Jahangirnagar University Planning Review ISSN 1728-4198
Vol. 19, June 2021 (Printed in June, 2022), pp. 81-110, © Jahangirnagar University

Education Facilities in Urban Areas: Planning Standards and Practices from National and Global Perspectives

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Abstract

Proper planning for education facilities in urban areas is very important for ensuring proper education and wellbeing of people. Hence designing proper planning standards for various types of education facilities are important for education facility planning of a city. Education services can be of various types, likely pre-primary school, primary school, secondary school, college etc. Hence development of proper planning standards for various types of education facilities always poses challenges for planners, practitioners and policy makers. Therefore proper understanding of education facility standards followed in various cities and countries around the world is quite important for development of planning standards for education facilities in Bangladesh. This paper primarily focuses on education facility standards followed in various cities and countries in the world as well as it examines education facility standards adopted in various plans and projects in Bangladesh. Based on the findings of this study, this paper also recommends education facility standards for urban areas in the planning contexts of Bangladesh.

Key Words: Education Facility, Planning Standard, Pre-Primary Education, Primary Education, Secondary School, College

Introduction

Education facility planning is very significant for city planning due to its importance on ensuring proper education of people at urban areas. Hence designing proper planning standards for various types of education facility is important for education facility planning of a city. Education facilities are important community facilities that are designed and planned by planners while physical planning of urban areas. Therefore planning standards for educational facilities are important for designing communities and urban areas in physical planning process.

The word "community" comes from the Latin term, *Communis,* meaning fellowship or common relations and feelings (Moinuddin, 2005). In its medieval usage, the word was possibly more descriptive, meaning a body of fellows or fellow town people. This definition is still relevant, since the average person today usually defines community in reference to locality, such as a hometown, place of residence, or neighborhood. However, there are many other ways of examining the meaning of community beyond a locality reference. This does not mean that the community as a locality base is dying out; rather the nature of community is complex and changing.

Community facilities deliver goods and services to the community through a system of facility networks. The traditional models of planning for community service facilities relied mainly on analyses of optimum location and capacity based on the concept of

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minimum travel distance for the delivery of services to the target population (ASCE, 1986). Mcshane (2008) in his Phd research titled as "Bringing in the Public: Community Facilities and Social Value" described, community facilities as educational, cultural, recreational, health and civic structures or places administered by local government authorities and that are available to the public. He mentioned two important points – availability to public and delivery by local government as two important features of community facilities. Ahamed and Khan (2011) describe that there are several types of community facilities, such as - Community Center, Parks, Playground, Theater and Cinema Hall, Library, Educational Institutions, Religious Institutions, Post Office, Fire Defense Services, Markets and Bazars etc.

The planning standard is used to determine the minimum area for each use for a certain population or for a certain land area. These minimum standards are considered for a particular locality by studying the functional requirements, number of users and other similar parameters (LGED, 2010). More clearly, these standards are based on the total amount of land required for selected urban services and facilities expressed as acres/hectares per population threshold served by the local bodies such as the Paurashava.

However, planning standard can be developed by two ways, such as - Overall proportions and Specific provision standards. The formulation of physical planning standards relates to the formulation of mechanism needed for allocating land for various social, cultural, economic and political purposes either in urban or rural areas when preparing physical land use plans in particular. The basic objective of suggesting various norms and standards for urban development plans formulation is to provide a basis for taking decision. The suggested norms and standards are indicative and can be suitably modified depending upon the local conditions (Rao, 2001).

Development of proper standards for various types of education facilities always poses challenges for planners, practitioners and policy makers. However, Bangladesh, being a developing country, faces the challenges of providing proper education facilities adequately and with appropriate quality to its various levels of urban dwellers as well. Different cities and countries have adopted various standards for planning and designing their education facilities considering their own contexts. It is explicable that searching for a common standard for education facilities is not a right choice for planners and practitioners while designing their particular cities. However, proper understanding of education facility standards followed in various cities and countries around the world is quite important for development of planning standards for education facility in Bangladesh. This paper primarily focuses on education facility standards followed in various cities and countries in the world as well as education facility standards adopted in various plans and projects in Bangladesh. Based on the findings of this study, this paper also recommends education facility standards for urban areas centered on planning contexts of Bangladesh.

Methodology of the Study

This paper is primarily based on secondary sources and desk research on the readily available data have been conducted for a better understanding of the planning standards for education facilities across various cities and countries around the world. Planning standards and provisions regarding education facilities at urban areas in Bangladesh have been explored in respective master plans, structure plans or any other relevant plans. Education facilities such as pre-primary school, primary school, secondary school and college have been mainly analyzed in this study.

In order to get an overall picture of planning standards and provisions of education facilities in urban areas of Bangladesh, various categories of urban areas have been selected for this study to represent each category of urban areas. Moreover, study areas are purposively selected across various regions of Bangladesh for proper representation of various types of urban areas in Bangladesh. Six major Metropolitan Cities of Bangladesh have been selected as well as four 'A' Category, Three 'B' Category and Three 'C' Category Paurashavas[2] have been selected for analysis of education facility provisions at different categories of urban areas in Bangladesh.

Table 1: Urban Areas Selected for the Study

Metropolitan City	Paurashava / Municipality		
	A Category	B Category	C Category
Dhaka, Chittagong	Savar (Dhaka)	Daudkandi (Comilla)	Nageswari(Kurigram)
Rajshahi, Khulna	Jhenaidah, Gopalgonj	Bajitpur (Kishoreganj)	Kasba (Brahmanbaria)
Barishal, Sylhet	Bhairob (Kishoreganj)	Pirganj (Thakurgaon)	Melandaha (Jamalpur)

Based on the findings regarding education facility standard and provisions from national and international practices, planning standards have been proposed for various types of education facilities for urban areas in Bangladesh.

Types of Education Facility

Education facilities are of different types and planning standards of these various types of education facilities differs in different cities and countries.

Community Facilities in Infrastructure Delivery Plan for 'City of London', UK

'Infrastructure Delivery Plan' of City of London uses the term 'Green Infrastructure' and 'Social Infrastructure' for dealing with community facilities while physical planning for this city. Green Infrastructure includes open space and trees whereas social infrastructure includes types of community facilities, such as education facility, health facility etc. Types of Educational Facilities in Infrastructure Delivery Plan for City of London are Pre-School/Nursery, Primary and Secondary School, Further Education / Adult Learning and Higher Education **(***City of London, 2009)*.

- Nursery Education: Facilities for children between 2 and 5 years old.
- Primary Education: School facilities for children up to 10 years of age.

[2] Paurashavas that have prepared master plans for their respective municipalities have been considered for this study.

- Secondary Education: School facilities for children between 10 to 19 years of age.
- Further Education: Full and part time education beyond compulsory-school level.
- Secondary school: Suitable for people over compulsory school age.
- Adult Learning: Courses for people over 18 years of age.
- Higher Education: Learning in a university.

Community Facilities in 'Putrajaya City' of Malaysia

Local Plan Manual (2002) for Putrajaya City of Malaysia provides a detail standards for different types of community facilities which includes public amenities like education, health, religious and community services etc. (Putrajaya Local Plan, 2002). According to Putrajaya Local Plan, educational facilities are categorized in four types as – Kindergarten/Taska, Primary School, Secondary School, School Complex. Kindergartens are pre-school education facilities for children from ages of 3 to 6 years. It may sometimes be combined with nursery facilities for infants and toddlers within the same compound or area of a kindergarten.

