# Assessing the Consequential Role of Infrastructural Facilities in Academic Performance of Students in Pakistan

By

## <sup>1</sup>Arab Naz, <sup>2</sup>Waseem Khan, <sup>3</sup>Umar Daraz, <sup>4</sup>Hafeez-ur-Rehman, <sup>5</sup>Muhammad Hussain and <sup>6</sup>Ibrahim and <sup>7</sup>Hamid Alam

<sup>1</sup>Chairman Department of Sociology/Social Work, University of Malakand *Khyber Pakhtunkhwa* Pakistan

<sup>2</sup>Lecturer and PhD scholar, Department of Sociology and Social Work, University of Malakand *Khyber Pakhtunkhwa* Pakistan

<sup>3</sup>Lecturer and PhD scholar, Department of Sociology and Social Work, University of Malakand *Khyber Pakhtunkhwa* Pakistan

<sup>4</sup>Professor and Chairman Department of Anthropology, QAU Islamabad. Pakistan

<sup>5</sup>Lecturer and M.Phil scholar, Department of Sociology and Social Work, University of Malakand *Khyber Pakhtunkhwa* Pakistan

<sup>6</sup>Lecturer, Department of Sociology and Social Work, University of Malakand *Khyber Pakhtunkhwa* Pakistan

<sup>7</sup>Lecturer and M.Phil Scholar, Department of Sociology and Social Work, University of Malakand *Khyber Pakhtunkhwa* Pakistan

#### **Abstract**

Physical infrastructure facilities are the compulsory components of any educational institution and are directly associated with better performance of students not only in academics but also in co-curricular activities. The current study has been undertaken to investigate students' academic performance, behavioral components' development and teachers'-students' relations in Pakhtun society of Malakand division Khyber Pakhtunkhwa Pakistan. The study has been approached through qualitative and quantitative design where the data is obtained from secondary sources like books, journals, magazines, reports and internet sources. Besides, the study has been framed in theoretical meta-analysis stance and an extensive work of economists that focuses on the efficiency of education measured through different inputs, building and class size, quality of physical facilities, students-teachers relation to educational outputs, such as test scores, obtained grades, class participation and social and moral development of students (Hanushek, 1999); Hoxby, 2000; Johnson, 2000; Krueger and Whitmore, 2000). For empirical analysis, data has been colleted from 120 samples of two boys' government high schools applying purposive sampling technique and keeping accessibility to these schools in context. The collected information was finally classified through a computer based program and presented in tables along-with observations. The study shows that there is a positive relationship between physical infrastructural facilities and student's academic performance and personality development.

Keywords: Physical, Infrastructural, School Size, Academic, Personality, Behavior, Development

## 1. Background of the Study:

Physical infrastructure facilities (including school buildings, class rooms etc) are the compulsory components of any educational institution and research have proved that student's performance and academic achievements in tests scores etc are correlated with better building quality, newer school buildings, proper lighting and thermal comfort and air quality along-with advanced laboratories and libraries (McGuffey's, 1982, Earthman and Lemasters, 1998). Plumley (1978) and Chan (1979) have assessed students studying in modernized or new buildings and concluded that the students of modern schools scored consistently higher grade across a range of standardized tests as compared to students of non-modernized schools.

New and facilitated buildings provide greater opportunity to students in their academic progress, grade up-gradation and other personality traits. Studies show that students in newer buildings outperformed students in older ones and posted better records for health, attendance, discipline (Bowers and Burkett, 1987) and are predominantly associated with building facilities of modern schools (Phillips, 1997 and Jago and Tanner, 1999). Besides, provision of physical facilities to students school design, mapping and topography play a vital role in student's academic achievement and personality development that result in the enhancement of basic skills (Andersen, 1999). Similar prospects have been observed by Lewis (2000)

from a sample of 139 schools in Milwaukee, which was tested across modern facilities to judge the effects of such qualities over students learning where the study found major impacts in this regard. Earthman et. al (1995) had made criteria that included factors such as structural differences and open space as indicators of quality that directly have impacts upon education while Coopers (2001) argues that capital investment to students' academic achievement and other outcomes including teacher motivation, school leadership, and students' time spent on learning are more associated with comfortable physical environment in schools.

Studies show that in many parts of the world, schools have grown larger and well-facilitated with modern teaching equipments (including labs, libraries, playgrounds, washrooms and flourished furniture) which results in better academic performance, however, there are schools where thousands of students are accommodated which leads to mismanagement (Henderson and Raywid 1994). Larger or smaller the school size, it has indeed both positive and negative impacts upon the learner and to Howley, Strange, and Bickel (1999) the smaller and larger schools have a variable role in achievement give rise to different policies and to Cotton (1996) small-school benefits are achieved in the 300 to 400-students range for elementary schools and less than 1,000 students for high schools. Further, awareness has been created regarding the arrangements to create more intimate learning places, which are shown from a bunch of review that linking the association of smaller schools size to higher students' academic achievement and performance (Cotton, 2001). Besides, some thinkers link size of a school as an "ecological environment" to the behavior of individual students (Barker and Gump, 1964), where the large school size, their interior wideness and big hall produce signs of power and rightness and vise-versa.

