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UNIVERSITY OF RAJSHAHI

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Bangladesh Journal of Educational Research (BJER)

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Editorial Note

It is our great pleasure to publish the First Issue of Bangladesh Journal of Educational Research (BJER). It is published by the Institute of Education and Research (IER), University of Rajshahi, Bangladesh and financed by Higher Education Quality Enhancement Project (HEQEP), University Grants Commission, Bangladesh.

BJER is a high quality open access peer reviewed journal providing a platform for the researchers, academicians, professionals, practitioners and students to impart and share knowledge in the form of high quality empirical and theoretical research papers from different streams of education.

We are very much happy and delighted that a good number of well-known researchers and educationists have shown their eagerness to be associated with this journal by allowing us to publish their papers. Firstly, we would like to thank the Editorial Board members for their consistent hard work with a view to maintaining the highest quality output. We would like to take the opportunity to thank all the authors and the Review Board members for their continuous support, guidance and advice.

In this volume, BJER publishes scholarly research papers that address significant contemporary religious, political, cultural, social, and organizational issues in difference levels of education in Bangladesh, the links between those factors and their impacts on the process of classroom teaching learning. They also discuss issues related to mainstreaming the children with special needs and inclusive education regarding viewpoints of different stakeholders.

In conclusion, the arena of educational thinking is continuously expanding through research. These articles included in this issue are thought provoking and has the potentiality to contribute significantly in the contemporary arena of education. We are confident that these articles will be of great value to our readers.

Thank you very much.

Chief Editor
Professor Dr. Golam Kabir

Executive Editor
Dr. Happy Das

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Building Three Bridges: Education Challenges and Prospects in the Islamic World

Manzoor Ahmed
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Abstract: *This paper on education challenges and prospects in the Islamic world makes the argument that the Islamic nations and societies, in order to face the challenges of development and fulfill their potential, must build three bridges – the bridge between citizens and the state in each country, the bridge between each and other Muslim countries, and the bridge between the Islamic world and the rest of the international community. The state of educational development in the Islamic countries is described and the role of capacity enhancement of people as the lynchpin for building the bridges to the future is presented. Five key areas of action are identified – making education pave the way to the future based on a clear vision and a consensus on the intangible goals and values to be supported and promoted by education; overcoming gender-based disadvantages of girls and women, looking at higher education as the engine for social change, enhancing the citizens' voice through civil society, and mobilizing resources for education for the poorer Islamic countries as a step in solidarity.*

Keywords: *Islamic World Education, Challenges and Prospects, Building Three Bridges.*

"… a revitalized Muslim world must endeavor to build at least three bridges. The first is the bridge between Muslims and their government. The second is the bridge between Muslim countries themselves. The third is the bridge between the Muslim world and the rest of the international community."

> -HRH Sultan Nazrin Muizzuddin Shah, Keynote address at the Second World Conference on Islamic Thought and Civilisation, 18 August 2014, Ipoh, Malaysia.*

Fifty-seven countries with a fifth of the world's population totaling 1.3 billion constitute the Organization of Islamic Cooperation (OIC). Counting people of Islamic faith outside OIC, including India's 175 million Muslims, the third largest in any country, the Islamic world accounts for a quarter of humanity. Spanning the

globe, OIC countries embrace great diversity in geography, ecology, size of population, resources, language, culture, ethnicity and the state of development.

Despite the diversity of geography and culture, the countries and people of the Islamic world are tied by a bond of common faith and spiritual values unique among any of the large collective bodies of nations. This bond offers a great potential for working together to fulfill common aspirations and goals for development of societies and enhancement of human wellbeing. But only a scratching of the surface has begun in exploiting the possibilities in this respect.

A geopolitical situation, arguably more challenging and with more far-reaching consequences than any time in history, is confronted by the Islamic world. Political turmoil, conflicts, insurgencies and civil war affect a large part of the Islamic world. Indescribable atrocities, cruelties, and human rights violation are being perpetrated, often invoking the name of Islam.

The internecine sectarian conflict among Muslims, not unknown since the early days of Islam, has taken a virulent form with the ISIS forces and their opponents carrying out their war across several national borders. A UN Security Council report reveals that over 15,000 young fighters from 80 countries, the majority from Europe, have joined the combatants, adding a new international dimension to it (BBC Radio, 6 November 2014). Besides this headline-grabbing war, sectarian violence has tragically reached new heights, especially between the Sunni and the Shiite, causing senseless fatalities across the Muslim world from Nigeria to Pakistan.

Samuel Huntington's thesis of "the clash of civilizations," and the specter of the combined Islamic and the Confucian hordes from Asia raiding the citadel of western civilization that he imagined is publicly rejected by responsible Western opinion leaders and sensible people everywhere. However, one cannot but wonder if the pernicious thesis is not influencing many policy and tactical decisions of Western powers, not to speak of the position of powerful protagonists of political conservatism, the Christian Right and world Zionism. Some of them harkens back to the anti-Islamic crusades of the middle age (Huntington, 1993).

Think of the two Gulf Wars and its aftermath that have wrought havoc in Iraq; the knee-jerk reaction to terrorist acts and threats including 9-11 destruction of the Twin Towers in New York; and the stubborn one-sidedness of the West led by USA on Israeli occupation of Palestine. This tendency to tilt, many would say it is more than a tilt, towards the premise of the civilizational clash is the same misguided justification that inspires and energizes the extremists and terrorists labeled as Islamic. The duplicity of the West does not serve its own larger and longer-term

interest. And it certainly cannot be an acceptable reason for any group in the Islamic community to try to pay the West back in its own coin, because this would not be in any one's interest.

We cannot but note the phenomenon called the "Arab Spring," literally ignited in December 2010 by the 26 year street vendor Mohammed Bouazizi in Tunis. It has contributed to changing the agenda for democracy and public engagement on it in the Arab and the Islamic world. It is still being played out as a force of defiance against both domestic tyranny and globalized disempowerment. Hamid Dabashi of Columbia University argues that the Arab Spring has altered the geopolitics of the region so radically that 'the Middle East' in its many dimensions has to be re-imagined. He of course rejects the skeptical and dismissive view of it held by some, both in the Islamic countries and outside (Dabashi, 2012).

Sultan Nazrin Muizzuddin Shah of Malaysia spoke of building three kinds of bridges – the bridge between Muslims and their government, the bridge between Muslim countries themselves and the bridge between the Muslim world and the rest of the international community.

The bridges that Sultan Nazrin speaks about are precisely the ones necessary to overcome the chasms I noted of democracy and governance, sectarian violence and the absence of solidarity within the Islamic Ummah, and the Islamic community failing to relate effectively to the wider world. Building these bridges, constructing a common understanding and a sense of purpose within each country and in the Islamic community as a whole has various dimensions; a critical one is building human capabilities through education and learning.

State of Education in Islamic Countries

Enhancing people's capabilities and skills for fulfilling their human potential through national education and learning systems is a key aspect of the larger task of building the different bridges. It is necessary to understand where the Islamic countries stand in educational development in relation to rest of the world and the variations and gaps between the Islamic countries themselves.

According to the *Human Development Report 2014* of UNDP, one-third or 19 of OIC members fall in the *very high* and *high* human development category. The other two-thirds are placed in the medium and low categories – the majority (24 countries) being at the low end of the global table. Population-wise, 80 percent of the people in the Islamic world are affected by poverty and under-development (UNDP, 2014).

Drawing on the good work done by SESRIC (Statistical, Economic and Social Research and Training Center for Islamic Countries), the situation in some of the critical areas in educational development can be highlighted (SESRIC, 2012).

Literacy rates. Adult literacy rate clearly is a critical indicator of development; it represents a necessary condition for progress in others areas of development. For the Islamic countries as a group, the average adult (15+) literacy rate was 71.7% in 2010 compared to the world average of 80.1%. Women remained behind globally; the gap for women in Islamic countries was 10 percentage points lower than for men. Within the OIC countries, half of the population fell below 60% literacy rate, with quite a few in Sub-Saharan Africa below 30%.

School Education. Attendance in **preschool education** has increased more slowly in OIC countries from 2000 to 2011, in comparison to developing countries as a group. The share of OIC countries enrollment in preschool has come down from 14% to 12.5% in this period. There has been a recognition of the importance of preschool preparation of children for primary education, especially as a proactive measure to overcome socio-economic disadvantages of population groups in developing countries. This trend has not been seen in OIC countries.

In **primary education**, the share of OIC members in enrolment and number of teachers in the world has been on the rise due to a greater effort in developing OIC countries to expand primary education. However, the increase in net enrollment rate has remained flat between 2000 and 2011 at 74% while it increased somewhat in other developing countries. About a quarter of the children in OIC countries did not enroll in primary school, whereas this proportion has been around half of that in developing countries as a group and about 3% in developed countries (SESRIC, 2012).

As individual countries, five OIC members – Indonesia Pakistan, Bangladesh, Nigeria and Egypt – accounted for half of the primary school children in OIC. The challenges are greater in the smaller population countries in Sub-Saharan Africa, poorer Arab countries and the conflict-affected countries. The symptom of a systemic problem in quality and access in primary education is the gap between gross and net enrollment, with about a quarter of the children not enrolled at the designated age (mostly over-age) in both OIC and developing countries. This indicates that a culture of enrollment in school at the right age has not caught on, that there are problems of physical and mental growth and development of children, and that preschool education is inadequate.

For **secondary schooling**, in net enrollment at 50% in 2011, OIC have made progress to come up to the level of the average for developing countries. This rate was 92% for developed countries and 71% for the world, leaving OIC significantly behind.

Technical and Vocational Education and Training (TVET). TVET, as a sub-set of higher secondary schooling, prepares young people for employment. Both OIC and developing countries had approximately a quarter of their upper secondary students in TVET, whereas this proportion was over 40% in developed countries. Within OIC there are major variations in this regards – 54% of higher secondary students in TVET in the OIC countries of Europe and Central Asia (ECA) regions compared to under 10% in South Asia and under 20% in Sub-Saharan Africa. This difference points to a policy question of how secondary education and TVET can be more directly geared to meeting employment and skills needs of countries (SESRIC, 2012: 14-16).

Tertiary Education. At the tertiary level, OIC progress between 2000 and 2011 has been slower than other developing countries – reported as gross enrollment. OIC were behind other developing countries (by 6 percentage points at 19%) and only about a quarter of the average for developed countries (which was 75%) in 2011 (SESRIC, 2012: 17-19).

Learning Achievement and Global Competitiveness. The outcome and impact of education for society and individual are reflected in the competencies and capabilities acquired by learners which are eventually manifested in productivity and other spheres of social and economic development of a country. OECD's Programme on International Student Assessment (PISA) is an attempt to evaluate performance of national school systems and the learners from the point of view relevant competencies. PISA tests reading, and mathematical and scientific literacy focusing on how well the young people at age 15 can use their knowledge and skills in real life tasks. For the 2009 round of tests, some 75 countries participated including 11 OIC members (Turkey, UAE, Malaysia, Jordan, Tunisia, Indonesia, Kazakhstan, Albania, Qatar, Azerbaijan, and Kyrgyzstan). The average scores for OECD countries were around 500 with a standard deviation of 100. OIC members, except Turkey and UAE, hardly exceeded 400 and most had score well below this number. Note that 80% of OIC countries did not participate in the test anticipating poor performance (SESRIC, 2012: 26-28)

The relevance of PISA and placing countries on a league table with highly uneven resource base and the state of educational development can be questioned. Nonetheless, it highlights the gap in acquiring knowledge and skills by young people between developing and developed countries and the urgency of overcoming the handicaps of developing countries, including OIC, in the global society.

Resources for Education. Public expenditure on education indicates national priority on education and adequacy of resources for it. Average public education expenditure in

2010 for the world, developing countries, and developed countries was 5%, 4.5% and 5.1% respectively. For OIC countries it was 3.8%. The proportions for all groups increased somewhat since 2000, except for OIC, which remained stagnant (SESRIC, 2012: 37-38).

Aggregate GDP share for public education budget does not necessarily show a full picture. A nominal per student expenditure is also not adequate because of varying cost patterns and prices among countries. A somewhat better measure is the ratio of per capita GDP and per capita student expenditure in each country. By this measure, educational resources have decreased between 2000 and 2010 – for world, from 36.7% to 24.5%; for developing countries, from 25.1 to 20.2, and for OIC, from 24.2% to 17.7%. The proportion also went down for developed countries from 32.2% to 28.5%. The impact of course was greater for OIC and developing countries because of the low baseline of expenditures in these countries (SESRIC, 2012: 40-41).

To get a sense of the gap in resources, subject to the caveats about nominal value of the amount, it may be noted that, in 2010, the average per student public expenditure was $550 for OIC, $905 for developing countries, and $11,432 for developed countries. There were obviously great variations among countries in each group, especially among OIC – with Qatar at $16,210, leading by a large difference from the two next best countries, UAE and Saudi Arabia, which spent less than a quarter ($4,050 and $3,678 respectively) of the amount spent by Qatar (SESRIC, 2012: 40).

Science, Technology and Research. On the foundation of the educational system can be built scientific research and technological development that drive innovation and the creation of the knowledge-based economy and society. The deficits and weaknesses in the education system noted above stand in the way of harnessing science, technology and research for fulfilling national aspirations for development as modern and progressive nations.

More than three quarters (76%) of world's total gross domestic expenditure on R&D (GERD) was in developed countries, a third of it in USA and another third by EU and Japan in circa 2010. The share of OIC was 2.1% which amounted to $26.6 billion. Of total OIC spending on R&D, two countries, Turkey and Iran, spent more than 60%, with the rest distributed among the remaining 55 countries (SESRIC, 2012: 51).

In World Economic Forum assessment of countries in terms of their capacity for innovation in industry and business, OIC had a score of 2.94, close to the average of 2.95 for all developing countries, but well below the average for developed countries at 4.43 in 2012-13. (SESRIC, 2012: 63)

Five Areas of Action

I would like to emphasize five areas as priorities for action – education system focusing on the future, strengthening the role of civil society, overcoming girls' disadvantage, higher education as the engine for change, and a step in mobilizing resources.

1. Making Education Pave the Way to the Future

The review and analysis of the education system often looks at the efficiency of education in terms of producing the skills and competencies seen as necessary for economic development. SESRIC review of OIC countries also has focused on this instrumental function of national educations systems as highlighted above in this paper. This is important but is limiting form the point of view of the vision, aspirations and values of a society. This is also restrictive from a longer term perspective of national development that reflects the normative view and functions of education in society. Human beings are not just cogs in the machine of economic production.

The dilemma, however, arises from the difficulty of having a clear vision and a consensus on the intangible goals and values to be supported and promoted by education. The premise of social determinism of education as a social institution suggests that the education system cannot go much beyond a "reproduction" of the prevailing structure of inequality and injustice in society and the values and priorities espoused by dominant segments of society.

Sociological and economic analysis of education and society has emphasized intergenerational transmission of inequality and how social capital serves the dominant power structure. However, historical and empirical evidence also shows that no educational system is as much a monolith as social determinists would assert. A dialectic tension exists in any social institution which offers avenues for change and societies indeed are changing. The creativity, imagination and commitment of the products of the education system itself have successfully contributed to change in society and the education system (Tzanakis, 2011)

As the OIC countries look ahead they have to ensure that the instrumental goal of education to build the human capital resources for each country is effectively served. At the same time the broader goals and values of society have to be addressed by the national education system. It has to play its role in building the three kinds of bridges we have spoken about.

The international and national discourse on post-2015 education agenda in the context of defining the global sustainable development agenda for the next 15 years

is on-going. In the World Education Forum in Incheon, South Korea in May 2015, the EFA2030 agenda will be given the final shape. At the United Nations in the autumn of 2015, the overall global development, SDG 2030, is expected to be adopted, replacing MDG 2015. The global and national retrospection and introspection have helped to bring out the educational challenges, not just in terms of expansion and efficiency of systems. A consensus is emerging about the purposes and values that have to be served by and internalized into the educational systems. OIC countries have to pay attention to this discourse and formulate its position in setting its agenda for the future and in working with member countries to adapt and adjust the global agenda for themselves.

In formulating the future EFA agenda, a set of seven goals has been proposed in the Global Education Meeting in Muscat, Oman in May this year. Consultations are being held under the auspices of UNESCO and other international stakeholders to critically look at the goals proposed in Muscat, provide critiques from the perspective of the regions and offer ideas for the World Education Forum planned for next year.

The Muscat agreement (UNESCU, 2014) pledged to *"Ensure equitable and inclusive quality education and lifelong learning for all by 2030"* as the overarching goal. It urged education must promote sustainable development and active global and local citizenship, and contribute to strengthening democracy and peace, and foster respect for cultural and linguistic diversity.

Besides proposing benchmarks and relevant indicators for *early childhood development, primary education, adult literacy, knowledge and skills for "decent work" with attention to gender equality and the marginalized*, it recommended targets for all learners to " to acquire knowledge, skills, values and attitudes to establish sustainable and peaceful societies, including through *global citizenship education and education for sustainable development*." (UNESCO Muscat Agreement, 2014)

Particularly relevant for OIC are the targets and associated indicators for "global citizenship" and "education for sustainable development." OIC countries with their Islamic identity of pride, has a special responsibility to ensure that this identity is not an instrument for exclusion, division and conflict among citizens within each country, among OIC countries and in the world community. Similarly, major producers of fossil fuel in the world and beneficiary of this production has an obligation to understand and explore challenges and options for promoting sustainable development, the core of the global development agenda in the 21st century.

The challenge of promoting the Islamic identity that is not divisive and that does not generate destructive conflict is not just a task of the educational system. The social institutions and processes of socialization, communication, leadership in political and other spheres, cultural expressions, celebration of history and tradition of inclusion, and upholding simple human decency have to play their role. All of society, and every person individually, have to do their bit. For example, freedom of thought, conscience and religious belief has to have precedence over or replace "blasphemy" law where it exists and is the cause of great grief and often unspeakable atrocities. Freedom of faith, rather than forcing one's belief on others, reflects the true spirit of Islam. Rule of law and equality before law irrespective of religious identity is another important tenet of Islam.