Types of Education Facilities in Bangladesh according to National Education Policy, 2010

National Education Policy of 2010 is the guideline for education in Bangladesh which recommended various policies for different level of education in Bangladesh. Ministry of Primary and Mass Education is the responsible ministry for providing primary education to everyone, according to 'Primary Education (Compulsory) Act, 1990'.

National Education Policy (NEP, 2010) of Bangladesh recognizes various types of education in its policy document which is supposed to act as a guideline for education planning for Bangladesh. However, no planning standard has been proposed in NEP – either for number of facilities against population size or in support of area per facility type. Table 2 presents different types of education in Bangladesh according to National Education Policy, 2010. NEP recommends that one-year pre-primary schooling must be introduced for 5+ children. Later, this will be extended up to 4+ children.

Table 2: Types of Education in Bangladesh according to National Education Policy, 2010

Pre-Primary and Primary Education	Higher Education	Business Studies
Adult and Non-Formal Education	Engineering Education	Agriculture Studies
Secondary Education	Medical, Nursing and Health Education	Law Studies
Vocational and Technical Education	Science Education	Women's Education
Madrasa Education	Information and Technology	Fine Arts and Crafts Education
Religious and Moral Education	Sports Education	Special Education, Health and Physical Education

Source: NEP, 2010. (Compiled by Author)

Standards and Provisions of Different types of Education Facilities

A. Pre Primary Education

i. Pre Primary Education Facility Standard in Foreign Countries

'Time Saver Standard' proposes a nursery school with a service radius of 1/3 mile or 0.5 km for a service population of 2000 in USA, however South Africa proposes for an 'Early Childhood Development Centre' with Acceptable Travel Distance of 2 km for a population ranging between 2.4 to 3 thousand (Mcgraw-Hill, 1999). Population threshold for a nursery school is generally found to be 2000 to 5000 (Table 3).

Area for nursery school ranges from 0.1 acre (Kuala Lumpur) to 0.5 acre (Putrajaya, Malaysia) in the same country. India recommends for a lesser sized nursery schools with 800 sq-m area whereas Bhutan goes for only 400 sq-m for the same. City of London recommends that local Authorities must provide nursery places for all three and four year olds.

Table 3: Pre Primary Education Facility Standard in Foreign Countries

City/Country	Type	Population Coverage	Area in Acres	Other Standard
USA (Time Saver Standard)	Kindergarten	Maximum Population Coverage- 2000 persons (550-600 families) for 8 classes; and 120 children (max.)	4 classes: 4000 ft.^{2} / 370 sq-m. 6 classes: 6000 ft.^{2}/560 sq-m. 8 classes: 8000. ft.^{2}/750 sq-m.	Radius of Area Served: 1-2 blocks; 1/3 mile
Hong Kong		730 half-day and 250 full-day places for every 1 000 children in the age group of 3 - under 6.		
India		1 per 2,500	800 sq.m.	
		Pre Primary School should be located near a Park		
Bhutan		1 per 2,500 - 5000	400 sq.m.	100 student
South Africa	Early Childhood Development Centre	2400—3000	0.02 ha./0.05 acre (Indoor play area: 1.5 sq.m per child) (Outdoor play area: 2 sq.m per child)	Acceptable Travel Distance: 2 km
Australia	Child Care Centre	5000 (Sub-district) 7,500 (District)		
Abu Dhabi	Early Nursing Centre / Nursery	0.12 sq.m. per person; Minimum GFA 700 sq-m.	Minimum Site 1080 sq-m.	
City of London			Local Authorities must provide nursery places for all three and four year olds.	

City/Country	Type	Population Coverage	Area in Acres	Other Standard
Tanzania			1,200 – 1,800 sq. m	
Kuala Lumpur	Kindergarten	5000	0.1 acre	0.02 acre/1000
Putrajaya	Kindergarten	1 for every 500 unit of household	0.20 ha	0.6 child/family ;15child/classroom

Source: Compiled by Author (Data Source: APA, 1965; Lancaster, 1990; Planning Department of Hong Kong, n. d.; Putrajaya Local Plan, 2002; City of London, 2009; Damphu Structure Plan, 2006; PPDC, 2008; Green, 2012; Magigi, W. and Majani, B. B. K. 2005)

ii. Pre Primary Education Facility Standard for Urban Areas in Bangladesh

Pre Primary Education / Nursery School

Planning standard for 'Nursery School' was not generally recommended in various Master Plans for different cities in Bangladesh in the past years. However District Town Infrastructure Development Project (DTIDP) proposes a standard for a Nursery School per 5,000 whereas Upazila Town Infrastructure Development Project (UTIDP) recommended for 10,000 population served by a nursery school (Table 4). For the case of metro cities, Rangpur City provides a standard 0f 0.2-0.4 acres for a Nursery School for a population of 2,000-5,000—referring home to school distance of 0.25-0.5 km.

Table 4: Pre Primary Education Facility Standard for Urban Areas in Bangladesh

		Standard	
City/ Country	**Plan/Project**	**Population Coverage**	**Area in Acres**
Bangladesh	Private Residential Land Development Rules (PRLDR), 2004	5000	0.4 (0.08 acre per 1,000)
Bangladesh	Non-government Primary (Bangla and English medium) School Registration Rules, 2011	Metropolitan Area	0.08 acres of land (5 Katha) with at least 3,000 square feet of space within the campus
		Municipality Area	0.12 acre (12 decimal)
		Other Area	0.30 acre (30 decimal)
Rangpur	Rangpur Master Plan	2,000-5,000	0.2-0.4
		Home to Facility Distance (0.25-0.5 km)	
Paurashava			
District level Paurashava	DTIDP	5,000	0.4
Upazila level Paurashava	UTIDP	10,000	0.5

Source: Compiled by Author

At present, anyone can establish a kindergarten school by only managing a trade license from respective city corporation or urban local boy. As a result, kindergarten schools have mushroomed in the country and most of the Kindergarten schools are running without formally being registered. The Primary and mass education ministry in August 2011 initiated "Non-government Primary (Bangla and English medium) School Registration Rules, 2011" —making it mandatory for the kindergarten schools to get registration from Directorate of Primary Education (DPE).

Pre-Primary Education Facilities at Metropolitan Cities in Bangladesh

Presently, pre-primary education in Bangladesh is delivered by the government primary schools, private kindergartens and NGO schools. Besides, this schooling also includes the instructional programs of the mosques, temples, churches and pagodas presently being conducted by the Ministry of Religious Affairs, which seek to impart religious teachings with alphabetical knowledge and modern education with moral lessons.

Accurate number of kindergarten schools are not available in our country as this type of schools are not yet registered though Government has recently introduced new laws which has made compulsory for a kindergarten school to be registered under Ministry of Primary and Mass Education, though earlier Anyone can establish a school by only managing a trade license from the city corporation concerned.

There is no valid statistics about the number of kindergarten schools in Dhaka as well, however it is assumed that there are several thousands of such kindergarten schools are now operating in Dhaka without proper approval from proper government authority (The Daily Star, 2011). According to district statistics of Dhaka (BBS, 2011), there was 2328 kindergarten schools in Dhaka in 2011 which means that one kindergarten school is available for every 4 thousand population in Dhaka (Table 5). If we add the NGO schools with the kindergarten schools, pre-school educational facility is available for 3 thousand population on an average which is better than any other metropolitan city in Bangladesh.