Similarly, Wasley et al. (2000) is of the view that positive outcomes are associated to small size of the school because it improves education through creating small and intimate learning communities, which encourage students' linkage, reduce isolation and discrepancies in the achievement, encourage teachers to use their intelligence and skills. In support, Schneider et al, (2000) and Nathan and Febey (2001) add that small schools often encourage parental involvement, which benefits students and the entire community and such schools are regarded as smaller but safer, saner, and successful in providing education. School size encompasses a variety of advantages and disadvantages in the course of students' dropout and behavior as Raywid (1999) favors small size of the schools in the sense that they make more rapid progress towards graduation, students' satisfaction to behave better where the dropout ratio is minimal as compared to larger schools. In addition, to the aforementioned advantages of small size schools Fowler and Walberg (1991) found that school size was the best predictor of higher test scores even considering widely varying socio-economic factors while small school size are directly associated with higher performance and students' outcomes (Lee and Smith, 1997 and Keller, 2000).

The effectiveness of school size in desirable outcomes not only in students' educational spheres but at the same amount it affects their socio-psychological aspects of personality development is considered as highly lucrative. Small size schools can reduce violence, aggression and disruptive behavior among students particularly students of low socio-economic status, that has been elaborated from the similar detailed studies of Gregory (1992), Stockard and Mayberry (1992) and Kershaw and Blank (1993) made in this context. Small schools can improve a wide range of students' attitudes and behavior that further reduce the waves of anonymity and isolation, which students sometimes experience in such type of learning environments and they may also increase the sense of oneness and belongingness, create "we" feeling and provocation of unity (Barker and Gump, 1964). Besides, studies conclude that apart from various multidimensional factors hampering students' participation in school activities, their satisfaction, attendance, and feeling of belonging, the role of large size of school is dominant (Fowler and Walberg, 1991 and Stockard and Mayberry 1992). On the contrary, studies show that smaller schools have effective role in reducing drop-out, increase in students and teachers attendance, producing higher graduation ratio, mild teacher attitude and higher cooperation, promotion of better relations with administration, and further enhance positive attitude towards teachings as compared to larger schools (Toenjes 1989, Pittman

and Haughwout 1987, Stockard and Mayberry 1992, Fowler 1995, Howley 1994, Farber 1998, Hord 1997, Gottfredson 1985, Stockard and Mayberry 1992, Lee and Loeb, 2000).

For academic performance and personality development of students' physical facilities along-with proper size of class room is very much important. Classroom, either with large or small size has its own benefits to enhance the academic performance of students. Besides, school buildings, class rooms' availability and its size also remain focus of academicians and researchers. Class room size does affect the overall performance of students despite the fact whether its size remain small or large, which is a debatable issue among different scholarships that is treated as a variable. It is widely believed that a trend towards preference for smaller classes is increasing for quality education and being codified in law; countries spend billions of amounts to reduce number of students to 20 or fewer in a class per-teacher (National Association of Elementary School Principals, 2000). The discussion over class size also reflects its technicality and thus the phenomenon requires in-depth analysis for better understanding. However, if class is considered as a facility in upbringing students' academic performance; one of the arguments is against the size of the class, which notes that educational inputs such as class size are not associated with higher performance (Hanushek, 1999). Similarly, researchers using a range of data have found that reducing class size has no effect on educational outcomes as Hoxby (2000), using naturally occurring variation in class sizes in a set of 649 elementary schools, finds that class size has no effect on student's achievement. An analysis of the relationship between class size and student achievement, Johnson (2000) finds no effect of class size on 1998 NAEP reading scores, other things being equal while Mosteller (1995) and Slavin (1989) find effects only for very large declines in class size.

However, with the above stated arguments; the leading supportive figure in class size remains Ferguson (1991) whose study concludes that a significant relationship among teacher quality, class size, and student achievement exists. Same is the case with other researchers whose studies find that class size affects test scores of the students and educational performance (Ferguson 1991, Folger and Breda 1989, Ferguson and Ladd 1996). The argument that buildings quality, size of schools, class room and class rooms' size and its impacts upon students' academic performance and achievement clarifies that there is no such superior position to large schools, large class rooms as compared to small schools in their academic progress and other achievements.

#### Statement of the problem

Education is among the global miseries that predominantly includes lack of facilitation, provision of quality education and educational development while such situation is far formidable in the third world particularly Pakistan where education is one of the biggest challenges to nation since independence (Naz et al, 2011). Census Report (1998) show improvement in the overall literacy rate with a little gender based variation such as 56.5% and 32.6% for males and females respectively. In this regard various plans have been designed to upgrade the standard of education in the country where most of them led to failure while achieving the desired goals. Pakistan is also a signatory of the millennium development goals (MDG, 2015), and has to achieve the desired objectives as stated in the plan till 2015. Most of the plans failed due to non-availability of funds, lack of infrastructural, physical and strategic facilities and more importantly, the non-availability of local experts in the field of education. Besides, the imported policies and non utilization of local resources had adverse impacts on educational sector.