What is the role of education in promoting the inclusivist identity of Islam and respecting and celebrating multiple identities of Muslims as well as of people of other faiths? This is where citizenship – local and global – and ethics, values and responsibility associated with it is pertinent. The objectives have to be spelled out and made part of the curriculum, learning content, teacher training and teacher conduct, culture and environment in school, and school's interaction with community. This content and pedagogy must find an appropriate place at every level from the preschool to the university and in lifelong learning outside formal education. Promoting rational thinking and reasoning and scientific enquiry in acquiring knowledge and understanding of world and society is part of this process. Equally important is to assess critically educational practices and prevent educational activities from becoming the promoter of division, intolerance, misguided chauvinism, prejudice and superstition, which is unfortunately the case in many situations.

A specific issue in this respect is faith-based educational institutions run by religious organizations and the existence of a parallel faith-based educations system, some of which are supported by public budgets. All of the high population Islamic countries – such as, Bangladesh, Egypt, Indonesia, Nigeria and Pakistan – have major parallel madrasah education systems which are supported by public funds along with the secular system, which is a source of complexity for reform and modernization of the national education systems. The complicating factors include:

i. History and tradition of madrasa education and its religion-linked basic purpose and objectives make it sensitive to subject it to rational and objective public scrutiny;

ii. Empirical observation and evidence show that the curricular objectives, learning content and the teaching-learning approach in faith-based education systems have

remained obscurantist and mostly not amenable to a significant departure from their traditional practices;

iii. Empirical evidence also indicates inclination of students and teachers, even if not institutions, towards extremist positions in political and social spheres.

The basic approach that is workable appears to be to make the secular system relevant, high quality and affordable to learners and parents and thus a sufficiently attractive educational option. This strategy still does not solve the policy dilemma, among contending social and political pressures, about the relative degree of public patronage and priority that should be accorded to faith-based and secular education (Mercer et al., 2005; Shiraj, 2007)

The world faces an unprecedented crisis of climate change and its devastating effects. Time is running out fast for action. The latest assessment of Inter-governmental Climate Change Panel (IPCC) of the United Nations starkly warns that burning fossil fuel must come to a full stop by the end of the century. Many urgent measures have to be taken in mitigating the effects of greenhouse gas emission and adapting to climate change not to further aggravate its effects and keep the increase of global warming below 2 degrees centigrade by the end of the century, a critical benchmark agreed globally.

The chair of the IPCC Dr Rajendra Pachauri said, "If the world wants to go on this pathway of keeping temperatures increases below 2 degrees C by the end of the century, then by the middle of the century we will have to treble or quadruple the use of low carbon or zero carbon energy from renewables, and sources like bioenergy, nuclear and carbon capture and storage." (Remarks at launch of 5th World Climate Change Report, 2014).

Besides everything to be done in technology, research, laws and regulations, and new investments, the new generation of citizens have to grow up with new awareness values, knowledge and behavior pattern leading to *new patterns of consumption and production* globally. The aspiration for and concept of a good life for the world in the future cannot be three automobiles and mega-watts of energy consumption in every household as in USA, or for that matter, in many countries within OIC. The planet cannot bear the burden (IPCC, 2014; Huq, 2014).

It is a matter of enlightened self-interest for OIC countries to engage themselves in this issue, since the reserve of fossil fuel cannot last forever; and it is ultimately a matter of survival of humanity.

The changes necessary in educational objectives, content and methods are obviously difficult and complex. The job cannot be left just to the current educational specialists and authorities. Universities, research institutions, think tanks, civil society and opinion leaders of society have to be involved in this effort - discussed again below. One step that OIC can consider, as a follow-up to this conference, is to initiate a project on re-visioning and re-shaping education for sustainable *human* development in OIC countries.

2. Overcoming Girls' Disadvantage

Malala Yousafzai, the teenager from Pakistan, was shot almost fatally by Taliban gunmen because she was outspoken in support of girls' education. She survived, became an icon of bravery, a champion of girls' right to education and won the Nobel Peace Prize. In the town of Chibok in the north-eastern Borno state of Nigeria, 276 teen-age girl students were abducted on 14 April this year by extremists, who considered secular education a threat to Islam. The girls have not been rescued as yet. The atrocities of Boko Haram (literally, "Western Education is Prohibited") in Nigeria against girls, because they go to school, continues.

Not all Islamic nations suffer serious gender disparity in education. In Bahrain, Bangladesh, Kuwait, Libya, Turkey and UAE girls enjoy equal access or surpass boys in primary and secondary schools - as in Indonesia, Malaysia and the Central Asian Muslim Countries (former Soviet states).

In Bangladesh, for example, pro-active government policies, such as free tuition at secondary level (where parents normally pay a fee), stipend for girls who attend school, partnering with NGOs to serve the hard-to-reach, and public awareness-raising campaigns have played an important role to deal with gender disparity in education. Broader socio economic steps have created a favorable environment for girls' participation in education. These include creating new economic opportunities for girls through employment in the ready-made garment sector. Micro-credit for rural women has led to self-managed small projects and enhanced status of women in family and community (Asadullah, 2014).

The empowerment of women and gender equality are serious concerns for OIC members. Action plans in each country, and collectively as OIC, prioritizing policy areas and the means of implementation taking into account the social and cultural realities of these countries have to be developed. Educational opportunities and outcomes for girls have to be a key element in this effort (SESRIC, 2013)

Research shows that education can help enlarge a woman's options about work and life in general, but the context is critical. For instance, educational opportunities for girls have to be accompanied by policies that expand employment in a working

environment that makes it possible for women to work. A multipronged approach to empowering women is needed (Pathways, 2012).

In the context of Islamic societies, it is necessary to be nuanced and sensitive about what constitutes women's empowerment. As the Pathways report put it:

It is easy to read women's dependence on their families as disempowering, where religious rhetoric/ideals only reinforce women's subordination. However, one needs to take account of the fact that in Bangladesh, both culture and religion stress a more family and community-based rather than individualistic view of the self. (Pathways, 2012: 13)

3. Higher Education as Engine of Social Change

It is often argued that universities and other tertiary level institutions should become the engine of social and economic progress. Most will agree that this is not so now in Islamic countries.

How can the institutions of higher education take on the role of propelling and promoting social and economic change? As in many developing countries, tertiary education has expanded in response to social demand, sometimes not in line with the market demand for people with professional and advanced qualifications.

Tertiary education does not function in a vacuum. Students coming out of the school system are often inadequately prepared – with the foundation of necessary knowledge and skills required in academic disciplines at the tertiary level lacking. There are also problems of attracting and retaining qualified faculty who have to be drawn from a relatively small pool of people with advanced degrees. Governance in higher education is another problem because a tradition of academic autonomy, self-evaluation and an accreditation system for quality assurance has not developed. Government funding is accompanied by government control that has hampered academic freedom, independent research and creativity.

In the short time span between 2002 and 2009, Middle East and North Africa has more than doubled their tertiary institutions from 178 to 398. If community colleges, teacher-training institutes, and other institutions not affiliated with universities are considered, the number rises to over 1100 (UNESCO, 2009: 17-18)

Private, for-profit institutions have grown rapidly in recent years in OIC, particularly in the oil-rich countries, some of these as joint ventures with overseas institutions. Non-public sector institutions accounted for over one-third (about 36 percent) of the total - their share is even greater in some countries. They need to be better evaluated and regulated to ensure that they maintain accepted standards, deliver what they

promise to students, and their outcomes are consistent with national development needs. A system has to be in place for holding the for-profit or non-profit private institutions accountable without undue stifling of academic activities and innovations (Wilkens, 2011).

The Brookings Project on U.S. Relations with the Islamic World proposed reform actions for the Arab region, which have relevance for other OIC countries. These include:

- Creating advocacy and independent stakeholder organizations at the national level to engage the public, employers, and others in pushing for critical reforms and to open up the higher education reform process to involve all sectors of society.
- Addressing the problem of data scarcity on labor market, institutions and programs (such as, breakdown of graduates from different degrees who are employed) to establish transparency, competition, and accountability.
- Supporting an intensified regional effort to recruit and train quality teachers with an emphasis on student-centered learning and critical thinking techniques.
- Examining opportunities to help advance the goal of regional cooperation and integration in higher education, an objective advocated in the first UNDP Arab Human Development Report in 2002, but which has seen little progress. (Wilkens, 2011: 11)

Universities traditionally have not been much involved in evaluating, monitoring, designing and ensuring better fit of school education with national development priorities, except perhaps through involvement in professional teacher training. As suggested in the previous section, as part of the policy development and priority setting for the national education system, universities can and should play a greater role than seen so far. In this effort universities need to join forces with other stakeholders, such as the political parties, the corporate sector and civil society.

4. Enhancing the Citizen Voice through Civil Society

With the rise of globalization, the influence of civil society organizations on governments and citizens has grown, especially in more tolerant societies and more open economies. The role that the civil society can play in offering channels for expressing citizens' voices has become a barometer of the legitimacy of the governance process and its responsiveness to citizens' aspirations in both developed and developing countries. However, in developing countries, including OIC member countries, there is often an 'adversarial' relationship between government and civil society, in contrast to being complementary to each other in serving the larger interests of society (SESRIC, 2014)

CIVICUS, an international advocacy forum for civil society, has devised an Enabling Environment Index (EEI) to assess the functioning of civil society in countries. Enabling environment is defined as "a set of conditions that impact on the capacity of citizens (whether individually or in an organised fashion) to participate and engage in the civil society arena in a sustained and voluntary manner." (SESRIC 2014, p. 4). The index takes into account elements of socio-economic, socio-cultural and governance environment in the countries (CIVICUS, 2013).

In 2013, the average EEI score of 223 countries was measured as 0.52 on a scale of 0 to 1, from less to more favorable. The score of 0.52 was also the average for developing countries compared to 0.73 for developed countries. The 57 OIC country average was 0.39 – considerably lower than global and developing country averages (SESRIC, 2014: 5). As expected, there were variations among OIC members - generally countries in East Asia and Pacific at the top among OIC countries and those in Middle East and North Africa and Europe and Central Asia scoring low.

The role of civil society is changing and is increasingly being recognized as an intermediary between government and citizens in debating, exploring and forming consensus on complex, sensitive but critical issues (World Economic Forum, 2013).

According to the World Economic Forum, in a hyper-connected and youth-oriented world, "Young people, who are more inter-connected than ever through technology and social media, have claimed a key role in shaping civil society and creating a better world for all" (World Economic Forum, 2013: 14)

With differences in the role and status of development of civil society among the OIC countries, there is the opportunity for forming alliances and working together on specific issues among civil society bodies of the countries. In Bangladesh, for example, the Campaign for Popular Education (CAMPE), a forum of over 200 NGOs active in education has become a strong civil society interlocutor of national education policy and programmes. CAMPE is the institutional base of Education Watch, which produces an annual research-based critique on quality and equity in basic education. It is also active in regional and international effort to project the civil society voice in education. This role in and among countries can be facilitated by encouragement of political leadership of the countries and recognition of value of these exchanges in the larger interest of the Islamic community.

On re-thinking and reshaping educational purposes and necessary reforms, alliance of academic centres and universities and civil society bodies could become a mutually supportive scenario – one providing the intellectual and analytical inputs and the other contributing to mobilization and participation of stakeholders and citizens. Is this too visionary? Perhaps, but we would know only if initiatives are

taken by enough people who do not shy away from visionary ideas. Many significant changes and innovations in the world would not happen if visionaries did not dare to take risks.

5. A Step in Solidarity

It is evident that not enough resources are available to match the goals of quality, relevance and equity set for education systems by national authorities in many of the Islamic countries. While most countries can mobilise greater resources for education than the present amounts with some shift in their priorities, many of the poorer Islamic countries face genuine difficulties to garner sufficient resources.

International cooperation and partnerships in development have been an objective of MDG2015 and EFA 2015. It will be also an objective for EFA 2030 and SDG 2030. The OIC countries must consider what they can do to express solidarity and build partnerships for development among the Islamic countries.

The resources can be found if the question is approached in a spirit of solidarity within each Islamic country and a sense of obligation to assist those in disadvantage. Thirteen of the top petroleum producers among the OIC members, (Saudi Arabia, Iran, Iraq, UAE, Kuwait, Nigeria, Algeria, Kazakhstan, Qatar, Azerbaijan, Indonesia, Oman and Libya, each producing at least a million barrels a day) produced 35 million barrels of crude oil per day in 2012, which amounted to 40% of the world production. A back of the envelope estimate indicates that only a dollar levy per barrel of production (out of an average price of $80 per barrel) would produce $10 billion dollars a year (International Energy Agency data cited in *wikipedia*).

The amount that could be raised through the small levy, in addition to regular public allocations of countries for education, can ensure that no reasonable education plan and programme in any OIC member country meeting basic criteria of quality and equity remain unimplemented for want of funding.

Concluding Comments

In the winter of 1298 AD, from January 29 to February 10, a Mongol army led by Hulagu Khan numbering about 150,000 soldiers overran Baghdad, the leading center of Islamic culture and learning and capital of the Abbasid Caliphate. They burned the city to the ground including its great library and killed 100,000 citizens. This devastation marked a turning point from which the world Islamic community never fully recovered. Because it marked metaphorically the closing of the gate of *Ijtihad* – rethinking, re-interpretation and independent reasoning – and the dominance of *taqlid* or unquestioning acceptance of rules and scriptures without knowledge or understanding of their bases. (Falahi, n.d.)

Seven hundred years later, in the winter of 1991, on 17 January, the massive US-led air offensive known as the Operation Desert Storm was unleashed on Baghdad, the capital of modern Iraq. After 42 days of relentless attacks by the allied coalition in the air and on the ground, U.S. President George H.W. Bush declared a cease-fire on February 28. The invasion of Iraq was preceded by eight years of inconclusive warfare between Iraq and Iran and the invasion of Kuwait by Iraq, both aided and abetted by international powers.

Desert Storm was initially declared as an unqualified success for the coalition of invaders, but simmering conflict in the troubled land continued and led to a second Gulf War in 2003. Peace has not returned to Iraq and conflict has spread to neighbouring lands.

How it will all play out with what consequences cannot be predicted. What can be said with greater confidence is that all OIC countries and their societies have to learn, and prepare their younger generations as best as they can, to respect and live with multiple identities of people, within each country, with other countries in the Islamic community and in the wider world. This challenge has to be taken up despite the adversities; in fact, this has to be done as a way of overcoming the adversities.

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Strategies for Dealing with Students' Misbehavior to Develop Good Classroom Discipline

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Abstract: *Dealing with students' misbehavior in the classroom is a common challenge and unavoidable task for the teachers and it is very much associated with classroom discipline. It has become a contemporary issue in teaching though there are no universal strategies regarding students' misbehavior and good classroom discipline. The aim of this review study was to presents an overview of selected research studies and statements of selected books regarding strategies for dealing with students' misbehavior to develop good classroom discipline. Based on a literature search 14 research studies conducted in different countries and 10 reputed books were selected for an analysis. The results show that among different possible strategies, inter-personal relationship; preventing misbehavior rather than curing; increasing self confidence among the students; ignoring unwanted behavior; conversation with the students after the class; using effective reprimands might be key strategies for dealing with misbehavior in the classroom.*

Keywords: *Misbehavior, Classroom, Discipline, Strategies*

"Student Misbehaviour in the classroom is a tough and unavoidable task to the teachers and it takes up teachers' considerable time to deal with" (Yuan & Che, 2012: 143). Generally good classroom discipline mostly depends on how effectively the teachers deal with misbehavior. Teachers' capability and quality also depends on managing students' behavior and classroom discipline. Generally classroom discipline can be defined as a set of rules which are commonly good for the teachers and students and which are also desired by the society as well as school community. It also indicates to follow the rules in the classroom. It does not mean that the set of rules or pattern of classroom discipline is same all over the world; even it may vary from grade to grade, place to place, community to community, school to school. In

practice , any definition of discipline in the classrooms reflect the common agreed values and beliefs of teachers, students, parents as well as whole school community. Dollar (1972) argued that "the term 'discipline' is usually reserved for those things a teacher can do to make her students comply with the rules of the classroom"(p. 4). Kyriacou (1986) reported that "discipline refers to the maintenance of order and control necessary for effective learning. In essence, this involves pupils acting in accordance with the teachers' intentions for their behavior , be it listening, talking or undertaking the academic work in hand"(Kyriacou, 1986:137) though presently discipline is very much concerned with students' unwanted behavior or misbehavior (Kyriacou,1986).**"**It is accepted that discipline is concerned with the development of internal mechanism that enable individuals to control themselves , there will need to agreed boundaries for attitudes and behavior"(Blandford,1998: 2).

Though good classroom discipline majorly depends on how appropriately or effectively the teachers deal with misbehavior raised by the students in the classrooms, it is not easy to define misbehavior. Generally misbehavior is unwanted or unexpected behavior created by the students which causes indiscipline in the class room and less effective lesson comparably. Kyriacou (1986) reported that "pupil misbehavior refers to any behavior by a pupil that undermines the teacher's ability to establish and maintain effective learning experience in the classroom"

(Kyriacou, 1986:154). It may indicate that students' misbehavior directly effect on classroom discipline as teachers cannot run their lesson effectively which means an indiscipline classroom. Misbehavior created by individual student or group of students is generally the strongest threat for discipline in the classroom and teachers should deal it effectively to develop good discipline in the classroom. Generally there are many causes of pupil's misbehavior. Monotonous and uninteresting lesson, society, learning difficulties, students' frustration, low self-esteem, poor academic achievement, tiredness, emotional problems etc (Kyriacou,1986; Yuan & Che, 2012) but strategies for dealing with students' misbehavior to develop good classroom discipline is an ongoing debating issue all over the world (Roach and Lewis, 2011).

Overall, the evidence proves that dealing with students' misbehavior is an important issue in teaching as well as classroom discipline; there are a lot of causes of students' misbehavior in the classroom and there is an ongoing debate regarding strategies for dealing with students' misbehavior. It can be reported that absolute strategies for dealing with students' misbehavior in the classroom have not been found out yet, though different educators, policy makers and researchers have suggested a number of strategies on the basis of their experience and their research as well as they recommended for the teachers to adopt effective strategies. So, in this regard it was

considered significance to find out effective strategies for dealing with students' misbehavior to develop good classroom discipline based on review of the relevant literature.

Methodology

Nature of the Study

Generally, this is a qualitative study based on the content analysis (qualitative review) of selected research studies and books. Leedy and Ormord (2005) and Neuendorf (2002) describe the technique content analysis as "a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases, and meanings" (as cited in Berg, 2007: 303–304).

