requires normally 3 years of study after the completion of a master's degree course.

Professional and Technical Education:

The duration of post-secondary education varies in technical and professional fields. The polytechnic diploma is a three-year course. A bachelor's degree in medicine (MBBS) requires 5 years of study after intermediate stage (12 years of schooling).

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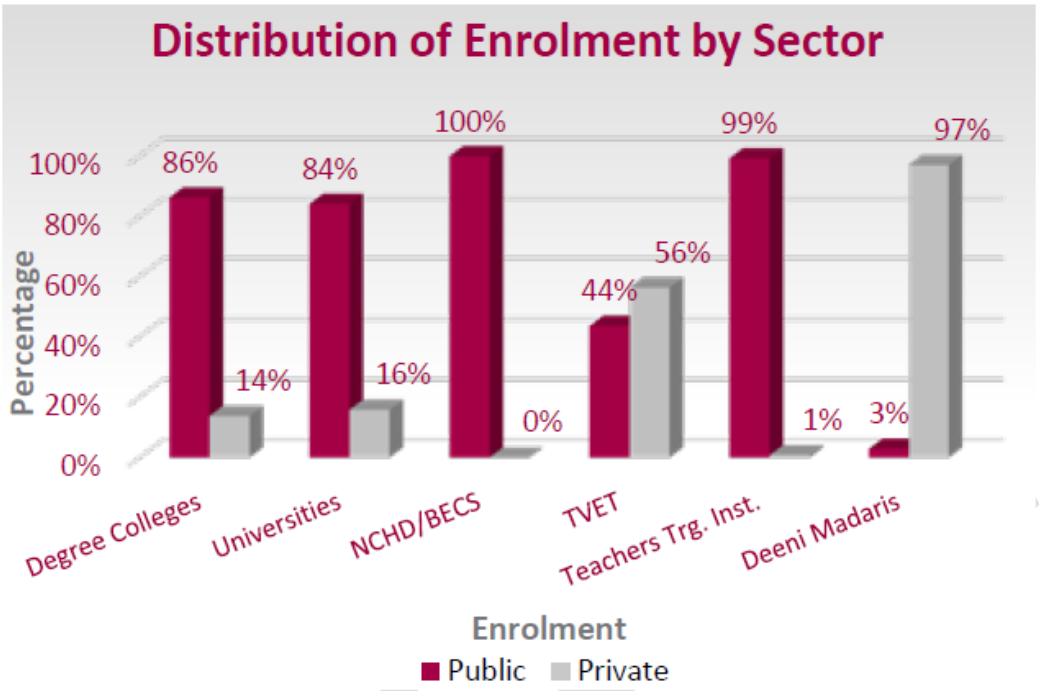


Similarly, a bachelor's degree course both in engineering and veterinary medicine is of 4 years' duration after the intermediate examination.

Madrasa's Education:

Side by side with modern education system there is also religious education system, which provides Islamic education. These institutions have their own management system without interference from either the provincial or federal governments. However, grants-in-aid are provided to these institutions by the government. During 2000 there were 6761 religious institutions with an enrollment of 934,000, of which 132,000 were female students in 448 institutions (Khan, 2002). Efforts have been made by the present government to bring the Madrasa's in the mainstream under Education Sector Reforms. The main purpose of mainstreaming Madrasa's is to enlarge employment opportunities for their graduates. Pakistan Madrasa's Education Boards are established to regulate the Madras activities.

Non-formal Education:

There are millions of people in Pakistan who have no access to formal education system. It is not possible for the formal system to meet educational needs of the rapidly growing population. Non-formal Basic Education School scheme has been introduced for those who have no access to formal education. This scheme is very cost-effective. Under this scheme primary education course is taught in forty months. Non-formal schools are opened in those areas where formal schools are not available. Government provides teacher's salary and teaching material whereas community provides school building/room. There are 6371 NFBE schools functioning in the country.

Examinations:

Examinations are usually held annually, which are the main criterion to promote the students to higher classes or to retain them in the same class. However, recently a system of automatic promotion up-to grade-III has been introduced in some schools. In the primary classes, examinations are conducted by the

respective schools. However, at the end of the fifth year of the primary stage a public examination is held by the education department for promotion to the next grade. Another examination is held for the outstanding students to compete for the award of merit scholarships. Similarly, the examination in Middle Schools is held by the individual schools but there is a public examination at the end of grade VIII conducted by the Education Department for awarding of scholarships. The Board of Intermediate and Secondary Education (BISE) conducts the examinations of Secondary and Higher Secondary. The degree level examinations are conducted by the respective universities.

Teachers' Training:

In Pakistan, there are 90 Colleges of Elementary Education which offer teachers' training programs for Primary Teaching Certificate (PTC) and Certificate in Teaching (CT) to primary school teachers. For secondary school teachers, there are 16 Colleges of Education, offering graduate degrees in education and there are departments of education in 9 universities which train teachers at the master's level. There are only 4 institutions which offer in-service teachers' training. Besides these, the Allama Iqbal Open University, Islamabad, offers a very comprehensive teachers' training program based on distance learning; its total enrolment is about 10,000 per annum of which 7,000 complete various courses every year.

Private Education System:

Private sector involvement in education is encouraging. The Federal Bureau of Statistics survey (1999-2000) indicates that there are 36,096 private educational institutions in Pakistan. About 61 percent of the institutions are in urban areas and 39 percent in rural areas. The percentage share of private sector in enrollment is 18 percent at primary school level, 16 percent at middle school level and 14 percent at high school level.

It has been observed that most of the private schools select their own curricula and textbooks, which are not in conformity with public schools. Majority of the schools are "English Medium" which attracts the parents for sending their children to these schools. Most of the schools are overcrowded and do not have adequate physical facilities. These schools are usually charging high fees from the students. Most of the schools are unregistered; therefore, in most cases the certificates issued by these institutions are not recognized by public schools. Majority of these institutions are functioning in the rented buildings. The National Education Policy 1998-2010 proposed that there shall be regulatory bodies at the national and provincial levels to regulate activities and smooth functioning of privately managed schools and institutions of higher education through proper rules and regulations. A reasonable tax rebate shall be granted on the expenditure incurred on the setting up of educational facilities by the private sector. Grants-in-Aid for specific purposes shall be provided to private institutions. Setting up of private technical institutions shall be encouraged. Matching grants shall be provided for establishing educational institutions by the private sector in the rural areas or poor urban areas through Education Foundation. In rural areas, schools shall be established through public-private partnership schemes. The government shall not only provide free land to build the school but also bear a reasonable proportion of the cost of construction and management. Liberal loan facilities shall be extended to private educational institutions by financial institutions.

Despite all shortcomings of private education mentioned above, PIHS survey indicates that enrolment rates in public schools have declined since 1995-96 particularly a large decline has been observed in rural areas. It is generally perceived by parents that quality of education in private schools are better than the public schools, therefore, those parents who can afford prefer to send their children to private schools. These trends indicate that the public education system is unable to meet public demand for providing quality education in the country.

Quality Education

Quality education is global agenda at all educational levels and especially at primary level. It's not only important for preparing individuals for the succeeding educational levels but to train them with the mandatory basic life skills. Quality education focuses increased access and equality and it is mainly due to these reasons that various international Forums and Declarations have guaranteed improvements in quality of education. National commitment towards quality education has become significantly visible since the late eighties. From then onwards, the government has experimented a number of initiatives and interventions for improving quality with national and international funding. Enhancing the quality in education demands well equipped educational systems that are unified and impressive for children's learning. Quality education focus to equalize gender and other inequalities; children's health and nutrition; issues of parental and community involvement; and the management of the education system itself. The benefits and impact of quality education also make invaluable contributions to all areas of human development, improving the status of women and helping to alleviate and eventually eradicate poverty.

"The Convention on the Rights of the Child (CRC) recognizes the right of every child to education and requires States to provide free and compulsory basic education (article 28). It further calls on governments to ensure that education leads to the fullest possible development of each child's ability, and to respect children's parents' cultural identity and for human rights (article 29). The CRC obligates both national governments and the international community to promote cooperation and ensure that the rights of children are met. The World Conference on Education for All in Jomtien Thailand sponsored by UNDP, UNESCO, UNICEF and the World Bank marked a significant shift in the world's collective approach to education, broadening notions of quality in basic education and understanding its delivery focusing special attention on the world's poorest citizens (Quality Primary Report 2013)".

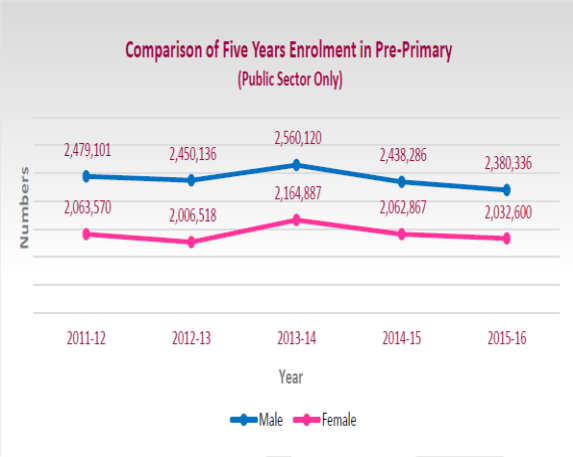
Current Quality Education Status in Pakistan

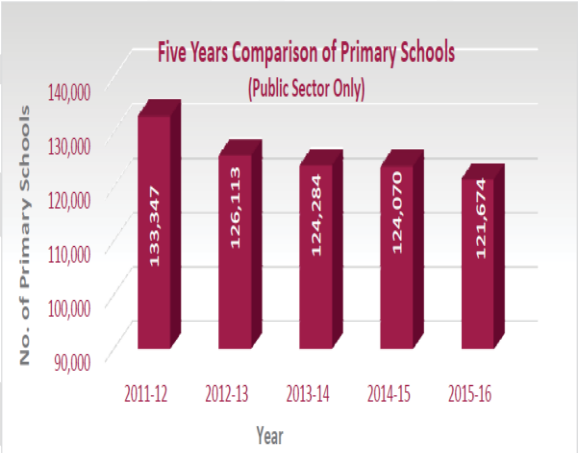
"Pakistan is a signatory of the Universal Declaration of Human Rights (1948) and many other declarations down to the World Declaration on Education for All (1990), the World Education Forum: Dakar Framework for Action 2000, the Recife Declaration of E-9 Countries 2000 and the Beijing Declaration of E-9 Countries on ICT and EFA 2001-2015. But Pakistan, despite policy statements and target setting in various education policies and five-year plans is still far below universal primary education access and retention (Ministerial Meeting of South Asia EFA Forum 21-23 May, 2003)".

Awan (2014) says that education plays a pivotal role in the rise and fall of nations especially in 21st century. It is mainly due to the emergence of global competition in education and technology. This competitive environment is the core need for progress of any country. Awan (2011) argues that all countries including Pakistan have different school systems but when we divide them we find two major categories of school systems: private and public schools. In Pakistan private schools are getting mass acceptance today to ensure sustained progress of the country. Therefore, the main objective of this paper is to analyze the quality of education introduced in private schools. The quality of education is assessed by education levels of teachers, method of teaching, curriculum, and study environment. During 1990s and 2000s private sector was emerged as a key provider of education services in Pakistan both in absolute terms and relative to the public sector. One piece of evidence relates to the number of private schools, which increased by 69%, as compared to mere 8% increase in number of schools. In 2000 private sector was catering the educational needs of about 6 million children. This number increased to 12 million in 2007-08 – equivalent to 34 percent of total enrolment. The number of teachers also doubled in private1 educational institutions during this period. Awan and Saeed (2014) plead that private educational institutions are playing key role not only in eradicating illiteracy but also enhancing the level of students

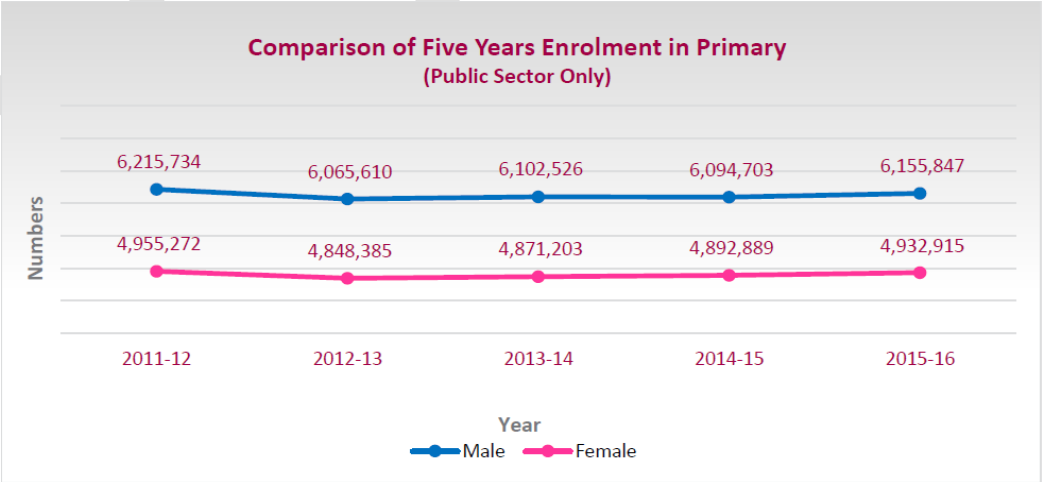
as well as teachers by providing better academic environment. Awan (2012) disclosed that private sector contributed significantly in eradicating illiteracy in the emerging economies. If private school properly managed they can uplift educational standard in Pakistan as well. Awan (2012) revealed that educational system was completely shattered in the Soviet Union after its disintegration in the late 1990s due to non-existence of private educational institutions. When the Soviet Union was collapsed its public school system was also collapsed.

If we compare the data of primary schools gathered over the period of five years, a decline of about 10% is observed. There are multiple reasons of this decline: Up-gradation of primary schools to higher levels closing of non-functional schools, as per rationalization policy Merger of schools, due to non-availability of teachers or lack of enrolment it is pleasing to note that, despite decline in number of primary schools, increase in enrolment is seen. At pre-primary stage of education, a decrease of about 2.0% and 1.0% has been observed against 2014-15 in boys and girls enrolment respectively.



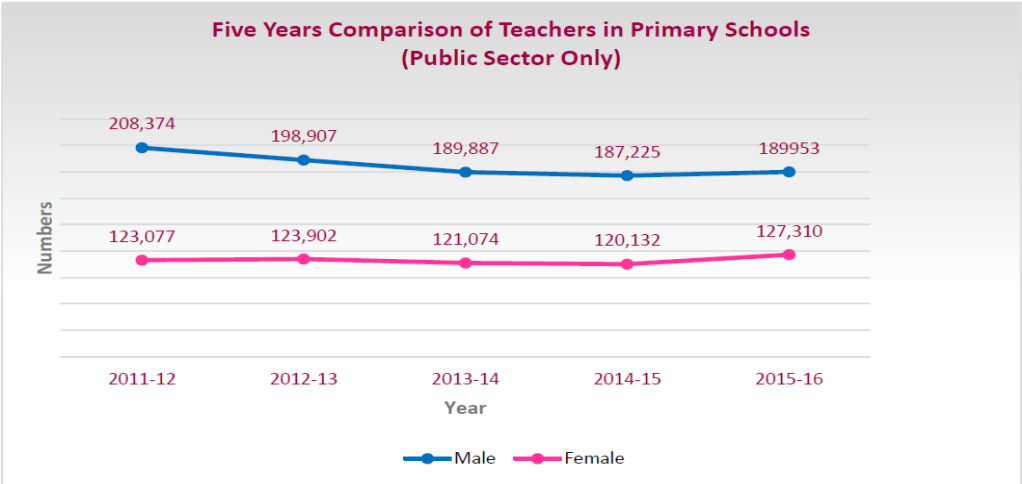


At pre-primary stage of education, an increase of about 1.0% for boys and girls has been observed against 2014-15.