The base and foundation for development of education lies in primary education that is a hierarchy of educational ladder. However, in Pakistan, it is amazing that this sector has mostly been remained vulnerable due to the scanty physical and instructional facilities. No proper attention was paid to provide firm foundation to primary level of education along with physical facilities and thus the sector was restricted to papers. A gradual increase has been observed in the education throughout history and the available statistics show that the literacy ratio has been increased since independence till now (Naz et. al, 2011). Majority of the youth spend time in school building confronting teachers, room conditions, black boards, air pressure and lightings. The average age of schools remain at the lowest with respect to physical and instructional deficiencies for students. Facing challenges of an aging building, low standard

of rooms atmosphere, lighting system, acoustics, furniture's, sanitation and even playground, a shift in students' enrollment and increasing students' drop-out with lowering students' performance in academics and personality development has been resultant since few decades.

This research study is an attempt to analyze and compare the performance of students while getting education in small size and large size schools. The study emphasizes the better performance of students that is a question for planners and designers as they want to multiply opportunities and enhance academic outcomes by creating better learning environments. The logic behind the compelling forces is the performance of students at high level in schools having sub-standard infrastructure. The fact is evident that clean, quiet, safe, comfortable, and healthy environments are the important components of successful teaching and learning.

#### Objectives of the study

- 1. To know about the students' perception regarding school size and their academic performance
- 2. To sort out the role of physical facilities in students' behavioral development
- 3. To investigate students' personality development in the light of infrastructural facilities

#### Hypotheses of the study

- 1. Better academic performance is directly associated with large school and class room size
- Availability of transportation, recreational and accommodation facilities elegantly develop students' behaviors
- 3. Presence of comfortable environment, class participation and co-curricular activities bring lucrative changes in students' personality

## 2. Material and Methods

The current study looks into the role of school buildings, class rooms, class room size and their impacts on student's academic performance in Pakistan. The research emphasizes over the physical and infrastructural facilities that play a lucrative role in students' attraction towards schools. In addition, such facilities are further urged as motivational factors in relegating students' ambiguities and doubts regarding schools. It is further stressed that these facilities augment students' behavioral aspects as well as bring the embellished alterations in their personalities.

The current study has been undertaken to investigate students' academic performance, behavioral components' development and teachers'-students' relations in *Pakhtun* society of *Malakand* division *Khyber Pakhtunkhwa* Pakistan. The study has been approached through qualitative and quantitative design where the data is obtained from secondary sources like books, journals, magazines, reports and internet sources. The information has thus been utilized to develop a framework applicable for third world education system in general and Pakistan in particular. Besides, the study has been framed in theoretical meta-analysis stance and an extensive work of economists that focuses on the efficiency of education measured through different inputs, building and class size, quality of physical facilities, students-teachers relation to educational outputs, such as test scores, obtained grades, class participation and performance and social and moral development of students (Hanushek, 1999); Hoxby, 2000; Johnson, 2000; Krueger and Whitmore, 2000).

For empirical data analyses on students educational and behavioral performance and relation with teachers, data has been colleted from two boys' government high schools namely Government High School Number-03 (GHS-3), and Government High School Number-1 (GHS-1) situated in *Thana* (a town in *Malakand* division; having educational ratio of about 95%) applying purposive sampling technique and keeping accessibility to these schools in context. The total population of these schools is about 2345 students (obtained from school records). A total number of 120 students of grade nine and grade ten were selected equally from both the schools i.e. 60 from each school randomly.

Data collection procedure was completed in nearly three months duration and a survey was conducted in different intervals applying different tests to judge every factor separately. These procedures included conduction of tests for score testing (ST) in different subjects (on pre-planned and ready made papers) in class hours. Besides, writing skills (WS) and behavioral judgment test (BJT) in different directions of students behaviors were planned through observation, class participation, group discussion, presentation, teacher evaluation, relation with fellow beings and co-curricular activities. Besides, students-teachers-relations (STR) information were obtained through a predetermined interview schedule having preplanned questions with given options.

The collected information was finally classified using excel sheet in a computer based program. The data was coded with the specific observations, distributed into frequencies and presented in a tabular form along-with graphs analyzing the various dimensions of the study.

## 3. Results

The empirical data that is collected during field survey and in a face to face communication with the respondents is statistically analyzed and reported in the technical research manner in the following paragraphs.

#### Perception Regarding School Size and Academic Performance

Humans usually tend to solve the social problems through the utility and formation of coherent representation or model of the world to perceive with the demonstration of raw sensations that direct their actions (Smith et al, 2003). Students' perception in context has been demonstrated regarding school size and academic performance. The data explicitly shows the various factors, which are related to the students' perception and its impacts upon their academic performance and career. The statistical enumeration explicates that class participation and increase in attendance level of the students improve the academic performance of the students to a greater extent as the larger portion of data falls in the category of acceptance to the related variable.