Sample Selection

The aim of this study was to give an overview of studies describing the strategies as significant for dealing with students' misbehavior in the classroom at school (primary and secondary) level. Hence, an attempt was made to select studies including empirical data that were published in international scientific journals (peer-reviewed) as well as books which were published by world reputed publishers. The combination of the term "strategies for dealing with students' misbehavior" with other additional search terms resulted 290 references. From only reading the titles and/or abstract 260 were deleted from the data-base as they were not fully related with this study. After reading the 30 studies carefully, 16 were deleted from the database because they did not focused on students' misbehavior and classroom discipline in regular primary or secondary schools. Deleting the 16 studies led to a final database of 14 studies and 10 books were selected as sample.

Sample Selection and Data Analysis Procedure

To search for relevant studies, a comprehensive search was performed in January 2013 using the databases: the British Education Index; Australian Education Index; Arts and Humanities Citation Index and Social science Citation Index via the University of York library webpage, and found relatively many relevant journal articles, published books, reports, government documents, conference papers, theses and dissertations. To search for potential references the terms 'misbehavior in the classroom', 'dealing with misbehavior in the classroom', 'classroom discipline', 'strategies for dealing with students' misbehavior and classroom discipline' 'good classroom discipline', ' classroom discipline in school' were used. Moreover, 10 reputed books were selected from the library of University of York, United Kingdom for a hand search. For an intensive analysis all selected studies and books were qualitatively reviewed very

carefully and among the findings of the reviewed studies and statements of the reviewed books major and mostly common strategies were listed as the findings of this study which are mentioned in the results and discussion section.

Findings and Discussion

Dealing with students' misbehavior in the classroom is always a contemporary issue and it is not an easy and avoidable task for teachers, because it results from a large range of causes that originate from the environment around the students: the classroom, school, community and the whole society. It indicates the teachers to understand the sources before dealing with the unacceptable behavior. Moreover, there are no universal strategies for solving the problem.

In spite of this limitation some strategies have been proved as effective for dealing with students' misbehavior in the classroom as well as good classroom discipline in different perspective at the school level which might be adoptable by the teachers. On the basis of qualitative review of sample research studies and books the findings are listed. To draw a clear argument with best possibilities, a discussion is made by providing evidence in favor of argument.

Inter-Personal Relationship

Generally it is believed that teaching - learning is a two way process where teachers play the role of a facilitator and teacher student moderate relationship in the classroom and outside the classroom is highly appreciable though there is no universal standard of this relationship. Moderate relationship between teachers and students can create friendly environment in the classroom that leads to expected behavior by the students. Munn et al. (1992) reported that teachers' personal relationship with students encourages positive behavior and good discipline in the classroom and teachers can build up this relationship by encouraging, praising, rewarding, recognizing them, using sense of humor and making personal contact with them. A research studies conducted in Malaysia reported that "good inter-personal relationships within/between teachers and pupils is viewed as one of the most important strategies" (Awang, Snape & Barber, 2013:205) for dealing with students' misbehavior. It can be pointed out that the pattern and level of teacher student relationship is controversial that means there is no universal agreed pattern or level. So, teachers might use technical approach to reach the students. "Establishing relationship with students does not mean that you become their friend. You need to maintain a professional distance. But keeping your distance does not mean keeping your relationship within the academic realm (Canter and Canter, 2001:184). It indicates that teachers should maintain a border of relationship and students should

not be allowed to cross the border also. Robertson (1996) claimed that newly appointed teachers and students face problems of discipline as both of them are not completely clear about the pattern of relationship. So, both of them are needed to be informed about the pattern of classroom behavior and discipline. Koutrouba (2012) argued that sound relationship between teachers and students strongly encourage good discipline in the classroom as there is an open way to interact with each other and it also help the students to be more socialized. Kyriacou (1986) reported that "teachers' authority in the classroom and mutual respect and rapport between the teachers and pupils" (Kyriacou, 1986: 130) are two major aspects for developing good teacher student relationship which strongly related with classroom control as well as classroom discipline. So, undoubtedly it is evident that inter-personal relationship might be an effective strategy for the teachers to deal students' misbehavior and classroom discipline.

Preventing Misbehavior rather than Curing

Lack of awareness about the rules might be one of the possible causes and teachers should be aware of different causes or circumstances that might lead less or limited misbehavior by the pupils in the classroom. For example, at the very beginning teachers can warn the students about unexpected behavior in the classroom and can explain the negative impact of unwanted behavior on classroom discipline as well as positive impact of expected behavior on classroom discipline. Muijs and Reynolds (2011) argued that it is obviously better to prevent misbehavior than correcting misbehavior. Kyriacou (2007) argued that "the Teacher Development authority [TDA] refers to discipline in terms of establishing a clear framework to manage pupils' behavior constructively and to promote pupils' self-control and independence, and requires students teachers to be able to use a range behavior management strategies" (Kyriacou, 2007: 83). It clearly indicates the significance of establishing a framework for good classroom discipline. "Many schools now develop classroom behavior agreements" (Rogers, 2011:40) from the very beginning of the schooling year and it promote better understanding to the students and teachers about the classroom discipline as well as rights and responsibilities in the classroom(Rogers, 2011). So, framework for classroom behavior pattern is a proved strategy for good classroom discipline which clearly indicates preventing misbehavior rather than curing.

Increasing Self Confidence among the Students

There is a clear strong relationship between pupil's academic achievement and misbehavior and generally poor academic achievement leads to misbehavior which might be limited by providing a relevant curriculum that allows most pupils to

experience academic success (Muijs and Reynolds, 2011). To protect or correct unwanted behavior or misbehavior from the students, teacher can take initiative to increase self confidence among the students. Generally the students who have low self-confidence, misbehave in the classroom unexpectedly and teachers face challenges to develop good discipline. Blandford (1998) reported that "if pupils can respect themselves, they can respect others and their environment and pupils with low self-esteem may behave in an uncooperative manner" (Blandford, 1998: 2). Frustration of the low-esteem pupils might cause them to act or behave unexpectedly in the classroom. Teachers might be strategic to increase confidence among the students using their teaching skills and strategies.

Ignoring Unwanted Behavior

Bull and Solity (1987) pointed out a number of ways to deal unwanted behavior in the classroom as "ignoring the unwanted behavior and rewarding appropriate behavior instead, changing the context, light techniques of control, using peer group influence, making the most of natural consequences, stronger measures"(Bull and Solity,1987: 139). If teachers ignore the students who produce unwanted behavior, students may change their behavior to grow attention of their teachers to them. Teachers can change role instantly, give reminders about the consequences, use several groups discussion, to correct their behaviors without noticing specifically which might be strongly effective for good classroom discipline. "Silently looking on can be used simply for observation and soaking in the information in the classroom without any attempt at changing the behavior, or it may make the student who attempts to draw his/her attention from the learning know that the teacher is noticing what is happening"(Yuan and Che, 2012:147). It indicates ignoring unwanted behavior technically that might result less unwanted or misbehavior.

Conversation with the Students after the Class

Sometimes teachers' reaction against students' misbehavior might have negative impact on their behavior and other activities. In this situation teacher might talk with the student individually after the class or lesson to correct his/her behavior. A research study conducted by Kyriacou and Martin (2010) in Spain with a sample of 176 secondary school student teachers reported that " have a conversation with the pupil after the lesson"(Kyriacou and Martin, 2010: 425) was the most effective approach to deal misbehavior in the classroom. Koutrouba (2012) reported that teachers' flexibility in knowledge dissemination in the classroom, teachers' sense of humor, sense of socialization, supportive attitude towards the students, mindfulness, patience, tactfulness are strongly associated with effective teaching which all encourage students to be well disciplined and using traditional approaches of

teaching is not effective at all. 'Conversation with the students after the lesson' proves the teachers' patience, sense of socialization and very much supportive attitudes towards the specific student(s) which might have an emotional and psychological effect on students' behavior. So, teachers might use this strategy in the classroom as it is proved effective by the research.

Using Effective Reprimands

Kyriacou (1986) argued that teachers can deal misbehavior by using effective reprimands and he pointed out about the major qualities involved in the effective use of reprimands as follows:

Correct targeting; firmness; build on rapport and mutual respect; follow through psychology; avoid confrontations; criticize the behavior not the pupil; use private rather than public reprimands; state rules and rationales; avoid making hostile remarks; avoid unfair comparison; be consistent; avoid reprimanding the whole class; making an example(Kyriacou, 1986: 163-164).

It indicates that teachers' highest level of confidence, good understanding between teachers and students, promoting treatment according to the psychological bases of the students, blaming students' behavior and making them understood that teachers are not blaming them. Sometimes students feel uneasy if teachers reprimand them in front of all and in this case teachers can personally talk with them and teachers should not reprimand all students instead of individual student or group of students. A research study conducted by Esturgo-Deu and Sala-Roca (2010) in Spain with a sample of 1422 pupils aged between 6 and 12 reported that boys presented more unexpected behavior than girls and "nearly a quarter of the pupils in a class presented disruptive conducts" (Esturgo-Deu and Sala-Roca, 2010: 834) and overall same students presented unwanted behavior during the whole class period. These findings might be a significant evidence for the teachers for selecting reprimands for the students to deal misbehavior in the classrooms.

Conclusion

It can be concluded that among different possible strategies, inter-personal relationship; preventing misbehavior rather than curing; increasing self confidence among the students; ignoring unwanted behavior; conversation with the students after the class; using reprimands might be the effective what teachers might adopt in the classroom. In this argument it can be reported that not only to adopt these strategies in the classroom is matter but also how effectively the teachers adopt in the classroom is important. A moderate inter-personal relationship between the teachers

and students might encourage students' expected behavior in the classroom. Teachers might warn the students about the behavior pattern of the classroom at the very beginning with the discussion of school authority. Increasing self confidence among the students, ignoring unwanted behavior, conversation with the student(s) after the class might reduce students' unwanted behavior in the classroom. Teachers might also use effective reprimands judging the situation of the classroom discipline which might be able to reduce misbehavior. Newly appointed teachers might be suggested to be trained properly and generally the teachers are required to be more strategic in this regard. Policy makers, parents and school authorities might think about the implications of these strategies for dealing with students' misbehavior in the classroom. Further studies in this area might be conducted.

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Mainstreaming Students with Visual Impairment in Secondary Science Education (IX-X): Curriculum Consideration and Assistive Technologies

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Abstract: *As students with visual impairment lack in sight, they are facing a lot of study problems mainly in mainstream secondary schools of Bangladesh, mostly in science subjects. Science is full of visual cues and instructions which is difficult to learn by students with visual impairment. The article found that it is not possible to do some academic activities for students with visual impairment without curriculum consideration and assistive technologies, especially in science related subjects. The paper attempts to describe the current situation of science education in secondary schools (IX-X) and find out the problems they are facing in the mainstream schools of Bangladesh. Interview with science teachers and students with visual impairment of class IX-X were done, science classes were observed and many secondary sources of information were analyzed. Finally the paper explains the curriculum consideration procedure for students with visual impairment and recommends effective teaching techniques and assistive technologies for them, which will help to study science.*

Keywords: *Mainstreaming, Visual Impairment, Science education, Assistive technology.*

Over the last few decades the world has produced a number of declarations and agreements to provide an inclusive society for all as an output of inclusive education. Among those declarations the UNESCO Declaration on Education For All (1990), the Salamanca Declaration on Inclusive Education (1994), the Dakar Framework (2000) and Convention of the Rights of the Persons with disabilities- CRPD, (2006)

strongly and clearly represent the rights of education of children with special needs. These international initiatives have moved the education systems of different countries towards inclusive education (Forlin and Forlin, 1998). Like many developed and developing countries, Bangladesh is a signatory country to these international declarations (Directorate of Primary Education [DPE] and Centre for Services and Information on Disability [CSID], 2002). Bangladesh is a small developing nation of Asia bordered by India and Myanmar. Poverty and illiteracy are common phenomena for this country. The present population of the country is about 166280,712 (Index Mundi**,** 2014) and 15% of this population has a disability (World Health Organization & World Bank, 2011). Some 89% of the people with disabilities are not in education (Directorate of Primary Education & Centre for Services and Information on Disability, 2002). But, the constitution of Bangladesh, Education policy- 2010, Persons with Disabilities' Rights and the Protection Act, 2013 clearly spelled out special needs children's right to education in mainstream schools. To ensure their access to secondary science education (IX-X) the curriculum and various teachers training programs provided by the Ministry of Education (MoE) is not sufficient as inclusive education demands a package of different types of teaching skills, effective curriculum and assistive technologies. In a regular class teacher can continue writing in the board without speaking. But, if there is a students with visual impairment in the class, teacher needs to speak while writing in the board and give proper oral guidelines so that the students with visual impairment understand the discussed topic. As science education is full visual information it seems more difficult for students with visual impairment. But, literature suggests that with the help of assistive technologies they can study science. Teaching strategies also need some modification and the curriculum also needs to consider for them (Penny and Mary, 2001).

The aim of this article is to find out the real picture of secondary school (IX-X) science education of students with visual impairment in Bangladesh. It also focuses on finding effective teaching techniques for them and to identify assistive technologies for science education. It also describes the curriculum consideration process for them at secondary schools. It will help them to integrate into mainstream science education at secondary grade (IX-X).

Definition of Terms

Definitions of some terms used in the article are given below.

Visual Impairment

Generally people who can't see are considered as person with Visual Impairment (VI). Defining visual impairment is a contested as well as complex issue. However for the article, the researchers considered both low vision and total blindness as visual impairment. For that reason people with irretrievable sight loss are called visually impaired. Blindness refers to a condition where a person suffers from any of the conditions: total absence of sight; or visual acuity not exceeding 6/60 or 20/200 (Snellen) in the better eye even with correction lenses; or limitation of the field of vision subtending an angle of 20 degree or worse (Jonas and Mosby, 2005). Low vision refers to one who has an impairment of visual functioning even after treatment, and/ or standard refractive correction, and has a visual acuity of less than 6/18 to light perception or a visual field of less than 10 degrees from the point of fixation, but who uses, or is potentially able to use, vision for the planning and/or execution of a task (World Health Organization, 1993).

Mainstreaming

Mainstreaming means educating children alongside their non-handicapped peers in the mainstream schools. It is the application of normalization to the education system (Williams, 1999: 254).

Science education

In the article science education means science and mathematics related subjects of class IX-X in secondary education i.e. Mathematics, General science, Physics, Chemistry, Biology and Higher Mathematics.

Curriculum and curriculum consideration

Curriculum is all the planned experience provided by the school to assist pupils in attaining the designated learning outcomes to the best of their abilities (Evens, 1942; cited in Kader, 1999). General curriculum need to be made flexible for students with Special Educational Needs (SEN) in some context. This type of curriculum flexibility is named curriculum consideration in the article. Curriculum, in the article, means science and mathematics curriculum of class IX-X.

Assistive technologies

Any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities is called assistive technology (IDEA, 2004). Equipment, products or devices which help to make science understandable for the students with visually impairment is treated as Assistive technologies in the article.

Methodology

Seven Secondary schools of Bangladesh were purposively selected from Dhaka and Rajshahi division. Among the 7 schools 3 schools are from rural areas and another 4 schools from urban areas. 10 Science teachers were also selected from these schools purposively. Among the 10 teachers 3 were mathematics teachers and 7 were teachers of other science subjects. At the time of teacher selection some criteria were considered like male-female, year of experience and type of school. Another type of respondent was students with visual impairment. 12 students with visual impairment were selected from two divisions. Snow ball sampling technique was followed to select them. Availability and gender of the student were considered at the time of student selection. Among these 12 students 5 were from class IX and 7 were from class X. Two different semi-structured interview schedules were administered to collect information from secondary school science teachers and students with visual impairment. The interview schedule for teachers have items related to present situation and future possibilities of science education of students with visual impairment. Interview schedule for students with visual impairment consisted items on opportunity to study science, problems they are facing and their expectations regarding science education. Classroom observation was also done. 5 classes from 7 schools were observed and an observation checklist was administered. Findings from the interview schedules and observation help to get the real picture of science education of students with visual impairment (IX-X) in Bangladesh. Then the extract of the findings blend with the literature to find out effective teaching strategies of students with visual impairment so that they can integrate into the mainstream science education. Besides, secondary data was also analyzed to find out the assistive technologies for students with visual impairment. Finally, a thick description of the curriculum consideration process for students with visual impairment was delivered. All ethical issues were strictly followed in all steps of the research.

Data analysis and Findings

Science education is very difficult for students with visual impairment as education system of Bangladesh provides a little in this perspective. Because in an inclusive setting, teachers need more than ever before to understand students with diverse exceptionalities, their characteristics, their needs, and effective strategies to work with them (Friend and Bursuck, 1999; cited in Kumar and Stefanich, 2001). Below the findings are discussed thematically:

Present situation of Science education of students with visual impairment

It is found that no students with visual impairment study in science group in class IX-X in Bangladesh. All students with visual impairment study arts and humanities

except 1/2 who reads in business group. General science and general mathematics are included in arts and humanities; so students with visual impairment read these two subjects where they face problems in many topics. Students with visual impairment do not learn some topics and another some topics- they only memorize without understanding. In the examination also, they fail to answer of some visual topics like executor and drawing. All of the interviewed students with visual impairment informed they give exam in less than 90% marks but evaluated in 100% marking scale.

Table 1: The main characteristics of the observed classrooms:

Items	**Characteristics**	**Frequency**
Classroom decoration	Well decorated	7
	Not decorated	3
Seating arrangement	U shape	-
	V shape	-
	Circle	-
	Rectangle	-
	Column	7
	Others	-
Teacher-student ratio	≥ 1:40	1
	≥ 1:50	2
	≥ 1:60	2
	≥ 1:70	2
Teacher –student interaction	Friendly	5
	Not friendly	2
Teaching method	Lecture method	7
	Participatory method	-
	Discussion method	-
	Problem solving method	-
	Individual and group work	-
	Others	-
Lesson Plan	Yes	-
	No	7
Teaching aids	Pictorial	-
	Real object	-
	Both real object and pictorial	-
	Tactile aid and Auditory aid	-
	None	7

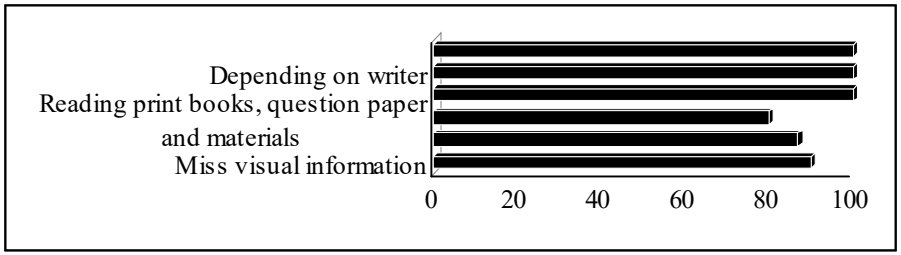
80% interviewed teachers said there is no scope and opportunities to take extra care for students with visual impairment. Their opinion was that it will harmful for both students with and without visual impairment, if teacher tries to give extra time and attention towards students with visual impairment. No assistive device and aid is

found to use in the observed secondary schools, braille books are not available in the library. So, teachers and students with visual impairment think science is very difficult for them.