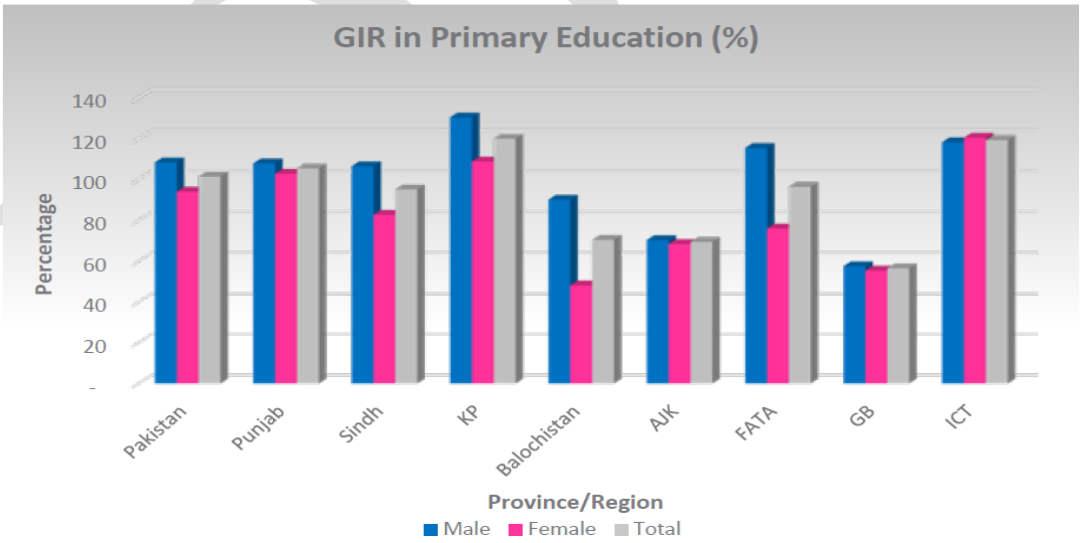


Currently, the overall public sector education system is using services of 0.72 million teachers while five years earlier the system had the services of 0.67 million teachers, indicating that over this time period, 6.0% more teachers are added to the system. We have observed a declining trend in the number of

primary level institutions in previous section of this chapter; the same trend is also reflected in teachers' data over the period of time except 2015- 16. In 2014-15 an increase of 1.5% and 6.0% has been observed in male and female teachers respectively. Gross Intake Rate (GIR) Total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population at the official primary school-entrance age.

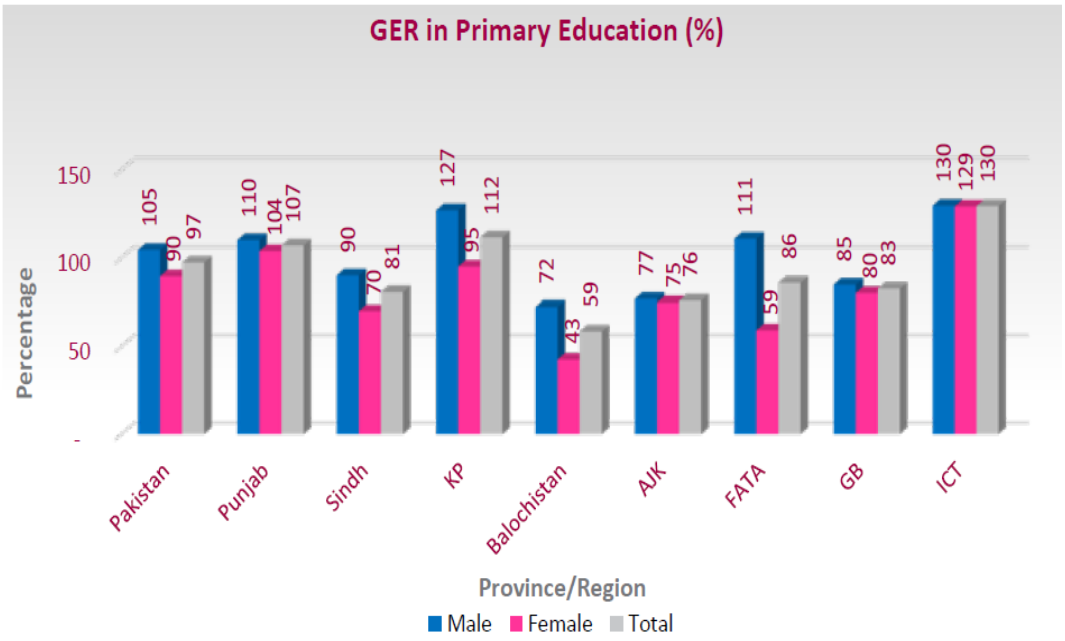


A high GIR indicates in general a high degree of access to primary education. As this calculation includes all new entrants to first grade, including over-aged and under-aged children entering primary school for the first time, the GIR can be more than 100 percent.



Gross Enrolment Ratio (GER) The GER is the most commonly used indicator to measure coverage. It shows the overall coverage of an education system in relation to the population eligible for participation in the system. It is useful for those who are interested in the overall participation of the school-age

population in a particular education level. It can be used for comparing different districts, provinces, regions, urban and rural provinces, boys and girls, etc.



Statement of Purpose

Education around the globe is considered as the defining feature of economic and social development. Primary education play a prominent role in this contribution which need to be based on quality standards. Awan (2011) argues that all countries including Pakistan have different school systems but when we divide them we find two major categories of school systems: private and public schools. In Pakistan private schools are getting mass acceptance today to ensure sustained progress of the country. Therefore, the main objective of this paper is to analyze the quality of primary education at public vs private sector. The quality of education is assessed by education levels of teachers, method of teaching, curriculum, and study environment. In ASER 2015 we not only see a modestly improved enrolment of 6-16 years from 79% to 80.5%, but after many years the public private enrolment proportion records highest shift of 6% points in favor of public sector and drop in private sector size including madrassah enrolment that reveals a modest declining trend from 2.7 in 2012 to 2.0% in 2015. For many years research on public and private trends (ASER/LEAPS) reported that learning outcomes in private sector is better than government so converse affect the enrollment on public sector. Attendance rate of teachers across the two sectors has been more or less bridged (public 89.2% and private 91%); teachers' presence was the one big factor to account for differences in learning outcomes across public and private schools. Missing facilities in public sector schools have also witnessed an overall increase in provision as recorded by ASER 2015 data. *According to this study the researcher attempt to find what is the comparison of quality between public and private sector at primary level in Pakistan and this study also helps to find out the quality affecting aspects in these two sectors for recommending better solutions for quality improvement actions.*

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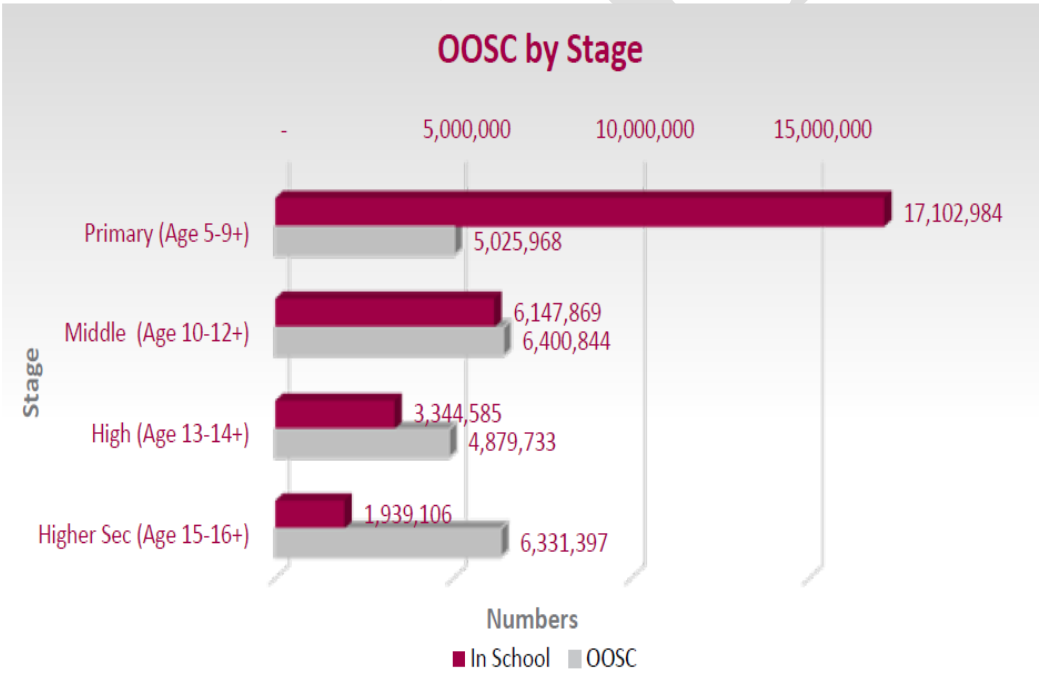
Three year comparison of Enrolment*

Stage	Sector	2013-14	2014-15	2015-16
Pre- Primary	Public	4,725,007	4,501,153	4,412,936
	Other Public	116,489	118,150	119,607
	Private	3,716,470	4,016,511	4,212,560
	Total	**8,557,966**	**8,635,814**	**8,745,103**
Primary	Public	10,973,729	10,987,592	11,088,762
	Other Public	360,145	369,307	372,314
	Private	6,535,985	7,011,911	7,290,919
	Total	**17,869,859**	**18,368,810**	**18,751,995**

Out of School Children NEMIS gives a complete picture of net enrolment and out-of-school children for all provinces and federating units in both the public sector (formal and non-formal) and private sector. According to NIPS projections, there are currently 51.17 million children in Pakistan between the ages of 5 and 16. Among this group, only 28.53 million children attend an educational institution (government or private), leaving 22.64 million children out of school. There are currently 5.03 million children of primary-school-going age out of school At the middle, high and higher secondary level the out of school children are 6.40 million, 4.88 million and 6.33 million respectively.



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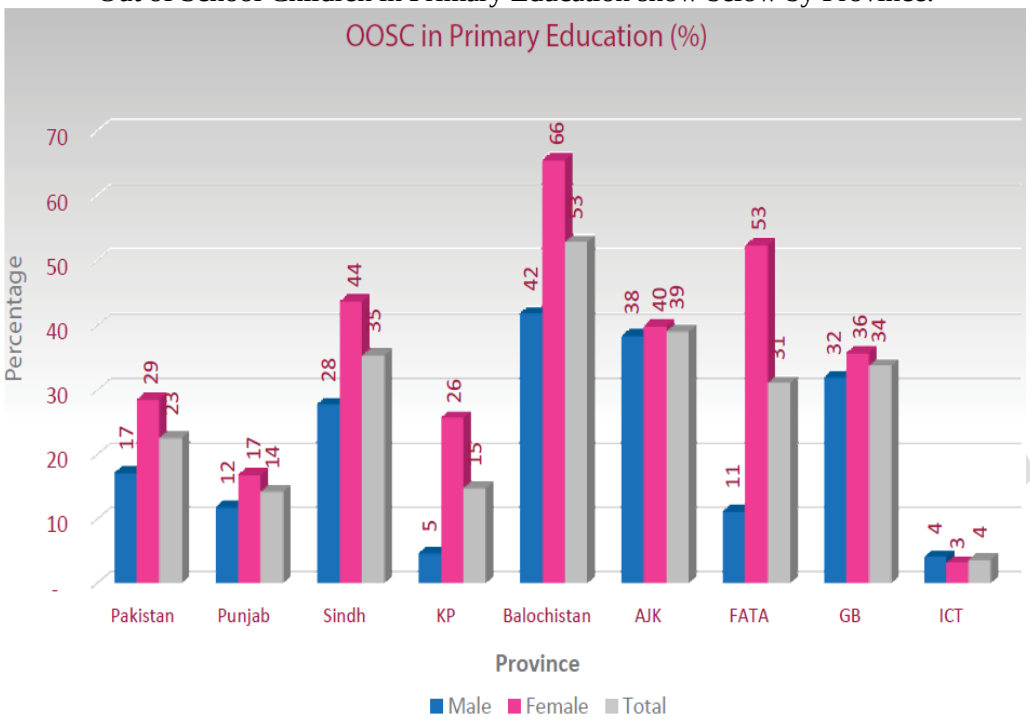
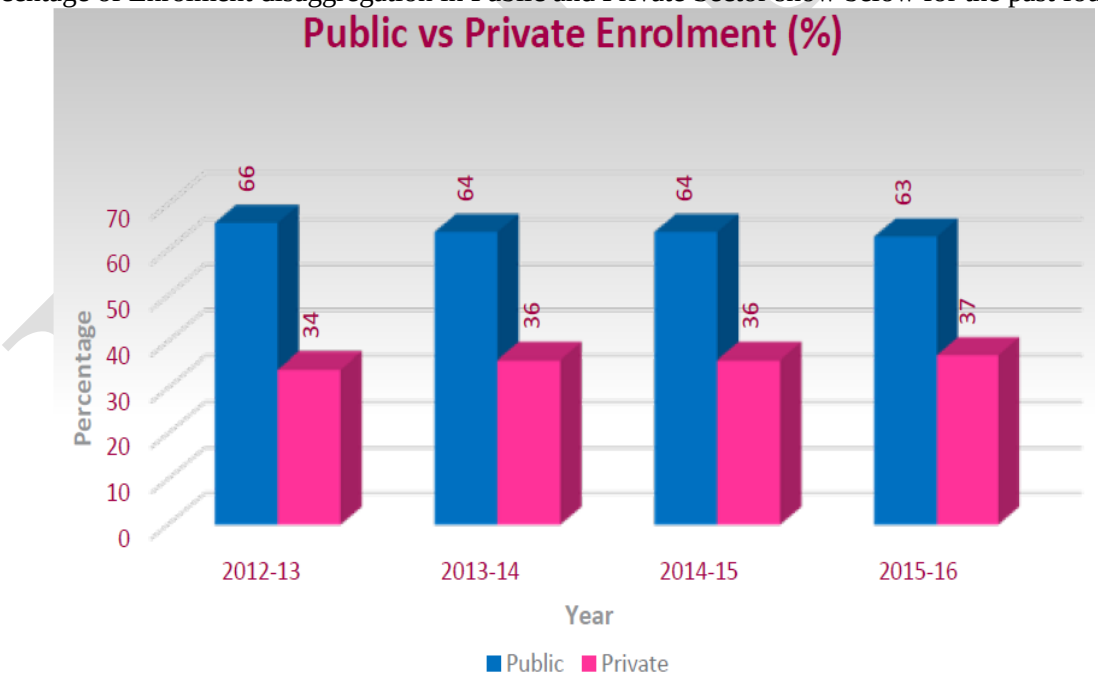
Out of School Children in Primary Education show below by Province:

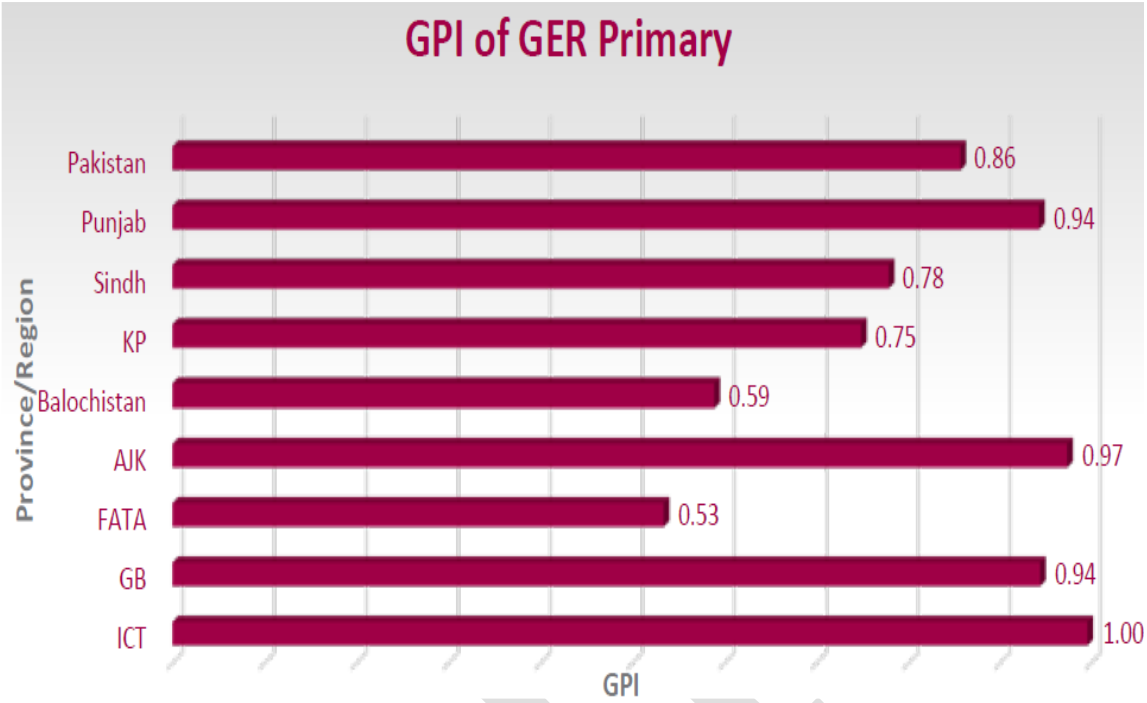


Percentage of Enrolment disaggregation in Public and Private Sector show below for the past four years:



GPI for Enrolment Ratios in Primary Education The gender differences in gross and net enrolment ratios in primary level of education are shown in following figures; this picture is mirrored in the provincial data. It is slightly below 1 in most provinces which is signifying fairly equal proportions of boys and girls, with

slightly higher enrolment ratios for boys. FATA shows the worst condition of GPI for GER in primary education which is due to the culture and traditions of tribal areas.