Table-1: Students Perception Regarding School Size and Academic Performance (Cross Tabulation, Sample Size, n=200)

|                                   | Extent of Performance |                   |
|-----------------------------------|-----------------------|-------------------|
| Areas of Performance/Achievements | To Some Extent        | To Greater Extent |
| Class Participation               | 23%                   | 77%               |
| Increase in Attendance            | 17%                   | 83%               |
| Decrease in Dropout               | 14%                   | 86%               |
| Students' Confidence              | 17%                   | 83%               |
| Removal of Fear and Hesitation    | 11%                   | 89%               |
| Learning Capacity                 | 13%                   | 87%               |
| Better Results                    | 15%                   | 85%               |
| Students' Creativity              | 17%                   | 87%               |
| Creation of Awareness             | 15%                   | 85%               |
| Superiority Complex               | 21%                   | 79%               |

 $(P=.000^{**}<.05$  there is highly significant relationship between students perception regarding school size and academic performance, ( $\chi$ 2 = 76.93, D.f. =9)

Further, the empirical data reflects that students' perception in regard to school size and academic performance is attractive and supported the information to the extent that there is a promising decrease in

the drop-out level of students and further enhances students' confidence level to a major extent. Besides, the information from the field data expounds that school size and the availability of physical facilities remove fear and hesitation among students during their class participation and demonstration while it has been noted that such facilities also increase the learning capacity of the students. Similarly the data analyzed in the table clearly shows that better results, students' creativity, awareness and superiority complex are directly associated with school size and physical or infrastructural facilities (see Table-1).

Resultantly, the students' perception regarding school size has close association and relation with academic performance and career development. The chi-square test further authenticates the results like  $(P=.000^{**} < .05)$  that shows highly significant relationship between students' perception regarding school size and academic performance, ( $\chi 2 = 76.93$ , D.f. =9).

Correlation of Students' Perception Regarding School Size and Academic Performance

|                  |                 | Academic    | Students Perception   |
|------------------|-----------------|-------------|-----------------------|
|                  |                 | Performance | Regarding School Size |
| Academic         | Pearson         | 1           | 0.932**               |
| Performance      | Correlation     |             |                       |
|                  | Sig. (2-tailed) |             | .000                  |
|                  | N               | 200         | 200                   |
| Students         | Pearson         | .932**      | 1                     |
| Perception       | Correlation     |             |                       |
| Regarding School | Sig. (2-tailed) | .000        |                       |
| Size             | N               | 200         | 200                   |

(\*\*Correlation is highly significant at the 0.01 level (2-tailed), r (200) = $0.932^{**}$ ; p<.01. r<sup>2</sup>=0.93) (Since 86% of the variance is shared, the association is obviously a strong one)

The correlation further validates the result such as (\*\*Correlation is highly significant at the 0.01 level (2-tailed),  $r(200) = 0.932^{**}$ ; p<.01.  $r^2 = 0.93$ , since 82% of the variance is shared, the association is obviously a strong one). The numerical value of correlation shows a positive relationship between students' perception regarding school size and academic performance.

## Physical Facilities and Students Behavioral Development

Behavior can be regarded as any action of an organism that changes its relationship to its environment and provides output from organism to the environment including the range of actions and mannerism by organisms, systems or individuals (Dusenbery, 2009). Similarly, schools as the systems include an environment and thus shape the behavior through the outputs in the form of learning and modification in mannerism. The experiential information of this research illustrates the relation between physical facilities and students behavioral development in the course of learning the curricula and manners. The field information expounds that physical facilities embellish students' behavioral development. The data palpably shows that physical facilities for the students in the academic institutions reduce depression and pessimism and increase self esteem to a greater extent, which indirectly influences and enhances students' behavioral capacity. The statistical interpretation demonstrates that availability of physical facilities decreases apprehension, anxiety and increase students' confidence to a greater level that improves students' output to the instructional environment. Further, the empirical data reflects that physical facilities bring improvement in students' behavioral elegance and tends to abdicate the rigidity and frustration through creation of flexibility for absorption; love and affection to a high possible extent (see Table-1).

Table-2: Physical Facilities and Students Behavioral Development (Cross Tabulation, Sample Size, n=200)

|  | <b>Extent of Behavioral Development</b> |                   |
|--|---|-------------------|
| Areas of Students Behavioral Development | To Some Extent                          | To Greater Extent |
| Reduction of Depression                  | 11%                                     | 89%               |
| Increase in Self-Esteem                  | 13%                                     | 87%               |
| Decrease in Pessimism                    | 15%                                     | 85%               |
| Decrease in Apprehension                 | 17%                                     | 83%               |
| Increase in Confidence Level             | 11%                                     | 89%               |
| Decrease in Anxiety                      | 13%                                     | 87%               |
| Decrease in Aggression                   | 10%                                     | 90%               |
| Decrease in Hooliganism                  | 19%                                     | 81%               |
| Increase in Social Relations             | 14%                                     | 86%               |
| Decrease in Tension                      | 12%                                     | 88%               |

 $(P=.000^{**}<.05$  there is highly significant relationship between Physical Facilities and Students Behavioral Development, ( $\chi 2 = 56.89$ , D.f. =9)

With reference to the hypothetical statements assumed for the research purpose; availability of transportation, recreational and accommodation facilities elegantly develop students' behaviors. The hypothesis was tested through the application of chi-square test  $(P=.000^{**} < .05$  that shows a significant relationship among the variables regarding the consequences of infrastructural facilities i.e. ( $\chi 2 = 56.89$ , D.f. =9).

