



Home Environment and Academic Achievement in Science

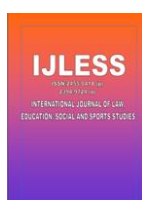
Prasannakumar S

Research Scholar, Karnatak University, Dharwad

Mobile: 7411528611

Email: prasannakumarsaparegm@gmail.com

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ABSTRACT

This article is about a study of Home environment in relation to Academic achievement of secondary school students in science. This study introduces crucial role played by home environment in shaping a child's overall development including academic achievement in science. Further meaning and definitions of home environment by educationists and researchers. Reviews supporting the study and characteristics of a good home environment, how academic achievement is influenced by home environment and for the achievement in science subject. Gender perspective of home environment. Finally conclusion and educational implications of the study

Key Words: Home Environment, Academic achievement, Characteristics of good home environment, Science achievement, Gender perspective, Educational implications.

Introduction

The home environment plays a crucial role in shaping a child's overall development, including their academic performance in science. This complex interplay of factors within the home can significantly impact a student's motivation, engagement, and ultimately, their achievement in science. A supportive and stimulating home environment can provide the foundation for a child's success in science, while a less supportive environment can hinder their progress.

Academic achievement is a complex interplay of various factors, with the school environment often taking center stage. However, the influence of the home environment on students' academic outcomes is equally, if not more, critical. This study delves into the intricate relationship between home environment and academic achievement in science. Moreover study aims to explore the complex relationship between home environment factors and academic achievement in science. By understanding the specific ways in which home environments influence students' learning, we can develop effective strategies to improve science education for all students.

Need and Significance of the Impact of Home Environment on Academic Achievement in Science

Understanding the influence of home environment on academic achievement in science is crucial for several reasons:

- **Identifying Disparities:** It helps identify disparities in educational outcomes among students from different socioeconomic backgrounds.
- **Targeted Interventions:** By pinpointing specific factors within the home environment that impact science learning, educators and policymakers can develop targeted interventions to address these needs.
- **Improving Educational Policies:** Research in this area can inform the development of educational policies that promote equitable access to quality education, particularly for disadvantaged students.
- **Enhancing Parent-Teacher Collaboration:** Understanding the role of the home environment can facilitate stronger partnerships between parents and teachers, leading to improved student outcomes.

The impact of home environment on academic achievement in science is significant because it:

- **Shapes Cognitive Development:** A stimulating home environment, rich in educational resources and intellectual stimulation, can foster cognitive development and critical thinking skills, essential for success in science.
- **Influences Motivation and Engagement:** Parental support, encouragement, and expectations can significantly impact a student's motivation to learn science.
- **Provides a Foundation for Future Learning:** A strong foundation in early childhood, including exposure to science concepts and activities, can lay the groundwork for future academic success.
- **Reduces Achievement Gaps:** By addressing the factors that contribute to achievement gaps, such as limited access to resources or lack of parental involvement, we can work towards creating a more equitable educational system.

By recognizing the importance of home environment in shaping students' science learning, we can take steps to create supportive and nurturing environments that empower all students to reach their full potential.

Home Environment

The order of home-life, dedicated to self-perfection and service of mankind is called 'Home environment'. It enjoys the foremost rank of importance among all the social orders of life. Home environment is the first to affect the individual and is which gives the child his first experience of loving. Home Environment is the climate prevailing in individual's home which varies from culture to culture, society to society, and family to family depending upon various factors. Muloa (2010) the term home environment refers to all the objects, forces, and conditions in the home which influence the child physically, intellectually and emotionally. According to Ekinne (2002), nature involves the home, the school, and the environment and peer groups to which the learner belongs. The home environment has for reaching influence on the child. Babara (1982) said that a positive and supportive home environment can contribute to better school achievement, while a negative one might hinder it. Also, Touray (1982) suggested that home environmental variances could be manipulated to enhance students' academic performance. According to Mohite (1990) "Home environment includes language, stimulation, physical environment, encouraging of social maturity and disciplinary practices".

Farooq Nawaz Khan and et.al (2019). "Relationship between Students' Home Environment and their Academic Achievement at Secondary School Level" *Pakistan Journal of Distance & Online Learning* Volume: V, Issue II, 223-234. Results obtained from analysis illustrated that a substantial majority of respondents are lacking separate study rooms at their homes, have a very low interactional opportunities at home in home related matters, but still majority of them were satisfied with their home environment. This conclude that home environment has positive impact on student's academic achievement.