Objectives of Study

The main objectives of study as follows:

I. To find out the major quality dimensions of public and sector schools at primary level.
II. Comparative analysis of common quality approached in students 'teachers and parents.
III. To measure the effectiveness of each quality dimension of primary education in Pakistan context.
IV. To find out the main key quality affecting factors in these two sector for recommending solutions.

Operationalization of the Objectives:

1. To find out and measure the quality dimensions of public and private sector schools at primary level.
    - Students well engagement in class
    - Curriculum and pedagogy
    - Assessment of student learning
    - Classroom environment and culture
    - Practice-oriented staff development
2. Comparative analysis of common quality approached in students, teachers and parents.
    - Problem solving approach with respect
    - Good relationship bond approach
    - Not need to brag at any side
    - Productive climate and culture
    - Like and dislike approach Remember how you liked (or disliked) your teachers
3. To find out the main key quality affecting factors for recommending solutions.
    - Guaranteed and viable curriculum
    - Challenging goals with effective management
    - Parent and community involvement

- Frequent monitoring of student progress
- Concentration on teaching and learning

RESEARCH METHODOLOGY

This study was designed to compare the quality of public versus private education system in Pakistan at primary level, centering on student teachers and parents common approaches about quality of education. To accrue the information regarding these approaches, independently collect the data and analyze this data according to different performance indicators to check the significance. The researched use secondary data with special focus of ASER Survey Report 2015 to find out quality dimensions approaches. Finally concluded the results and recommending solutions after verdict quality effecting factors in these two sectors for better quality education.

COMPARISON OF QUALITY EDUCATION

In this study stratified sampling technique was used to select the sample. A total of 50 *teachers, 100 parents and 300 students* were chosen randomly participated in the study. The detail of the sample is given in tables 1bellow:

CONCLUSION

Quality education is still an important target as government's endorsement of *Education* for All (EFA) in 1990, same the repetition of this commitment by signing up to achieve Millennium Development Goals (MDGs) in 2001, and the recent declaration of education from age 5 to 16 as a basis and immutable human right in 2010, many observers remain doubtful of the capacity of the state to deliver on these commitments (United Nations 2009). Despite two decades of efforts involving the multilateral and bilateral aid agencies, government, civil society organizations and the for-profit private sector, Pakistan is nowhere close to creating an equitable education system (Burki 2005).The recently launched ASER Report 2015 is a testament to civil society evidence-based activism that has drawn irreversible attention to the crisis of learning, both locally and globally. As we move forward towards the recently adopted Sustainable Development Goals (SDGs), carries a sector wide, ambitious and aspirational approach for ensuring all children and young people, regardless of their background, acquire relevant learning outcomes by 2030. The data provided by the ASER Report thus serves as an invaluable resource for setting the ground and understanding the extent of the learning crisis in order to meet the planned targets. The ASER 2015 survey was conducted in 146 rural districts of Pakistan, covering 83,755 households in 4,217 villages throughout the country. Detailed information was collected on 258,021 children (59% males, 41% females) aged 3-16 years. Out of these 219,609 children aged 5-16 years were tested for language and arithmetic competencies.

National rural findings revealed that 45% enrolled in class 5 still were not able to read a class two level story in their local language i.e. Urdu/Sindhi/Pashto. The situation is even direr for English and Math. 51% of class 5 children could not read sentences in English (class 2 level) while 50% could not solve two digit division sums. Moreover, children enrolled in private schools were found to be performing better than those who were going to their government counterparts. But students studying in private schools were also observed to be taking more tuition when compared to government schools students.

The ASER 2015 data set also highlights the appalling access and gender disparities created in terms of enrollment and learning levels because of differences in wealth status. The indicators captured through household questionnaire measures the economic potential and achieved levels of income /wealth of a household. The results reveal that the richest quartile has the highest percentage of children enrolled (80%)

whereas the poorest quartile has the lowest enrollment rate (61%). A strong correlation between wealth and enrollment is established as we move along the wealth index. Moreover, socio-economic background is also found to be influencing gender inequity. The males and females belonging to the poorest quartile are particularly disadvantaged as depicted by the lowest enrollment rates. The most alarming trend is that of female's enrollment which not only decreases across all quartiles but is also lower than the enrollment rate of males across all quartiles. Not only enrollment, but also the learning levels of all three competencies i.e. Urdu/Sindhi/Pashto, English and Math are found to be affected by the wealth of a household. The poorest have the lowest learning levels (20% Urdu/Sindhi/Pashto, 17% English, and 18% Math) and the richest have the highest learning levels (42% Urdu/Sindhi/Pashto, 40% English, and 38% Math). The households with a better wealth status are able to spend significantly more on their children's education improving their opportunities for better quality schooling as reflected by the enrollment figures mentioned above.

The analysis illustrates the long way to go to ensure all children even achieve one of the most modest of the sustainable development targets. In particular, it puts the spotlight on the need for reforms to start in the early years of pre-primary and primary schooling when learning gaps begin to form. It also highlights the importance of focusing attention on the poorest who have the furthest distance to travel if they are all to be able to achieve even the most basic skills by 2030.

In ASER 2015 we not only see a modestly improved enrolment of 6-16 years from 79% to 80.5%, but after many years the public private enrolment proportion records highest shift of 6% points in favor of public sector and drop in private sector size including madrassah enrolment that reveals a modest declining trend from 2.7 in 2012 to 2.0% in 2015. Is this good news or a cause for concern? For many years research on public and private trends (ASER/LEAPS) reported headlines about higher learning outcomes in private sector even when controlled for differences. There has been an exaggerated bias in our conversations on 'what is happening right in private sector' and exploring aggressive policy options that support a popular interpretation of the state as a 'financier enabler' and not a preferred provider of education services. However, it is refreshing to see that in provinces backed by active political champions and political will. There is a push for a better performing public sector pushing for implementation of sector plans, targets and stocktaking. According to ASER 2015 attendance rate of teachers across the two sectors has been more or less bridged (public 89.2% and private 91%); teachers' presence was the one big factor to account for differences across learning outcomes across public and private schools. Missing facilities in public sector schools have also witnessed an overall increase in provision as recorded by ASER 2015 data. The students' attendance rate (primary) has improved (public sector 84% private 90%), but what continues to drag this indicator in public sector schools is students abstaining from attendance in Sindh schools.

Their attendance rate has dropped further from 68% in 2014 to 65% in 2015. Similarly, from 41% of children enrolled in ECE classes in 2013 the number has slipped to 37% in 2015. Can Pakistan afford this lack of investment and attention to its youngest for sustained improvement at primary and post primary levels? This can only be reversed with improved confidence of parents and children in the quality of public sector services right at the outset. Looking at access, affordability and enrolment, public sector still remains the largest education service provider in rural areas and this emerging trend can act as a key

Performance indicator to accelerate public sector efforts, morale and political will to improve its services. Therefore public sector provision needs to be strengthened and better resourced focusing on improvement in quality of learning through partnerships and innovative approaches that teach at the right level; recruitment of sufficient and trained teachers and higher number of learning contact hours in these

schools. This comprehensive whole school and systems based approach combined with prioritizing districts/sub-districts, collaboration with BISP and intermediary partners and above all with communities most in need will produce even higher outcomes and boost confidence in public sector provision committed to ALL children in schools, learning better and staying longer.

FINDINGS

According to the latest Pakistan Social and Living Standards Measurement (PSLM) Survey FY2015,

- The literacy rate of the population (10 years and above) is 60 percent as compared to 58 percent in FY2014.
- The data shows that literacy rate is higher in urban areas (76 percent) than in rural areas (51 percent).
- Province wise data suggests that Punjab leads with 63 percent followed by Sindh with 60 percent, Khyber Pakhtunkhwa with 53 percent and Baluchistan with 44 percent.
- GER at the primary level excluding Katchi (prep) for the age group 5-9 years at national level during FY2015 recorded at 89.0 percent as compared to 90 percent in FY2014.
- The decrease in overall GER in Pakistan is mainly due to decline in Punjab GER to 97 percent in FY2015 from 100 percent in FY2014. Sindh showed improvement to 79 percent in FY2015 against 76 percent in FY2014 and Khyber Pakhtunkhwa also improved to 90 percent in FY2015 against 89 percent in FY2014 while Baluchistan GER witnessed significant improvement to 71 percent in FY2015 as compared to 67 percent in FY2014.
- NER at the national level during FY2015 remained stable at 57 percent compared to last year. Province wise comparison reveals that Punjab NER declined to 61 percent in FY2015 as compared to 64 percent in FY2014. Sindh NER improved to 51 percent in FY2015 as compared to 48 percent in FY2014; while NER of Khyber Pakhtunkhwa witnessed a slight improvement at 56 percent in FY2015 as compared to 54 percent in FY2014. Baluchistan also witnessed a significant improvement at 46 percent in FY2015 as compared to 39 percent in FY2014.
- At national level, the total number of enrolments during FY2015 was recorded at 43.95 million as compared to 42.09 million during the same period last year. This indicates an increase of 4.4 percent and it is estimated to increase to 45.17 million during FY2016.
- The total number of institutes stood at 252.56 thousands during FY2015 as compared to 241.61thousands during last year, showing an increase of 4.5 percent. However, the number of institutes is estimated to increase to 257.47 thousands during FY2016.
- The total number of teachers during FY2015 was recorded at 1.59 million as compared to 1.53 million during last year showing an increase of 3.9 percent. This number of teachers is estimated to increase further to 1.62 million during the year FY2016. Public Expenditure on Education as percentage to GDP is estimated at 2.2 percentage in FY2015 as compared to 2.1 percentage of GDP in FY2014 showing an increase of 4.8 percent.
- HEC is also contributing to play its role in running different scholarships programme to enhance academic qualification at various levels on merit basis in line with specific criteria. During FY 2016, overall 42,963 scholarships were awarded under different programmes of HEC.
- Prime Minister's Fee Reimbursement Scheme for less developed areas (selected regions) was successfully executed, and is continued for FY 2016. Reimbursement to around 23,458 students of less developed areas is being carried out this year.
- PSDP allocation for HEC was Rs.19.985 billion in FY2016 for 144 (87 on-going & 57 new unapproved) development projects being executed in Public Sector. During July 2015 to March 2016, the government has released Rs.14.053 billion (which is 70% of the revised allocation) for the execution of development projects reflected under PSDP 2015-16. (Pakistan Economic Survey 2015-16… Economic Adviser's Wing, Finance Division, Government of Pakistan, Islamabad

RECOMMENDATIONS

In light of above conclusion the study recommended some imperative factors inside and outside school that contribute for the quality of academic performance with influence the student's achievement scores in both sectors schools quality. The key aspect for the educators is to educate their students effectively so that they may be able to show quality performance in their academics. To achieve this objective it is necessary for the educators to understand better about the factors that may contribute in the academic success of students**.** In the light of above discussion the researcher extent the following recommendations some proposed for Government policy side and the others at general child centered sanctions as follows:-

- At Government part they should proper implement the policies as per plan and proper monitor the government sector school to improve the performance and quality.
- Government should also monitor the private schools to formally recognize their performance and to regularize the government rules in private sectors
- Government should also need to harmonize the infrastructure, curriculum, faculty, and education and training requirements in these two sectors.
- Government should centralized the school opening process with formal procedure and fulfilment of each and every requirement for both sectors.
- For the improvement of curriculum the teachers' guides should include the curriculum outlines and syllabus may be produced at large scale and be provided to the teachers. The guide books and manuals can meet the need of on-job training of teachers.
- Teacher and supervisory staff should be given training in adopting and using teaching methods suitable to integrated curriculum needs.
- Increase the public sector budget and need to provide AV Aids and also required introduced new teaching techniques to divert the parent's attention to low cost public schools enrollment.
- Need to extents studies for exploring potential of both side schools to actively engage with parents on quality participations for overall MDG,s achievements.
- Frequent Two-way communication between families and schools is necessary for students' success. Research shows that the more parents and teachers share relevant information with each other about a student, the better equipped both will be to help that student achieve academically. It should be in shape of parent's conference, Parent-teacher organizations or school community councils, Weekly or monthly folders of student work sent home for parent review and comment, Phone calls, E-mail or school website
- Adults should make contact soon after a problem has been identified, so a timely solution can be found. Waiting too long can create new problems, possibly through the frustration of those involved.
- Follow-up Consistency and frequency should be needed, Parents need frequent, ongoing feedback about how their children are performing with homework.
- Clarity and usefulness of communication must be needed, Parents and teachers should have the information they need to help students, and in a form and language that makes sense to them.
- To ensure the eminence in education Students should well engaged in class activities and performance.
- Curriculum and pedagogy should be equalized for both sectors to measure the national quality scale.
- Weekly base Assessment of student learning is necessary to reach the quality standard.
- Need to shape very effective Classroom environment and culture for better teaching and learning.
- Except from report writing and fake commitments a Practice-oriented staff development needed to ensure quality.

- Treat the teacher-parent-child relationship with the respective way. Create a problem-solving partnership, instead of confronting a teacher immediately with what's wrong. "Meet with a teacher to brainstorm and collaborate ways to help your child, instead of delivering a lecture.
- Good relationship bond approach is needed because: "This is one of the first relationships with an adult your child may have outside the family unit. "For young children, the teacher-child relationship is a love relationship," adds Michael Thompson, Ph.D. "In fact, it may be their first love relationship after their parents and it can be pretty powerful and wonderful."
- Not need to brag at any side but need to give courage in positive way to the child to Successful accomplishments.
- Effective instructional arrangement and implementation is needed. The Child need Productive climate and culture from both sides is must to teach and learn better for excellent quality.
- It is very important approach that Like and dislike approach Remember how you liked (or disliked) your teachers. "It's important to leave your own baggage at the door, so you can talk about your child with the teacher (and not about you!)" adds Michael Thompson, Ph.D.
- To ensure good quality Guaranteed and viable curriculum these factors can be a big influence on student outcomes.
- To cater the quality needs challenging goals should be set with effective management approaches in light of effective feedback in both public and private sectors.
- Parent and community involvement should be formalize in shape of PTA (parents teachers associations) and register with government to effective working and progress in schools.
- Frequent monitoring of student progress should be needed from three sides as: government on schools, teachers on child and parents on child.
- Research and development is very important part to measure quality at every stage. So concentration on teaching and learning with research and development and trainings should be carry on for effective progress.

REFERENCES:

1. Annual Status of Education (ASER Pakistan) Reports 2012-16. file:///C:/Users/SABIL/Desktop/ASER_National_Report_2015.pdf.
2. Pakistan Education Statistics 2015-16 file:///C:/Users/SABIL/Desktop/Pakistan%20Education%20Statistics%202015-16.pdf
3. Z. Nasir and H. Nazli (2010), "Education And Earnings In Pakistan", Working Papers & Research Reports, No. 1991, PP. 1–25.
4. Gorard, S., 2015. The complex determinants of school intake characteristics, England 1989–2014. Cambridge Journal of Education 46 (1), 131–146.
5. Blevins, B. M. (2009). Effects of socioeconomic status on academic performance in Missouri public schools. Retrieved from http://gradworks.umi.com/3372318.pdf
6. Gorard, S., 2016. How prepared do newly-qualified teachers feel? Differences between routes and settings. Journal of Education for Teaching 43, 1. http://dx.doi. org/10.1080/02607476.2016.122070.
7. Andrabi, Tahir, Jishnu Das, and Asim Ijaz Khwaja. 2011. "Students Today, Teachers Tomorrow? Identifying Constraints on the Provision of Education." World Bank Policy Research Working Paper No. 5674. Washington DC: World Bank
8. Kalogrides, D., Loeb, S., 2013. Different teachers, different peers. Educational Researcher 42 (6), 304–316.
9. SAPS. 2010. Private Sector Education in Pakistan: Mapping and Musing. Islamabad: Institute of Social and Policy Sciences.
10. Andrabi, Tahir, A. Khwaja and J. Das, Schooling of Last Resort? Madrassa, Private or Public Schools, WP 2010.
11. Ravitch, Diane. 2010b. "Scholar's School Reform U-Turn Shakes Up Debate." The New York Times. Retrieved on August 30, 2011 (http://www.nytimes.com/2010/03/03/education/ 03ravitch.htm).
12. H. Begum and M. M. Sadruddin (2013), "A Study of Administrative Issues in Secondary Schools of Quetta", Social Sciences and Humanities, Vol. 4, No. 3, PP. 297–306.
13. Khan (2012), "Instructional Management of A Private and A Government Secondary School Principal in Northern Pakistan", International Journal of Educational Development, Vol. 32, No. 1, PP. 120–131.