Correlation of Physical Facilities and Students Behavioral Development

|             |                 | Physical   | Behavioral  |         |
|-------------|-----------------|------------|-------------|---------|
|             |                 | Facilities | Development |         |
| Physical    | Pearson         | 1          |             | 0.942** |
| Facilities  | Correlation     |            |             |         |
|             | Sig. (2-tailed) |            |             | .000    |
|             | N               | 250        |             | 200     |
| Behavioral  | Pearson         | .942**     |             | 1       |
| Development | Correlation     |            |             |         |
|             | Sig. (2-tailed) | .000       |             |         |
|             | N               | 200        |             | 250     |

(\*\*Correlation is highly significant at the 0.01 level (2-tailed), r (200) =0.982\*\*; p<.01.  $r^2$ =0.98) (Since 89% of the variance is shared, the association is obviously a strong one)

In addition, the correlation explicates the results like (\*\*Correlation is highly significant at the 0.01 level (2-tailed), r (200) = $0.942^{**}$ ; p<.01.  $r^2$ =0.94, since 89% of the variance is shared, the association is obviously a strong one). The results of chi-square test show that there is high association between the random and non random variables.

## Physical Facilities and Personality Development

**Personality** is the particular combination of emotional, attitudinal, and behavioral response patterns of an individual (Angler, 2009). Different personality theorists present their own definitions of the word based on their theoretical positions that personality is the distinctive and characteristic pattern of though, emotion and behavior that makeup an individual's personal style of interacting with the physical and social environment (Smith et al, 2003). Other theorists such as Jean Piaget's stages of development, Erikson's stages of psychosocial development and personality development in Sigmund Freud's theory

being formed through the interaction of id, ego and super-ego (Santrock, 2002). In this regard, schools are the organizations that replicate or relegate humans' potentials and alterations in personality.

Similarly, educational facilities such as physical and instructional directly influences the social and psychological development of the students. In this regard the tabulated data clearly demonstrate that physical facilities available to students at school provide an opportunity for demonstration of their potential and emotional satiability. Similarly, such facilities increase in students the quality of compromising with others and bringing in them better social adjustment in terms of social and physical accommodation. Further, the field information in regard of physical infrastructure and students' personality development explicitly demonstrate that availing such facilities not only decreases the hostility level of the students but also make them less aggressive in their relations to other students. Such decrease in the hostility further leads to the creation of love and affection and reduction of frustration among students as given in the statistical information below. Finally, the collected information patently expresses that physical facilities encourage students to be flexible for absorption of knowledge, embellish their self esteem, and further decreases the rigidity in their correspondence with other (see Table-3).

Table-3: Physical Facilities and Personality Development (Cross Tabulation, Sample Size, n=200)

| Areas of Various Impacts on Personality | Extent of Impacts on Personality Development |                   |
|---|--|-------------------|
| Development                             | To Some Extent                               | To Greater Extent |
| Students' Potentials                    | 13%  | 87%               |
| Emotional Stability                     | 15%  | 85%               |
| Compromising Capabilities               | 17%  | 83%               |
| Social Adjustment                       | 18%  | 82%               |
| Decreases Hostility                     | 14%  | 86%               |
| Decrease Aggressiveness                 | 12%  | 88%               |
| Creates Love and Affection              | 15%  | 85%               |
| Reduces Frustration                     | 20%  | 80%               |
| Positive Self Esteem                    | 19%  | 81%               |
| Flexibility for Absorption              | 16%  | 84%               |
| Reduce Rigidity                         | 21%  | 79%               |

 $(P=.000^{**}<.05$  there is highly significant relationship between physical facilities and personality development ( $\chi 2 = 75.85$ , D.f. =9)

In addition, the research study comprises of the hypothetical statement that presence of comfortable environment, class participation and co-curricular activities bring lucrative changes in students' personality. The validity of hypothesis was checked through the application of chi-square test like ( $P=.000^{**}$ < .05) that shows a highly significant relationship between physical facilities and personality development ( $\chi 2 = 75.85$ , D.f. =9).

**Correlation of Physical Facilities and Personality Development** 

|                         |                 | Personality | Physical Facilities |
|-------------------------|-----------------|-------------|---------------------|
|                         |                 | Development |                     |
| Personality Development | Pearson         | 1           | 0.910**             |
| • •                     | Correlation     |             |                     |
|                         | Sig. (2-tailed) |             | .000                |
|                         | N               | 250         | 250                 |
| Physical Facilities     | Pearson         | .910**      | 1                   |
| •                       | Correlation     |             |                     |
|                         | Sig. (2-tailed) | .000        |                     |
|                         | N               | 200         | 200                 |

<sup>(\*\*</sup>Correlation is highly significant at the 0.01 level (2-tailed),  $r(200) = 0.910^{**}$ ;  $p<.01. r^2=0.91$ ) (Since 82% of the variance is shared, the association is obviously a strong one)

The correlation further validate the result in manner (\*\*Correlation is highly significant at the 0.01 level (2-tailed), r (200) = $0.910^{**}$ ; p<.01.  $r^2$ =0.91, since 82% of the variance is shared, the association is obviously a strong one). It shows that there is strong association between the reggressor and reggressand.