Table 5: Pre-Primary Education Facilities (excluding pre-primary education facilities at Government Primary Schools) at Metropolitan Cities in Bangladesh

City	Kindergarten		NGO School		Total- Pre Primary Education	
	No	Thousand /Facility	No	Thou/Fac	Total	Thousand /Facility
Dhaka	2328	4	517	18	2845	3
Chittagong	571	5	51	51	622	4
Rajshahi	87	5	19	24	106	4
Khulna	66	11	53	14	119	6
Sylhet	77	6	47	10	124	4
Barisal	51	6	14	23	56	6
Total	**852**	**5**	**184**	**25**	**1036**	**4**

Source: District Statistics of BBS, 2011 (Compiled by Author)

According to the District Statistics of BBS, Chittagong city has 571 kindergarten school with average coverage of 5000 population per kindergarten school whereas it has 51 NGO School with population coverage of 51 thousand per school. At metropolitan city level, with the exception of Khulna city, all other cities have quite adequate number of kindergarten schools—i.e., one kindergarten school is fairly available for 5 thousand population. Besides pre-primary schools operated by NGO's are available for moderately 25 thousand population in metropolitan cities, which are mainly accessed by children belongs to lower income group of people. As a whole, pre-primary education facility is available for every 4 thousand population in major metropolitan cities in Bangladesh though for Khulna and Barisal City, this figure stands at 6 thousand per facility.

B. Primary School

i. Primary School Facility Standard in Foreign Countries

Time Saver Standard proposes an Elementary School of 12 – 14 acres having 800 students in USA for a population of 5000 with a service radius of ¼ - ½ mile. India proposes a primary school for 5 thousand population having one acre in size with 500 students whereas Hong Kong city recommends a primary school of 1.5 acre for 765 students with 30 classrooms (Table 6). Kuala Lumpur city of Malaysia suggests a primary school (3 acre) for a 10 thousand people whereas Putrajaya city proposes the same facility for 10,800 population having a size of 5 acre.

Table 6: Primary School Facility Standard in Foreign Countries

Country/ City	Population Coverage	Area in Acres	Other Standards
USA	Time Saver Standard (Elementary School)		
	5000 persons; 800 pupils	12-14 acres	Radius- ¼- ½ mile;
Washington		80 sq-ft per student	
Hong Kong	765 pupils	6200 sq-m	30 Classroom size
India (UDPFI)	5000	4000 sq-m	500 pupils
	Playfield Area	2000 sq-m (min 18m x 36 m)	
Bhutan	2500—6000	10,000 – 15,000 sq-m	350-600 pupils
South Africa	7000	Minimum 2.8 ha (including sports fields)	Radius 5 km; 960 Learners
	If sharing community sports fields – 1.4 ha/two primary schools, each of 1.4 ha and sharing sports ground of 2.0 ha – 4.8 ha		
Australia-City of Welland			
UAE-Abu Dhabi	Determined from the demographic analysis of the development; 660 students per school	24500 sq-m	17.66 sq-m per student;
City of London		Class sizes must not exceed 30 pupils	

Country/ City	Population Coverage	Area in Acres	Other Standards
Tanzania		1.5-4.5 ha	Neighbourhood Level
Kuala Lumpur	10,000	3 acre	0.30 acre/1000
Putrajaya	10,800	2 ha	35 student/class; 4 storey (max)

Source: Compiled by Author (Data Source: APA, 1965; Lancaster, 1990; Planning Department of Hong Kong, n. d.; Putrajaya Local Plan, 2002; City of London, 2009; Damphu Structure Plan, 2006; PPDC, 2008; Green, 2012; Magigi, W. and Majani, B. B. K. 2005)

ii. Primary School Facility Standard for Urban Areas in Bangladesh

DMDP proposes a standard of 1 acre for every 15,000 population for primary school in Dhaka city whereas Detail area plan for Dhaka suggests that schools in built up area may accommodate themselves within a minimum of 0.5 acres, which is a conservative approach otherwise that reflects the severe scarcity of land in Dhaka city. Khulna Master Plan of 2001 recommends one primary school (0.5-0.7 acre) for every 3,400 people and Rajshahi Master Plan of 2004 proposes for population coverage of 4,000 for every primary school covering an area of 1-1.5 acres, as shown in Table 7.

Table 7: Primary School Facility Standard for Urban Areas in Bangladesh

City/Country	Plan/Project	Population Coverage	Area in Acres
Dhaka	DMDP (1995-2015)	15,000	1
		Per shift 500 Students (Area With Playground)	
	DAP	*Schools in built up area may accommodate themselves within a minimum of 0.5 acres*	
Bangladesh	Non-government Primary (Bangla and English medium) School Registration Rules, 2011	Metropolitan Area	0.08 acre (8 decimal)
		Municipality Area	0.12 acre (12 decimal)
		Other Area	0.30 acre (30 decimal)
	Primary School with JSC and SSC		12.5 Katha (9000 sq-ft)
	Primary School with JSC, SSC and HSC		1.04 Bigha (15,000 sq-ft)
Khulna	KMDP-2001	3,400	0.5-0.7 acre
Rajshahi	RMDP-2004	4,000	Area: 1-1.5acre
Sylhet		5000	1
Barisal		7000	1
Rangpur		1500-5000	1-1.5
	PRLDR-2004	5000	0.6 (0.08 acre per 1000)
		10000	1

City/Country	Plan/Project	Population Coverage	Area in Acres
	Paurashava Plans of Nineties by UDD	5000	2
	Paurashava Plans of Nineties by LGED	5000	2
District	District Town Infrastructure Development Project (DTIDP)	2000	0.30
		Minimum no of students (from class 1 to 5): 150 Persons, Minimum land for each school (within Paurashava): 12 decimal, Distance between two primary school: 2 km	
Upazila	Upazila Town Infrastructure Development Project (UTIDP)	5000	2

Source: Analyzed by Author; (Data Source: BBS, 2011; Latest Development Plan, Structure Plan, Master Plan and Detail Area Plans of the relevant Cities; RAJUK, 1995; RAJUK, 2014; RDP, 2015; RMDP, 2004; RMP (Draft), 2014; DAP, 2010.)

On the other hand, DTIDP proposes for 0.30 acres of land for a primary school in support of 2,000 population with minimum 150 students per school. It also suggests that minimum land for each school (within Paurashava) should be 12 decimal whereas distance between two primary schools should be 2 km. It is quite apparent that these standards have made compromises with the requirement of playlot or playground for children within school premises.

Primary School Facilities at Metro Cities in Bangladesh

Primary education is delivered in cities of Bangladesh mainly through government primary school as well as registered and non-registered types of non-government schools. Primary School coverage in thousand population is 15 for Dhaka City, 10 for Chittagong City whereas it is quite lower for Rajshahi (7), Khulna (6) and Barisal (5) cities. According to District Data of 2011 from BBS, at metropolitan city level, government primary school is available for every 13 thousand people as shown in Table 8. On the other hand, if all types of primary schools are considered, 10 thousand people is served by a primary school, which is adequate according to the standard of DMDP but insufficient according to the standard of KMDP and RMDP.

Table 8: Primary School Facilities at Metro Cities in Bangladesh

City	Govt		Registered	Non-Registered	Total Primary School	
	No	Thou/Fac			No	Thou/Fac
Dhaka	399	22	87	86	572	15
Chittagong	179	14	48	36	263	10
Rajshahi	47	10	13	1	61	7
Khulna	77	10	30	23	130	6
Sylhet	37	13	0	0	37	13
Barisal	56	6	13	2	71	5
Total	353	13	91	60	1088	10

Source: Analyzed by Author (Data from District Data Statistics, 2011)

Primary School Facilities at Municipalities in Bangladesh

UTIDP recommends a primary school for every 5 thousand people whereas DTIDP suggests this facility for every 2 thousand people. Analysis of existing numbers of schools in municipalities shows that population coverage of primary school is 4 thousand per school on average for municipalities in Bangladesh, which seems to be quite adequate in number as per the present standard. Bhairob Paurashava has a coverage of 7 thousand per school whereas Bajitpur has a coverage of 2 thousand population for every school, as presented in Table 9.