14. M. N. Tariq, S. John, M. S. Ishaque, And G. M. Burfat (2012), "A Comparative Study Of Public And Private Schools Headteachers Vision For School Improvement", Interdisciplinary Journal Of Contemporary Research In Business, Vol 4, PP. 174–183.
15. Ali, Z., 2013. State of desolation: Operating without registration, private schools face no penalties. Express tribune. http://tribune.com.pk/story/646348/ state-of-desolation-operating-without-registration-private-schools-face-no-penalties/.
16. Poverty in Asia: A deeper look (Special chapter) in Key indicators for Asia and the Pacific (45 edition). http://www.adb.org/sites/default/files/publication/43030/ ki2014_0.pdf.
17. M. Nishimura and T. Yamano (2013), "Emerging Private Education in Africa: Determinants of School Choice in Rural Kenya", World Development, Vol. 43, No. 2013, PP. 266–275.
18. R. Ejaz, A. Khan, S. Noreen, And M. Raza (2012), "Household Choice Of Public Versus Private Schooling, A Case Study Of Bahawalpur City", Middle-East Journal Of Scientific Research, Vol. 11, No. 1, PP. 94–99.
19. Alimi Baba Gana (2011), "An Assessment Of Teacher's Job Satisfaction and Job Performance In Three Selected Secondary Schools of Borno State, Nigeria", Contenetal J. Education Research, Vol. 4, No. 1, PP. 28–24.
20. Chudgar, E., Quin, A., 2012. Relationship between private schooling and achievement: Results from rural and urban India. Economics of Education Review 31, 376–390.
21. Government of Azad Jammu & Kashmir, 2014. [Online]. Available: Www.Ajk.Gov.Pk.
22. Official Website of Planning and Development Muzaffarabad - AJK [Online]. Available: Http://Pndajk.Gov.Pk/2013.
23. National Report (2012), "Situation Analysis of Children and Women in Pakistan" - Pakistan United Nations Children's Fund (Unicef), Islamabad, Pakistan.
24. Collado, D., Lomos, C., Nicaise, I., 2015. The effects of classroom socioeconomic composition on student's civic knowledge in Chile. School Effectiveness and School Improvement 26 (3), 415–440.
25. F. Oluremi (2013), "Principals Organizational Management And Students Academic Achievement In Secondary Schools In Ekiti- State Nigeria", Singaporean Journal Of Business Economics and Management Studies, Vol. 2, No. 2, PP. 76–84.
26. G. O. Oyinloye (2010), "Primary School Teachers' Perception Of Classroom Management And Its Influence On Pupils' Activities," European Journal Of Educational Studies, Vol. 2, No. 3, PP. 305–312.
27. http://pakistan.brac.net/index.php?option=com_content&view=article&id=156&Itemid=694
28. http://www.alifailaan.pk/quality Pakistan Data Portal: http://www.data.org.pk/dataset Aao
29. http://www.moent.gov.pk/ Ministry of Federal Education & Professional Training
30. http://www.aepam.edu.pk Academy of Educational Planning And Management
31. http://www.kpese.gov.pk KP Elementary & Secondary Education Department
32. http://www.emis.gob.pk GB Education Management Information System
33. http://www.pesrp.edu.pk Punjab Education Sector Reforms Program
34. http://www.aaoparhao.com/publications/ HANDS (ASER Partner)
35. http://www.reflectglobal.com/portfolio-view/aser-survey-2015/
36. http://balochistan.edu.pk/ Baluchistan Education Department
37. http://www.rsu-sindh.gov.pk Reform Support Unit Sindh
38. http://www.nrsp.org.pk/ext-resources.html Reflect Global
39. http://www.fde.gov.pk Federal Directorate of Education
40. http://schools.ajk.gov.pk AJ&K Schools Department
41. http://www.aserpakistan.org/index.php?func=report
42. http://fata.gov.pk FATA Directorate
43. http://hands.org.pk/2015/

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COMMON ALGORITHMS OF PRIMARY STRESS PLACEMENT ON POLYSYLLABIC WORDS

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Abstract
Turkish students tend to make considerable stress placement errors when pronouncing English polysyllabic words because of the interference of the traditional word stress patterns of their mother tongue. They usually misplace stresses in their utterance, both either as a result of their native pronunciation habits or their lack of stress-placing knowledge in the target language. Experience has clearly shown that one of the most visible areas of weakness in Turkish students learning English is stress placement. This is the main problem to be explored and resolved in this research with an "algorithm of suffixes"**.** The learners of English in Turkey are very much in need of practising such algorithm listings and going through electronic dictionaries. The study patterns or algorithms in this research involve in at least four-syllabled words with one prominent primarily stressed syllable. Students are first given a pretest to see how they naturally fare in English rhythm to expose their wrongly-misplaced stress patterns, their stress mobility concept and their fossilized erratic stressing habits. In the pretest, 25 questions are downloaded via the audacity program given to them within 5 second-intervals three times by the computer. Those freshmen non-initiated to the English stress patterns clearly present in this test a total lack of English stress pattern marked by a general irregularity in their utterance. Then they are briefed on general characteristics of English stress pattern of such polysyllabic words based on their grammatical category within an algorithm of some general suffix patterns. After a 3 hour intensive stress placement drill, a post-test of fresh 25 words is administrated to them. This post-test determines the rate of students' improvement in their pronunciation and proves the efficiency of the algorithm of suffixes introduced.
Keywords: Prımary Stress Placement, Common Algorıthms

1 Background to the issue of polysllabic words' stress in English

A polysyllabic word is a word having more than three syllables (polysyllable, 2017). In such polysyllabic words in English at least one of the syllables is stressed. And in most dictionaries that syllable is followed by a stress mark ['] in its phonetic transcription (Wenszky, 2000, 2017). For example in the word *'FEBruary* ['fɛbruəri] the first syllable (feb-) is stressed, and for the word *'OPposite* ['ópəzít] again the first syllable (-op-) is stressed. In *in'CREdible*, however, the second syllable (-cred-) and again in *e'XAmine* the second syllable (-am-) is stressed. And finally in the word *employ'EE* the last syllable (-ee) is stressed to prove the inconsistency of the English phonetics. Stress is one determinant of word pronunciation in English and it is important for the speaker to predict its location for the accuracy of his spoken utterance as well as his understanding of it. The primary or main stress in a word is the exact location of its most prominent syllable determining its meaning to be conveyed clearly (main stres, 2017). It is the distinction in stress that causes the difference in pronunciation and the meaning between the noun *'OBject* (with primary stress located on the first syllable) and the verb *ob'JECT* (with primary stress located on the second syllable) (Wenszky, 2000).

This difference in stress is manifested by variations in the pitch, duration and amplitude of each syllable in a word. Although English is notorious for its complicated stress patterns, there are still certain features or algorithms for predicting the location of the primary stress. It is good to know that in English certain suffixes do influence the stress such as the suffix *-eer* (as in the word *engin'EER* attracts primary stress to itself to the end whereas words containing the suffix *-ical* (as in *'CHEMical*) cause the primarily stressed syllable to immediately precede the suffix (word stress, 2017).

Many works to resolve this problem have shown that a simple rule for the assignment of stress to English words can operate as accurately as other more complex algorithms. Thus it has been noted that the most effective way of predicting the primary stress of a word is accomplished by incorporating some basic stress rules with some level of morphological decomposition (predictability, 2017).

Following the analysis by Fudge (1984), on the effect of affixes (i.e. prefixes and suffixes) on stress patterns in English, an algorithm has been developed that will locate the primary stressed syllable. The algorithm has two components**:** one makes use of a basic stress rule, the other involves the analysis of words into their constituent morphemes.

Much work has been done to formally capture the systematic variations in the location of main stress for English words (Wenszky, 2000). Selkirk's work (Selkirk, 1995) has pointed to the concept of "syllable weight" as being important for stress determination in a word. Syllable weight refers to the phonological structure of each syllable. A "heavy" syllable is one that ends in a consonant cluster (i.e. more than one consonant). A "light" syllable is one that ends with a single consonant. This concept is important for stress placement, because it is usually a heavy syllable that carries primary stress. Light syllables are usually unstressed. Another important observation about basic stress patterns in English is that primary stress rarely occurs on the last syllable of a polysyllabic word. It usually occurs on the penultimate (second to last) or on the antepenultimate (third to last) syllable. The choice of which of these syllables receives primary stress depends on the concept of syllable weight. In particular, stress placement depends on the weight of the penultimate syllable (Wenszky, 2000).

2 The statement of the problem

Word stress is an integral part of English language and it has the importance to set the very basic quality of oral communication. Natives largely rely on stress pattern of words to identify the words correctly and most of the problems occurring during communication between non natives and natives stems from the lack of emphasis on word stress patterns. However the correct application of stress in words is a demanding skill and knowledge as the word stress pattern of English does not have concrete rules to apply every new word for foreign English learners. Despite this difficulty, considering its importance for communication, some word stress patterns or algorithms must be emphasized and importance should be given to pronunciation education. Thus, solving the stress placement problem of English learner will certainly have a beneficial effect on their overall communication strategies (Lieberma-Prince, 1977).

3 The purpose of the study

Mistakes in word stress are a common cause of misunderstanding in English (Briony, 1987. Because stressing the wrong syllable in a word can make the word very difficult to hear and understand. Stressing a word differently can change the meaning or type of the word. Even if the speaker can be understood, mistakes with word stress can make the listener feel irritated, or perhaps even amused, and could prevent good communication from taking place. For these and many other reasons word stress is an extremely important part of the English language learning. And students should definitely get special help from their pronunciation teachers to acquire the skill of placing stress on the right syllable in order to express themselves intelligibly (Halle-Vergnaud, 1987). Thus an early introduction of stress patterns in curricula will be of immense benefit to students both in terms of their efficient foreign language communication and their effective learning. Experience has clearly shown that one of the most visible areas of weakness in Turkish students learning English is stress placement. This weakness is further magnified by the fact that no stress patterns and drills are introduced in the early levels of the curriculum or indeed at any other level.

Foreign students in general find it difficult to deal with the correct stressing of English polysyllabic words, and it would be maddening for anyone to learn the stress of each word separately. For this and many other related reasons, in order to establish an efficient foreign language communication and effective learning teaching as many English stress patterns and supporting them with appropriate drills is of paramount importance and absolute priority.

Stress patterns should be introduced to students as early as possible (Rogerson-Revell, 2011). This would help them avoid the wrong accentual habits and build a strong foundation for verbal language

activity. The current study has the sole purpose of raising awareness on this issue and provide relevant materials to remedy the ills of wrong stress placement especially in polysyllabic words. Thus we can emphasize this systematic approach to English stress pattern in Turkey, especially with reference to the classification of some English word-endings in a set of algorithm of suffixes (Burzio, 2007).

4 Methodology

The algorithm of suffixes described in this article has been evaluated using a method that has been used to assess other such algorithms. A corpus of 475 polysyllabic words was compiled from the Brown Corpus of most frequent words of English. The list contains the most frequent polysyllabic words of English. The algorithm was tested on this list in order to determine its accuracy and to compare it to the accuracy of other systems.

After each word was tested, it was evaluated as to whether the stress was located on the correct syllable. For illustrative purposes, only a few stress patterns are dealt with here. In a first stage, only the main stress is accounted for. Because of the general linguistic level of our students and the wrong accentual habits that they might have acquired in high school, and the possible interference from the mother tongue, the stress patterns and rules should be proposed to them in a simple form to facilitate their learning and automatic drilling.

The exceptions to the rules should be rote-learnt to avoid confusion. It is worth mentioning that the Daniel Jones *English Pronouncing Dictionary* (Jones, 1917) has thousands of polysyllabic words to work on and the number of irregularity are less than to be numbered.

5 Algorithm of suffixes affecting the stress pattern of polysyllabic words in English

Peter Roach (Roach, 1983) claims that "the effect of prefixes on stress does not have the comparative regularity, independence and predictability as suffixes" and adds that "there is no prefix of one or two syllables that always carries primary stress". He continues that "the best treatment seems to be to say that stress in words with prefixes is governed by the same rules as those for words without prefixes" (Wenszky, 2000).

He could very well be the right adviser to help us frame our algorithm for the stress placement in English polysyllable words.

Roach suggests that polysyllabic words have three types of suffixes having to do with their stress-placement, i.e "suffixes carrying primary stress themselves" (also called the autostressed suffixes), "suffixes that do not affect stres placement" and "suffixes that influence stres in the stem" (Halle-Vergnaud, 1987). Here is the algorithmic listing of those suffixes determining the English stress placement in polysllabic words with their many examples**:**

5.1 Autostressed Suffixes (Suffixes carrying primary stress themselves)

"-ATION": prepa'ration, repu'tation, despe'ration, coro'nation, hesi'tation, popu'lation, star'vation, deco'ration, agi'tation, quo'tation, do'nation, civili'zation, imagi'nation.

"-SELF": her'self, him'self, it'self, my'self, one'self, our'self, thy'self, your'self.

"-EE": refu'gee, evacu'ee, employ'ee, arrest'ee, assign'ee, confer'ee, train'ee, assault'ee, audit'ee, award'ee, biograph'ee, call'ee, contact'ee, counsell'ee, elect'ee, flirt'ee, interact'ee, introduc'ee, invest'ee, murder'ee, own'ee, phon'ee, pick'ee, rap'ee, releas'ee, rescu'ee, tickl'ee.

"-EER": mountai'neer, volun'teer, auctio'neer, budge'teer, came'leer, canno'neer, chario'teer, comman'deer, conventio'neer. de'creer, domi'neer, electio'neer, engi'neer,
fak'eer, fictio'neer, 'fleer, fore'seer, 'freer, junke'teer, leafle'teer, marke'teer, muske'teer, muti'neer, orien'teer, over'seer, pio'neer, pisto'leer, sloga'neer, summi'teer.

"-ESE": Portu'guese, journa'lese, bureaucra'tese, compute'rese, educatio'nese, federa'lese, governmen'tese, journa'lese, lega'lese, officia'lese, telegra'phese.

"-ETTE": ciga'rette, launde'rette, bru'nette, chemi'sette, co'quette, flowe'rette,

kitche'nette, luncheo'nette, maiso'nette, pi'pette, pous'sette, quar'tette, quin'tette, roo'mette, sermo'nette, servi'ette, silhou'ette, toi'lette, towe'lette, videocas'sette, wago'nette.

"-ESQUE": pictu'resque, ara'besque, Beat'lesque, bur'lesque, Disne'yesque, gigan'tesque, gro'tesque, humo'resque, Lincol'nesque, mode'lesque, pictu'resque, Roma'nesque, Rube'nesque, statu'esque, Michelange'lesque.

5.2 Suffixes that do not affect stress placement

"-ABLE": 'comfortable, a'batable, a'bominable, ac'ceptable, ac'complishable, ac'countable, a'chievable, a'daptable, 'admirable, ad'visable, a'greeable, 'amiable, 'applicable, at'tainable, be'lievable, 'blamable, 'breakable, 'calculable, 'certifiable, 'classifiable, col'lectable, com'mendable, con'ceivable, de'fendable, de'pendable, de'testable, de'visable.

"-AGE": 'anchorage, 'amperage, as'semblage, 'baronage, 'brakeage, 'brokerage, 'counterespionage, 'harborage, 'sewerage, 'shrinkage, 'stockbrokerage, 'tutelage.

"-AL": re'fusal, ab'dominal, ab'normal, abo'riginal, aca'demical, a'coustical, ad'ditional, aero'medical, 'agricultural, 'anal, 'anarchical, 'ancestral, appa'ritional.

"-ARY": ˈactuary, ˈˌcapilˈlary, ˈordiˈnary, ˈarbiˈtrary, fiˈduciary, ˈnecessary, ˈlegenˌdary, ˈFebruary, ˈcustoˌmary, ˈdictionary, aˈpotheˌcary, ˈmerceˌnary, ˌeneˈficiary, ˈadversary, ˈcommenˌtary, reˈactioˌnary, ˈmomenˌtary, heˈreditary, evoˈlutionary, conˈfectionary.