#### 4. Discussion over the data

The analysis of the field data evidently shows the effectiveness of school size as one of the important and basic elements in creating atmosphere for desirable outcomes not only in students' educational spheres but at the same amount it affects their socio-psychological aspects of personality development. The information of respondents palpably discloses the fact that infrastructural facilities can reduce violence, aggression and disruptive behavior among students and further can improve a wide range of students' attitudes and behavior and decrease the level of isolation in school environment. Besides, high portion of respondents manifestly expresses that physical facilities also increase the sense of oneness, social solidarity and belongingness, create "we" feeling and provocation of unity in terms of reading, class performance, tests scores and other academic achievements. The analysis further link school size with the promotion of students academic performance and also improvement has been observed in participation in school activities, their satisfaction, and attendance, reducing drop-out, increase in students and teachers attendance, producing higher graduation ratio, mild teacher attitude and higher cooperation, promotion of better relations with administration, and further enhance positive attitude towards teachings as compared to schools which have no such facilities which is necessary for their personality development and future success.

The analysis and statistical discussion augment that for academic performance and personality development of students' physical facilities along-with proper size of class room is very much important as the data had proved to a maximum level that size of school play a pivotal role in students' academic performance. The relational analysis of physical environment such as better classroom, school buildings, cooperative school environment, better facilities decrease tension, depression and anxiety among the students and further enjoy high statuses in future life. The discussion obviously interpret that apart from better school facilities the size of school is also takes into consideration for better results which is qualitatively explain in the literature review and argument of the paper. The discussion thus conclude that buildings quality, size of schools, class room and other school related facilities have positive impacts upon students' academic performance, achievement and personality development.

## 5. Conclusion

Empirical studies will continue, focusing on fine-tuning the acceptable ranges of these variables or optimal academic outcomes. But we already know what is needed: clean air, good light, and a quiet, comfortable, and safe learning environment. This can be and generally has been achieved within the limits of existing knowledge, technology, and materials. It simply requires adequate funding and competent design, construction, and maintenance. In this regard, school size and infrastructural facilities play an important role in behavioral and personality development of the students. There is a definite consensus about the positive effects of small school size, and the effects seem to be the strongest with students from lower socioeconomic groups. The empirical analysis illustrates that small size schools have greater academic achievements and performance as compare to large size school. Besides, small size school enhances class participation, increases attendance ratio and students confidence level, decreases drop out, remove fear and hesitation and enhances students learning capacity to a greater extent.

Nevertheless, school facilities that are translated into brick-and-mortar, affect the daily performance of teachers and students who use them. Such facilities are based on the available technology, experience with "what works," and the changing needs of the times. Similarly, in relation to school size, physical facilities also improve the behavioral and personality development of the students. The study further expresses that physical and infrastructural facilities reduce depression, pessimism, apprehension,

frustration and enhances students' capacities and confidence level which directly affect the personality and behavioral performance of the students. In addition, the study palpably explicates that availability of physical facilities improve students' personality; besides more physical facilities improve students' potentials, increases students' capacities, create a sense of love and affection and reduces rigidity which positively influences students' personality.

## 6. Recommendations

The availability of infrastructural and physical facilities is highly associated with good academic performance and personality development of the students. In order to improve the academic performance of the students, this research study emphasizes on the following recommendation for better output:

Proper seating arrangement is the core of learning and better academics that should be provided through large school size. There should be better transport and communication facilities for the students to improve their capacities and capabilities. Similarly, the administration should provide chairs, clean water, peaceful school environment and other school related facilities to improve the behavioral and academic performance of the students.

Recreational and leisure time activities play a pivotal role in the adjustment and of individual in diversifying environments particularly for young-ones. In this connection, presence of comfortable environment, class participation and co-curricular activities bring lucrative changes in students' personality and ensures academic achievements.

Research is among the basic needs of the day in the present age that requires a suitable and appropriate environment fit to the research demands. Good physical and infrastructural facilities allow the research environment that productively brings positive effects on academic outcomes.

#### References

- Andersen, S. 1999. The relationship between school design variables and scores on the Iowa Test of Basic Skills. Athens, Ga.: University of Georgia.
- Angler, B. 2009. Personality Theories: Eighth Edition. Belmont, CA: Wadsworth, Cenage Learning.
- Barker, R. G., and P. V. Gump. 1964. Big school, small school: High school size and student behavior. Stanford, Calif.: Stanford University Press. (ED001132).
- Bates, J. 1996. Healthy learning. *American School & University* 68(5), pp. 27–29.
- Bowers, J. H., and C. W. Burkett. 1987. Relationship of student achievement and characteristics in two selected school facility environmental settings. Paper presented at the 64th Annual International Conference of the Council 18 Do School Facilities Affect Academic Outcomes?
- Chan, T. 1979. The impact of school building age on pupil achievement. Greenville, S.C.: Office of School Facilities Planning, Greenville School District. (ED191138)
- Coopers. P. 2001. Building performance: An empirical analysis of the relationship between schools' capital investment and pupil performance. United Kingdom: Department for Education and Employment.
- Cotton, K. 1996. School size, school climate, and student performance. Portland, Ore.: Northwest Regional Educational Laboratory. Retrieved 07/03/02 from http://www.nwrel.org/scpd/sirs/10/c020.html