Problems faced by the students with visual impairment in mainstream schools

Students with visual impairment face a lot of problems for limited vision. 90% interviewed students with visual impairment informed; they miss huge information for sight lacking. One of the students with visual impairment said, “May be a teacher wrote a new spelling in the board, I miss to learn the spelling as I can’t see.” Moreover, students fail to learn many lessons as they can’t write down class lecture. Besides, students with visual impairment are unable to read print materials, which is another reason for information missing. Exam questionnaire is printed which is also inaccessible format for the students with visual impairment. S/he needs to take help from her/his sighted guide to read the question paper. 80% respondents complained these factors make their results down. Besides, students with visual impairment also left behind in some topics for their visual drawback. Such as, they can’t make out many parts of geometry. Simply all of them avoid the topic or memorize it without understanding. 95% students with visual impairment informed they prefer reading arts and humanities as they find science very difficult for them. There in arts also, they have to read General Science and General Mathematics which also contain many visual topics. The only thing they do is simply avoiding the topics. They don’t learn these topics; even don’t give answers of those questions in the answer script of exams. On an average, they give 60-70% answers of the exam but measured in a 100% numbering scale which causes unexpected poor numbers.

Following graph shows the main problems of students with visual impairment in classroom. Percentage have been calculated by students opinion.



Graph 1: Main problems faced by students with visual impairment in classroom

Teacher's thought about science education for students with visual impairment

50% teachers of mainstream schools argued that it is not possible and necessary also to teach everything to students with visual impairment. They said, "They will never be able to draw and explain executor; higher order theorem, trigonometry and other measurements are not also possible for them". 90% interviewed teachers believe there is no way to teach these topics for students with visual impairment. Many other parts of mathematics like logarithm and index, complex algebra, complex equation, charts and graphs are also very difficult for them to learn.

Again, many topics of Physics, Chemistry and Biology are also impossible to learn by the students with visual impairment, informed all the interviewed teachers. 85% science teachers argued, "Students with visual impairment are not able to perform practical laboratory works like frog and worm dissection, dissection of Hibiscus flowers, identifying chemicals, testing many chemical reactions etc. They are also unable to understand and draw different parts of human body i.e. cell, mitochondria, nucleus etc., plant and other animal body parts and actions. So, it is not possible for the students with visual impairment to read science." Another 20% respondent teachers said if the Government of Bangladesh takes necessary and effective measures then students with visual impairment can study in science group. To implement this huge economic support, aids and materials, teachers training and consciousness rising is obligatory.

Recommendation

This picture of science education for students with visual impairment instructs to think on this issue. Literatures from developed countries (Dyson, 2001) show that curriculum consideration is mandatory in these areas; also assistive technologies help students with visual impairment to learn science and mathematics.

The curriculum designed for ordinary children is generally appropriate is generally appropriate for visually impaired children. However, some adaptations to the learning materials and teaching approaches have to be made so that the learning needs of visually impaired children can be met. The curriculum should adopt a consistent, realistic and flexible approach in curriculum planning and implementation. (Educational Bureau of Hongkong, 2013)

Curriculum Consideration

In spite of bringing change in teaching technique, all the topics are not easy for the students with visual impairment to do for sight lacking- like geometry, executor and theorem, drawing charts-graphs and figures, picture drawing and scientific

laboratory. Some are difficult to do like complex equation, trigonometry, measurements etc. The current practice of Bangladesh is that students with visual impairment simply avoid these topics and don't answer questions on these topics as well. Curriculum consideration for them is a way to overcome these types of challenges. It means making topics accessible for students with visual impairment so that they can answer them.

When considering curriculum, first of all a teacher will divide the syllabus of specific subject into three categories, i.e. 'Must do', 'Should do' and 'Could do'. This category will be done depending on the importance of a topic considering the learning outcomes. Again, dividing topics remember the type and severity of vision problem of a student. Teachers first teach them the topics included in 'Must do' category which is mandatory to attain the learning outcomes of that grade. When students with visual impairment successfully learn 'Must do' areas then they will start to learn 'Should do' topics. Students will not start to learn 'should do' category before completing 'Must do' ones. If a student get success in must and should do topics only then s/he will learn 'Could do' topics.

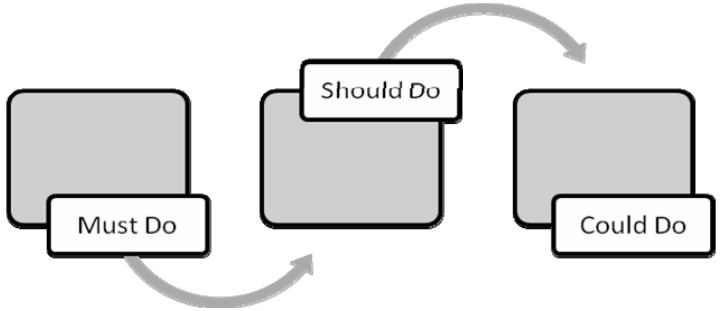


Figure 1: Category of topics according to learning outcome

Moreover, there are also some challenges for students with visual impairment. Suppose, there is a topic in the 'Must do' category which is not possible to solve by a student with visual impairment; then what will be the activity of the teacher? Here comes the strategy of bringing some technical changes in the topic. For example, Teacher can simplify the topic, if simplify isn't enough then s/he can modify that. Still the student cannot learn, and then it may be changed or altered by another similar topic. If all the techniques fail finally the topic can be omitted (Dyson, A., 2001). Here an example of the curriculum consideration procedure is explained:

Say, there is a picture of mitochondria in the question paper; students are asked to identify the organ and describe its function. Students with visual impairment will be

stuck in the first part of the question, identifying the organ. Teacher can simplify it for the students. Like- 'Describe the functions of mitochondria.' This is called simplification.

If there is specific learning outcome about identifying the organ and the question bears some marks in the identification part of the question, teacher can modify the question without visual clues for a student with visual impairment. The question may be-

'Which organ is called the power house of body? Describe the functions of the organ.'

This is the way how a question can be modified for students with visual impairment. Give an alternate is another major area of concentration. In reality, it is impossible for a visual impaired student to do executor, how will the student answer this question? Executor has a specific learning outcome; the teacher can alter it by giving another question for the students with visual impairment keeping the same learning objective. Executor helps to increase analytical ability of a student. But, students with visual impairment are not able to do this. So, another question on analytical ability can be set to measure these skills. If simplification, modification and changing do not work then the topic can be omitted.

Teaching Consideration

As stated in Penny and Mary (2001: 73): "The academic curriculum appropriate for students with visual impairments is determined by their cognitive abilities. The goals and objectives set for students without visual impairments do not need to be changed for a student due solely to a vision problem, though the methods for accomplishing the goals may be different".

That means if a teacher brings some changes in the teaching technique, students with visual impairment can continue reading in an inclusive setting. Another study showed students with visual impairment need first-hand experience in learning Mathematics because they lack visual stimulation related to the development of mathematical concepts such as size, shape, color etc. The teacher needs to adapt the learning materials and give examples to the children's level of understanding. (Educational Bureau of Hongkong, 2013) Mainstream schools translate textbooks and syllabus into Braille and adaptive electronic media so that students with visual impairment can get the benefit. The article suggests some teaching considerations based on classroom observation and interview blending with related literature for the students with visual impairment in a mainstream class. Teachers of an inclusive class should:

Allow lectures to be audio recorded.

- Encourage direct conversation and speak directly to the students with visual impairment in a normal tone.
- Always give specific instructions, like - please take the centimeter ruler and measure the length of the table.
- Provide large print copies of written materials for students with low vision. Try to increase visual contrast of written materials.
- Provide a wide range of direct learning experiences. Use real objects so that the student can feel them by touch.
- Allow students to explore in their natural environment, like- plants, animals, and instruments etc.
- Supply students with tactile diagrams and graphs labeled by braille.
- Use Braille labels on chemicals and reagent containers.
- Keep the laboratory aisles cleared, and do not leave doors half-open.
- Instruct other students in class to yield the right of way for the student with visual impairment whether or not that student is using long canes.
- If possible, provide a laboratory assistant or find a volunteer in class who is willing to work with the student with visual impairment to read directions and procedures, and guide him/her.
- Provide assistive technologies whenever possible like talking thermometers, voltmeters, timers and calculators, glassware with embossed numbers, sandpaper labeling for poisonous chemicals, and computers with voice or Braille output. Light probes and special adapters, which transform visual and digital signals into audio outputs are also suitable for assisting the visually impaired student in science laboratory settings (AAAS (1991) as cited in Kumar and Stefanich, 2001).
- Whenever teachers use manipulative, models, or other equipment, students with visual impairment need the opportunity to use their tactile and kinesthetic senses to become familiar with the objects to benefit from their use in lessons. Teachers should introduce students with visual impairments to materials and equipment used in the same way and at the same depth as other students understand visual input (Kumar and Stefanich, 2001).

Assistive technologies

Any visual materials used in classrooms need to be adapted for use by students who do not have the visual skills required for the task. Charts, models, maps, and graphs will have greater educational value for students with visual impairments if they can be "read" using the sense of touch. Tactile and kinesthetic input can provide students

with information about objects they come in contact with and use. (Penny and Mary, 2001)

Klatzy and Lederman (1988), cited by Penny and Mary (2001):

Students with visual impairments use tactile and kinesthetic input to learn about their environments. Such input should not be thought of as 'lesser senses' to use in the absence of vision, but as another system through which learning takes place.

For example, outlining map boundaries with string enables students with visual impairments to use their sense of touch to read maps. Auditory language triggers the creation of mental images that correspond with words. Images are recalled to assist students in comprehending verbal language (Barraga and Erin, 1992; cited in Penny and Mary, 2001). A student with visual impairments is likely to have fewer and less detailed mental images to correspond with verbal language. Such images may differ according to a student's individual experiences and verbal input he or she has received from others (Whitmore and Maker, 1985). General education teachers should observe and interact with students with visual impairments in an effort to determine whether individual students understand verbal input. The teacher must check for comprehension during class discussions and when giving directions. If students are having difficulty understanding what the teacher says, the teacher may need to clarify or expand on their background knowledge or vocabulary. Most students with visual impairments have some usable vision. Their visual learning can become more efficient if they can enhance their skill to use their vision through training or the use of assistive devices. There are many devices which help visual impaired students to learn mathematics; like Taylor Arithmetic frame, Arithmetic and Braille writing scale, Abacus, Talking calculator, Geometric shapes and solids, spur wheel (a serrated wheel revolving in a plated metal handle which is used for making continuous embossed lines on the reverse side of the paper), compass set, Opisometer (a bell rings each time the disc moves a distance of one meter, useful for mapping and understanding mathematical problems in length and perimeter), Primary mathematics kit etc. (Punani and Rawal, 1993). The primary mathematics kit is specially designed for the visually impaired students to comprehend mathematical concepts. It contains a plastic box, slide strips, number boards, fractional strips, braille clock, geometrical shapes, magnetic board and geometric devices.

Moreover, some science aids are also available. Like, conductivity apparatus is an assistive technology for the visual impaired students. It helps to understand the difference in the heat of copper and iron. Another aid is three dimensional raised relief plastic charts. It is a rigid PVC sheet, printed and formed in multi-colors. The

charts make many shapes like plant cell, plant meiosis, plant mitosis, ribonucleic acid, bacterial forms, spirogyra and funaria, depicts fertilization, T.S dicot leaf, human skeleton, circulation system, heart and nervous system, a section of the brain, digestive system, the ear, nose and eye, reproduction organs of male and female etc. (Punani and Rawal, 1993)

There are a number of technical progresses all over the globe that can provide the print disabled and visually impaired people with accessible information systems and study materials which can enable them to equal access of information like the sighted people. ICT brings a radical change in the life of visually impaired all over the world. (Andrea, 2010) Computers with visual impaired friendly software (JAWS, Katha, etc) helps them in educational perspective. Tape-recorder, talking watch and talking mobile are found to be very helpful for them.

Conclusion

The constitution of Bangladesh is clearly spelled out the rights of Visually Impaired people in educational institutions. They have the rights to study with dignity and live independently. Now-a-days, in many countries Visually Impaired students are studying science and doing well in these subjects. But, the picture of Bangladesh is not satisfactory at all. It's time to focus on the issue. Curriculum consideration process should include in the teacher training programs of Bangladesh. Assistive technologies need to make available. But, the most important thing for the visually impaired people is positive thinking and conscious rising. It will smooth the onward ways.

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Preschool Participation and its Impact on Later Education in Bangladesh

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Abstract: *A recent study in Bangladesh showed that impact of preschool education on learning achievement at the end of primary education was limited to those who pursued such education in primary-attached high schools. This cross-sectional study aims to examine the issue deeply through separate analyses of urban and rural schools. Socioeconomic background, school-related information, and learning achievement data of 1167 students from 66 schools were analyzed. Two issues emerged – provision of preschool education in primary setting and students' participation in preschool education. Findings reveal that preschool provision within schools increased students' participation in such education but such a provision was less effective for better later learning than the independent preschools. No effect of preschool participation was found on rural students' later learning but it was one of the important predictors of urban students learning achievement. Importance of other predictors than that of preschool participation raises questions on quality and sustainability of preschool education on later education. Results have implications for the government of Bangladesh who has just started nationwide preschool education.*

Keywords: *Preschool, Quality Education, Learning Achievement.*

Importance of early interventions on child development is well documented, especially in the context of developed world. Studies suggest that early learning contributes to brain's developing architecture, development of intellectual schemas, communication skills, later learning and employment (Blakemore and Frith, 2005; Gopnik *et al.,* 1999; Melhuish, 2004; Sylva, 1994; Sylva and Pugh, 2005). Ramey and Ramey (1998) and Schweinhart *et al.* (1993) reported lasting effects of early education and care, especially for children with disadvantaged background. Schweinhart *et al.* (1993) showed that early education improved high school grades, decreased delinquency and adult crime, and increased employment status and earnings. Investment in early years education is more likely to save more than seven

times in social, health and justice system in later life (Barnett, 1996). All these impressive results inspired many to introduce preschool education throughout the world which has reflected with great significance in the first of the six Education for All (EFA) goals (UNESCO, 2000).

Evidence from the developing countries also shows that children who attend preschool education are generally better prepared for formal schooling than those without such experience (Engle *et al.,* 2007). After controlling for family factors, impact was found more among those with less advantaged background (UNESCO, 2007). In Botswana, preschool experienced children performed better than their peers in English language, mathematics and science (Taiwo and Tyolo, 2002). The Nepali preschoolers were more likely to enrol in primary schools, had higher levels of school readiness, better school attendance and obtained higher scores in year-end examinations (Bartlett *et al,.* 2003). In South India, higher quality preschool provision produced better developmental outcomes compared to a similar but lower quality provision (Rao, 2010).

Five-year duration of primary education (grades I-V) for the children aged 6–10 years is compulsory in Bangladesh since 1990 for which preschool is not required (Government of Bangladesh, 1990). Whilst a number of policy documents including national plan of action for children and national education policy highlighted the need of development of preschool education (Government of Bangladesh, 2003; 2005; 2010). Such aspiration is yet to be materialized. At least 10 types of educational institutions offer primary education which intakes 86.4% of the eligible (6–10-year-old) children (Nath and Chowdhury, 2009). The provision, in general, is characterized by late entry and early dropout of students, poor quality of education and disparity in terms of location and school type.

Historically, *baby classes* of a section of the primary schools offered preschool education in Bangladesh. It was an unofficial grade prior to grade I. Over time, independent preschool centres especially by nongovernment organizations (NGOs) and kindergartens by private initiatives have emerged. The Directorate of Primary Education estimated that in 2005, 26,299 of the 82,000 various types of primary schools offered preschool education to 1.1 million children. In addition, 25,180 centres established by various NGOs provided such education to about 630,000 children (Ministry of Primary and Mass Education, 2008). Another estimate shows that among the 4–5-year-old children the net and gross enrolment ratios were respectively 13.4% and 30.5% indicating many over-aged children in preschools (Nath and Sylva, 2007). Among the students who completed primary education in 2008, 15.3% received preschool education before entering into primary education (Nath, 2012). A wide variation was also observed by school type where the students

of primary-attached high schools had the highest (37%) and those of the non-formal primary schools had the lowest (2.3%) rate of participation. In general, urban children of educated parents with better economic status were more likely to participate in preschool education (Nath, 2012; Nath and Sylva 2007).

Studies available in Bangladesh exploring quality of preschool education and its impact on pupils learning achievement are limited to the first few years of specific interventions provided by some NGOs through locally trained teachers and facilitators (Aboud, 2006; Aboud and Hossain, 2011; Moore *et al.,* 2008). All these interventions were in rural areas where the communities are predominantly poor. Aboud and Llewellyn (2004) found that the participating pupils showed considerably higher skills related to school readiness and more frequently participated in interactive play compared to a control group with similar background. Comparing with the international standards, they found that quality of the provision provided was low-to-medium but high to South Asian standard. A four-week dialogic reading intervention on preschoolers resulted significant increase on the participants whereas no change was noticed in the control group (Opel *et al.,* 2009). A nine-month comprehensive maths intervention helped the participating preschoolers to double their score where control children increased only slightly (Opel *et al.,* 2012). Two studies were conducted on an NGO-run one-year preschool programme to see whether it has any sustained and positive impact on pupils' later education. Both reported the same: Preschool experienced pupils were ahead of their non-preschool counterparts in their first year in primary schools but the difference become negligible or disappeared by the end of second year (Begum *et al.,* 2004; Shahjamal and Nath, 2009). Preschool participants and nonparticipants performed equally in their third to fifth grades.

Using *Education Watch* 2008 dataset, a recent study found that participation in preschool education, in general, could not make any influence on learning achievement of the students at the end of compulsory primary education when the influence of socio-economic and school-related factors were controlled (Nath, 2012). Students of five major types of primary schools produced a similar result. An exception was those pursued primary education in the primary-attached high schools where the preschool participants performed better than nonparticipants. These are secondary schools along with a primary section; they follow the national curriculum like majority independent primary schools.