"BERRY": ˈbarberry, ˈbayberry, ˈdogˌberry, ˈchinaˌberry, ˈcranˌberry, ˈdewˌberry, ˈsnowˌberry, ˈgooseˌberry, ˈˌhackˌberry, ˈmulˌberry, ˈblackˌberry, ˈwinterˌberry.

"-EN": 'widen, 'straighten, 'strengthen, 'broaden, 'deepen, 'soften, 'steepen.

"-FUL": 'wonderful, 'basketful, 'bottleful, 'bountiful, 'bucketful, 'conflictful, 'dessertˌspoonful, dis'graceful, dis'gustful, disres'pectful,
dis'trustful, 'foresightful, 'insightful, 'prayerful, re'proachful, 'tablespoonful, unre'morseful.

"-ING": a'mazing, a'bandoning, a'bolishing, a'bounding, 'abrogating, ad'ministering, ad'monishing, 'handiˌcapping, 'handˌshaking, 'heartˌbreaking, 'hospitalizing, 'trespasing, 'triumphing, uncom'pelling.

"-ISH": 'devilish, 'amateurish, car'toonish, 'cleverish, 'cockneyish, 'countryish, 'waterish, 'yellowish.

"-LIKE": 'animallike, 'basketlike, 'businesslike, 'chimneylike, com'puterlike, de'tectivelike, 'doughnutlike, 'factorylike, 'flowerlike, 'granitelike, 'lobsterlike.

"-LESS": 'powerless, af'fectionless, agen'daless, am'bitionless, 'asteriskless, 'characterless, com'passionless, consti'tutionless, 'daughterless, e'motionless,

"-LY": 'hurriedly, ab'horrently, a'bominably, a'bortively, a'bundantly, aca'demically, ac'commodatingly, a'cquisitively,
ad'ditionally, ad'ministratively, ad'venturously, af'fectionally, ag'gressively, a'greeably, 'amateurishly.

"-MENT": 'punishment, 'government, de'velopment, 'managemet, em'ployment, a'rrangement, im'provement, a'ppointment, 'parliament, a'ssessment, be'reavement, rede'velopment, a'ccompaniment, pre'dicament, en'lightenment, a'mazement, rein'forcement.

"-NESS": 'yellowness, a'bortiveness, ab'ruptness, 'absoluteness, ab'surdness, a'busiveness, 'accurateness, 'airlessness, 'airworthiness, a'likeness, 'agelessness, ad'visableness, ad'venturesomeness, 'amorousnes, 'appositeness, be'tweenness, 'beautifulness.

"-ONY": ˈacrimony, ˈagrimony, ˈalimony, ˈantiˌmony, ˈceremony, ˈmatrimony, ˈpatrimony, ˈparsimony, ˈsanctimony, ˈtestimony.

"-ORY": ˈminatory, ˈauditory, ˈmandatory, ˈoratory, ˈpredatory, ˈlaudatory, ˈcirculatory, ˈpurgatory, aˈccusatory, oˈbligatory, deˈrogatory, conˈciliatory, conˈtributory, deˈpository, ˈpromissory, exˈclamatory, interˈrogatory, preˈparatory, obˈservatory, maˈnipulatory.

"-OUS": 'poisonous, ab'stemious, acri'monious, adven'tageous, ambi'dextrous, ana'chronous, a'nonymous, antitu'berculous, 'blasphemous, ca'cophonous, can'tankerous, cere'monious, con'temptuous, har'monious, ho'monymous.

"-FY": 'glorify, 'amplify, 'classify, com'plexify, de'classify, dis'qualify, dis'satisfy, e'xemplify, mis'classify, over'simplify, per'sonify, 'sanctify, sub'classify.

"-WISE": 'otherwise, anti'clockwise, 'contrariwise, 'counterclockwise, 'profitwise.

"-Y": 'beautifully, ab'dominally, ab'horrently, acci'dentally, ca'cophony, cos'mogony, dis'harmony, ethno'botany, he'gemony, inter'company, 'matrimony.

5.3 Suffixes that influence stress in the stem

"-EOUS": advan'tageous, contempo'raneous, con'sanguineous, dis'courteous, extempo'raneous, homo'geneous, instan'taneous, miscel'laneous, nonsimul'taneous, porce'laneous, simul'taneous.

"-GRAPHY": photo'graphy, 'biography, ge'ography, 'autography, bibli'ography, chro'nography, to'pography, vide'ography.

"-IAL": pro'verbial, acces'sorial, ad'verbial, adver'torial, ambassa'dorial, anticom'mercial, bac'terial, bicen'tennial, bioma'terial, circumfe'rential, diffe'rential, evi'dential, extrater'restrial, imme'morial, inter'racial.

"-IC": cli'mactic, acro'nymic, acti'vistic, adventu'ristic, a'gnostic, agora'phobic, alche'mistic, allo'graphic, allo'morphic, al'truistic, topo'graphic, plura'listic, nonrea'listic.

"-ION": per'fection, abbrevi'ation, abomi'nation, accep'tation, adminis'tration, antiorgani'zation, argumen'tation, assasi'nation, inconside'ration, inflam'mation.

"-IOUS": in'jurious, acri'monious, antire'ligious, cere'monious, dishar'monious, har'monious, inhar'monious, nonre'ligious, osten'tatious,

"-TY": tran'quillity, a'bility, ab'surdity, accounta'bility, ad'versity, advisi'bility, amo'rality, an'tiquity, au'dacity, bar'barity, believa'bility, bisexu'ality.

"-IVE": re'flexive, a'bortive, abs'tractive, ac'comodative, ac'cumulative, a'cusative, af'firmative, ag'gressive, al'literative, argu'mentative, compre'hensive, con'templative, contra'ceptive (Celex2, 1996)

5.5 Stems of "–ative" words and their stress pattern

ab'late, ac'cumu,late, ac'cuse, ad'minis,trate, ad'verse, af'firm, 'affri,cate, ag'gluti,nate, al'lite,rate, 'alter,nate, a'me,liorate, ap'preci,ate, 'argument, as'simi,late, as'so,ciate, au'thority, 'calcu,late, calm, cause, 'cogi,tate, col'labo,rate, com'memo,rate, com'mise,rate, com'muni,cate, com'mute, com'pare, con'note, con'serve, con'sult, 'contem,plate, 'coope,rate, 'copu,late, 'corre,late, cor'robo,rate, create, 'cumu,late, cure, de'clare, 'deco,rate . de'gene,rate, de'libe,rate, de'limi,tate, 'demons,trate, de'note, de'rive, de'termine, dis'crimi,nate, ,do'nate, dure, 'edu,cate, e'late, 'ema,nate, e'voke, ex'hort, ex'ploit, ex'plore, 'fede,rate, 'figure, fi'xate, form, 'gene,rate, 'gravi,tate, 'illus,trate, i'magine, 'imi,tate, com'municative, 'indi,cate, in'form, i'ni,tiate, 'inno,vate, 'operative, 'inte,grate, in'terpret, in'terro,gate, in'vesti,gate, lax, 'legis,late, lo'cate, ma'nipu,late, 'medi,tate, 'multiply, ar'rate, ne'gate, 'nomi,nate, 'norma, 'ope,rate, opt, 'oxi,date, 'pal,liate, 'pene,trate, 'operative, 'predi,cate, pre'pare, pre'serve, pre'vent, 'probe, .'propa,gate, pro'voke, purge, 'quality, 'quantity, .re'cupe'rate, re'form, re'gene'rate, re'late, 'remons'trate, re'mune,rate, re'pare, ,rèpre'sent, re'store, ro'tate ,ro'tate, 'rumi,nate, se'date, 'sepa,rate, 'specu,late, 'stimulate, talk (Wenszky, 2000).

6 Conclusion

In summary, the algorithm presented here represents a computationally efficient and accurate system for the task of assigning primary stress to English words. Combined with a set of letter-to-sound rules, it allows one to one type of any English word and have as output a phonemic representation of the word with the location of the primary stressed syllable. The algorithm for the correct placement of stressing in polysyllabic words has been so designed that if there are any further changes that need to be made to increase the accuracy, this can be accomplished with great facility. However the rules presented here constitute but the tip of the iceberg, as the full range of the English accentual system demands a more lengthy study and a lot of patience and hard work. In spite of time and curriculum constraints, it is worth going to the trouble of systematically reinforcing the adoption of valuable attitudes and strategies by our students. Teaching students English stress placement is a difficult task and a big challenge, but this will certainly have a beneficial effect on their overall communication strategies. For this reason, the stipulation of English stress patterns and rules in the English Language curricula remains an urgent priority and an absolute requirement.

References

Briony W. (1987). Word stress assignment in a
Word stress (2017). seas3.elte.hu/analysis/analysis6.pdf
Wenszky N. (2000). Secondary Stress in English Words, Doctoral Dissertation
text-to-speech synthesis system for British English
Syllabification (2017). www.elearnenglishlanguage.com/blog/learn-english/.../syllabification-word-stress/
Speech and Language, 12(2):119–142
Selkirk, E. (1984). Sentence Prosody: Intonation, Stress, and Phrasing
Roach, P. (1983). English Phonetics and Phonology
pronunciation and lexicon compression. Computer
Predictability, (2017). www.esltrail.com/2008/02/word-stress-predictability.html
Polysyllable (2017). https://en.wiktionary.org/wiki/polysyllable
Pamela Rogerson-Revell, P. (2011). Language Arts & Disciplines
Main stress (2017). https://www.tolearnenglish.com/exercises/exercise...2/exercise-english-76222.php
Liberman-Prince (1977). On stress and linguistic rhnythm, Linguistic Inquiry Volume 8, Number 2 (Spring 1977) 249-336
2.4
Jones, D. (1917). English Pronouncing Dictionary
Halle-Vergnaud, (1987). An essay on stress, by Morris Halle and Jean-Roger Vergnaud. Cambridge, MA: MIT Press
Fudge, E. (1984). English word-stress. London: Allen and Unwin
Computer Speech and Language, 2:235–272.
Celex2 (1996). The CELEX2 lexical database
Burzio, L. (2007). Phonology and phonetics of English Stress and vowel reduction
Bagshaw, P. (1998). Phonemic transcription by analogy in text-to-speech synthesis: Novel word

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IMPLEMENTATION OF AUGMENTED REALITY TECHNOLOGY IN NATURAL SCIENCES LEARNING OF ELEMENTARY SCHOOL TO OPTIMIZE THE STUDENTS' LEARNING RESULT

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ABSTRACT
In this research, the researcher developed new innovation in natural sciences learning of elementary school by implementing augmented reality technology. The method that used in this research was research and development method based on Borg and Gall theory which consists of ten stages: 1) research and information collecting, 2) planning, 3) develop preliminary form of product, 4) preliminary field testing, 5) main product revision, 6) main field testing, 7) operational product revision, 8) operational field testing, 9) final product revision, 10) dissemination and implementation. The result of this research is learning media of natural sciences learning in elementary school by utilizing augmented reality technology. Based on the implementation of experiment, it is obtained the data that learning process using augmented reality which is developed can optimize the students' learning result.
Keywords: Augmented Reality, Learning Result, Research and Development, Natural Sciences of Elementary School, Learning Media

INTRODUCTION

Based on the result of PISA (2009), Indonesia is on the second lowest rank from the 65 countries. There are three aspects that were researched by PISA, they are: the ability of reading, mathematics, and science. The result showed that science is on the lowest rank. This is apprehensive that aspect which is measured by PISA is including the special skill in science field that is very needed in facing the global era challenge. In this case, science learning should be revised to be better. From those reasons, it becomes challenge for sciences teachers to teach science maximally to the students. One of the efforts is revising the learning system. In education field, science learning is called as natural sciences learning. Natural science (IPA) is collection of knowledge that is arranged systematically about natural indication. Natural science development is not only about fact, but also scientific method and scientific attitude. It is hoped that natural science education can be tool for students to learn surrounding nature. Also, the continually prospect development can be implemented in daily life. (Depdiknas, 2008).

Based on the result of survey in Surakarta, it is showed that the score of natural science is lower than the others subjects. In conducting examination, the score of natural science is in the lowest rank compared with other subjects. On the national examination in academic year of 2013/104, the average of Indonesian Language is 8, 26, mathematics 7, 38, while natural science is 7,29. Then, on the national examination in academic year of 2014/2015, the score of natural science has significant decreased with average 62, 43. Starting from that, it is a challenge for teachers to be able to convey the science lessons as much as possible to the students. One effort that can be done to maximize learning outcomes is by improvements in the learning system.

Learning outcomes of students are influenced by internal factors and external factors. Internal factors including the students' interest and willingness in managing the material received. External factors include the availability of media and the presence of a teacher in the learning process. Learning is a

process of interaction between students and teachers, both in the classroom and outside of classroom by using learning source and learning media.

Learning resources can be obtained from teachers, books, or printed media and other audio media that are expected to gain a wider knowledge. Progress in education will not happen without improving the learning process used. In other words, the quality of education is strongly influenced by the quality of learning. Therefore, the lessons to be implemented should be adjusted to the mandate of Government Regulation No. 19 of 2005 on National Education Standards, one of the standards to be developed is the process standard.

Then, to obtain good results in the learning process, it should be supported by the appropriate media that, because the learning media is an intermediary or the introduction of good communication and fun between teachers with students. The students' spirit will arise when the atmosphere is so fun and learning will be effective when they are happy in learning. Teachers' ability in designing and implementing learning media is the key to the success of fun learning process.

Grouping Learning media are very diverse, Seel and Glasgow (1990: 181-183) classify the media into two broad categories: traditional media and latest technology media. Learning media with modern technology usually involves emerging technologies such as cassette playback, video, recordings. While traditional media can be created manually by the teacher or containing classic elements by using materials and tools that are easily found in the environment. Teachers must be creative to create learning media in order to make learning condition which is educative, effective, and optimally efficient.

In this global era, the main multimedia is in form of ICT (Information Technology and communication) becomes a fundamental requirement in determining the quality and effectiveness of the learning process. According to Alhamuddin (2010) the process of learning using multimedia makes the learning is more deeply and fun, while for teachers the utilization of media is easier and very helpful in the process of effective learning. From Dryden and Vios (2003) study, it can be concluded from the results of their research that in successful education, self-image was more important than the learning materials. Thus, the concept of future education is directed to how to excite learners to learn in a fun way.

Nowadays, one of the trending technologies is *Augemented Reality*. Suryawinata (2010) stated that *Augmented Reality* is combination between virtual and reality world made by computer. The virtual object can be text, animation, 3D model or video that gathered with the real environment, so that the users can feel the virtual object is in their environment. *Augmented Reality* belongs to new technology branch. However, the development is fast. So far, this technology is used in various fields, especially in military and advertisement. And now, it started applying in education field. Elango (2015) in his research showed positive result in implementing *Augmented Reality* on mathematics learning. Then, Chiang, Yang & Hwang (2015) stated that there is increasing of students' understanding in learning science through media based *Augmented Reality*. Also, research by Kucuk, Zilmas, and Goltas (2015) showed positive result in utilization of *Augmented Reality* in learning language.

In short, object can be seen more real through *Augmented Reality*. Therefore, it is very interesting if it is applied in learning process, especially in natural science, for it has many topics that can be learned through picture or visual. Besides, *Augmented Reality* can be accessed via OS Android in phone facility.

Therefore, in this research, the researcher developed new innovation in natural science learning in elementary school. It is hoped that the problems above can be solved. The researcher developed assignment worksheet that utilize technology by using *Augmented Reality* system and can be accessed via android.

RESEARCH METHODOLOGY

Research design that was conducted is Research and Development (RD) that developing assignment worksheet of Natural science in elementary school based multimedia android using *Augmented Reality*. The development that conducted is using procedural model that adapting Borg and Gall model development.

The development according to Borg and Gall (1983) consists of ten steps: (1) research and information collecting (2) Planning (3) Develop preliminary form of product (4) Preliminary field testing (5) main product revision (6) main field testing to validate development product in large scale and compared with control product (7) operational product revision (8) operational field testing. It is validation test towards operational product that produced (9) Final product revision (10) dissemination and implementation product.

Respondent in this research is class 5 elementary school students in Surakarta. In the trial of small scale, the product is tested to 10 students and 1 teacher. In the trial of middle scale, the product is tested to 25 students and 2 teachers. Then, in the trial of large scale, it is tested to six classes (control class and experiment class). Instruments that used in this development research are questionnaire, questions, validation sheet, assessment sheet between students and observation sheet. Data processing in this research is conducted using descriptive analysis, including: expediency analysis and analysis of learning test result data. The method of collecting data in this research is questionnaire technique to know the expediency product (assignment worksheet based android multimedia) from topic experts, language experts, learning experts, media experts, and also the teacher and students' respond, learning result assessment, psychomotor, and behavior. Test technique to assess cognitive learning result, and assessment technique inter students to psychomotor and behavior. Before tested, product is validated by 9 experts using Aiken formula.