- Cotton, K. 2001. New small learning communities: Findings from recent research. Portland, Ore.: Northwest Regional Educational Laboratory. Retrieved 07/03/02 from <a href="http://www.nwrel.org/scpd/sirs/nslc.pdf">http://www.nwrel.org/scpd/sirs/nslc.pdf</a>
- Dusenbery, D. B. 2009. *Living at Micro Scale*. Harvard University Press, Cambridge, Mass. p. 124. <u>ISBN</u> 978-0-674-03116-6.
- Earthman, G. I., and L. Lemasters. 1998. Where children learn: A discussion of how a facility affects learning. Paper presented at the annual meeting of Virginia Educational Facility Planners. Blacksburg, Va., February. (ED419368)
- Earthman, G. I., C. Cash, and D. Van Berkum. 1995. A statewide study of student achievement and behavior and school building conditions. Paper presented at the annual meeting of the Council of Education Facility. Do School Facilities Affect Academic Outcomes?
- Farber, P. 1998. Small schools work best for disadvantaged students. *Harvard Education Letter* (March/April).
- Ferguson, R. F. 1991. Paying for public education: New evidence on how and why money matters. *Harvard Journal on Legislation* 28 (2): 465–98.
- Ferguson, R. F. and H. Ladd. 1996. Additional evidence on how and why money matters: A production function analysis of Alabama schools. In *Holding Schools Accountable: Performance-Based Reform in Education*, ed. Helen F. Ladd. Washington, D.C.: The Brookings Institution.
- Folger, J., and C. Breda. 1989. Evidence from project STAR about class size and student-achievement. *Peabody Journal of Education* 67 (1): 17–33.
- Fowler, W. J., Jr. 1995. School size and student outcomes. In *Advances in Educational Productivity*, vol. 5, ed. H. J. Walberg. Greenwich: Conn. JAI Press, Inc., pp. 3–26.
- Fowler, W. J., Jr., and H. J. Walberg. 1991. School size, characteristics, and outcomes. *Educational Evaluation and Policy Analysis* 13 (2): 189–202.
- Gottfredson, D. C. 1985. School size and school disorder. Baltimore, Md.: Center for Social Organization of Schools, Johns Hopkins University. (ED261456)
- Greenwald, R., L. V. Hedges, and R. D. Laine. 1996. The effect of school resources on student achievement. *Review of Educational Research* 66 (3): 361–96.
- Gregory, T. 1992. Small is too big: Achieving a critical anti-mass in the high school. Position paper prepared for the Hubert H. Humphrey Institute for Public Affairs and the North Central Regional Educational Laboratory. Retrieved from <a href="http://www.gatesfoundation.org/NR/downloads/ed/evaluation/smallistobig.pdf">http://www.gatesfoundation.org/NR/downloads/ed/evaluation/smallistobig.pdf</a>
- Hanushek, E. A. 1997. Assessing the effects of school resources on student performance: An update. *Educational Evaluation and Policy Analysis* 19 (2): 141–64.
- Hanushek, E. A. 1999. Some findings from an independent investigation of the Tennessee STAR experiment 20 Do School Facilities Affect Academic Outcomes? *National Clearinghouse for Educational Facilities 1090 Vermont Avenue, N.W., Suite 700, Washington, D.C. 20005–4905 888–552–0624 www.edfacilities.org* ©2002, *National Institute of Building Sciences* and from other investigations of class size effects. *Educational Evaluation and Policy Analysis* 21 (2): 143–63.
- Henderson, H., and M. A. Raywid. 1994. "Small" revolution in New York City. *Journal of Negro Education* 63 (1): 28–45.
- Hord, S. M. 1997. Professional learning communities: What are they and why are they important? Southwest Educational Development Laboratory, Issues about Change 6 (1): 1–9. Retrieved on 07/19/02 from http://www.sedl.org/change/issues/issues61.html