Bangladeshi studies exploring the role of pre-school education on latter learning mostly concentrated on rural schools. Nath (2012), however, combined urban schools with rural but did not provide any separate analysis. Various studies identified variations among the rural and urban schools in Bangladesh in terms of

resources, teaching quality and output. Urban schools at both primary and secondary levels are far better than their rural counterparts (Nath *et al.,* 2008; Nath and Chowdhury, 2001; 2009). As this particular type of primary school provision (attached to secondary schools) played a role in sustaining pre-school contribution, deeper exploration of this was thought to be an important contribution for Bangladesh when it wants to expand such education throughout the country. The aim of this paper is thus to look at the issue in further detail through analyzing rural and urban schools separately and exploring the role of preschool provision in this particular type of school. Following were the specific aims:

i. to explore students' characteristics of this particular type of school, specifically by school location (rural and urban), and comparing with similar national statistics;

ii. to explore the situation of preschool participation of these students against their socioeconomic characteristics and school location;

iii. to explore the impact of pre-school participation on learning achievement and whether impact differs in terms of school location.

Method

This is a cross-sectional study. Data were taken from the *Education Watch* 2008. *Education Watch* is a civil society initiative to monitor progress of education in Bangladesh (www.campebd.org). Thus, this paper presents a secondary analysis of a dataset prepared for *Education Watch* in 2008.

Population and sample

According to the Ministry of Primary and Mass Education (2008), Bangladesh has 1569 high schools which also provide primary education. Of them, 35.8% located in rural and 64.2% in urban areas. Over one-third of a million students receive primary education in these schools who are 2.1% of the total primary students. This ratio is 0.6% in rural areas and 15% in urban areas. Whereas 10.2% of all primary students in Bangladesh study in urban schools, it is 73.2% in the case of this particular type of school – indicating an urban bias. Of the primary-attached high schools, 28.4% had preschool provision covering 1.8% of the total preschool students.

With 95% confidence limit, 5% error margin and design effect 1.5, it was estimated that 600 pupils are required to have a valid estimate of students' performance in the test (Cochran, 1977; Kalton; 1983). Separate samples were drawn from rural and urban schools. In each area, 30 schools were randomly selected and in each selected school 20 students of grade V (final grade of primary education) were selected in the same manner. Thus, 1200 students from 60 schools constituted the initial sample.

Small class size in some schools and absenteeism of students on the test date in few cases hampered fulfilling the required sample size. Attempt was made to fulfil the gap by increasing number of schools and students wherever available. Finally, the test was carried out on 1167 pupils from 66 schools. Area-wise, 536 students from 31 rural and 631 students from 35 urban schools constituted the final sample.

Test instrument and data collection

The National Curriculum and Textbook Board (NCTB) adopted 50 competencies which the pupils are expected to acquire through primary education. The test instrument comprised of 27 of them which are suitable for paper-pencil-based test. The test was originally developed for *Education Watch* study in 2000 (Nath and Chowdhury, 2001). Primary school teachers, national curriculum experts, and the *Education Watch* members collectively developed the instrument through several pre-tests and piloting. The 27 competencies focused Bangla, English, mathematics, social studies, general science, and religious studies. Number of question-items to address the competencies was 64.

School teachers, national curriculum experts, *Education Watch* members and the researchers who were involved in test development ensured internal validity of the test. External validity was checked through administering the test in some best schools and comparing the results with the national average. Details of the validity of the test are available elsewhere (Nath and Chowdhury, 2001). Reliability of test was assessed thrice. Once based on the field trial data and again with the data generated through national surveys in 2000 and 2008. Using Kudar-Richardson formula number 20 (KR 20), it was found that the test as a whole was more than 90% reliable (Nath and Chowdhury, 2001; 2009).

Data used in this paper came from three different but interlinked sources. The above described test was administered on the sampled students in their classrooms. In this group test the sampled students filled up the answer sheets within a given time. School information was taken from the heads of the schools at their offices. Background and education-related information of the students under test were collected later from their parents through home visits. Trained research assistants administered the test and collected all other data from the school heads and the parents. They were supervised by an independent team. *Education Watch* members including this author provided random visits to the study spots. The test was administered and all other data were collected from mid October to mid November 2008, just before completing primary education of the sampled students.

Data analysis techniques

Analysis of data was started through exploring distribution of students by their background characteristics and school factors. Simple frequency distribution and bi-

variate analysis were done. To explore participation of students in preschool education against their socioeconomic characteristics a bi-variate approach was taken. Similar analysis technique was followed to explore mean number of competencies achieved by the students. Appropriate statistical tests (chi-square and *t*-test wherever applicable) were applied to see the differences between and among the estimates. Effect sizes of the mean differences were also calculated wherever applicable.

Second level of analysis was multivariate. First, we tried to identify the factors influencing students' participation in preschool education. As participation of students in preschool education is a dichotomous variable, binary logistic regression analysis was considered suitable for this (Hosmer and Lemeshow, 1989; Menard, 1995). The following regression model was used:

$$\ln [p / (1 - p)] = a + \sum b_i x_i$$

Where, p is the probability of a student participated in preschool education; a is the constant; b_i values are estimated regression coefficients; and x_i are the background characteristics of the students.

Second, to see the impact of students' preschool participation or preschool provision in their schools on their learning achievement a linear regression analysis (ordinary least square method) was performed because of the continuous nature of the dependent variable. The form of equation is

$$T = a + \sum b_i x_i$$

Where, T is total number of competencies achieved by each student; a is the constant; b_i values are estimated regression coefficients; and x_i are the background characteristics of the students and school-related factors.

Results

Sample schools and students

This section presents the sampled schools and the students in terms of various characteristics. Separate analyses for rural and urban schools and students were carried out (not shown in table). The estimates were compared with national averages found in *Education Watch* 2008 study. Difference between and among the estimates were committed when they were found statistically significant at $p \leq 0.05$.

Mean age of the students was 11.1 years with a variation from 9–16 years. Majority of them (91.4%) belonged to 10–12 years. Ninety percent of the mothers and 93.2% of the fathers received at least one year of schooling with a mean of respectively 7.6

and 9.1 years. Thus, proportion of first generation learners (if both the parents had no schooling) in the sample was too small (3.5%). One-tenth of the students were non-Muslims and 1.2% from the ethnic minority communities. Over 90% of the students had electricity facility at home; however, 18.7% came from food deficit households[1].

Forty-eight percent of the students' guardians attended in school meetings; however, 81.2% meet the teachers to discuss about academic progress of their wards. Fifty-seven percent of the students participated in co-curricular activities and 91.6% had access to mass media (radio, TV or newspaper). Eighty-five percent of the students availed private tuition in grade V with an average of 6.4 months.

Average number of teachers per school was nine. They, on average, had 13.7 years of schooling and 16.9 years of experience. Fifty-six percent of the teachers had professional training. Average class size was reported to be 37 with 23 students per teacher. The school managing committees (SMCs), on average, met 5.7 times during the year and the study schools were 5.5 km away from the respective *upazila* (government's administrative unit at the lowest level) centres.

The urban students were relatively younger than their rural counterparts. Parents of the urban students were also more educated than those of the rural schools. Urban students were ahead of their rural counterparts in terms of electricity at home and less incidence of food deficiency. Proportions of non-Muslim and ethnic minority students were more in the rural schools than the urban schools. The urban students were also ahead of the rural students in terms of guardians' attendance in school meetings, discussion with teachers, availing private tuition and access to mass media. On the other hand, more rural students participated in co-curricular activities. Although no difference emerged in student-teacher ratio, the class size was bigger in urban schools. The urban schools were ahead of the rural schools in terms of number of teachers, their level of education and professional training but lagged behind in terms of length of service. The rural SMC met more times than their urban counterparts and the distance between school and *upazila* centre was also more in the case of rural schools.

Although proportion of girls was slightly higher in the study schools than that of the national average, the mean age of the students was mostly equal. Parents of the students of these schools were more educated than the parents of the fifth graders throughout the country. Advantage of the students of this particular type of schools was also noticed in terms of availability of electricity at home and less incidence of food deficiency. Less proportion of non-Muslims and ethnic minorities were found in these schools. The students of the study schools were ahead of the national average in terms of access to mass media, availing private tuition, participation in co-curricular activities, and guardians' discussion with teachers in academic matters.

However, the guardians of these students were less likely to participate in school meetings. Although the class size in these schools was higher than the national average, it was reverse in student-teacher ratio. This was because of higher number of teachers in these schools. These teachers were more educated and experienced than those of the other schools but less likely to be trained. The managing committees of these schools met less frequently than the other schools. These schools were much closer to the *upazila* centres.

Half of the 66 schools under study had provision for preschool education; 51.5% of the rural and 48.6% of the urban schools belonged to this. This figure was 22.6% at the national level considering all primary school provisions.

Preschool participation

On average, 37% of the students of the study schools attended in preschool education at their early age with a significant variation between rural and urban schools (18.3% vs. 38.8%, $p<0.001$) (Table 1). Majority received one-year course but 3.3% received a two-year course; 0.2% rural and 4.4% urban. The recipients of a two-year course were 8.9% of the total preschool recipients. Area-wise, 1.1% of rural and 11.3% of urban preschoolers took a two-year course.

Although there was no gender difference among urban students, the boys of rural schools were more likely to participate in preschool education than the girls of the same area (25.3% vs. 13.4%, $p<0.001$). Whereas 32% of the students of the schools without a preschool provision received such education it was 42.5% among those with preschool provision ($p<0.001$). In rural schools where there was no preschool provision, 6.9% of the fifth graders were found to receive preschool education in their early life which increased to 28.2% if the schools had preschool provision ($p<0.001$). These figures were respectively 34% and 44.1% among the students of urban schools ($p<0.001$). Statistically significant urban-rural difference was noticed in both types of schools (with and without preschool provision). Again, 17.5% of rural and 46.5% of urban preschool participants came from those schools where there was no preschool provision.

No variation in preschool participation was observed in terms of age of the students; however, participation of the urban students was significantly higher in all three categories of age. Students' preschool participation significantly increased with the increase of their parental education. Similar result was found in terms of food security status of the households. Urban-rural gap in preschool participation increased with the increase of parental education and household food security status.

Table 1: Percentage of students participated in preschool education by area and socioeconomic characteristics

Socio-economic characteristics	Area		Results from statistical test for urban-rural gap	All
	Rural	Urban		
All	18.3	38.8	$\chi^2_{(1)}$ = 57.91, p < 0.001	37.0
Gender				
Girl	13.4	38.2	$\chi^2_{(1)}$ = 51.72, p < 0,001	35.9
Boy	25.3	39.4	$\chi^2_{(1)}$ = 10.99, p < 0.001	38.3
Results from statistical test	$\chi^2_{(1)}$ = 12.19, p < 0.001	$\chi^2_{(1)}$= 0.10, ns		$\chi^2_{(1)}$= 0.75, ns
Pre-school provision				
No	6.9	34.0	$\chi^2_{(1)}$ = 59.64, p<0.001	32.0
Yes	28.2	44.1	$\chi^2_{(1)}$ = 15.82, p<0.001	42.5
Results from statistical test	$\chi^2_{(1)}$ = 39.84, p < 0.001	$\chi^2_{(1)}$ = 6.62, p < 0.01		$\chi^2_{(1)}$ = 14.63, p < 0.001
Age				
9-10 years	20.2	34.6	$\chi^2_{(1)}$ = 6.19, p < 0.01	33.7
11-12 years	18.3	40.7	$\chi^2_{(1)}$ = 45.74, p < 0,001	38.6
13-16 years	15.7	39.4	$\chi^2_{(1)}$ = 7.04, p < 0.01	35.1
Results from statistical test	$\chi^2_{(2)}$ = 0.54, ns	$\chi^2_{(2)}$ = 2.06, ns		$\chi^2_{(2)}$ = 2.67, ns
Mothers education				
Nil	15.0	16.7	$\chi^2_{(1)}$ = 0.07, ns	16.7
1–5 grades	15.5	30.2	$\chi^2_{(1)}$ = 10.28, p < 0,001	27.8
6+ grades	23.3	43.7	$\chi^2_{(1)}$ = 24.67, p < 0.001	42.6
Results from statistical test	$\chi^2_{(2)}$ = 5.24, p < 0.01	$\chi^2_{(2)}$ = 19.54, p < 0.001		$\chi^2_{(2)}$ = 42.58, p < 0.001
Fathers education				
Nil–5th grade	21.2	30.0	$\chi^2_{(1)}$ = 3.77, p < 0.05	28.4
6–10 grades	16.1	32.3	$\chi^2_{(1)}$ = 16.10, p < 0,001	30.9
11+ grades	14.0	49.5	$\chi^2_{(1)}$ = 25.05, p < 0.001	48.4
Results from statistical test	$\chi^2_{(2)}$ = 2.77, ns	$\chi^2_{(2)}$ = 18.56, p < 0.001		$\chi^2_{(2)}$ = 38.11, p < 0.001
Food security status				
Deficit	23.7	30.1	$\chi^2_{(1)}$ = 1.48, ns	28.8
Break even	14.7	34.5	$\chi^2_{(1)}$ = 21.33, p < 0,001	32.9
Surplus	13.4	45.4	$\chi^2_{(1)}$ = 37.29, p < 0.001	43.9
Results from statistical test	$\chi^2_{(2)}$ = 7.87, p < 0.02	$\chi^2_{(2)}$ = 10.34, p < 0.01		$\chi^2_{(2)}$ = 20.92, p < 0.001

Multivariate analysis of preschool participation

A stepwise approach was used and the model was selected by a combination of forward selection and backward elimination. Of the nine variables considered in the analysis (Appendix 1) the regression model accepted six (Table 2). These include age of student, area, mothers' education, fathers' education, availability of electricity at home, and preschool provision in school. These variables collectively explained 12% of the variation in the dependent variable. The analysis shows that students' participation in preschool education has increased with the increase of their age and level of parental education. Having electricity at home, as it is an indication of family wealth, also influenced preschool participation positively. It was observed that the chance of preschool participation of the urban students was 1.9 times higher compared to their rural counterparts. Again, having preschool provision in the primary schools also increased the chance of participation by 1.56 times.

Table 2: Logistic regression model predicting participation in preschool education

Predictors	Regression coefficient	Odds ratio	95% CI of odds ratio	Level of significance
Age				
9–10 years	0	1.00		
11–12 years	0.428	1.53	1.16 – 2.04	p < 0.01
13–17 years	0.657	1.93	1.07 – 3.50	p < 0.03
Area				
Rural	0	1.00		
Urban	0.642	1.90	1.10 – 3.30	p < 0.02
Mothers education				
Nil	0	1.00		
1–5 grades	0.744	2.10	1.17 – 3.78	p < 0.01
6+ grades	1.103	3.01	1.68 – 5.41	p < 0.001
Fathers education				
Nil–5th grade	0	1.00		
6–10 grades	-0.286	0.75	0.52 – 1.09	*Ns*
11+ grades	0.427	1.53	1.01 – 2.33	p < 0.05
Electricity at home				
Not available	0	1.00		
Available	0.943	2.57	1.41 – 4.66	p < 0.01
Preschool provision				
No	0	1.00		
Yes	0.446	1.56	1.22 – 2.00	*p < 0.001*
Constant	-3.518			p < 0.05
-2 Log likelihood	1459.97			
Cox & Snell R^2	0.09			
Nagelkerke R^2	0.12			

ns = not significant at p = 0.05

Separate analysis for rural and urban schools shows that gender of student and ethnicity came out as the significant predictors of rural students' preschool participation (not shown in table). The boys and the Bangalis were more likely to participate in preschools compared to their respective counterparts (girls and ethnic minorities). On the other hand, age of student, mothers' education, fathers' education and availability of electricity at home were the significant predictors of preschool participation of urban students (not shown in table).

Students' learning achievement

The students, on an average, achieved 20.8 of the 27 competencies under test (Table3). Although, overall, there was no gender difference in learning achievement (girls 21.0 and boys 21.2, ns), the urban students outperformed their rural counterparts (21.1 and 18.2, $p<0.001$). Whilst no gender difference was found among the urban students (girls 21.0 and boys 21.2, ns), the girls lagged behind the boys in rural schools (17.7 and 18.8, $p<0.01$).

Table 3: Mean number of competencies achieved by the students by preschool participation and area

Preschool participation	Area		Results from statistical test for urban-rural gap	All
	Rural	Urban		
Not participated	18.2 (4.8)	20.6 (4.1)	$t_{(822)} = 7.44$, $p < 0.001$	20.3 (4.3)
Participated	17.6 (4.4)	21.9 (3.6)	$t_{(341)} = 9.50$, $p < 0.001$	21.7 (3.7)
Results from statistical test	$t_{(534)}$ 1.25, ns	$= t_{(629)} = 4.16$, $p < 0.001$		$t_{(1165)} = 5.89$, $p < 0.001$
All	18.2 (4.7)	21.1 (3.9)	$t_{(1165)} = 11.66$, $p < 0.001$	20.8 (4.1)

Figures in the parentheses indicate standard deviation; ns = not significant at p = 0.05

Earlier study showed that participation in preschool education helped students achieve more competencies than those did not (21.7 and 20.3, $p<0.001$) (Nath 2012). Table 3 shows that this was true only for the students of urban schools (21.9 and 20.6, $p<0.001$) but not among those in rural schools (17.6 and 18.2, ns). On the other hand, at the aggregate level, presence of preschool provision in the primary-attached high schools did not make any difference in learning achievement of the students (Table 4). However, area-specific analysis shows that this was true for the urban schools but not for the rural schools. In rural areas, the students who had no preschool provision in their schools achieved more competencies than those who had such provision in school (18.6 and 17.7, $p<0.01$).