Table 9: Primary School Facilities at Municipalities in Bangladesh

Name	**Govt**		**Private**	**Grand Total**	
Paurashava	**No**	**Thou/Fac**	**No**	**No**	**Thou/Fac**
Jhenaidah	14	8	11	25	4
Bhairob	15	8	3	18	7
Savar	9	33	22	31	5
Bajitpur	20	2	0	20	2
Daudkandi	8	6	3	11	4
Pirgonj	5	6	6	11	3
Kasba	7	6	7	14	3
Melandaha	6	5	2	8	4
Nageswari	10	6	0	12	5
Total	**77**	**5**	**29**	**139**	**4**

Source: Analyzed by Author (Data from District Data Statistics, 2011)

A Category Paurashava

Provisions for Educational Facilities in 'A' Category Paurashava

1.4 acre space per thousand population is presently allotted for educational facilities in Jhenaidah Paurashava which will be 1.6 acres in future if Master Plan is properly implemented. However, for Gopalgonj and Bhairob Paurashava, only 0.3 acre per thousand is allocated at present for educational use. Averagely 0.7 acre land per thousand people is currently set aside for educational facilities. However, it would be 0.9 acre per thousand if Master Plans of these Paurashavas are duly implemented, as presented in Table 10.

Table 10: Provisions for Educational Facilities in 'A' Category Paurashava

Name of Paurashava	Area in Acre		Standard (Acre/Thousand)	
	Existing	(Future— if proposal are implemented)	Present	Future
Jhenaidah	154	266	1.4	1.6
Gopalgonj	26	150[3]	0.3	1.1
Bhairob	31	37	0.3	0.2
Total	211	453	0.7	0.9

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

[Data Source: Master Plan for Jhenaidah Paurashava, 2013; Master Plan for Gopalgonj Paurashava, 2013; Master Plan for Bhairob (Draft) Paurashava, 2014.]

Area for Primary School in Proposed Master Plans of 'A Category Paurashava'

According to the Master Plans of A Category Municipalities, average size of the proposed primary schools is 1.21 acres (Table 11), which is a little bit smaller in size that is recommended (2 acre) in UTIDP standard.

Table 11: Proposed Primary School in Master Plans of 'A Category Paurashava'

Name	Proposed		
Paurashava	No	Acre	Acre/Fac
Jhenaidah	7	8.41	1.2
Bhairob	10	13.83	1.38
Savar	2	0.8	0.4
Total	19	23.04	1.21

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

B Category Paurashava

For the case of selected B Category Paurashavas, as revealed in Table 12, only 0.14 acre land per thousand people is allotted at present for educational facilities while 1.49 acres of land is averagely suggested for proposed primary school in these Municipalities.

Table 12: Provisions for Primary School Facility in B Category Paurashava

Name	Present Land Use in Education		Proposed Primary School			Future Land Use in Education	
Paurashava	**Acre**	**Acre/Thou**	**No**	**Acre**	**Acre/Facility**	**Acre**	**Acre/Thou**
Daudkandi	3.69	0.08	2	3.5	1.75	7.19	0.10
Bajitpur	5.59	0.16	2	1.4	0.7	6.99	0.16
Pirganj	5.94	0.20	10	16	1.6	21.94	0.56
Total	15.22	0.14	14	20.9	1.49	36.12	0.23

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

C Category Paurashava

Currently land use of 0.54 acres is appropriated for educational facilities per thousand population which is assumed to increase to 0.66 acres in future after implementation of Master Plans (Table 13). In the proposed Master Plans, 0.94 acre is allotted per primary school for C category Paurashavas and in future, 0.27 acre of land will be available for primary schools in these municipalities, as shown in Table 14.

Table 13: Area for Education Facility in C Category Paurashavas

Name	Present		Future	
Paurashava	**Acre**	**Acre/Thou**	**Acre**	**Acre/Thou**
Kasba	12.89	0.31	19.08	0.26
Melandaha	29	0.94	34	1.00
Nageswari	37	0.5	74	0.86
Total	78.89	0.54	127.08	0.66

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

Table 14: Primary School Facilities in C Category Paurashavas

Name	Present		Present		Proposed			Future	
Paurashava	**No**	**Thou/Fac**	**Acre**	**Acre/Thou**	**No**	**Acre**	**Acre/Fac**	**Acre**	**Acre/Thou**
Kasba				0.00	1	1.15		1.15	0.02
Melandaha	20	1.55	8.42	0.27				8.42	0.25
Nageswari			12.00	0.16	12	11.13	0.93	23.13	0.27
Total		1.50		0.19	13	12.28	0.94		0.27

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

Area of Primary School in Urban Areas of Bangladesh

Varying sizes of primary schools have been found in the cities in Bangladesh for both – Government and Private schools. It has been found that size of government operated primary schools drastically varies which reveals that no set of standard has been practiced in the development of these primary schools by concerned authorities. On the

other hand, for the cases of private schools, some are well sized with a playground facility for the students; while some are running with a building structure only, without play area or open spaces around and even some are operating in the few floors within a building.

Median size of government primary schools in urban areas in Bangladesh has been found to be 850 sq-m and average size is 1650 sq-m (Table 15). Only 30 percent government primary schools have playgrounds for the students while rests of the schools do not have adequate space for play.

Table 15: Size of Government Primary School in Urban Areas of Bangladesh

Size of Govt Primary School	Area - Sq.m	Acre
Median	875	0.20
Average or Mean	1650	0.40

Source: Analyzed by Author

Some government primary schools have an area above 1 acre, (e.g., Halishahar Housing Estate Govt Primary School of Chittagong – 1.6 acre; Port Primary School of Chittagong – 1.5 acre) and some schools have quite small area i.e., Nakhalpara Govt Primary School (3 katha), Dholaipar Govt primary school (5 katha) – however this study finds that area of the government primary school usually ranges from 0.6 to 1.0 Bigha at urban areas in Bangladesh.

Area of Proposed Primary Schools in Paurashava Master Plans

Analysis of Master Plans from different category of paurashavas reveals that average of proposed size of the primary schools in the Master Plans is 1.22 acre (Table 16), which will provide an opportunity for the primary schools to accommodate a playground in its school premise.

Table 16: Area of Proposed Primary Schools in Paurashava Master Plans

Category of Paurashava	No	Acre	Acre/Fac
A Cat	19	23.04	1.21
B Cat	14	20.9	1.49
C Cat	13	12.28	0.94
Total	**46**	**56.22**	**1.22**

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

Review of Primary Education Facility at Urban Areas in Bangladesh

Presently the number of primary school is fairly adequate according to the size of the population in the urban areas of Bangladesh. But the problem lies with the size of the educational institutions at primary level. Government Primary Schools are relatively better sized with some primary schools are found to be closer to 1 acre, however private schools are not proper sized with lack of open spaces around or lack of playground and play facilities for children. Absence of proper rules and regulations and lack of

monitoring by appropriate authorities are some of the reasons behind this. Proposed Master Plans attempted to suggest primary schools with space for playgrounds, thereby allocating minimum of one acre of land for primary schools. National Education Policy also asserts compulsion on provisioning playground in educational institutions. However, proposed Master Plans have fallen short of achieving the target of 2 acres per primary school as stated in UTIDP standard but staying quite above the target of DTIDP standard.