RESULT AND DISCUSSION

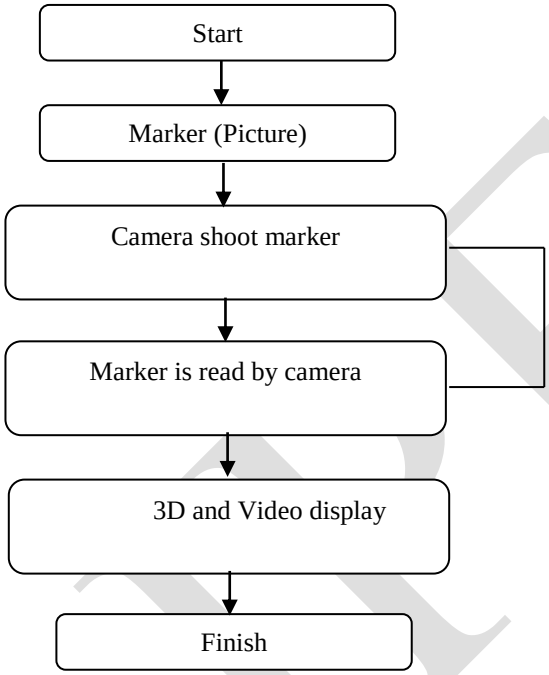
Research and Information Collecting

Activities conducted on the needs analysis in the form of field studies by giving questionnaires to students and teachers to the needs of learning media, learning condition in the classroom, the availability of learning materials, interviews with students and teachers, and analysis of national examination results in the last three years and daily test results.

In this preliminary research, it is found that the learning result of natural science is not yet optimal, there are some topics that are difficult to be understood by the students, especially the topic that need analysis process to an image and cycle. Thus, teachers need natural science learning media that appeals to learners and facilitates the students' understanding in learning natural science.

Planning

In this stage, the researcher design learning media based android multimedia by utilizing augmented reality based on KTSP curriculum.



Picture 1. Augmented Reality Mechanism

Develop Preliminary form of Product

Researchers make learning media based on augmented reality technology based on the 5th grade of elementary school. The resulting product has been validated by 9 experts covering material experts, media experts, learning experts, linguists, and education practitioners. The results obtained that the media developed is valid with the acquisition of validation value Aiken 0.9528.

Picture 2. Display of Augmented Reality

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Picture 3. Display of Application in android

Preliminary Field Testing

In preliminary field testing stage, product was tested to 10 students and 2 teachers. The aim of preliminary field-testing was to measure readability of product that was media. Furthermore, this test was conducted by distributing questioner to the students and teachers after they used the product. The result shows that the quality of developed media was average. The data analysis shows that students mean score in evaluating product is 83.96, and evaluation product from teacher is 81.25.

Table 1. The Result of Preliminary Field Testing

No	Evaluation Aspect of Quality	Students		Teacher	
		Persentage (%)	Category	Persentage (%)	Category
1.	Content	86,67	Good	83,33	Average
2.	Language	81,67	Average	83,33	Average
3.	Display	84,17	Average	79,16	Average
4.	Abandonment	83,33	Average	79.16	Average
	Mean	83,96	Average	81,25	Average

Main Product Revision

Main product revision was done to revise the product by considering on the result of preliminary field-testing. Revision was conducted from students' evaluation and teachers' evaluation toward the product. The revision includes improving the quality of sensitivity marker in augmented reality and others inappropriate terms.

Main Field Testing

In this stage, product was tested into larger scale. Developed media was tested into one class with the total number of students was 25 students and 2 teachers. The result shows that the quality of media is good. Students' evaluation score was 88,07 and teachers' evaluation score was 92,71.

Table 2. The Result of Main Field Testing

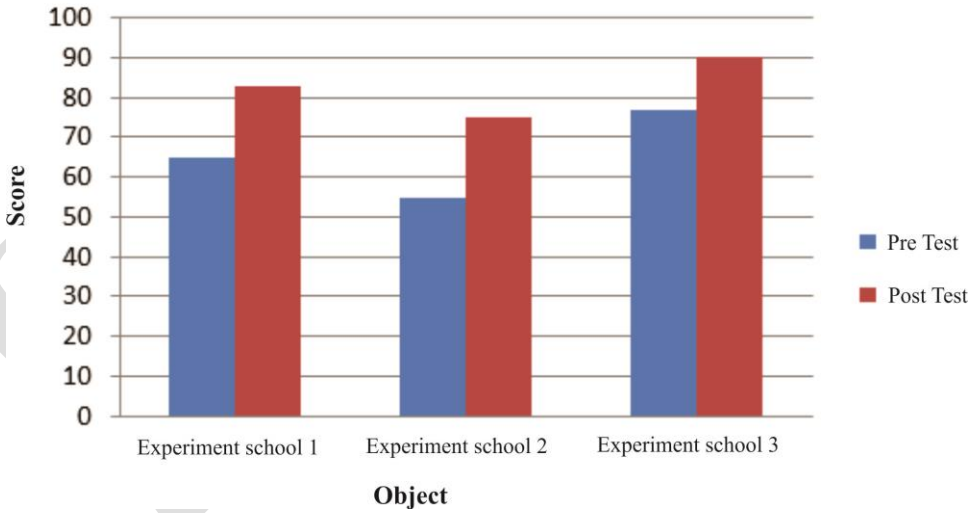
No	Evaluation Aspect of Quality	Students		Teacher	
		Persentage (%)	Category	Persentage (%)	Category
1.	Content	86,74	Good	91,67	Good
2.	Language	89,77	Good	91,67	Good
3.	Display	88,26	Good	91.67	Good
4.	Abandonment	87,5	Good	95,83	Good
	Mean	88,07	Good	92,71	Good

Operational Product Revision

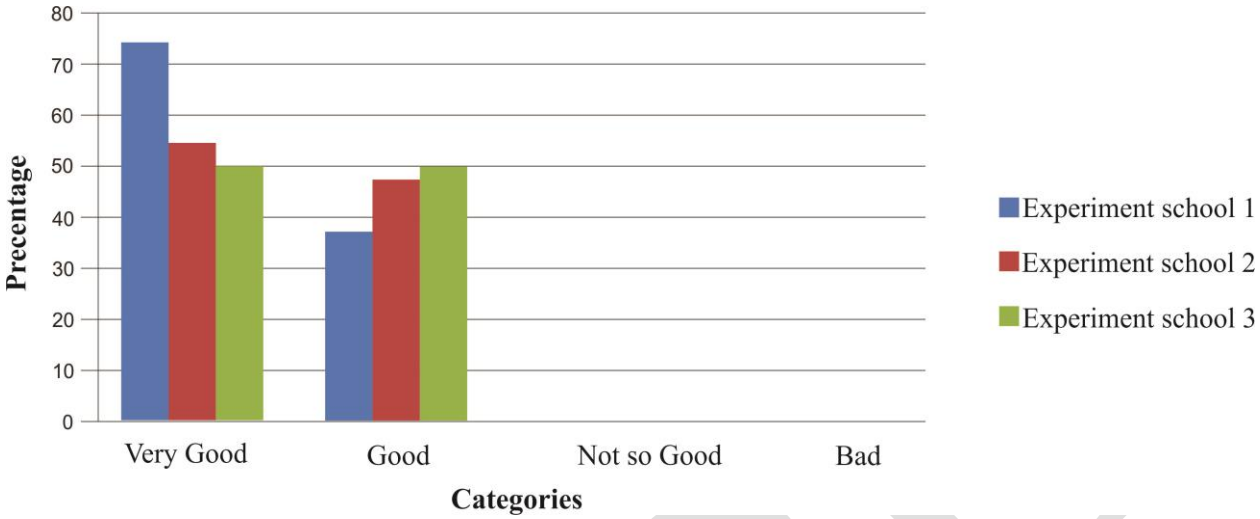
The quality revision and improvement of the product was done based on the result of main field-testing. In this stage, the quality revision and improvement was conducted by adding the explanation voice on augmented reality display.

Operational Field Testing

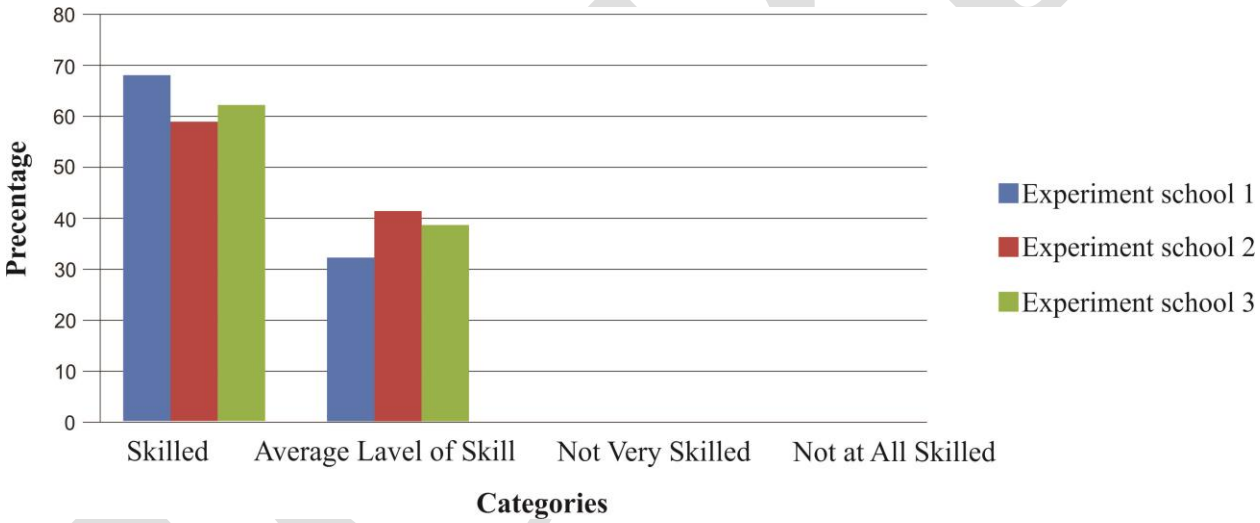
Operational field testing of developed media was conducted in 3 sample schools. The result of implementing the developed media in learning process shows the optimal result. It can be showed from the improvement of students learning outcome in some aspects such as cognitive, affective, and psychomotor. The following tables show the improvement score of students' learning outcome on.



Graphic 1. Mean Score of students' Cognitive Score



Graphic 2. Students' Learning outcome in Affective Aspect



Graphic 3. Students' Learning Outcome in Psychomotor Aspect

Final Product Revision

final product revision was conducted based on the result of operational field testing that shows that the quality of product is appropriate and relevant to be implemented and disseminated.

Dissemination and Implementation

After validation, testing and revision leaning media of science using augmented reality is appropriate and relevant to be implemented in learning process. The next stage is disseminating and implementing product. Furthermore, the developed product is presented in learning innovation forum and distributed to schools in Surakarta. Later on, play store is used to enlarge the distribution of produce and easy teachers and students to access and download the product.

CONCLUSION

In this research, researcher developed learning science media by using augmented reality technology. The product was validated by 9 experts including media expert, learning expert, language axpert and education practitioners. The result of validation shows that the developed media score was 0.9528. The result of students' evaluation and teachers' evaluation toward the product was 88.07 % and 92.71%. It means that the developed product is good and relevant to be implemented in learning process. Moreover, the result of field testing also shows significant result. The result of field-testing shows that the developed media can improve students learning outcome on science viewed from cognitive aspect, affective aspect and psychomotor aspect. In the last stage of this development research, researcher disseminates the product to the elementary school teachers in Surakarta, distributes and provides download facility of product in playstore.

REFERENCES

Arikunto, Suharsimi. (2013). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta : Rineka Cipta.

Ball, Deborah Loewenberg and Forzani, Francesca M.. 2009. The Work of Teaching and the Challenge for Teacher Education. Journal of Teacher Education, 2009; 60; 497.

Chiang, T. H. C., Yang, S. J. H., & Hwang, G. J. (2014). Students' online interactive patterns inaugmented reality-based inquiry activities. Journal *Computers & Education, 78*, 97-108.

Dimyati & Mujiono. (2006). *Belajar dan Pembelajaran.* Jakarta: Rineka Cipta.

Depdiknas. (2008). *Kurikulum Tingkat Satuan Pendidikan.* Jakarta: Dikmenum. Depdiknas.

Education For All Global Monitoring Report. (2011). Diperoleh 10 April 2016 dari http://www.Unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/gmr2011-efa-development-index.pdf

Elango, P. (2013). *Sistem Pemulihan Lembaran Kerja Bagi Nombor Negatif Berasaskan Realiti Luasan (AR2WN2).* (Phd), Universiti Kebangsaan Malaysia, Bangi.

Fleck, S., & Simon, G. (2013). *An Augmented Reality Environment for Astronomy Learning in Elementary Grades An Exploratory Study*. http://dx.doi.org/10.1145/2534903.2534907

Gall, M.D., Gall, J.P. & Borg, W.R. (2003). Educational Research An Introduction 7 th Ed. Boston: Pearson Education, Inc.

Hamalik, Oemar. (2009). *Proses Belajar Mengajar*. Bandung: Bumu Aksara.

Harapan, Nazarudin Syafaat. (2012). *Pemograman Aplikasi Mobile Smartphone dan Tablet PC Berbasis Android.* Bandung: Informatika.

Harlen, W. (2006). Purpose and procedures for assesing science process skill. *ProQuest. Assesment in education*, 6 (1), pp 129-144.

Harre, Rom. (2002). *Cognitive science: A philosophical introduction*. London: SAGE Publications.

Irham, M. dan Wiyani, N. A. (2013). *Psikologi Pendidikan: Teori dan Aplikasi dalam Proses Pembelajaran.* Yogyakarta: Ar-ruzz Media.

Isjoni. (2013). *Cooperative Learning.* Bandung: Alfabeta.

Isnaningsih & D. S. Bimo. (2013). *Penerapan Lembar Kegiatan Siswa (LKS) Discovery berorientasi Keterampilan Proses Sains untuk Meningkatkan Hasil Belajar IPA.* Jurnal Pendidikan IPA Indonesia, 2 (2), 136-141.

Kozhevnikov, M., & Thornton, R. (2006). Real-Time Data Display, Spatial Visualization Ability, and Learning Force and Motion Concepts. *Journal of Science Education and Technology*, *15*, 1.http://dx.doi.org/10.1007/s10956-006-0361-0

Kucuk, S., Yilmaz, R. M., & Goktas, Y. (2014). Augmented Reality for Learning English: Achievement, Attitude and Cognitive Load Levels of Students. *Journal Egitim Ve Bilim-Education and Science, 39* (176).

Lamounier, E., Bucioli, A., Cardoso, A., Andrade, A., & Soares, A. (2010). *On the use of Augmented Reality techniques in learning and interpretation of caridiologic data*. Annual International Conference of the IEEE, 2010 (Vol. 1, pp. 2451-2454).

Martin, S., Diaz, G., Sancristobal, E., Gil, R., Castro, M., & Peire, J. (2011). New technology trends in education: Seven years of forecasts and convergence. *Computer & Education*, *57*, 1893-1906. http://dx.doi.org/10.1016/j.compedu.2011.04.003

Majid, Abdul. (2007). *Perencanaan Pembelajaran.* Bandung: Remaja Rosdakarya.

Medina, E., Chen, Y.-C., & Weghorst, S. (2008). Understanding Biochemistry with Augmented Reality.*Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2007*, 4235-4239. Danakorn, N., Noor Dayana, A., & Norafffandy, Y. (2013). Mobile Augmented Reality: The potential for education. *13th*

International Educational Technology Conference, *Procedia-Social and Behavioral Sciences*, *103*, 657-664. http://dx.doi.org/10.1016/j.sbspro.2013.10.385

Nazarudin. (2007). Manajemen Pembelajaran. Yogyakarta : Teras.

Programe for International Student Assessment (PISA). (2009). *PISA 2009 Plus Result Performance of 15-years-old in reading, mathematics and science for 10 additional participants.* Diperoleh 10 April 2016 dari http://nces.ed.gov/survey/pisa.

Belawati, Tian, dkk. (2003). *Pengembangan Bahan Ajar*. Jakarta: Universitas Terbuka.

Leach, J., Driver, R., Millar, R., & Scott, P. (1997). A study of progression in learning about 'the nature of science': Issues of conceptualisation and methodology. International Journal of Science Education, 19(2), 147-166.