Table 4: Mean number of competencies achieved by the students by having preschool provision in study school and area

Preschool provision in study school	Area		Results from statistical test for urban-rural gap	All
	Rural	Urban		
No	18.6 (5.1)	21.1 (4.1)	$t_{(578)} = 4.12$, $p < 0.001$	21.0 (4.2)
Yes	17.7 (4.4)	21.0 (3.8)	$t_{(585)} = 6.22$, $p < 0.001$	20.7 (4.0)
Results from statistical test	$t_{(534)} = 2.17$, $p < 0.01$	$t_{(629)} = 0.43$, *ns*		$t_{(1165)} = 1.13$, *ns*
All	18.2 (4.7)	21.1 (3.9)	$t_{(1165)} = 11.66$, $p < 0.001$	20.8 (4.1)

Figures in the parentheses indicate standard deviation
ns = not significant at p = 0.05

Table 5: Mean number of competencies achieved by the students by various compositions of pre-schooling and area

Various compositions of pre-schooling	Area		Results from statistical test for urban-rural gap	All
	Rural	Urban		
School has no provision and student did not participate	18.7 (5.1)	20.2 (4.2)	$t_{(450)} = 3.50$, $p < 0.001$	20.1 (4.3)
School has no provision but student participated	17.9 (4.1)	23.1 (3.1)	$t_{(129)} = 5.99$, $p < 0.001$	23.0 (3.2)
School has provision but student did not participate	17.8 (4.3)	21.1 (3.9)	$t_{(370)} = 7.55$, $p < 0.001$	20.7 (3.7)
School has provision and student participated	17.5 (4.4)	20.9 (3.6)	$t_{(210)} = 6.11$, $p < 0.001$	20.7 (3.7)
Results from statistical test for variations in compositions	$F_{(3,532)}$=1.84; ns	$F_{(3,627)}$=13.73; $p < 0.001$		$F_{(3,1163)}$=24.72; $p < 0.001$

Figures in the parentheses indicate standard deviation
ns = not significant at p = 0.05

To explore the issue in more detail, the students were categorized into four groups according to various compositions of preschool provision in schools and students' participation in preschool education. Mean number of competencies achieved by these four groups of students were calculated and presented in Table 5. In the schools with a provision of preschool education, an equal performance was observed among the students who had preschool experience and who had not. On average, each group of students achieved 20.7 competencies. Non-participant students of the schools without a preschool provision although achieved a lower mean (20.1), no significant different was found between them. On the other hand, preschool experienced students of those schools where there was no provision of such

education achieved the best score with an average of 23 competencies. Similar results were found among the students of urban schools but no significant variation was observed among these four groups of rural students. However, the urban students outperformed their rural counterparts in each of the four categories. Effect sizes for all the differences were calculated which varied from very small (0.1) to moderate (0.5).

Multivariate analysis of learning achievement

Two separate models were built; urban and rural. The 10 variables significantly predicted learning achievement of the students of this particular type of primary provision found in Nath (2012) and an additional one called 'preschool provision' were used as explanatory variables for both (Appendix 2). The analyses showed that these variables collectively explained 8% of the total variation in learning competencies of rural students and 32% of that of the urban (Tables 6 and 7). Not all the variables were found significantly contributing to the models. Two variables had significant contribution to the rural model; these include fathers' education and gender of student (Table 6). On the other hand, seven variables had significant contribution to the urban model. The variables are teachers' educational qualification, fathers' education, student-teacher ratio, teachers' professional experience, age of student, guardians' discussion of academic matters with teachers, and preschool participation (Table 7).

Table 6: Multiple regression model predicting rural students learning achievement

Predictors	Regression coefficient	Beta coefficient	*t*-value	Level of significance	Order to appear
Age of student	0.09	0.02	0.42	*ns*	
Gender of student	0.95	0.10	2.26	*p<0.05*	2
Fathers education	0.18	0.15	2.50	*p<0.01*	1
Mothers education	0.08	0.06	1.00	*ns*	
Preschool participation	0.77	0.06	1.27	*ns*	
Preschool provision	0.31	0.03	0.62	*ns*	
Teachers educational qualification	-0.12	-0.03	-0.44	*ns*	
Teachers training	0.01	0.08	1.57	*ns*	
Teachers professional experience	-0.02	-0.02	-0.36	*ns*	
Student-teacher ratio	0.02	0.04	0.96	*ns*	
Guardians discussion with teachers	0.39	0.06	1.44	*ns*	
Constant	15.94				
Adjusted R^2	0.08				
Analysis of variance (*F*-value)	4.08			*p<0.001*	

Table 7: Multiple regression model predicting urban students learning achievement

Predictors	Regression coefficient	Beta coefficient	*t*-value	Level of significance	Order of appearance
Age of student	-0.45	-0.11	-3.13	*p<0.01*	5
Gender of student	0.33	0.04	1.23	*ns*	
Fathers education	0.10	0.11	2.23	*p<0.05*	2
Mothers education	0.07	0.06	1.33	*ns*	
Preschool participation	0.44	0.10	2.72	*p<0.01*	7
Preschool provision	0.04	0.01	0.14	*ns*	
Teachers educational qualification	0.94	0.29	5.15	*p<0.001*	1
Teachers training	0.01	0.04	0.96	*ns*	
Teachers professional experience	-0.10	-0.19	-3.40	*p<0.001*	4
Student-teacher ratio	0.03	0.13	3.42	*p<0.001*	3
Guardians discussion with teachers	0.50	0.10	2.73	*p<0.01*	6
Constant	10.75				
Adjusted R^2	0.32				
Analysis of variance (*F*-value)	27.08			$p < 0.001$	

Comparing these two models it can be said that presence of preschool in the study schools had no influence on students learning achievement at the end of compulsory primary education. However, participation in such education which may be in school or outside significantly influenced urban students' later learning when the influences of other variables were controlled. This was not the case for the rural students. The urban model also presents several powerful variables than 'preschool participation' in terms of significantly contributing to learning achievement.

Discussion

Impressive research demonstrating impact of early years education on various aspects of child development in the developed world inspired many developing countries to consider it as an important part of education provision. It is an important tool to overcome poverty-trap hindering developing countries education for long (UNESCO 2007). Preschool interventions in a number of developing countries such as Bangladesh, Botswana, Cambodia, India and Nepal showed positive impact on children in terms of school readiness and cognitive development (Bartlett *et al.,* 2003; Engle *et al.,* 2007; Rao, 2003; Taiwo and Tyolo, 2002). However, most of these studies examined only the intervention period or the first few years of intervention. Long-term impact of such education, in the developing country context, on later education or on later life as a citizen is yet to be explored.

One of the first examinations on the role of preschool participation in Bangladesh raised question about the influence of such education on learning achievement at the end of primary education (Nath, 2012). Using the same dataset, this paper offers an extended analysis of the previous study through analyzing a particular type of primary school namely primary-attached high school. This was important because this type caters a small portion of primary students with the highest proportion experienced in preschool education showing an impact of it on later education. The students of this type of primary education provision showed the highest performance in various tests among six major types of primary schools. Importance of this analysis also lies with children's limited access to preschool education in Bangladesh, international call for preschool education and the government's willingness to create a space for such education for all preschool aged children in the country (Government of Bangladesh, 2010; Nath, 2012; Nath and Sylva, 2007; UNESCO, 2000).

It should be noted that the schools under study are very much special in terms of majority's location in urban areas and their collective coverage of a small portion of preschool and primary students. As shown in the findings section, these schools were distinctly ahead of the other types of primary education provision in the country in terms of school-related indicators and students' socio-economic background. Again, the urban schools of this category were much ahead of their rural counterparts in terms of the same indicators. As learning performance of the students depends on multiple affects of these components, it may be expected that when preschool phenomenon is added to these elements it may act differently in various circumstances. Results of multiple regression analysis of this and other studies supported this. Here, we observed that rural children's preschool participation at early age did not have any impact on their learning achievement at the end of compulsory primary education but it did in the case of urban students. Where an impact was found, however statistically significant, other predictors of learning achievement were found more influential than this, most of which are related to students' background and the schools where they received primary education. Moreover, effect size was also found to be smaller. It seems that the preschool education, at least the way it was provided, was less influential than primary education itself in impacting on later learning achievement.

Among the students who were experienced with preschool education, majority of them received it from the schools where they received primary education and these students performed equally with those who had no experience. On the other hand, the students who received preschool education outside their primary schools showed

significantly better performance than those received it in their own schools or who did not. Having preschool provision in primary-attached high schools, however, increased plausibility of children's participation in such education; it was found less effective for better later learning than the outside providers, at least with their existing quality. Independent preschool provisions established by a number of NGOs and the privately initiated kindergartens may be these outside providers. Note that the NGO programmes are mostly in rural areas and the kindergartens mostly an urban phenomenon. Further investigation of data shows that the students who received preschool education not from their primary educational institutions were ahead of the others in terms of parental education. They were younger in age. Teachers of their primary schools were more educated and with less experience. These characteristics are similar to those responsible for better later learning found in regression analysis for urban students. Plausibility is that the educated and well-off urban parents preferred their children's preschool education in the kindergartens and then moved them to primary-attached high schools for primary education and beyond, because these schools were resourceful than others.

This study has some limitations too. School and additional educational factors considered in this study and the previous one represented only primary education but not preschool education. Consideration of variables characterizing preschool atmosphere and quality may help understand better the role of present preschool provision in the country. Again, the state of physical and mental development of children before entering into preschool education is also important for such analysis. Work of the NGO-run independent preschools and the kindergartens may need to be examined from a comparative perspective because they follow different curriculum and model. A longitudinal cohort study may help fulfil the present knowledge gap in Bangladesh context. In addition, voices of various stakeholders such as the teachers, parents and children may be sought to get insight into the views and experiences of them.

Finally, Bangladesh is now in a way of establishing preschool education throughout the country in line of the inspiration from various policy documents including the National Education Policy 2010. A curriculum has already been prepared along with textbook and other materials. In absence of rigorous research on the existing models, this was done through verbal consultation among the major providers. This study may serve to inform the direction to current process and contents of future early years policies. Parents with preschool aged children may also be benefitted from these findings while choosing preschool institution for their children.

Note

Food security status is a proxy to household economic condition. The parents of the students were asked to rate their households in a four point scale in terms of total income and expenditure during the past year. The points in the scale were *always in deficit*, *sometimes in deficit*, *break even* and *surplus*. Due to smaller sample in the first category it was added to the second and renamed as *deficit* for this particular analysis.

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Appendix 1: Measurement of variables used in the logistic regression analysis predicting preschool participation

Variables	Measurement
Dependent variable	
Pre-school participation	0 = not participated, 1 = participated
Independent variables	
Gender of student	0 = girl, 1 = boy
Age of student	0 = 9–10 years, 1 = 11–12 years, 2 = 13–16 years
Area of resident	0 = rural, 1 = urban
Mothers education	0 = nil, 1 = 1–5 grades, 2 = 6+ grades
Fathers education	0 = nil–5th grade, 1 = 6–10 grades, 2 = 11+ grades
Religion	0 = Muslim, 1 = non-Muslim
Ethnicity	0 = small ethnic minority, 1 = Bangali (majority)
Electricity at home	0 = no, 1 = yes
Preschool provision in school	0 = no, 1 = yes

Appendix 2: Measurement of variables used in the multivariate regression analysis predicting learning achievement

Variables	Measurement
Dependent variable	
Competencies achievement	0–27 number of competencies achieved by the students
Independent variables	
Gender of student	0 = girl, 1 = boy
Age of student	9–16 students age in years
Mothers education	0–16 years of schooling completed by mothers
Fathers education	0–16 years of schooling completed by fathers
Guardians discussion with teachers	0–3 number of discussion meetings
Student teacher ratio	5–87 number of students per teacher
Teachers educational qualification	10–16 mean years of schooling completed by the teachers
Teachers professional experience	3–34 mean years of professional experience of the teachers
Teachers professional training	0–100 percentage of teachers having professional training
Preschool participation	0 = not participated, 1 = participated
Preschool provision in school	0 = no, 1 = yes

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English Language Development Strategies for the Secondary Level Teaching of Biology in English Version Schools

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Abstract*: Most of the Limited English Proficiency (LEP) students are facing challenge in learning science due to the language of science. Teachers make out the urgent need to help students who have lack proficiency in the English Language in learning science. A review of the LEP and Directed Activities Related to Text (DARTS) presented here with an appraisal of extant studies in regard to language development strategies with relation to science teaching and learning. This article aims to provide some ideas how teachers can adopt the language development strategies for the students of secondary level in biological science classroom as a language and content mediator in the English version schools. From the review of literature, a sample question has been developed from Biology textbook for class IX-X with an aim to illustrate of the status of students' potentiality in language development in biological science learning.*

Keywords: *Language Development, Limited English Proficiency, Directed Activities Related to Text.*

Teaching English particularly in a country where English is used as foreign language is relatively difficult. Teachers need to deal with Limited English Proficiency (LEP) students or students that have limited ability in English (Pamelasari & Khusniati, 2013)**.** English is recognized as foreign language in Bangladesh because it is not used usually to communicate the society. General population only uses English for certain occasion so their capability of using English enthusiastically is inadequate, therefore they can be classified as Limited English Proficiency (LEP) people. In Bangladesh the practice of the teaching biological science in English has been increased. Generally, while most teachers identify the burning need to help students

who lack of proficiency in the English Language better clutch scientific concepts and principles, many are unaware of the role they must to play in lowering the language barrier in science learning (Kim & Wai, 2007). Most of the teachers still have been taught specific methods and techniques for supporting students' use of English in learning biological science. The use of language development strategies to help LEP students to learn science better may be considered a relatively new area of science teaching-learning in Bangladesh. Science teachers have to now be aware that they need to actively seek and implement ways of lowering the language barrier and difficulties in the teaching and learning of science in English. Besides, being the content mediator, science teachers are also required to be the language mediator in the science classroom if they are to successfully intervene in language related problems in order to optimize their students' potential in learning science (Kim & Wai, 2007).

Objective of the Study

The objective of this study is to render some ideas for teachers to acclimatize the language development strategies for the secondary level science classroom as a language and content mediator in the English version schools through developing some particular patterns of questions from secondary level science text book of English version schools, written and distributed by National Curriculum and Textbook Board (NCTB, 2014), Bangladesh.

Methodology

Since the article is based on literature review which includes readings of books, journal articles, research reports and guidelines both on Bangladesh and international perspectives, the ideas from these literatures might help us to build up our argument for this article and administers a sample question from secondary science textbook which is published by NCTB, Bangladesh.

Discussion and Analysis

The Role of English Language Proficiency as Foreign Language in Biological Science Learning

The studies of Tobin & McRobbie (1996) and Torres & Zeidler (2002) revealed that the correlation between levels of English proficiency and biological science learning have always indicated LEP reduced students' science achievement when their learning was in English. These studies prop up the assertion that it is imperative to scaffold science instruction so that it is more understandable for English language

learners. Henderson and Wellington (1998) very concisely place it; the quality of the classroom language is bound up with the quality of learning. Language development and conceptual development are inextricably linked, explained by Wellington and Osborne (2001).According to Gibbons (2003), Studies that explore the role of classroom discussion and other forms of scaffolding depict how teachers intercede between students' contemporary English abilities and levels of science understanding and the more academic English and science knowledge being embattled. Moreover, studies have indicated that when an English language learner's first language contributes to equivalent with English, first language knowledge can be helpful in science learning in English. Furthermore, Jimenez, García, & Pearson (1996) found that older learners are competent to transfer cognate knowledge from their first language to their second or foreign language. Further explained from the Vygotskyian point of view, during the time learners use words, they are helped to build up concepts. Language thus performs both as a psychosomatic means that helps learners to structure thought as well as a mental function in it (Vygotsky, 1978).

In sum, the literature indicates that potential instructional approaches construct on what is known from first-language science knowledge and also take into account the language and cultural backgrounds of the students. Examples include using activities and strategies to enhance comprehension of science information (e.g., interactive questioning on expository text); focusing on language functions (e.g., describing, explaining, and reporting, drawing conclusions in the context of science investigation); explicitly teaching and reinforcing key vocabulary; and strategically using students' first language to enhance their understanding. In particular, it is not just the language in itself but rather what educators do with language. This is because what educators do with the language involuntarily affects how the learners use the language and that is fundamental to the learning of science (Wellington & Osborne, 2001)

Language Problems and Science Learning in the English Version Schools

Kim and Wai (2007) recommended that one of the ways to facilitate students figuring out science framework is by lessening the language obstructions in the learning activity. On the other hand, Anstrom, Lynch and Dicerbo (1998) believed that by giving better opportunity for students to get involved in the science area or context they will be uncomplicated to absorb the science context itself. In current years, lots of studies have dealt with the difficulty of the language of science in the classroom. Students have to handle with their own language while writing notes or finishing homework; teacher's spoken language; the language used in curriculum and

instructional materials and textbooks; teacher's written language on the chalkboard, handouts and tests; the jargons of science; and the gap between the meanings of the same words when used in daily language and when used in the context of a science lesson. Some of these issues have been explored by scholars in the context of native speakers of English (Bell & Freyberg, 1985; White, 1988). These studies show that even students whose mother tongue (L1) is English experience difficulties in dealing with the specialist terminology used in science and in coping with the language demands and assumptions made by science teachers and writers of curriculum materials. This being the case, the problems faced by students learning science in a foreign language are bound to be even greater and more complex. We can think of a number of instances in science, and even in other subjects, where pupils' failure to respond correctly to a question is mistakenly attributed to their lack of understanding the concept. Jarrett (1999) adds that academic language is more abstract than social language and that in science; common words can take on specialized meanings. To a large extent, this is a result of the disparity between the language used by the teacher of science and the language used and understood by the students. One of the major reasons why language becomes a barrier to LEP students is because scientific terms, whether technical or non-technical, are unique in nature and they are seldom encountered in other contexts or in English as a foreign language instruction. Very often teachers take it for granted that the language used to state rules, express concepts or define terms is self-evident, and may fail to notice that what seems simple and clear to them may be hard and vague to their students.

The English-versions context. The above examples were cited to emphasize that it is not just the non-native speaker of English who has difficulties with the language of science and that the language needs for learning biological science are more than simply the acquisition of an adequate level of general English. Before moving on to illustrations from science lessons in Bangladesh, a brief outline of the structure of schooling in Bangladesh is in order. The main language spoken in Bangladesh is Bangla as a mother tongue. But from the initial years of the primary school, the medium of instruction in English version schools at all other levels is English, and it is also a compulsory subject of study. The science curricula presently followed in years 1-12 were all developed centrally, and are as follows:

* Years 1-5 Elementary Science (Primary level)

* Years 6-8 General Science (Lower Secondary level)

* Years 9- 10 Physics, Chemistry, Biology (Secondary level)

Effective sstrategies for teaching English language learners

Teachers can use strategies based on social interactionist theory, such as that of Vygotsky (1978), to create classroom conditions that promote learning by modeling, scaffolding and helping students to assemble understanding, with the ultimate goal of becoming autonomous thinkers and problem solvers. Vygotsky (1978) also categorizes four loads as obstacles to meaningful instruction: cognitive load, culture load, language load and learning load; One of the key factors in helping LEP students achieve greater progress in learning science is the role played by the science teacher in lowering the language barrier and sparking student interest and curiosity by developing a creative, wise and passionate curriculum and constructing a meaningful questionnaire. By lightening these loads and arranging meaningful learning for students, teachers can motivate students and facilitate learning of both the English language and content. In this regard, Vine (1997) stresses that if content were to be made accessible to LEP students, teachers will need to move beyond leaving the language to take care of it and needs to adjust his / her instruction to support the learner's existing capabilities so that the learner is able to beyond his / her current level of performance.