C. Secondary School

i. Secondary School Facility Standard in Foreign Countries

Time Saver Standard recommends two set of standards for USA regarding secondary school – junior high school of 18 – 20 acres for 10 – 20 thousand population and high school of 32 – 34 acres for 14 – 34 thousand population with a radius of ¾ - 1 mile. Hong Kong City recommends a high school of 1.75 acre at District level for 1200 students aged 12 – 17 (Table 17).

As it is observed in Table 17, India recommends a secondary school facility of 4 acres for 1000 students having a population of 7500 while South Africa suggests for 12 acres of space having a playfield for a population of 12.5 thousand. Abu Dhabi city of UAE proposes 6 acres of high school for a 500 students whereas Kuala Lumpur city of Malaysia goes for 5 acre space for every 20 thousand population.

Table 17: Secondary School Facility Standard in Foreign Countries

City/ Country	Population Coverage	Area in Acres	Standard
USA	Time Saver Standard		
Junior High School	10000-20000; 800-1600 students	Min 18-20 acres	Radius: 1/2 mile - 3/4 mile
High School	14000-34000; 1000-2600 students	Min 32-34 acres	Radius: 3/4 mile - 1 mile
City/ Country	**Population Coverage**	**Area in Acres**	**Standard**
Hong Kong	1200 students aged 12-17; (Class Size-40)	A 30-classroom school, operating 30 whole-day classes, requires a site of 6 950m^2	District Level
India	7500; 1000 students	16000 sq-m	
	Play Field Area	10000 (min 68m x 126 m)	
Bhutan	7500; 350—600 students	20000-30000 sq-m	Radius 5 km
South Africa	12500;p 1000 students (Class Size-40)		Radius 5 km
	Min 4.8 ha (Including Playfield); If sharing community sports field—2.6 ha		
Australia			
Abu Dhabi	500 students	23000 sq-m	

City/ Country	Population Coverage	Area in Acres	Standard
City of London		Class sizes must not exceed 30 pupils	
Tanzania		2.5—5 ha.	
Kuala Lumpur	20,000	5 acre	0.25 acre/1000
Putrajaya	17,500	3 ha	35 student/class; 4 storey (max)

Source: Compiled by Author (Data Source: APA, 1965; Lancaster, 1990; Planning Department of Hong Kong, n. d.; Putrajaya Local Plan, 2002; City of London, 2009; Damphu Structure Plan, 2006; PPDC, 2008; Green, 2012; Magigi, W. and Majani, B. B. K. 2005)

ii. Secondary School Facility Standard for Urban Areas in Bangladesh

Detailed Area Plan (2010) for Dhaka City recommended for 2 acres of land for secondary school per 20 thousand population though DMDP proposed a secondary school for every 23 thousand people (Table 18). Requirement of playground in a premise of secondary high school has been asserted in DMDP, however a reduced standard of 1 acre is proposed for high schools in built up areas.

Table 18: Secondary School Facility Standard for Urban Areas in Bangladesh

City/ Country	Plan/Project	Population Coverage	Area in Acres
Dhaka	DMDP (1995-2015)	23000	2
		Per shift 1000 Students (Area With Playground)	
	DAP, 2010	20000	2
		High Schools in built up area may accommodate themselves within a minimum of 1.0 acres	
Bangladesh	Non-government Primary (Bangla and English medium) School Registration Rules, 2011	Primary School with JSC and SSC	12.5 Katha (9000 sq-ft)
		Primary School with JSC, SSC and HSC	1.04 Bigha (15,000 sq-ft)
Rajshahi	RMDP-2004	6,000	2-3
Khulna	KMDP-2001	5,000	1.5-1.6
Sylhet	Sylhet Master Plan	8,000	2
Barisal	Barishal Master Plan	8,000	2
Rangpur	Rangpur Master Plan		
	High School up to Std. X / Madrasa up to Dakhil	5,000-10,000	1.5-2.5
	High School up to Std. XII / Madrasa up to Kamil	5,000-15,000	2-3
	PRLDR-2004	20,000	2
			(0.10 acre per 1000)

City/ Country	Plan/Project	Population Coverage	Area in Acres
Paurashava	Paurashava Plans of Nineties by UDD	20,000	5
Paurashava	Paurashava Plans of Nineties by LGED	20,000	5
District level Paurashava	DTIDP	No population standard	1
Upazila level Paurashava	UTIDP	20,000	5

Source: Analyzed by Author; (Data Source: District Statistics of BBS, 2011; Latest Development Plan, Structure Plan, Master Plan and Detail Area Plans of the relevant Cities; RAJUK, 1995; RAJUK, 2014; RDP, 2015; RMDP, 2004; RMP (Draft), 2014; DAP, 2010.)

Rajshahi and Khulna City have recommended for secondary schools for every six and five thousand population in their development plans, on the other hand Barisal and Sylhet city proposed for 2 acres of land for 8 thousand population. UTIDP recommends for a more generous standard of 5 acre of land for every 20 thousand population. Non-government Primary (Bangla and English medium) School Registration Rules, 2011 recommends for 12.5 katha of land for Primary School with provisions for JSC and SSC whereas it proposes for 1.04 Bigha land for school having primary education with provisions for JSC, SSC and HSC.

Secondary School Facilities and Population Coverage at Metro Cities in Bangladesh

Government High School is available for every 2.3 lakhs people in metropolitan cities whereas non-government secondary schools are more available in metro cities having secondary schools for every 15 thousand population (Table 19). In total, there is a secondary school for every 20 thousand population in metro cities in Bangladesh. Khulna and Barisal Cities are advanced cities in terms of secondary education facility coverage whereas Dhaka and Sylhet Cties have higher population coverage of secondary schools.

Table 19: Secondary School Facilities at Metro Cities in Bangladesh

City	Govt	Thou/Fac	Non Govt	Thou/Fac	Total	Thou/Fac
Dhaka					242	37
Chittagong	8	324	134	19	142	18
Rajshahi	5	90	41	11	46	10
Khulna	3	250	83	9	86	9
Sylhet	2	243	21	23	23	21
Barisal	2	164	37	9	39	8
Total	**20**	**230**	**316**	**15**	**561**	**20**

Source: Analyzed by Author (Data from District Data Statistics, 2011)

Secondary School Facilities at Municipalities in Bangladesh

UTIDP suggests a secondary school for every 20 thousand population in a municipality having 5 acres of land. Population coverage of secondary schools in the studied municipalities has been found 6 thousand on average. Pirgonj Paurashava has a secondary school for every 3 thousand population whereas Bhairob has a secondary school for 17 thousand people (Table 20). It is observed that C category municipalities has comparatively lower population coverage than the A and B Category Paurashavas. Therefore municipalities enjoy better population coverage of secondary schools than the divisional cities in Bangladesh as this study reveals.

Table 20: Secondary School Facilities at Municipalities in Bangladesh

Name of Paurashava	**Total**	**Thou/Fac**
Jhenaidah	15	7
Bhairob	7	17
Savar	34	5
Bajitpur	4	9
Pirgonj	11	3
Kasba	5	8
Melandaha	5	6
Nageswari	16	4
Total	97	6

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

Area of Secondary School

Secondary schools, frequently termed as 'High School', of varying sizes, like primary schools, have been observed in urban areas in Bangladesh. Government operated secondary schoolsare quite adequately sized with playground in most cases; whereas private high schools in cities have been found with and without playgrounds.