National Research Council. (2012). A framework for K-12 science education: Practices, crosscutting concepts, and core ideas. Washington, DC: The National Academies Press.

Nor, F.S., Noor, D.A.H, & Noorafandi, Y. (2015). A Review of Research on Augmented Reality in Education: Advantages and Applications. International Education Studies Journal, 8, 13. http://dx.doi.org/10.5539/ies.v8n13p1

Stiggins, R. J. (2005). Student-involved assessment for learning (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall. Stiggins, R. J., & Conklin, N. F. (1992). In teachers' hands: Investigating the practices of classroom assessment. Albany, NY: State University of New York Press.

Sagala, Syaiful. (2010). *Konsep dan Makna Pembelajaran*. Bandung: Alfabeta.

Sanjaya, Wina. (2013). *Penelitian Pendidikan, Jenis, Metode dan Prosedur Pendidikan*. Jakarta: Kencana Prenada.

Sri Sulistyorini. (2007). *Model Pembelajaran IPA Sekolah Dasar dan Penerapannya dalam KTSP*. Yogyakarta: Tiara Wacana.

Sudarwan Danim. (1995). *Media Komunikasi Pendidikan*. Jakarta: Bumi Aksara.

Sudjana, Nana. (2004). *Dasar-Dasar Proses Belajar Mengajar*. Bandung: Sinar Baru Algensindo.

Sugiyono. (2015). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.

----------. (2015). *Metode Penelitian & Pengembangan Research and Development.* Bandung: Alfabeta

Susanto, Ahmad. (2013). *Teori Belajar dan Pembelajaran di Sekolah Dasar*. Jakarta: Kencana Prenada Media Grup.

Samatowa, Utsman. (2006). *Bagaimana Membelajarkan IPA di Sekolah Dasar*. Jakarta: Depdiknas.

Majid, Ambul. (2013). *Strategi Pembelajaran.* Bandung: Remaja Rosdakarya.

Mulyasa. (2010). *Kurikulum Tingkat Satuan Pendidik (KTSP).* Bandung: PT. Remaja Rosdakarya.

Nurina, Irma. (2015). *Penerapan Lembar Kerja Siswa berbasis Penugasan Terbimbing untuk Meningkatkan Motivasi dan Minat Belajar Siswa di Sekolah Dasar.* (Tesis). Universitas Negeri Semarang, Semarang.

Treagust, D. F. & Duit, R. (2008). Conceptual change: a discussion of theoretical, methodological and practical challenges for science education. Cultural Studies of Science Education, 3, 297-328.

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STRESS PLACEMENT ON PHRASES AND COMPOUNDS IN ENGLISH

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Abstract
The three types of stresses namely "word stress," "compound stress" and "phrasal stress" are the key elements to determine the exact means of conveying a specific intent in an utterance. Therefore during perception and production of such meaning-carrying codes, being able to use the right stress pattern is vitally important to establish the intended communication, or the language learning and teaching technique to be followed. This research investigates the learner's ability to perceive, distinguish and produce the meaning differences between words, phrases and compounds during L2 acquision through various stress patterns. In such contrastive patterns as *ˈHOT ˌdog* (type of food) [compound] vs. *ˌhot ˈDOG* (hot canine) [phrase]" and "a *ˈGREEN ˌhouse* (a building made of glass for growing plants inside) [compound] vs. a *ˌgreen ˈHOUSE* (a house which is painted green) [phrase] the difference in the stress placement is a clear indication of meaning changes expressed. Compounds have primary stress on the first word and on those following them they have secondary stress. In the compound *ˈGOLF ˌball*, the first word has primary stress and the following the secondary stress. As for phrases, however, their qualified elements i.e. the words second in line are stressed more prominently. Therefore the acquisition of such a distinction in stress patterns in phrases and compounds is very important for learners of English in order to analyze what is said and convey their meaning more precisely in their oral communication. Natives make little mistake in distinguishing between the two because they are consciously familiar with them from their childhood on in their immediate environment. We, as language teachers, can and must help our student to acquire this skill by teaching them special stress paradigms, and allow them to compare minimal pairs using pictures representing a compound word or a phrase and asking them to tell the difference between the two. Students can hear a prerecorded tape with the names of the items, and be asked to indicate which one it is that they've heard. Such words may be marked with capitalized letters in relevant syllables or phonetic transcriptions with suprasegmental features to show relevant stress patterns with primary or secondary stress where necessary. These drills may also incluse many other activities until we are satisfied of their performances. Thus our students having full consciousness of the meaning-determining feature of stress placement in compounds and phrases are eventually able to understand and convey their intended meaning more clearly.
Key words: stress placement, L2, compound, phrase, transcription

Background of the issue of stress placement on phrases and compounds

Throughout this century the stress patterns on oral expressions (specifically compound words and phrases) somehow a direct consequence of their syntactic structure are in question (usefulenglish, 2017). Numerous pedagogical resources on ESL/EFL pronunciation advocate teaching nonnative speakers (NNSs) suprasegmentals to improve the intelligibility of their speech (ibid). There are many instances that some foreigners speak English with perfectly intelligible consonants and vowels and with standard grammatical forms, and yet the native have the greatest of difficulty in understanding them because of the speakers' lack of using suprasegmental elements in their oral utterance (ibid).

Moreover, such mispronunciation may cause misinterpretation and potential discomfort devaluing the speaker's effort in oral communication irrespective of their fairly good grammar. Emphasizing on proper intonation in L2 teaching contributes to a high percentage to the total intelligibility of the speaker's speech (Damar, 2014).

McNerney and Mendelsohn (1992) claim that a short term pronunciation course should focus first and foremost on suprasegmentals as they have the greatest impact on the comprehensibility of the learner's English. Thus giving priority to the suprasegmental aspects of English not only improves learners' comprehensibility but is also less frustrating for students because greater change can be effected by such a priority in their teaching.

This argument has been supported by works of Brazil (1994), Coulthard (1994), Pennington and Richards (1986), Celce-Murcia, Brinton and Goodwin (1996) and many other phoneticians. Stress placement on compound words and phrases have also been the topic of research by several researchers such as Kubozona, Quirk et al (1985). They have dealt with the issue of Blending Phonological

Headedness as well as Phonological Headedness of English compound words and noun phrases to explain the paradigms of Stress Placement in English Blending words (Liu, 2017). Quirk et al. (1985) suggested that stress pattern of blend forms tends to follow that of the rightward source word. According to Kubozono and Quirk et al. (1985), phonological headedness in English blending words should be rightward.

However, Tzakosta and Weijer (2006) pointed out that phonological headedness depends on different degrees of stress: accented syllables are head while unaccented syllables are nonheads. According to this definition, we can say that headedness of English compound words is leftward (stressed), while headedness of English noun phrases is rightward (stressed) (ibid). While some have contended that the stressing of phrases and compounds in English is impossible to master in a nativelike way.

However, some others like Giegerich (1992) have adopted the view that the compound-phrase distinction is not that robust and that the stress criterion, commonly invoked in attempts to draw the compound-phrase distinction in English, is even less reliable than previously thought. It not only fails to correlate with other (semantic, syntactic) criteria for compound status, but also draws on incomplete and deeply flawed generalizations regarding stress in compounds and phrases. Some phoneticians like Gero Kunter (2011) adopt the terms “left prominence” and “right prominence” instead of “compound stress” and “phrasal stress”.

The distinction between phrasal vs. compound stresses

Stress in English compound words poses difficult problems for foreign learners. English does not seem to be at all consistent in the way it treats compounds and phrases, either from the point of view of writing or from the point of view of pronunciation and especially stress.

If we look at how this uncertainty and inconsistency arises we can perhaps understand better the difficulties (McMahon, 2002). If we look beyond the principles of word stress to the principles of accent placement, and in so doing pay attention to the information structure of compounds, we can obtain valuable guidance about stress placement in such words (Vogel, 2001).

It is notoriously difficult to know how to stress English compound words. This is partly because we cannot easily define what a compound word is, and partly because it is not simply a question of stress but also of accent. The latter involves a significant combination of both stress and tone and serves to highlight what is regarded as “new” or important information in a particular group of words or tone group. If we look beyond the principles of stress to the principles of accent as well, we are in a better position to try and explain the stress of compound words in English (Roach, 2013).

Compound nouns generally have a primary stress on the first element but with a secondary stress on the second constituent: *ˈEARTH ˌquake, ˈLIFE ˌboat, ˈWAITing ˌroom, ˈFIRE-ex ˌtinguisher.* Contrasting the compounds with the corresponding noun phrases we come up with such pairs in sentences: "That sounds like a *ˈBLACK ˌbird* . [compound], and "A carrion crow is a completely *ˌblack ˈBIRD.* [n. phrase]. Similar compound / phrase contrasts can also be found in the following examples: *“ˈBLACK ˌboard [C] vs. ˌblack ˈBOARD [NP]”; “ˈGREEN ˌfly [C] vs. ,green ˈFLY [NP]”; “ˈHOT ˌhouse [C] vs. ˌhot ˈHOUSE [NP]”* (ibid).

The stress often shifts from the second to the first element when the compound is being used attributively in a noun phrase. This is analogous to the redistribution that occurs in compounds like *“ˈLIGHT ˌhouse-keeper vs. ˌlighthouse-ˈKEEPer”.* Or in these contrastive examples: *“The room is ˌdown ˈSTAIRS. vs. a ˈDOWN ˌstairs ˈroom” -- “His work is ˌfirst ˈCLASS. vs. his ˈFIRST ˌclass ,work”, “The water is ˌknee-ˈDEEP. vs. ˈKNEE-ˌdeep in water. ”* (ibid)

The stress distribution provides a firm basis for distinguishing between different underlying relations, not so much between compound and phrase as between different semantic relations (ibid): a *ˈBULL-ˌfight* involves bulls, and a *ˌbull ˈCALF* is a young bull. a *ˈFRENCH ˌteacher* teaches French, but a *ˌFrench ˈTEACHer* is French. A *ˈSLATE quarry* yields slate. and a *ˌslate ˈROOF* is made of slate. **A** *ˈTOY ˌfactory* produces toys, but a *ˌtoy ˈFACtory* is a model of a factory used as a toy (ibid). As for the compound nouns, the stress is on their first part, e.g. *ˈBLACK ˌbird* and *ˈRAIL ˌroad.* The compound adjectives have the stress is on the second part as in *ˌbad-ˈTEMpered* and *old-ˈFASHioned***.** **T**he compound verbs have the stress on the second part as in *to ˌunderˈSTAND* and *to ˌoverˈFLOW*. A compound word consists of two or more lexical components each of which can stand alone as separate words. Thus corn and field can combine to produce *ˈCORN%field* (a field where corn is grown), kick and back produce *ˈKICK%back* (money that someone kicks back to someone as a bribe). out and house give *ˈOUT%house* (a smaller house located outside a larger house, often containing a primitive toilet); tens of thousands more examples like these can be found in literature (ibid).

English strongly favors compounding. In terms of stress placement, most of the English compounds strong-stress the left component of the compound such as *ˈAFter ˌbirth, ˈAIR ˌbase* and *ˈBAS ˌketball***.** Indeed, about 90 percent of all compounds written as single words strong-stress the left component (Teschner, 2004). But the remaining 10 percent do not, strong-stressing instead the right-hand component though giving the appearance of strong-stressing both components equally. Here are five some of such exceptions having right-strong-stressing compounds: *ˌafterˈNOON, ˌbackˈYARD, ˌblackˈCURRant, ˌbroad-ˈMINDed* and *ˌbuckˈTEETH.*

Many have contended that it is impossible to master the skill of stressing compounds and phrases properly in a nativelike way. Giegerich (1992) on the other hand looks at the issue from another perspective. He tries to prove that the compound-phrase distinction is not that robust and that the stress criterion, commonly invoked in attempts to draw the compound-phrase distinction in English, is even less reliable than previously thought (ibid).

As for the determination of prominence in a compound, Roach (2013) suggests that if the first part of the compound is (in a broad sense) adjectival, the stress goes on the second element, with a secondary stress on the first.

For example: *ˌloudˈSPEAKer, ˌbad-ˈTEMPered, ˌsecond-ˈCLASS* and *ˌthree-ˈWHEELer.*
If, however, the first element is (in a broad sense) a noun, then the stress goes on the first element. Examples: *ˈTYPE ˌwriter, ˈCAR-ˌferry, ˈSUN ˌrise, ˈSUIT ˌcase* and ***ˈTEA-ˌcup.***

Roach (2013) is however fairly cautious about these ˈrulesˈ, but states in this way that they are genuinely helpful to teachers and learners alike. Tayler (1991) suggests that by following the predictability and information-conveying feature of either part of the compound stress is determined. Thus *ˈPARK ˌStreet,* as opposed to *ˈPARK ˌAvenue, ˈPARK ˌRoad,* or *ˈPARK ˌPlace.*

Street is the more common and predictable term in these cases, and is thus de-accented as opposed to the less common terms such as *place, square, terrace, grove, lane, avenue,* and many others which are all accented.

It is interesting to note, however, that many compounds marked by Kingdon (1958) as having ˈdouble primary stressˈ is nowadays considered as having one primary and secondary stress.
Although Kingdon marks the following words, among others, with double stress, most speakers today would probably distinguish the primary and one secondary stress on them:

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ˈFARM ˌhouse, ˈBOX ˌoffice, ˈSEA ˌlevel, ˈTISsue ˌpaper, ˈBOA con ˌstrictor, ˈVACuum ˌcleaner, ˈCOLD ˌcream, ˈSIX ˌshooter, ˈSLEEPing ˌpartner, ˈFLYing ˌfish, ˈSMALL ˌholder, ˈPUBlic ˌschool, ˈTRAVeller's ˌcheque, ˈSTAGE ˌmanager, ˈWEEK ˌend, ˈWARrant ˌofficer, ˈSUGar ˌbeet, and *ˈMAIDen ˌname.*

What seems to be happening is that sometimes speakers tend to have some difficulty in recognizing a compound in the first place. One could say that they are treating the compounds as two separate words and stressing them accordingly. In this they are perhaps often led (or misled) by the spelling, but not always as in the case of *ˈMAKE- ˌbelieve, ˈHOSE ˌpipe and ˈGRAND ˌmother).*

Sometimes the contrasts are so clear that one cannot but help stressing the relevant item when one talks about it: **a** *ˈDANCing ˌteacher* vs. a *ˌdancing ˈTEACHer***,** a *ˈYOUNG ˈGERMan ˌteacher* vs. *a ˌyoung ˈGERMAN ˌteacher* or an *ˈENGlish ˌstudent* vs. an *ˌEnglish ˈSTUdent.*

To sum all this up very briefly, we can say that, in cases of doubt, if we look at which element of a compound carries most information, or is the most unpredictable, and place the accent on that element, we have a good chance of producing correct compound stress (Kunter, 2011).

The structure of phrasal and compound stresses

According to Hayes (1995) the *word stress* is the strongest stress in a prosodic word. As for the *phrasal stress,* it is assigned beyond word stress in syntactic collocations of words, such as phrases, clauses, or sentences. Essentially like Bloomfield, for whom *ICE- ˌcream* was a compound and *ˌice ˈCREAM* a phrase, Liberman & Sproat (1992) drew the PS/NS distinction strictly along stress lines. Thus he suggests that placing stressing in relevant syllables of the word "girlfriend" as *ˌgirl ˈFRIEND* having end-stress while for *ˈGIRL- ˌfriend* with fore-stress would determine the intended meaning. As in the examples of such phrases like *a ˌgreen ˈHOUSE* [wS] (which is a house that is green), but *a ˈGREEN ˌhouse* [Sw]**"** (is a glass building for growing plants). Likewise *a ˌFrench ˈTEACHer* [wS] a phrasal meaning a teacher from France but *a ˈFRENCH ˌteacher* [Sw] who is a teacher of French is a compound word. Another example *a ˌwoman ˈDOCtor* [wS] is any female doctor, however *a ˈWOMan ˌdoctor* [Sw] is a gynecologist.

This distinction can be attributed to the difference between compound and phrase in surface structure; hence the common names "phrasal stress" and "compound stress". This is the analysis formalized in the Chomsky-Halle Compound Rule (1968) which presupposes a syntactic analysis such that "compound" is defined as a branching structure of the sort.

The treatment of cases like *"ˈSTEEL ˌwarehouse vs. ˌsteel ˈWAREhouse***"** under this analysis is somewhat obscure, since both seem to be noun-noun compounds.

Here, however, reference is often made to deep syntactic differences – i.e. "warehouse made of steel" vs. "warehouse for storing steel" - and, though details of such an analysis have never actually been worked out, the assumption continues to be held that ultimately the whole phenomenon will be shown to deepend on syntax at one level or another.