Strategies appropriate for various concepts of teaching science in English

Genesee (2000) shows us that English language learners in elementary (primary) and middle school (secondary) are not passive recipients of learning. Rather, they are actively constructing **schema** (organizational structures of language and content) and meaning. Thus, all teaching, even direct teaching must be planned so that learners play active roles as they learn. However, we are concern about the reading and writing components in this paper. The success of LEP students in science classrooms may be enhanced by unambiguously addressing vocabulary and technical terms, carefully incorporating language functions such as summarizing, rephrasing, classifying and evaluating, and making explicit the different structures and features of the language of science (Buxton,1999). According to Crawford (1995) Students learn new jargon and word meanings best when they stumble upon them during persistent activities and explorations. Therefore, teachers would like to edify vocabulary as part of their hub instruction, not as a disconnect activity. The subsequent paragraphs list some flourishing strategies as suggested in a review of related literature:

Henderson and Wellington (1998) trace that Directed Activities related to Text (DARTS) have been booming in serving students be more alert on important parts of the text as well as linking them in reflecting on its subject matters. The two extensive grouping drawn in are:

a. Reconstruction (or completion) DARTS – These are fundamentally problem-solving activities that use modified text. The manuscript, table or figure has parts missing (words, phrases or labels deleted), or alternatively, the transcript is broken into subdivisions which have to be re-ordered into the 'correct' sequence according to rational order or time progression. Davies and Green (1984) categorized the activity which can be included in Reconstruction (or completion) DARTS as follows-

- **Text completion**

Predicting deleted words (cloze), sentences, or phrases.

- **Diagram completion**

Predicting deleted labels on diagrams using text and other diagrams as sources.

- **Table completion**

Completing deleted parts of a table using table categories and text as sources of reference.

- **Completions activities with disordered text**

Predicting a logical order for a sequence and classifying segments according to categories given by the teacher.

- **Prediction**

Predicting next part of text with segments presented in sequence.

b. Analysis DARTS – These use original passage and are more study-like. They are about ruling targets in the text. The teacher decides what the 'information categories' of the text are and which of these to focus on. These are the objectives which students are to look for, and engross the students in establishing and categorising the information in the text. The teacher may also request students to assemble diagrams or tables from information given. The activity including in Analysis DARTS according to Davies and Green (1984) can be seen as below-

- **Underlining**

Searching for specific target words or phrase that relate to one aspect e.g. key words.

- **Labeling**

Labeling segments of text which deal with different aspects, e.g. labeling scientific account.

- **Segmenting**

Segmenting of paragraph or text into information units.

- **Diagrammatic representation**

Constructing diagram from text e.g. using diagrams, concept maps, mind maps, and labeled model.

- **Tabular presentation**

Constructing and representing information in tabular form, extracting from a written text.

Word games are also advantageous in revealing students to more active reading in a more sociable context focused Henderson and Wellington (1998). While this tactic may require the teacher to pay out more time and endeavor in preparing the materials, the gratification experienced by students is unquestionably worth it. Examples of word games include matching pairs or trios and grouping words into groups. Cards may also be used to play the memory game called "Pelmanism" whereby all cards are placed face down and students are required to come across the cards two at a time. If the cards form a pair then the student gets to keep the pair but replaces the cards (face down in the original position) if they don't.

Conclusion

In sum up, learning language is an important issue to learn science. The LEP students in learning science have to learn a new language at the same time they are required to acquire new subject knowledge and matter also. Here a science teacher must be aware of how to mediate the content knowledge and language instruction effectively to the LEP students successfully. To some extent the linguistic structures or discourse patterns must be associated with a particular topic or may differ from the incorporate appropriate language learning activities into their science lessons. In this regard, DARTS have been proved successful in helping students to be more focused on important parts of the text as well as involving them in reflecting on its content. As a result, students will be able to demonstrate their utmost English language learning proficiency in science learning.

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Appendix

(A Sample Question)

Research Title:

Language Development Strategies for the Secondary Level Teaching of Biology Practice in English Version Schools

Name: _____

Date: _____

Instructions:

- Please answer each of the following questions. Include relevant examples whenever possible. You can use the back of a page if you need more space.

Examples of analysis DARTS

1. Labeling paragraphs from a newspaper article on **Lungs and Breathing** according to information categories:

You breathe in and out all the time - without having to even think about if most of the time! When you breathe in (inhale) through your mouth or nose, air travels down your windpipe and into your lungs. The windpipe is called the trachea. At the end of the trachea there are two big tubes: just one is called bronchus and the two together are called bronchi. Each bronchus goes to a lung. The bronchi branch off into smaller tubes and then smaller ones.

The tiniest ones are called bronchioles, and they are covered with millions of tiny air sacs called alveoli. These air sacs fill with air and the lungs get bigger. Each air sac is covered with tiny blood vessels called capillaries. Blood which has travelled around the body and has had all the oxygen taken from it, comes into the lungs from the heart through the blood vessels. The blood is carrying carbon dioxide which the body doesn't want.

The blood leaves the carbon dioxide in the lungs and picks up fresh oxygen from the lungs. When you breathe out (exhale), the carbon dioxide leaves your body. The fresh oxygen is carried around the body in the blood. The lungs are protected by the ribs. Under the ribs there is a muscle called the diaphragm. It works with your lungs as you inhale and exhale.

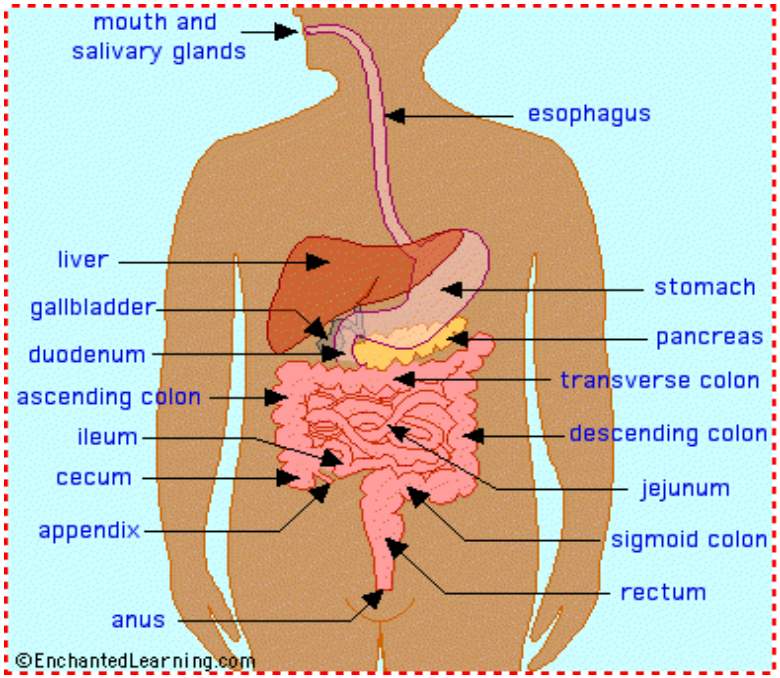
Label the paragraphs in the text given using the following:

1. Purifying bloods by releasing carbon dioxide.

2. Description of breathing system

3. Functions of the tiny parts of lungs

Describe the diagram by writing ten sentences.



Completing a text on the Role of light in photosynthesis using words from a word bank given

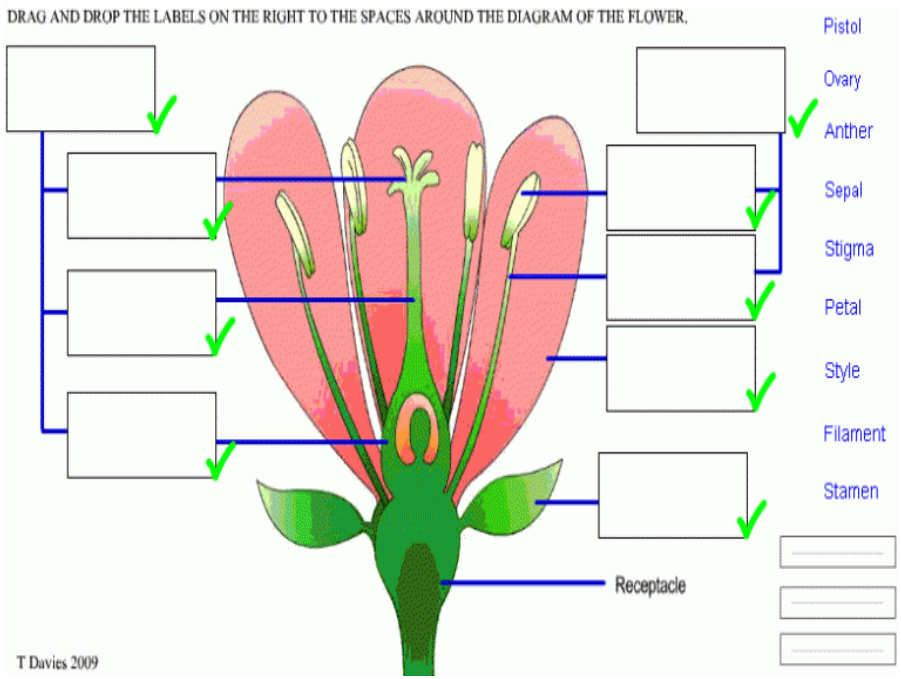
The Role of light in photosynthesis.

Complete the text below using words from the word bank given.

The importance of _____in photosynthesis is immense. For the production of carbohydrates from H2O and CO2, the source of required _____is light. Sunlight takes part in the _____of chlorophyll. With the effects of sunlight and stomata being opened, CO2 can enter leaves, and take part in the _____of food carbohydrates. But very little amount of light, falling on_____, is used in photosynthesis. Red, blue, orange and purple portions of visible spectrum function better than that of green and yellow. The rate of _____increases with the increase of light up to a definite limit.

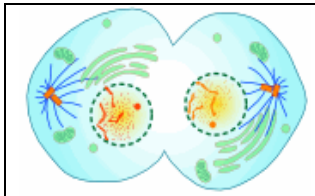
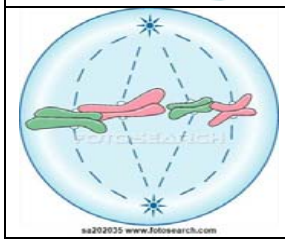
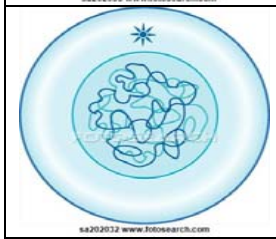
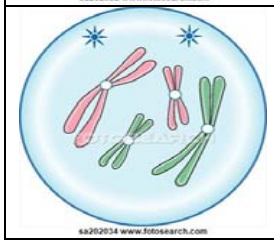
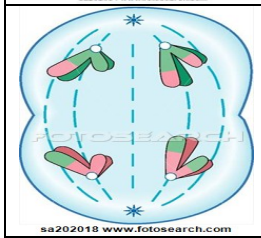
Production	leaf	development	energy	light	photosynthesis

Labeling a diagram of the flower and completing the main function of various parts of the flowers (top-left side is no. 1 and top right is no. 5)



Examples of completion DARTS

Sequencing the phases of cell division

	**1. Interphase**: Chromosomes threadlike
	2. **Prophase**: Chromosomes become shorter and fatter
	3. **Metaphase**: Chromosomes arrange themselves on the equator
	4.**Anaphase**: Chromatids move to opposite poles
	5. **Telophase**: Chromatids have reached poles. Cell starts to divide into two

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Headteachers' Understanding about Inclusive Education from the Perspective of Disability: A Case of Some Selected Schools in a District of Bangladesh

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Abstract: *Bangladesh has started to include students with disabilities in mainstream schools like many other countries but it is apparently novice in the journey towards inclusive education. Many significant changes are required for implementing inclusive education but how much the teachers are groomed for shifting towards new practices is mostly important to know. In this regard, this small qualitative study tried to explore how disability and inclusive education are understood by the school headteachers who usually have more chance to get information and training as well as have the authority of decision making than other teachers because of their leading position in schools. Five mainstream government primary school and three special school headteachers were interviewed employing semi-structured interview guide from one district of Bangladesh. Though interviewees indicated some positive changes in their knowledge and understandings, still lack of clear concepts about disabilities and inclusive education are evident among the participant headteachers. Specific recommendations have been made in light with the findings.*

Keywords: *Inclusive education, Disability, Headteacher*

Inclusive education is nowadays a global agenda for ensuring equity in education for all. Many International declarations have been made to ensure the right to education for all learners through the process of inclusive education. These declarations include Salamanca Framework for Action (UNESCO, 1994), Dakar Framework (UNESCO, 2000), UNCRPD 2006 (UN Enable, 2008) and more. In response to those international declarations, Bangladesh proclaimed several legislations, policies and actions to promote inclusive education. The Child Policy 2010 (MoWCA, 2011); the National Education Policy 2010 (MoE, 2010) and the Proposed Draft Education Act 2013 (MoE, 2013) are some of the policy documents that articulated the necessity of

the implementation of inclusive education for ensuring education for those children who are disadvantaged and left out of schools. In order to translate those policies and legislations into practice, the Government of Bangladesh has taken several programmes and projects that include the second Primary Education Development Programme-PEDP II [2003-2010] (DPE, 2005) and PEDP III [2011-2017] (DPE, 2011). These examples through the policy as well as practice initiatives someway reflect on the commitment of the government for ensuring education of all learners from diverse backgrounds through inclusive education.

Among many initiatives took place under the PEDP II and PEDPIII pragrammes, one of the major achievements could be identified as the orientation of all the primary school headteachers regarding the concept of inclusive education (DPE, 2011). This is an important factor for the success of inclusive education because persons who are in leadership positions have the potential to bring innovative changes in a process (Kouzes & Posner, 1987) and adapt new understandings and ideas through skill development (Senge, 1996). Further to this, inclusive leadership itself involves different stakeholders by offering team work opportunities and provides opportunity to others to act as leaders and also it promotes inclusive practices through reforming decision making processes, recognizing new ideas, building up collaboration with other people and agencies beyond the institution (Ryan, 2006). Therefore, heads of the primary schools have a major inclusive leadership responsibility to reform the entire school system. It has also been explored by many studies (Forlin at el., 2009; Kim, 2011) that teachers are still concerned in including children with disabilities in the same classroom when they talk about inclusive education. Considering these factors, the current study aimed to explore school headteachers' understanding about disability and inclusion in Bangladesh through an in-depth qualitative inquiry.

Context of the study

In Bangladesh, to some extent, disability is perceived through a medical model (Ahsan et al., 2012; 2011). For instance, disability is defined as person's partial or full physical or mental inability to lead normal life in the Bangladesh Persons with Disability Welfare Act -2001 (MSW,2001).Moreover, the cause of disabilities and potentials of persons with disabilities are misunderstood in Bangladeshi society. Disability is seen as punishment or ill fate or will of God (Ackerman et al., 2005; Hosain et al., 2002).

In the stigmatized society parents of children with disabilities also look down their children's ability. They are not aware and vocal for the right of their children with disabilities. In a study a parent said, "My son is mad. None call him good. School

also does not take him, so he is walking around" (Ackerman et al., 2005: 51). Sometimes parent choose religious activities for children with disabilities to reduce their sin and it is noteworthy that people often belief parents' sin cause child's disability (Hosain et al., 2002).According to Ackerman et al. (2005), children with disabilities deprived from education due to poverty, social stigma and lack of knowledge and information about disability. Similarly Sultana (2010) reported about the limited access for the persons with disabilities to basic needs as health, housing, education and employment.

In Bangladesh, there were no separate laws to ensure the rights of persons with disabilities until 2001. The Person with Disability Welfare Act, 2001 proposed integration of students with disabilities into mainstream schools and teacher development in this regard (Ministry of Social Welfare [MSW], 2001). Later, the Second Primary Education Development Programme (PEDP-II) initiated many strategies to ensure equitable access so that all children could reach the basic primary education (Ministry of Primary and Mass Education [MoPME], 2010). In line with that the Access and Inclusive Education Cell (AIEC) was established to coordinate and implement inclusive education under the Directorate of Primary Education (DPE) in 2005 (Hossain, 2008).Among PEDP-II initiatives, infrastructure building, teacher training, special allowance for students with disabilities, special seating arrangement, disabilities screening tool development etc. are remarkable (Disability Rights Watch Group, 2010; DPE, 2009; Hossain, 2008; Nasreen & Tate, 2007). Following PEDP-II, the third Primary Education Development Programme (PEDP-III) aims to mainstream inclusive education (as its sub-component 2.1.3) along with taking further strategies (DPE, 2011).Recently, the Rights and Protection of the Persons with Disability ACT, 2013 has been enacted to increase the participation of persons with disabilities and to removing discriminations to them.

Moreover, the National Education Policy 2010 ensured that the inclusion of children with disabilities in mainstream schools and mentioned when inclusion will not be possible, for severe physical and intellectual disabilities which limits even children's daily living skills, special education & care will be provided (Ministry of Education, 2010). However, it was not explain that who are not able to cope in daily living activities and how will those be assessed. According to DPE (2009), almost 75% to 85% children with disabilities can be educated in mainstream schools if teachers are provided adequate training and given some environmental arrangements to address learners' need.

Special education opportunity also limited for children with disabilities as special schools are not available everywhere. For instance, government sponsored special

schools can serve about 1,500 students with disabilities among 2.6 million school aged children with disabilities (Ackerman et al., 2005). Moreover special schools are mostly situated in urban areas or city rather than rural areas (Ackerman et al., 2005). Ministry of Social Welfare is responsible for the special schools whereas mainstream schools are overseen by Ministry of Primary and Mass Education [MoPME] or Ministry of Education [MoE] (Ackerman et al., 2005; Hossain, 2008).Thus special education has seen as charity issue by the government even.