Median and average values of size as well as playground area of government operated or public secondary Schools in different cities in Bangladesh are given in the following table, which gives an understanding about the area of secondary schools in urban areas. Table 21 depicts that average size of public secondary schools is 1 acre in cities of Bangladesh having a playground of 0.3 – 0.5 acre on average.

Table 21: Size of Government Secondary School in Urban Areas of Bangladesh

Govt. Secondary School	Area - Sq.m	Acre	Playground (m2)	Acre
Median	3650	0.90	1300	0.32
Average	4037.5	1.00	2115	0.52

Source: Analyzed by Author

A Category Paurashava

Size of the schools, for the cases of 'A Category Municipalities' are not satisfactory, especially for the cases of the private schools. Many schools do not have any playgrounds of its own for their students. 2.09 acres per secondary school have been proposed in the proposed Master Plans in the A Category Paurashava, as shown in Table 22, which is higher than the DTIDP standard of 1 acre per school.

Table 22: Standard of Proposed Secondary School in Master Plan of 'A Category Paurashava'

Name	**Proposed**		
Paurashava	**No**	**Acre**	**Acre/Fac**
Jhenaidah	7	9.91	1.42
Gopalgonj	10	25.6	2.56
Total	17	36	2.09

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

B Category Paurashava

Presently 0.18 acre space per thousand population is used for secondary education facilities in B category Paurashavas whereas it will be increased to 0.24 acre per thousand if future proposals of Master Plans are implemented (Table 23). Master Plans of respective B Category Paurashavas have proposed secondary school facilities comprising average area of 2.5 acres.

Table 23: Provision for Secondary Education Facility at 'B Category Paurashava'

	Present		**Proposed**			**Future**	
Paurashava	**Acre**	**Acre/Thou**	**No**	**Acre**	**Acre/Fac**	**Acre**	**Acre/Thou**
Daudkandi	3.53	0.08	2	3	1.50	6.53	0.09
Bajitpur	10.76	0.31	2	4	2	14.76	0.33
Pirganj	5.83	0.19	3	10.50	3.5	16.33	0.42
Total	**20.12**	**0.18**	**7**	**17.5**	**2.5**	**37.62**	**0.24**

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

C Category Paurashava

0.16 acres of land per thousand population are presently allocated for Secondary schools in C category municipalities which will rise up to 0.34 acres if Master Plans are implemented in future (Table 24). 1.71 acres per primary school is proposed in the proposals for Master Plans of respective Paurashavas.

Table 24: Provision for Secondary Education Facility at 'C Category Paurashava'

Name	Present		Proposed			Future	
Paurashava	**Acre**	**Acre/Thou**	**No**	**Acre**	**Acre/Fac**	**Acre**	**Acre/Thou**
Melandaha	5.80	0.19	2	5	2.5	10.80	0.32
Nageswari	11.00	0.15	12	19	1.58	30.00	0.35
Total	16.80	0.16	14	24	1.71	40.80	0.34

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

Standard of Proposed Secondary Schools in the Paurashava Master Plans

UTIDP proposes for 5 acres of land for a secondary school whereas DTIDP recommends for only 1 acre of land. In the proposed Master Plans, Table 25 finds that municipalities has recommended for 2.04 acres of land for a secondary school on average which is quite below the proposed standard of UTIDP but above the standard set forth in DTIDP. Khulna Master Plan proposes 14 secondary schools with total area of 24 acres which reveals a standard of 1.67 acre or 5 bighas for every high school which is in consistent with the proposed standard in KMDP (2001).

Table 25: Standard of Proposed Secondary Schools in the Paurashava Master Plans

Category of Paurashava	No	Acre	Acre/Fac
A Cat	17	36	2.09
B Cat	7	17.5	2.5
C Cat	14	24	1.71
Total	**38**	**77.5**	**2.04**
Khulna Master Plan	**14**	**24**	**1.67**

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities and Metro City)

D. College Facility

i. College Facility Standard in Foreign Countries

India recommends for a college with 10 acre for a population of 1.25 lakhs having a playfield of 4.5 acre whereas Bhutan suggest for a college of 15 acre for every 350 – 600 students for a region. Hong Kong city suggest for a college facility having an area between 0.5 – 1.75 acre (Table 26). Abu Dhabi city suggests to consider the provision of college facility to be determined on a case by case basis.

Table 26: College Facility Standard in Foreign Countries

City/ Country	Category/Plan/Project (as appropriate)	Population Coverage	Area in Acres	Other Standards
India		1,25,000 (1000—1500 students)	40,000 sq-m	Playfield-18000 sq-m
		Residential including hostel Area (sq-m)	4,000 sq-m	

City/ Country	Category/Plan/Project (as appropriate)	Population Coverage	Area in Acres	Other Standards
Bhutan		1 per Region (350—600 students)	60,000 sq-m	Territorial Level
Hong Kong	Post-secondary College	No Set Standard; Site reservation between 2 000 m^2 to 7 000m^2		
South Africa	Large tertiary institutions that are not universities	4,00,000	1 ha	Access Distance- 20 km
Abu Dhabi		To be determined on a case-by-case basis		
City of London		there is not a standard of provision for post-16 education, however a core government target is to encourage more young people to stay in education until the age of 18		

Source: Compiled by Author (Data Source: APA, 1965; Lancaster, 1990; Planning Department of Hong Kong, n. d.; Putrajaya Local Plan, 2002; Damphu Structure Plan, 2006; City of London, 2009; PPDC, 2008; Green, 2012)

ii. College Facility Standard for Urban Areas in Bangladesh

Masters Plans of Dhaka, Rajshahi, Khulna and Barishal proposes a college for every 30 thousand population, however DTIDP and UTIDP recommended for a college per 15 and 20 thousand population respectively (Table 27). Rangpur Master Plan suggests for a college having 3 – 4 acres of land for a population ranging between 15 to 25 thousand, while PRLDR (2004) proposes 2 acres of land for every 25 thousand people in urban area. Significant variations has been found in the standard of size between UTIDP and DTIDP; as UTIDP suggests for 10 acres for a college facility whereas DTIDP recommends for only 2 acres for the same facility (Table 27).

Table 27: College Facility Standard for Urban Areas in Bangladesh

City	Plan/Project	Population Coverage	Area in Acres
Dhaka	DMDP (1995-2015)		
	DAP	30,000	2
Rajshahi	RMDP-2004	30,000	10
Khulna	KMDP-2001	36,000	10
Sylhet	Sylhet Master Plan	25,000	3
Barisal	Barishal Master Plan	30,000	open space equivalent to one football field
Rangpur	Rangpur Master Plan	15,000-25,000	3-4
		Home to Facility Distance (2-3 km)	
Dhaka	PRLDR-2004	25,000	2
Paurashava			
Paurashava	Paurashava Plans of Nineties by UDD	20,000	5

City	Plan/Project	Population Coverage	Area in Acres
Paurashava	Paurashava Plans of Nineties by LGED	20,000	5
City	**Plan/Project**	**Population Coverage**	**Area in Acres**
District level Paurashava	DTIDP	15,000	2
Upazila level Paurashava	UTIDP	20,000	10

Source: Analyzed by Author; (Data Source: District Statistics of BBS, 2011; Latest Development Plan, Structure Plan, Master Plan and Detail Area Plans of the relevant Cities; RAJUK, 1995; RAJUK, 2014; RDP, 2015; RMDP, 2004; RMP (Draft), 2014; DAP, 2010.)