While phrases tend to be stressed phrase-finally, i.e. on the last word, compounds tend to be stressed on the first element (Compounds vs. noun phrases, 2017).

This systematic difference is captured in the so-called nuclear stress rule (phrasal stress is on the last word of the phrase) and the so-called compound stress rule (stress is on the left-hand member of a compound) formalized in Chomsky and Halle (1968) as in these examples of noun phrases: *the ˌorange ˈCARpet, this ˌnew ˈHOUSE, such a ˌgood ˈJOB,* contrasted with these examples of the

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nomimal compounds: ˈ*PAYment* ˌ*problems*, ˌ*instalˈLAtion* ˌ*guide*, ˈ*SPACE* ˌ*requirement* **(**Dalton, C. & B. Seidlhofer, **1994).**

This systematic difference between the stress assignment in noun phrases and in noun compounds does lead to minimal pairs where it is only the stress pattern that distinguishes between the compound and the phrase: *a* ˈ*BLACK*ˌ*board* [C] (a board to write on) vs. a ˌ*black* ˈ*BOARD* [P] (a board that is black)– ˈ*OPerating ins*ˌ*tructions* [C] (instructions for operating something) vs. ˌ*operating in*ˈ*STRUCtions* [P] (instructions that are operating) –*in*ˈ*STALLing* ˌ*options* [C] (options for inst. sth) vs. *ins*ˌ*talling* ˈ*OPtions* [P] (the installing of options).

Given the correctness of the compound stress rule, another interesting problem arises how are compounds stressed that have more than two members? (Hayes, 1995). Consider the following compounds, their possible stress patterns, and their interpretations. ˈ*MAIL delivery service – mail de*ˈ*LIVery service / ˈSTUdent* ˈ*feedback* ˌ*system – student* ˈ*FEEDback system / ˈGOVernment* ˈ*REVenue policy –* ˌ*government* ˈ*REVenue*ˌ*policy*

The data at hand show that a certain stress pattern seems to be indicative of a certain kind of interpretation: A ˈ*MAIL de*ˌ*livery* service is a service concerned with ˈ*MAIL de*ˌ*livery* (i.e. the delivery of mail), whereas a ˌ*mail de*ˈ*LIVery* service is a *de*ˈ*LIVery* ˌ*service* concerned with mail. This is a small semantic difference indeed, but still one worth taking note of.

A ˈ*STUdent* ˌ*feedback* system is a system concerned with ˈ*STUdent* ˌ*feedback*, whereas a ˌ*student* ˈ*FEEDback* system may be a ˈ*FEEDback* ˌ*system* that has something to do with students (e.g. was designed by students or is maintained by students).

While the ˈ*GOVernment* ˌ*revenue* policy is a policy concerned with the ˈ*GOVernment* ˌ*revenue*, the ˌ*government* ˈ*REVenue* policy is a certain ˈ*REVenue* ˌ*policy* as implemented by the government.
Many pronunciation teachers usually sum up the whole concept of compound and phrase stress in these five rules (compound words, 2017):
1. compounds combining two nouns have the stress on the first element. e.g. ˈ*TYPE*ˌ*writer*, ˈ*SUN*ˌ*rise*, ˈ*TEA*-ˌ*cup*, ˈ*SUIT*ˌ*case*
2. compounds with an adjectival first element and –ed at the end have stress on the second word.e.g. ˌ*bad*-ˈ*TEMpered*, ˌ*heavy*-ˈ*HANDed…*
3. compounds in which the first element is a number tend to have final stress.e.g. ˌ*three*-ˈ*WHEELer*, ˌ*second*-ˈ*CLASS*, ˌ*five*-ˈ*FINGer…*
4. compounds functioning as adverbs are usually final-stressed.e.g. ˌ*head*-ˈ*FIRST*, ˌ*north*-ˈ*EAST*, ˌ*down*ˈ*STREAM…*
5. compounds which function as verbs and have an adverbial first element take final stress.e.g. ˌ**down**-ˈ*GRADE*, ˌ*back*-ˈ*PEDAL*, ˌ*ill*-ˈ*TREAT.*

The methodology of teaching phrasal and compound stresses
The teaching of compound and phrasal stress patterns to L2 learners is very important to increase their understanding of the spoken language and especially their oral performances. We can help them acquire such skills by getting them to know the basic elements of stress patterns and by drilling minimal pairs of such compound words or phrases and by asking them to distinguish between the two meanings.

Students may be exposed to some pictures and words on them referring to the names of the items, and be asked to indicate which one it is that they've heard. Words may be marked on the words with capitalized letters and with primary and secondary stresses shown on relevant syllables either as they are written ordinarily or in their IPA transcription. After many such examples, students acquire full

consciousness of the meaning-determining feature of stress placement in compounds and phrases and are able to convey their meaning more clearly.

Minimal pair drills for phrasal and compound stresses

Minimal pairs are most convenient for the teaching of stress distinction. Students can look at these examples on the board, with the explanations given from the loudspeaker and try to guess which item is meant by the relevant stress pattern (minimal distinctions, 2017):

a *ˈWHITE ˌboard* [C] (a board to write on) vs. a *ˌwhite ˈBOARD* [P] (any board that is white) – a *ˈWHITE ˌhouse* [C] (a house that is painted white) vs. *the ˌwhite ˈHOUSE"* [P] (where the U.S. president lives); *ˈRED ˌsocks* [C] (ordinary red socks) vs. *ˌRed ˈSOX"* [P] (Boston's baseball team) – *a ˈWET ˌnurse* [C] (a woman hired to suckle another's infant) vs. a *ˌwet ˈNURSE* (a nurse who has gotten wet) – *ad ˈMISSsible ˌevidence* (evidence that is admissible)" [C] – *auto ˈMATic ˌpilot* (a pilot that is automatic)" [C] – *ˈBAKED ˌbeans* (beans that are baked) [C] – *ˈBIG ˌbusiness* (business that is big) [C] *ˈBLACK ˌsheep* (a sheep that is black) [C] vs. *ˌblack ˈSHEEP* [P] (a worthless or disgraced member of a family)

The following listing (stress in speech, 2017) contains only phrases, and one can tell this by their having metaphorical sense and stress on the second part of the statement, which is a clear criterion for the learners to observe while distinguishing phrases from compounds:

an ˌarm and a ˈLEG [P] (a large, possibly exorbitant, amount of money) – *ˌbad ˈEGG* [P] (someone or something that disappoints expectations) – the *ˌbig ˈAPPLE* [P] (nickname for New York, USA) – to *ˌbreak the ˈICE* [P] (to break down social formality and stiffness) – *ˌcarbon ˈCOPy* [P] (an exact duplicate) – *ˌcrocodile ˈTEARS* [P] (insincere show of sorrow) – *ˌcut the ˈMUStard* [P] (to come up to expectations) – *ˌdrop in the ˈBUCKet* [P] (a very small proportion of the whole) – *ˌfunny ˈFARM* [P] (mental institution) – *ˌguinea ˈPIG* [P] (a person or animal who is used as the subject of an experiment) – *ˌivory ˈTOWer* [P] (a state of sheltered and unworldly intellectual isolation) – *ˌmum's the ˈWORD* [P] (keep quiet - say nothing) – *ˌold ˈHAT* [P] (old-fashioned; hackneyed) – *ˌpaint the ˌtown ˈRED* [P] (engage in a riotous spree) – *ˌpaper ˈTIger* [P] (a person who appears to have power but is in reality ineffectual) – *ˌsacred ˈCOW* [P] (something too highly regarded to be open to criticism or curtailment) – *ˌsick ˈPUPpy* [P] (someone who behaves oddly) – *ˌson of a ˈGUN* [P] (a rogue or scamp) – *ˌswan ˈSONG* [P] (a final gesture or performance, given before dying or retirement) – *ˌwell ˈREAD* [P] (erudite and literate) – *ˌyellow ˈBELLy* [P] (a coward).

Then students are given another listing of compounds vs. phrases and are asked to read them aloud making sure that both primary and secondary stresses are placed on their right places.

"geˌologist - asˈTROnomer vs. geˈOlogist - as,tronomer" – "ˌapple ˈPIE vs. ˈAPPle ˌpie" – "ˌscholar-ˈACtivist vs. ˈSCHOlar-ˌactivist" – "ˌapricot ˈCRUMble vs. ˈApricot ˌcrumble" – "ˌMichigan ˈHOSpital vs. ˈMICHigan ˌhospital" – "ˌMadison ˈAVenue vs. ˈMADison ˌavenue" – "ˌBoston ˈMARathon vs. ˈBOSton ˌMarathon" – "ˌPenny ˈLANE vs. ˈPENny ˌLane"– "ˌsummer ˈNIGHT vs. ˈSUMmer ˌnight" – "aˌluminum ˈFOIL vs. aˈLUMinum ˌfoil" – "ˌMay ˈFLOWers vs. ˈMAY ˌflowers" – "ˌsilk ˈTIE vs. ˈSILK ˌtie" – "ˈFOUNtain ˌpen vs. ˌfountain ˈPEN" – "ˈHOSEˌpipe vs. ˌhoseˈPIPE" – "ˈFAULT ˌfinding vs. ˌfault ˈFINDing" – "ˈMAKE-ˌbelieve vs. ˌmake-beˈLIEVE" – " ˈENGlish ˌteacher vs. ˌEnglish ˈTEACHer" – "ˈBUS conˌductor vs. ˈbus conˌDUCTor" – "ˈENgine ˌdriver vs. ˌengine ˈDRIVer" – "ˈDINing ˌroom vs. ˌdining ˈROOM".

Finally students are asked to read some sentences containing minimal pairs of compound and phrases to make sure that the meaning intended is cyrstal clear by themselves and the audience (Compounds vs. noun phrases, 2017).:

A *ˈBULL-ˌfight* involves bulls; but a *ˌbull ˈCALF* is a young bull. – A *ˈTURKISH ˌteacher* teaches Turkish. *but* a *Turkish ˈTEACHer* is Turkish. A *ˈSLATE ˌquarry* yields slate; but a *ˌslate ˈROOF* is made of slate. A *ˈTOY ˌfactory* produces toys. *but* a *ˌtoy ˈFACtory* is a model of a factory used as a

toy. I told you he was a ˌ*bank CLERK*, and NOT a ˌ*bank* ˈ*PRESident*. Just the one ˌ*air* ˈ*BASE* is under attack, *and* NOT the whole ˌ*air* ˈ*FORCE*. I wanted them to come in the ˈ*BACK* ˌ*door, and* NOT the ˈ*FRONT* ˌ*door*. I wanted them to come in the ˌ*back* ˈ*DOOR*, NOT the ˌ*back* ˈ*WINdow*. They told me they wanted ˈ*APPLE* ˌ*pie, and* NOT ˈ*PUMPKIN* ˌ*pie*. They told me they wanted ˌ*apple* ˈ*PIE, and* NOT ˌ*apple* ˈ*CIDER*.

Conclusion

The basic general characteristics of compound and phrasal stresses are that compound stresses are right-headed and inherit their major properties from their head. Furthermore, compounds exhibit a regular compound-specific stress pattern differing systematically from that of phrases. As for the phrases they are stressed on their second parts, in other words, they have their prominence on their last part. There are basically five elements summing up the compound and phrase stress rules:

1. compounds combining two nouns have the stress on the first element.e.g. ˈ*TYPE*ˌ*writer*, ˈ*SUN*ˌ*rise*, ˈ*TEA*-ˌ*cup*, ˈ*SUIT*ˌ*case*

2. compounds with an adjectival first element and –ed at the end have stress on the second word.e.g. ˌ*bad*-ˈ*TEMpered*, ˌ*heavy*-ˈ*HANDed*

3. compounds in which the first element is a number tend to have final stress. e.g. ˌ*three*-ˈ*WHEELer*, ˌ*second*-ˈ*CLASS*, ˌ*five*-ˈ*FINGer*

4. compounds functioning as adverbs are usually final-stressed.e.g. ˌ*head*-ˈ*FIRST*, ˌ*north*-ˈ*EAST*, ˌ*down* ˈ*STREAM* **5.** compounds which function as verbs and have an adverbial first element take final stress.e.g. ˌ*down*-ˈ*GRADE*, ˌ*back*-ˈ*PEDAL*, ˌ*ill*-ˈ*TREAT*. Natives make little mistake to distinguish betw. the two because they are naturally familiar with them. Therefore the teaching of such stress patterns to learners of English is very important for their progress in pronunciation skills. Such features can be taught them by exercising on a listing of minimal pairs or pictures representing a relevant compound or a phrase and asking them to distinguish between the two. Students hearing a prerecorded tape with the names of the items learned may be asked to indicate which one it is that they ˈve heard. The relevant syllables of the words may be marked with capitalized letters or their phonetic transcriptions may have suprasegmental features on them. Students can also be exposed to some sentences having these elements in them to distinguish meaning differences based on stress distinction. Thus the present study will serve its purpose to bring an awareness in students for the distinction between compound and phrasal stress patterns of the English language in order to express their meaning more clearly.

References:

Liu, C. K. (2017). *Stress, Rhythm, Tone and Intonation,* National Taipei University
Brazil, D. (1994). *Pronunciation for advanced learners of English*, . Cambridge: Cambridge University Press.
Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (1996). *Teaching pronunciation: A reference for teachers of English to speakers of other languages.* New York: Cambridge University Press.
Chomsky-Halle (1968) *The Sound Pattern of English* https://en.wikipedia.org/wiki/The_Sound_Pattern_of_English
Compound words (2017). *Compound Words* - Capital Community College
grammar.ccc.commnet.edu/grammar/compounds.htm
Compounds vs. noun phrases (2017). WordReference Forums
Coulthard M. (1994)**.** *Advances in text analysis.* London: Routledge.
Dalton, C. & B. Seidlhofer (1994). *Pronunciation.* Oxford: OUP.
Damar, E. A. (*2014*) *Task-Based Video Use for the Improvement of English Stress*
www.mcser.org/journal/index.php/jesr/article/download/2822/2785
Giegerich, H. (1992). *English Phonology*, University of Edinburgh
Hayes,B (1995). *Metrical Stress Theory: Principles and Case Studies* https://books.google.com.tr/books?isbn=0226321045
Jenkins, J. (2000). The phonology of English as an International Language. Oxford: Oxford University Press.
Kingdon, R. (1958). *The groundwork of English stress,* https://academic.oup.com/eltj/article-pdf/XIV/1/47/9799860/47.pdf
Kunter, G. (2011). *Language Arts & Disciplines*
Liberman *and* Sproat (*1992*). *The Stress and Structure of Modified Noun Phrases in English*
McCarthy, M. (1991). *Discourse analysis for language teachers.* Cambridge: CUP.
McMahon, A. (2002) *Introduction to English Phonology*, Edinburgh University Press, ,
McNerney, M., & Mendelsohn, D. (1992). *Suprasegmentals in the pronunciation class: Setting priorities.* In P. Avery & S. Ehrlich (Eds.), Teaching American English pronunciation (pp. 185-196). Oxford: Oxford University Press.

Minimal distinctions (2017). *Minimal Distinctions - Linguistics Network* www.linguisticsnetwork.com › Tutorials › Tutorials Phonology
Nespor-Vogel (2007). *Prosody Phonology: With a New Foreword*
Pennington, M. C. (1996). *Phonology in English Language Teaching.* New York: Addison Wesley Longman.
Pennington-Richards (1986). *Pronunciation Revisited,* TESOL Quarterly, June 19786
Quirk et al.'s. (1985) *Comprehensive grammar of the English language,* Longman
Roach, P. (2013). *English phonetics and phonology: A practical course. (enhanced EBook edition)*. Cambridge: Cambridge University Press.
Seidlhofer, B. (2011). *Understanding English as a Lingua Franca*. Oxford: Oxford University Press.
stress in speech (2017). *Stress in Speech: Providing Meaning Through Emphasis - ThoughtCo* https://www.thoughtco.com ›
Taylor, D. (1991). *Compound word stress | ELT Journal | Oxford Academic*
Teschner, **R. V. (**2004**)**. *Pronouncing English: A Stress-based Approach,*
https://books.google.com.tr/books?isbn=1589010027
Tzakosta, M. & J. van de Weijer (2006). *On the role of phonological, morphological and semantic headedness in acquisition* WUW: University of Warsao. 223-244.
Underhill, A. (1994). *Sound foundations. Oxford: Macmillan Heinemann English Language Teaching.*
Usefulenglish (2017) usefulenglish.ru/phonetics/stress-in-compound-words