Methodology

The study followed qualitative grounded theory approach to get thick data and data generated knowledge. Grounded theorists value data driven knowledge rather than bringing theory or existing ideas directly to the data (Charmaz, 2006).Particularly, this study pursued constructivist grounded theory of Charmaz (2006). Constructivists believe in subjectivity of the researcher and view that participants as well as researcher both construct result of the study or evolved theory through their interactions (Charmaz, 2011). According to Mills et al. (2007) constructivist grounded theory emphasis on understanding the reality rather than unveiled truth.

A district of Dhaka division has been chosen for the study considering its ease of communication and researcher's accessibility to the community. In this qualitative study, theoretical sampling followed to select participants purposively. Theoretical sampling is a way of selecting place, person, and situation to fill up the gaps of emerging concepts from collected data (Corbin & Strauss, 2008). Following semi-structured interview method, five mainstream government primary school headteachers and three special school headteachers were interviewed. Semi-structured interview method helps to maintain control over the interview process by using interview guide to get relevant data but at the same time it is flexible to follow new leads during interview (Bernard, 2006).The semi-structured interview was guided by questions on some categories such as: types and number of children with disabilities in the school catchment area, cause of disabilities, learning abilities of children with disabilities, education opportunities of children with disabilities and concept of inclusive education.

After each interview data was initially analysed for further data collection and later all interview records were transcribed in Bengali for further analysis. Thus data were analyzed both during data collection and after data collection following grounded theory approach. Research team also shared the resulted knowledge with participants after analysis of data. Researchers should follow a trustworthy manner in study (Gay

et al., 2006) from planning to report. This study followed all ethical considerations of the Social and Behavioural Research Ethic Committee (SBREC) of a reputed university of Australia. Participants were well informed about the study purpose and they were fully free to take their decision in regards participation. Participants' consent was taken and their confidentiality valued highly. Pseudonyms are used all through the report.

Findings

The findings on school headteachers' understanding about disability and inclusion are reported as follows under five themes. Pseudonyms are used instead of using name of participants. If participant is a headteacher of mainstream (government primary) primary school abbreviation 'MS' used to mean that. Respectively, 'SS' used to mean headteacher of special school. Five themes that were raised from the analysis included in following paragraphs.

Language used to describe disabilities

This study found that headteachers are using variety of terms from formal to informal for addressing children with disabilities. For example, they are using formal term as 'visual impairment', descriptive language as 'problem with vision' and informal or local language '*ondho* (blind)' for addressing children with visual impairment (See Table 1). Participants also used the term '*protibondhi shishu*(children with disabilities)' and '*bishesh chahida shamponno shishu* (children with special needs)'. A headteacher mentioned about positive change among teachers as they were used to say derogatory term to describe disabilities.

> We were used to call them as *khora* [lame], with many different terms like *ondho* [blind], *kana* [to mean person with visual impairment], then we left these terms and use one term 'protibondi' [persons with disabilities], after that the term 'bishesh chahida shamponno shishu' [children with special needs]. (Sayeed, MS)

Participants generally mentioned about physical impairment, visual impairment, hearing and speech impairment, intellectual disability, multiple disabilities through different terms and description. Sometimes they used some insulting term as '*boba* (who cannot speak)', '*lol pora* (drooling)', '*autistic* (child with autism)'. It is mentionable that only one special school headteacher mentioned about autism.

Table 1: Words and phrases for describing different types of disabilities

Types of disabilities	List of words/phrases (Informal to formal language) →			
Hearing/speech impairment	*'Boba'*(who cannot speak)	*'Totlami'* (stuttering)	Speech impairment	Hearing impairment
Visual impairment	*'Ondho'*(blind)	Problem with vision	Low vision	Visual impairment
Intellectual disability	*'Kam buddhi shampanno'* (Low intelligence)	Autistic	Intellectual disability	
Physical impairment	Problem in leg	Problem in hand	Who cannot walk	Physical impairment
Others	*'Lolpora'* (drooling)	Multiple disabilities		

Participants generally mentioned about physical impairment, visual impairment, hearing and speech impairment, intellectual disability, multiple disabilities through different terms and description. Sometimes they used some insulting term as '*boba* (who cannot speak)', '*lol pora* (drooling)', '*autistic* (child with autism)'. It is mentionable that only one special school headteacher mentioned about autism.

Causes of disabilities

The study found that participant headteachers have evidence based concept about cause of disabilities. There are variations in their responses. However, responses could be summarized through the following phrases uttered by eight respondents: lack of maternal care, lack of awareness, malnutrition of mother and baby, poor health services, chemical (formalin) in food, tobacco consumption, diarrhea and high fever. They also mentioned that people's superstitious belief also increase risk for pregnant women which may cause disabilities of baby as consequences.

Participants informed that village people have tendency to call traditional (untrained) midwife for delivery rather than going to hospitals. Sometimes midwifes forcefully try to bring out the baby and participants believe that mishandling of baby during delivery may cause disability.

> For example, different places in rural areas, people call a 'dhatri' [midwife] who is not trained. They [midwife] bring blades with them, don't they? The blade should be sterilised. After sterilising, the cord should be cut. If the blade is not sterilised…the germs transfer into the cord [of baby]. Thus, the possibility to be disabled is higher. (Ullash, SS)

People are also reluctant to get health service during pregnancy because of superstitious beliefs. "There is the matter of the amulet [Tabij-kaboj], sometimes people think that vaccination is not necessary, giving an amulet is enough" (Shapla, MS). She also shared that some people in society still belief that bad spirit can cause disability of child if mother go outside without amulet during her pregnancy.

Education status of children with disabilities

Both mainstream school headteachers and special school headteachers reported about poor educational status of children with disabilities. Headteachers found some children with disabilities go to school but many drop out. According to Fuad (MS), "she [a student with hearing or speech impairment] could write but could not speak. So she did not continue school."

DPE uses a guideline for identifying degrees of disabilities, by using that guideline, school headteachers are only allowed to welcome children with mild to moderate disabilities in mainstream schools as per PEDP–II action plan (DPE, 2009).The responses have indicated that in case of children with severe and profound disabilities school headteachers just report the education officers about the severity of the disability without taking any responsibility for the education of those children. Shilpi said, "those [children with disabilities] do not come [to school] they are not able to come"

Students with disabilities who can cope in existing education system they are welcomed in mainstream schools. Otherwise students with disabilities drop out because their special needs are not catered for. Ullash mentioned that even in integrated school for visual impaired students general teachers do not care for the special needs of visual impaired students. Participants informed that visual impaired students rarely get access to mainstream schools.

> Inclusive education has not been implemented really ... a disable boy with problem in leg and low vision ... he went to school for admission but the head teacher did not allow him. The head teacher said, "No, it is not possible to enroll you. How will you study here?" ... When his parent came to know, they said nothing is doable with you, you better die. Can you understand?! After this comment, he [the student] got depression [tar mon manoshikota kisuta nasto hoye gase]. At one stage he died. (Ullash, SS)

Some participants assume that students with disabilities drop out from school because of teachers' lack of skills in addressing special learning needs. Sayeed said that mainstream school teachers do not know how to teach students with hearing

impairment and students with visual impairment. Therefore they cannot give opportunity to those students in their schools. Similarities found in Shilpi's experience.

> Deaf children can learn, there was one in my school. He was not very regular in school. Actually we are not trained; we do not know how to teach. May be for that reason we could not ensure his progress. But, it has been understood that he is capable to learn. (Shilpi, MS)

This study found that students with disabilities get easier access to rural mainstream schools than urban mainstream schools. Participants pointed that students compete to get chance in urban schools. Therefore urban schools do not have any concern about student enrollment rate like rural schools. One of the participants reported that availability of special school in an area hinder students with disabilities access to mainstream schools. As mainstream school teachers tend to send the student with disabilities to the nearby special school.

Opportunities to education for children with disabilities are also very limited in special schools. Participants informed that lack of special schools also limiting the educational opportunities for children with disabilities. Helen explained how lack of special school increasing schooling cost for poor parents as well as wasting parent's valuable time. As result some students with disabilities drop out from school.

> Suppose one student come from 'Kutumpur' (pseudonym). The distance from Kutumpur to here is 30 miles [1 mile = 1.6 Kilometre]. It is not possible for him [parents] to come here five days for his child's education by spending money for that 60 [30+30] miles travel. One issue is travel expense; second issue is his time and third is his poverty. When he brings his child here for the day long, he cannot go to work ... if he does not earn, his family will be unable to keep going ... All these factors cause students to stay at home ... poverty, distance and time ... for these three reasons, a person with disabilities remain disabled. (Helen,SS)

> Poverty is another obstacle for education of children with disabilities. Ullash reported that children, who do not go to school, stay at home or beg, especially visual impaired children. Participants also informed that considering schooling cost and future job prospect sometimes parents choose religious education or vocational education for children with disabilities. "many people of my village used to say, 'if he [a child with visual

> impairment] could read The Holy Quran properly, he could earn his livelihood by being a religious leader in mosque [Imam]' " (Tareq, SS).

Learning Abilities

The study found that headteachers' belief about learning ability of children with disabilities also linked to those children's access to mainstream schools. Headteachers do not take any responsibility for children with disabilities whom he viewed as unable to learn. Most mainstream headteachers believe that students with physical disabilities are able to learn. Some of them viewed that students with hearing impairment are also able to learn. Some teachers said that students with multiple disabilities, visual impaired are able to learn in special schools but not in mainstream schools.

> Yes, of course [students with disabilities] can learn but I doubt whether students with all types of disabilities can learn. Because, if he/she has intellectual disabilities, it is really ... [tough] to learn ... or student with visual impairment in our schools [mainstream] ... or if [the student] have problems in the ear, not able to hear.... I think a separate school is a must for him/her. If they come to our schools [mainstream], separate room and special teacher who are trained to teach them might be better for them. (Nafis, MS)

Special school headteachers did not mention about inability of students with disabilities. Only one headteacher pointed about the limited learning ability of students with intellectual disabilities.

> My view is, as he [student with intellectual disabilities] is coming to school, he will try his best according to his merit. If we give 1000 times effort to him, it is not possible for him [to maintain standard academic performance]. (Tareq, SS)

Concept of Inclusive Education

In this study most of the Mainstream school headteachers define the inclusive education as bringing all kind of children including all disadvantaged children under mainstream school or same education system. However they did not indicate about the need to change existing education system to address diverse educational needs of all children.

> Inclusive education means bring all children of society under the same education. Same education means primary education. From six years of age which education we get as a right. In society there are many kinds of children, such as children from bede [gipsy], methor[cleaner], potita[sex-worker] community ... bringing all children under the shade of the same education. (Shapla, MS)

In regards to disability, mainstream school teachers viewed inclusive education as educational opportunity for children with disabilities. They believe inclusive education movement will ensure the educational right of children with disabilities. One of the participants indicated the cost effectiveness of inclusive education for Bangladesh.

> 'Disabled' was treated as a special community to us ... if they have been educated then they will not be called by a special name 'disabled'. Then they will be like us - that they are a human being ... I wish that they do not need to live with the name 'disabled' [protibondhi nam nie jeno oder beche thakte na hoy] (Shapla, MS)

> Education is their [children with disabilities] right. Apparently, no special education system has been developed in our country to ensure that right. In spite of having a plan, [it was not implemented] for poor socioeconomic conditions. As a result if we think about unified education [inclusion], just only need to recruit some special teachers [rather than set up a new separate school]. The infrastructure can be extended in that institute if needed ... moreover, the [special] teacher can teach [students with special needs] as well as other students. (Sayeed, MS)

In compare to mainstream school headteachers, special school headteachers are more aware about special needs of children with disabilities. Nevertheless special school headteachers do not have clear idea about inclusive education.

> I think that there is not considerable difference. The difference is - in the case of integrated education programs, there is a hostel where students stay for their study. On the other hand, in case of inclusive education- students go to different schools from their home. (Ullash, SS)

Discussion and recommendations

This study aims to explore headteachers understanding about inclusive education from the context of disability in Bangladesh. The study is limited to only one district of Bangladesh and to its small sample size. Especially, only three headteachers of special schools participated in the study. One of the reasons behind such small sample size was that limited scope of special school facilities exist in that district. However, this is a general scenario of Bangladesh which has been reported in other

study as well (Ahsan et al., 2015). Thus the findings of the study may not be reflection of the whole country and grounded theory also "produces limited, tentative generalization not universal statements" (Bryant & Charmaz, 2007: 52). Considering this limitation in the study design, the researchers made attempts to reflect on possible implications of the findings for inclusive education in Bangladesh without making any generalized claims. The following paragraphs discuss the interpretation of the findings with possible recommendations.

The findings derived from this study reported that headteachers possess a degree of general knowledge about disability and their right to education. They also have an understanding about existing barriers to their education. Several research studies (Ahsan et al., 2013; The Disability Rights Watch Group, 2010) found that describing the concept of disabilities dominated by pejorative terms such as boira [deaf], kana [blind], lula [cripple] and such terms were used by teachers even. The current study found that headteachers used more formal terms in most cases, which can be considered as certain level of understanding and awareness about disability. However, some of them found to use those negative terms to describe disabilities (see table 1). Hence, it could be recommended that while preparing teachers for inclusive education positive terminologies have to be introduced in relation to addressing disabilities.

Headteachers participated in the current studies appeared to have evidence based concepts about the causes of disabilities, whereas many other studies in the context of Bangladesh reported superstitious beliefs among different stakeholders regarding disabilities (Ackerman, et al., 2005; Hosain, et al., 2002; Titumir & Hossain, 2005). Common causes identified by the interviewees include lack of maternal care, lack of awareness, calling untrained midwife, Lack of nutrition of pregnant women and babies, lack of Iodine, various diseases (e.g., diarrhea, typhoid; dysentery). Some social and cultural context related causes were also reported by the participants. These causes of disabilities are consistent with other studies conducted in various countries including Bangladesh (Ahsan et al., 2013; Anderko et al., 2010; Center for Services and Information on Disability [CSID], 2002, Department of Social Services [DSS] & UNICEF, 2014; Durkin et al., 2000; Gayen & Raeside, 2007; Olusanya, 2010; Murray & Lopez, 1997; Rahman, 2010), which also indicate that headteachers assumptions are clear about causes of disabilities.

Most of the interviewees could identify the concept of disability from the perspective of physical impairment, hearing and speech impairment, visual impairment, intellectual and multiple disabilities. But they failed to mention about other disabilities such as learning disabilities, cerebral palsy etc. Therefore an orientation

of different types of disabilities to teachers has to be confirmed to enhance teachers' understanding regarding disabilities.

The findings indicated that headteachers are concerned about poor educational opportunities of children with disabilities. The participants reported that only mild to moderate children with disabilities are getting access to mainstream primary schools. This finding is supported by other literature available in the context of Bangladesh (Nasreen & Tate, 2007; The World Bank, 2011).This finding could be a reflection of the policy set by the PEDP-II & III that allows only mild to moderate children with disabilities to be enrolled in mainstream primary schools (Ahsan, 2013, Ahsan et al., 2013, DPE, 2011). This study draws a strong recommendation that such exclusionary clauses in the policy documents have to be removed in order to ensure inclusion of all children with disabilities in mainstream schools. Otherwise negative attitudinal and discriminatory practice would remain under the shadow of these clause that would lead to discrimination against children's learning abilities which has no relationship with their severity of disabilities in general (Ainscow, 1997).

It is evident from the analysis of findings that headteachers seem to have confused about several concepts such as students' learning potentials, special learning needs and inclusive teaching learning practices in the classroom. Most of the interviewees appear to have the belief that children with certain disabilities (i.e., severe disabilities, multiple disabilities and visual impairment) do not have potentials to learn in mainstream classrooms. Such concept of poor learning abilities of children with disabilities has been reported by another study conducted on Greek teachers (Coutsocostas & Alborz, 2010). Loreman et al. (2011) claimed that two major beliefs of mainstream teachers: 1. all students can learn and 2. teachers' confidence to make a difference have the potential to bring positive changes in inclusive classrooms. Therefore, both pre-service and in-service teacher education program in Bangladesh need to take required measures to minimize such confusing concepts on learning abilities of students with disabilities found in the views of headteachers.

It is encouraging that head teachers participated in this study seem to have a clear understanding about the concept of inclusive education. Where there are many studies in the context of Bangladesh and abroad (Ahsan et al. 2012, Ainscow & César, 2006), which reported that most mainstream school headteachers hold a view that including children with disabilities is the goal of inclusive education; participants from the current study found to have a clear view that including all children is the aim of inclusive education. The Bangladesh Government provided short training on inclusive education to school headteachers (MoPME, 2010), which may have a positive impact on their knowledge about inclusive education.

However, it is a matter of concern that headteachers are lack in understanding about how to bring changes or adaptations in an inclusive classroom for ensuring learning of all children. Therefore, "participation and achievement" (Ainscow & Miles, 2009: 3) may depends on how the students with disabilities can cope with existing system, which is mentioned by the special school headteachers. The current study found that special school headteachers do not have a clear understanding about inclusive education. This could be a barrier to develop collaborations between mainstream and special schools. Hence teacher education program designed for special education teachers in Bangladesh should address the issues in curriculum. Furthermore teacher development curriculum and other policies should address the issue on participation and achievement of students' with disabilities to ensure full inclusion of those children.

From the above discussions it is apparent that mainstream primary school and special school headteachers in Bangladesh seem to have a fragmented concept about inclusive education. The concept of inclusive education was fragmented as they could not clarify things related to children's participation, achievement and any modification to address the need of children in an inclusive setting. One of the observations was that headteachers from mainstream primary school hold a broader concept of inclusive education than those who were from special schools as they (mainstream school headteachers) could clarify it beyond inclusion of only children with disabilities. Teacher preparation curriculum revision through using the lens of inclusive education could be a viable strategy to address this challenge. Several other studies conducted in the context of Bangladesh (Ahsan et al., 2015; 2013; 2012; 2011) also claimed that teacher education curriculums (both pre-service and in-service) require a careful revisions to ensure adequate preparations for teachers in inclusive classrooms. Further to this, current study has made several policy and implementation level recommendations to develop better understanding of headteachers on inclusive education from the perspective of disabilities in Bangladesh. If those recommendations are considered by the relevant stakeholders, it could be expected that headteachers would be better prepared in regards to inclusive education that would lead to a better inclusive learning friendly environment for all learners.

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