College Facilities at Metro Cities in Bangladesh

From the District Data of 2011 from BBS, it is found that population coverage of a college in metro cities in Bangladesh is 38 thousand which is below the recommended standards of Master Plans. Average for College Coverage for Dhaka City is 70 thousand whereas it is 62 thousand for Chittagong city, 29 thousand for Khulna City and 15 thousand for Rajshahi city (Table 28). So big metro cities have lower level of coverage in terms of college facilities than the relatively lower sized metro cities in Bangladesh.

Table 28: Provisions for College Facilities at Metro Cities in Bangladesh

City	College & School (operating Jointly)	Govt		Non-Govt/Others	Total	Thou/Fac
		No	Thou/Fac			
Dhaka	64			64		70
Chittagong	13	8	324	21	42	62
Rajshahi	9	5	90	17	31	15
Khulna	7	7	107	12	26	29
Sylhet	4	3	162	8	15	32
Barisal	4	4	82	10	18	18
Total	37	27	171	68	290	38

Source: Analyzed by Author (Data from District Data Statistics, 2011)

College Facilities at Municipalities in Bangladesh

On the other hand, there is a college facility available for every 11 thousand population in studied municipalities in Bangladesh. A Category Paurashava like Jhenaidah and Savar enjoys population coverage of 9 and 11 thousand respectively whereas Pirgonj (B Cat) and Kasba (C Cat) have a coverage of 5 and 7 thousand correspondingly (Table 29). Therefore, in terms of college facility coverage, paurashavas have better facility coverage than the metro cities in Bangladesh.

Hence, there are some shortages of college facility in metro cities in Bangladesh according to the standard; however paurashavas generally have adequate number of

college facilities according to their population. So more college should be developed in those metro cities having adequate demand for college facilities.

Table 29: Provisions for College Facilities at Municipalities in Bangladesh

Paurashava	College			
Name	College & School *(operating Jointly)*	College	Total College	
			No	Thou/Fac
Jhenaidah	1	11	12	9
Bhairob	0	3	3	40
Savar			15	11
Bajitpur	1	2	3	12
Pirgonj	2	4	6	5
Kasba	4	2	6	7
Melandaha	1	2	3	10
Nageswari	0	4	4	16
Total	**9**	**28**	**52**	**11**

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities)

Area of College in Urban Areas of Bangladesh

Government operated colleges are relatively higher in sizes while private colleges are comparatively lower in sizes. Chittagong College has an area of 19.5 acres, RAJUK college in Dhaka possesses 4.5 acre whereas Govt K.C. College of Jhenaidah occupies 2.1 acres of land and Govt M.M. City College of Khulna has an area of 0.65 acres. Therefore significant variations are observed in terms of size of the colleges in Bangladesh; even for the government operated colleges in the country. In metro cities, some colleges are operating even with few floors of a building as no standard has been followed in the process of development and registration of theses colleges by appropriate authorities. Median size of college in urban areas of Bangladesh has been found[3] 1.625 acre while the average size is 2.3 acre, as revealed in Table 30.

Table 30: Size of College Facility in Urban Areas of Bangladesh

College Facility	Area - Sq.m	Acre
Median	6500	1.625
Average	9200	2.3

Source: Analyzed by Author

[3]Area of some randomly selected Colleges in various urban areas in Bangladesh is provided in the Appendix 24 which shows the relative variations in the size of those institutions in different urban areas in Bangladesh.

Paurashava Master Plan Proposals Regarding College Facility

DTIDP proposes a size of two acre for a college facility whereas UTIDP recommends for 10 acre areas for a college. Master Plans of B category municipalities propose 2.33 acre per college while C category Paurashavas propose 3.83 acre for every college on average (Table 31). Analyzed Master Plans of A category Paurashava has not proposed any college in their respective plans. Aggregately 3.14 acre space is proposed per college in the municipal plans in Bangladesh which is above the DTIDP standard of 2 acre though it is quite lower than the standard of 10 acre set out in UTIDP. Khulna Master Plan proposes 10 acre of land for a proposed college in its Master Plan of 2001 (Table 31).

Table 31: Provisions for College Facility at Paurashavas in Bangladesh

Name	Present		Proposed			Future	
Paurashava (B Category)	**Acre**	**Acre/Thou**	**No**	**Acre**	**Acre/Fac**	**Acre**	**Acre/Thou**
Daudkandi	3.55	0.08	2	6	3	9.55	0.13
Bajitpur	10.89	0.31	2	4	2	14.89	0.33
Pirganj	9.29	0.31	2	4	2	13.29	0.34
Total	23.73	0.21	6	14	2.33	37.73	0.24
Name	**Present**		**Proposed**			**Future**	
Paurashava (C Category)	**Acre**	**Acre/Thou**	**No**	**Acre**	**Acre/Fac**	**Acre**	**Acre/Thou**
Kasba		0				0	0
Melandaha	8.5	0.27	2	9.5	4.75	18	0.53
Nageswari	7.2	0.1	5	17.3	3.46	24.5	0.28
Total	15.7	0.15	7	26.8	3.83	42.5	0.35
Total(Proposed)			**13**	**40.8**	**3.14**		

Source: Analyzed by Author (Data from Master Plans of Respective Municipalities).

[Data Source: Master Plan[4] for Daudkandi Paurashava, 2013; Master Plan for Pirganj Paurashava, 2013; Master Plan for Nageshwari Paurashava, 2013; Master Plan (Draft) for Kasba Paurashava, 2014; Master Plan (Draft) for Melandaha Paurashava, 2012.]

Findings on Various Types Educational Facilities in the Urban Areas of Bangladesh

A. Pre Primary Education Facility

At present, pre-primary education in Bangladesh is delivered by public primary schools, private kindergartens and NGO schools. Besides, this schooling also includes the instructional programs of the mosques, temples, churches and pagodas presently being

[4] Master Plans for various Paurashavas has been prepared by LGED. Theses master plans are accessible at https://oldweb.lged.gov.bd/UploadedDocument/UnitPublication/10/

conducted by the Ministry of Religious Affairs, which seek to impart religious teachings with alphabetical knowledge and modern education with moral lessons.

Accurate number of kindergarten schools are not available in our country as this type of schools are not yet registered though Government has recently introduced new laws which has made compulsory for a kindergarten school to be registered under Ministry of Primary and Mass Education, though earlier, anyone can establish a school by only managing a trade license from the concerned city corporation or municipality.

At metropolitan city level, with the exception of Khulna City, all other cities have quite adequate number of kindergarten schools—i.e., one kindergarten school is fairly available for 5 thousand population. Besides pre-primary schools operated by NGO's are available for moderately 25 thousand population in metropolitan cities, which are mainly accessed by children belongs to lower income group of people. As a whole, pre-primary education facility is available for every 4 thousand population in major metropolitan cities in Bangladesh though for Khulna and Barisal Cities, this figure stands at 6 thousand per facility.

Currently, in urban areas in Bangladesh, especially in metropolitan cities, outdoor play areas are rarely provided for children of pre-schools, though many schools attempts to provide indoor play spaces with playing equipment's however in most cases these provisions are quite inadequate. However, importance of outdoor play spaces cannot be ignored and therefore urban planners, architects as well as sociologists stressed for ensuring outdoor play space and playlot for proper physical and mental development of child. Therefore, it is recommended that 3-4 kathas of outdoor play space should be preserved for a nursery school and minimum size of the nursery school should be 0.2 acre. This study suggests that, it is preferable to run the pre-primary schools for two shifts in urban areas for maximizing the utility of these institutions and prioritizing the standard size of these schools with adequate play space and outdoor play areas; instead of provisioning two separate schools by compromising the size of the schools.