- Howley, C. 1994. The academic effectiveness of small scale schooling (an update). ERIC digest. Charleston, W. Va.: ERIC Clearinghouse on Rural Education and Small Schools. Retrieved on 07/19/02 from http://www.ed.gov/databases/ERIC Digests/ed372897.html
- Howley, C. B. 1995. The Matthew principle: A West Virginia replication? Education Policy Analysis Archives. 3 (18): 1–25.
- Howley, C. B., and R. Bickel. 1999. The Matthew project: National report. Randolph, Vt.: Rural Challenge Policy Program.
- Howley, C., M. Strange, and R. Bickel. 2000. Research about school size and school performance in impoverished communities. ERIC digest. Charleston, W. Va.: ERIC Clearinghouse on Rural Education and Small Schools. Retrieved 07/19/02 from <a href="http://www.ael.org/eric/digests/edorc0010.htm">http://www.ael.org/eric/digests/edorc0010.htm</a>
- Hoxby, C. M. 2000. The effects of class size on student achievement: New evidence from population variation. *The Quarterly Journal of Economics* 115 (3): 1239–84.
- Hunt, M. 1997. How science takes stock: The story of meta-analysis. N.Y.: Russell Sage Foundation.
- Jago, E., and K. Tanner. 1999. Influence of the school facility on student achievement: Lighting; color. Athens, Ga.: Dept. of Educational Leadership; University of Georgia. Retrieved 07/22/02 from http://www.coe.uga.edu/sdpl/researchabstracts/visual.html
- Johnson, K. A. 2000. Do small classes influence academic achievement? What the national assessment of educational progress shows. Washington, D.C.: Heritage Foundation. Retrieved 07/23/02 from <a href="http://www.heritage.org/Research/Education/CDA00-07.cfm">http://www.heritage.org/Research/Education/CDA00-07.cfm</a>
- Keller, B. 2000. Small schools found to cut price of poverty. *Education Week* 19 (22): 6. Retrieved 07/22/02 from http://www.edweek.com/ew/ewstory.cfm?slug=22size.h19
- Kershaw, C. A., and M. A. Blank. 1993. Student and educator perceptions of the impact of an alternative school structure. Paper presented at the annual meeting of the American Educational Research Association,
- Lee, V. E., and J. B. Smith. 1997. High school size: which works best and for whom. *Educational Evaluation and Policy Analysis* 19 (3): 205–27.
- Lee, V. E., and S. Loeb. 2000. School size in Chicago elementary schools: Effects on teachers' attitudes and students' achievement. *American Educational Research Journal* 37 (1): 31.
- Lewis, M. 2000. Where children learn: Facilities conditions and student test performance in Milwaukee public schools. Scottsdale, Ariz.: Council of Educational Facility Planners International. Retrieved 07/22/02 from http://www.cefpi.org/pdf/issue12.pdf
- Lowe, J. M. 1990. The interface between educational facilities and learning climate in three elementary schools. Ph.D. diss. College Station, Tex.: Texas A&M University.
- Lucas, J. 1981. Effects of noise on academic achievement and classroom behavior. Sacramento, Calif.: California Department of Health Services.
- McGovern, M. A. 1998. A breath of fresh air. School Planning and Management 37 (10): 14.
- McGuffey, C. 1982. Facilities. In *Improving educational standards and productivity: The research basis for policy*, ed. H. Walberg. Berkeley, Calif.: McCutchan Pub. Corp.
- Mosteller, F. 1995. The Tennessee study of class size in the early grades. *The Future of Children* 5 (2): 113–27.
- Nathan, J., and K. Febey. 2001. Smaller, safer, saner, successful schools. Washington, D.C.: National Clearinghouse for Educational Facilities and Minneapolis, Minn.: Center for School Change,

- Humphrey Institute of the University of Minnesota. Retrieved 07/03/02 from http://www.edfacilities.org/pubs/saneschools.pdf
- National Association of Elementary School Principals. 2000. Does size really matter? The debate over class size. Alexandria, Va.: National Association of Elementary School Principals. Retrieved 07/03/02 from <a href="http://www.naesp.org/comm/c1200.htm">http://www.naesp.org/comm/c1200.htm</a>
- Naz, A., Khan, W., Rehman, H., and Khan, T. (2011). The Dilemma of Women's Education in Pakistan: An Investigation into the Various Socio-Religious and Political Constraints in Women's Educational Empowerment in *Pakhtoon* Society of Khyber *Pakhtunkhwa* Pakistan. Accepted in Indian Journal Of Health And Wellbeing In September issue. ISSN.2229-5356.
- Phillips, R. 1997. Educational facility age and the academic achievement of upper elementary school students. D. Ed. diss., University of Georgia.
- Pittman, R. B., and P. Haughwout. 1987. Influence of high school size on dropout rate. *Educational Evaluation and Policy Analysis* 9 (4): 337–43.
- Plumley, J. P. 1978. The impact of school building age on the academic achievements of selected fourth grade pupils in the State of Georgia. Athens, Ga.: University of Georgia.
- Raywid, M. A. 1999. Current literature on small schools. ERIC digest. Charleston, W. Va.: ERIC Clearinghouse on Rural Education and Small Schools. Retrieved 07/22/02 from <a href="http://www.ael.org/eric/digests/edorc988.htm">http://www.ael.org/eric/digests/edorc988.htm</a>
- Santrock, John W. 2002. A topical approach life-span development (illustrated ed.), McGraw-Hill, <u>ISBN</u> 978-0-07-243599-3, http://books.google.com/?id=-MYyNgIyXUAC.
- Schneider, M., P. Teske, and M. Marschall. 2000. *Choosing schools*. Princeton, N.J.: Princeton University Press.
- Slavin, R. 1989. Achievement effects of substantial reductions in class size. In *School and classroom organization*, ed., R. Slavin. Hillside, N.J.: Erlbaum.
- Smith, E. E., Nolen-HOedsema, S., Fredrickson, B. L., and Loftus, G. R. (2003). Introduction to Psychology (14<sup>th</sup> Ed). Thomson Wadsworth Inc.
- Stockard, J., and M. Mayberry. 1992. Resources and school and classroom size. In *effective educational environments*. Newbury Park, Calif.: Corwin Press, Inc.
- Toenjes, L. A. 1989. Dropout rates in Texas school districts: influences of school size and ethnic group. Austin, Tex.: Texas Center for Educational Research.
- Walberg, H. J. 1992. On local control: Is bigger better? In *Source book on school and district size, cost, and quality*. Minneapolis, Minn.: Minnesota University, Hubert.
- Wasley, P. M., M. Fine, N.E. Gladden, S. P Holland, E. King, E. Mosak, and L. C. Powell. 2000. Small schools: Great Strides. A study of new small schools in Chicago. Retrieved 07/03/02 from <a href="http://www.bnkst.edu/html/news/SmallSchools.pdf">http://www.bnkst.edu/html/news/SmallSchools.pdf</a>.