B. Primary Education Facility

Varying sizes of primary schools have been found in the cities in Bangladesh for both – Government and Private schools. It has been found that size of government operated primary schools drastically varies which reveals that no set of standard has been practiced in the process of development of these primary schools by concerned authorities. On the other hand, for the cases of private schools, some are well sized with a playground facility for the students; while some are running with a building structure only, without play area or open spaces around and even some are operating in the few floors within a building (Khan, 2016.

This study finds that, presently the number of primary school is fairly adequate according to the size of the population in the urban areas of Bangladesh. But the problem lies with the size of the educational institutions at primary level. Government Primary Schools are relatively better sized, however private schools are not proper sized with lack of open spaces around or lack of playground and play facilities for children. Absence of proper rules and regulations and lack of monitoring by appropriate authorities are some of the reasons behind improper sizes of private schools. Proposed master plans of various municipalities attempted to suggest primary schools with space for playgrounds, thereby allocating minimum of one acre of land for primary schools.

Considering the population density and land scarcity of metro cities in Bangladesh, primary schools can be run in two shifts which would allow maximum utilization of educational infrastructures. Hence, one primary school can serve a population of 10,000 in metro cities, however where the population density is low and land is quite available – as for the case of some municipalities, population threshold of 5000 can be set as standard for primary school.

C. Secondary Education Facility

Secondary schools, frequently termed as 'High School', of varying sizes, like primary schools, have been observed in urban areas in Bangladesh. Government operated secondary schools are quite adequately sized with playground in most cases; whereas private high schools in cities have been found with and without playgrounds. This study finds that average size of Government Secondary Schools is 1 acre in cities of Bangladesh having a playground of 0.3 – 0.5 acre on average.

Detail Area Plan for Dhaka City (2010) recommended for 2 acres of land for secondary school per 20 thousand population though DMDP proposed a secondary school for every 23 thousand people. Requirement of playground in a premise of secondary high school has been asserted in DMDP, however a reduced standard of 1 acre is proposed for high schools in built up areas.

UTIDP proposes for 5 acre of land for a secondary school whereas DTIDP recommends for only 1 acre of land. In the proposed master plans, it has been found that municipalities has recommended for 2.04 acres of land for a secondary school on average which is quite below the proposed standard of UTIDP but above the standard set forth in DTIDP. Khulna master plan proposes 14 secondary schools with total area of 24 acres which reveals a standard of 1.67 acres or 5 bighas for every high school which is in consistent with the proposed standard in KMDP (2001).

Considering minimum 1 acre of land reserved for playground, as suggested by this study, recommended standard for secondary school in urban areas is 1.5 – 2.5 acres, however 2 acres may be ideal in size though it may be relaxed down to 1.5 acres for denser parts of metropolitan cities.

D. College Education Facility

Currently there are three types of colleges at urban areas in Bangladesh namely – 'Intermediate or Higher Secondary College' providing two years higher secondary education, 'Degree College' providing three years bachelor education and 'Honors Degree College' providing four years honors education as well as masters level education to the students under the jurisdiction of 'National University'. Various master plans have recommended different standards for college facility in urban areas in Bangladesh though those standards did not mention the type or category of college such as intermediate, Degree or Honors College. DMDP for Dhaka and RMDP for Rajshahi city have recommended for a college facility for 30,000 population whereas Master Plan for Khulna city proposes a college for 36,000 and Sylhet for 25,000 population.

From the District Data of 2011 from BBS, it is found that population coverage of a college in metro cities in Bangladesh is 38 thousand which is below the recommended standards of master plans. Big metro cities have lower level of coverage in terms of college facilities than the relatively lower sized metro cities in Bangladesh.

As per this study, there are some shortages of college facility in metro cities in Bangladesh according to the standard, but paurashavas generally have adequate number of college facilities according to their population. So more college should be developed in those metro cities where there is adequate demand for college facilities. Public colleges are relatively higher in sizes while private colleges are comparatively lower in sizes. Significant variations have been observed in terms of size of the colleges in Bangladesh, even for the public colleges in the country. In metro cities, some colleges are being operated with few floors of a building as no standard has been followed in the process of development and registration of theses colleges by appropriate authorities.

Considering the present context of urban areas in Bangladesh, land area of 2-3 acres is recommended for 'Intermediate College' including a playground of minimum 1 acre and land area of 3-4 acres is proposed for Degree and Honors College with a playground of 1.5 acres.

Table 32: Recommended Standards for Educational Facilities for Urban Areas in Bangladesh

Types	Type of Urban Area	Population Threshold	User Threshold	Area	Service Radius	Age Group (User Percent)/ Other Standard
Pre Primary Education		5000; (10,000 for two shift)	125 Students (250 for two shifts)	0.2 acre-0.4 acre (800-1600 sq-m)	0.5 -1 km	Outdoor Play Area: 3 – 4 Katha
	(Indoor play area: 1.5 sq.m per child); (Outdoor play area: 2 sq.m per child); Class Size: 30; Assumption: 50 percent enrollment					
Primary School		5000 (450 Students); 10,000 (for two shift)	450 Students (900 students for two shifts	1 – 1.5 acre (playfield 0.5 acre)	1 – 1.5 km	Playground: 0.5 Acre Class Size: 40-50
Secondary School		10,000 (20,000 for double shifts)	800 – 1000 students	1.5 – 2.5	1 – 2 km	Playground 1 – 1.5 acre
College						
Only Intermediate		30,000 – 35,000	800 – 1000 students	2 – 3	2 – 3 km	Playground of 1 acre
SSC and Intermediate		25,000 – 30,000	1000 – 1200 students	2 – 3	2 – 3 km	Playground of 1 acre
Degree and Honors College		30,000 – 35,000	1000 – 1500 students	3 – 4	2 – 3 km	Playground of 1.5 acre

Source: Recommended by the Author based on this study.

Concluding Remarks and Way Forward

National Education Policy of 2010 is the guideline for education in Bangladesh which recommended various policies for different level of education in Bangladesh. NEP recognizes various types of education in its policy document which is supposed to act as a guideline for education planning for Bangladesh. However, no planning standard has been proposed in NEP—either for number of facilities against population size or in support of area per facility type.

NEP acknowledges that primary education will be universal, compulsory, free and of uniform quality for all. So, equal opportunities should be created to ensure access of all sections of children to primary education irrespective of ethnicity, socio-economic conditions, physical or mental challenges and geographical differences. In addition every ward of urban area should have a government owned primary school as primary education is a basic right for every citizen and new primary schools should be developed properly with adequate space for playground.

Steps should be taken to eradicate the existing discrimination in terms of facilities in different types of primary education institutions (community schools, non-registered and registered schools, government schools, kindergartens and urban/rural schools). All such institutions including the kindergartens, english medium schools and all types of madrasahs should have to register themselves with concerned authorities in compliance with set rules.

This study has suggested standards for education facilities for urban areas in Bangladesh which could be a guideline for planners and policy makers while planning for various cities in Bangladesh. Respective government agencies and urban local bodies should develop their education facilities by following proper planning standards in respective urban areas to ensure proper education and wellbeing of people.

(Acknowledgement: This research has been funded by Ministry of Science and Information & Communication Technology' of Government of Bangladesh under Bangabandhu Fellowship of Science and ICT)

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