Julius Jose O. Bercasio and et.al (2023). "Home Environment and Achievement Motivation and their Effect on the Academic Performance of Selected Students of PSHS-BRC" *BU R&D Journal* Vol. 26 (1), ISSN (Print): 0016-4139 | ISSN (Online): 2719-082X. Results reveal that the selected students of PSHS-BRC have commonalities in their home environment profile, have satisfactory or better academic performance; and generally have moderate level of achievement motivation.

Linus Terry DZEVER (2015). "The Impact of Home Environment Factors on Academic Performance of Senior Secondary School Students in Garki Area District, Abuja -Nigeria" *Bulgarian Journal of Science and Education Policy (BJSEP)*, Volume 9, Number 1. The study indicates that students/children academic performance is influenced by the parenting styles and socioeconomic background of their parents; as parents that earn high income can take absolute responsibilities of their children's education compared to parents that earn meager salaries. The financial and moral support a child receives from his/her parents' affects his psychology, which is reflected in his performance in school. Also both parental socio-economic status and parenting style influence children's school achievement

Messiah Abeku Morgan and et.al (2023). "Effect of Home Economics Students' Self-Efficacy and Perception of Teachers Social Learning Environment Management Practices on Their Interest in Integrated Science" *Journal of Education and Practice* Vol.14, No.6, ISSN 2222-1735. The results indicated that both self-efficacy and classroom social learning environment are positively associated with students' interest in Integrated Science, and their combined influence could raise students' interest.

Nnaekwe Uchenna Kingsely, Obiakor Mariagoretti Ijeoma (2018). "An Evaluation of Home Environment as A Social Factor That Influences Student Academic Performances in Secondary Schools in Enugu Urban", in *Scholars Journal of Arts, Humanities and Social Sciences* ISSN 2347-9493. The findings indicate that small family size promote the qualitative and good academic performance and the stable home has positive influence on the academic performance of the students.

Characteristics of good Home environment

Provide a safe, nurturing, supportive, stimulating science environment that allows the children to grow scientifically and healthy. For an optimal development, children need: adequate physical and science promoting home environment; a tolerant and positive atmosphere; conditions for positive changes and improvements.

- Support and stimulate scientific inquiry
- Providing adequate learning facilities
- Love and care towards the child
- Discipline Gently
- Support and Guidance to complete the home work
- Romantic relationships.
- Emotion and emotion regulation.

- Identity.
- Development of scientific attitude.
- Support and Motivate the Child
- Provide an Optimal Environment

Home Environment and Academic Achievement

The family is the most important and the oldest institution that man devised to regulate and integrate his behaviour as he strives to satisfy his basic needs. It has been the place for individual's moral and material progress ever since the civilization began. The family is basically an institution where parents and children live together. The family plays a vital role in contributing not only to the social and physical well-being of the members but also psychological well-being. The family has been defined by Sumner and Keller (1927) as a miniature social organization including at least two generations and characteristically formed upon the blood bond.

The family environment being very essential includes all the physical, social and psychological factors that influence the growth and behaviour of the individuals. When parents are involved in their children's education at home, they do better in school. The family makes critical contributions to students' achievement from Pre-School through high school. A home environment that encourages learning is more important to student's achievement than income, education level, or cultural background. On the other when parents are involved at school, as well as at home, children do better and stay in school longer.

Families may be involved in their children's education in a variety of ways, including involvement in the home (e.g., help with homework) and in the school (e.g. attending open houses) as well as through parent-teacher communication and parent to parent communication. With regard to involvement practices in the school context, meta-analytic reviews have repeatedly documented that children whose families are more involved in school (e.g., via attending parent-teacher conferences and parent meetings, visiting and voluntary in the classroom and participating in social events in the school) display higher levels of achievement than children whose families are less involved in school (Fan and Chan, 2001; Jeynes, 2005).

Educators and Sociologists all agree that the home environment is the most significant single factor that influences the Academic Achievement of the child. A happy home life encourages the child the feeling of security, co-cooperativeness and the ability for achievement.

Home atmosphere is also responsible for child's personality development, adjustment outside the home, success in school as well as in adult life. Many parents may not have high school education themselves, so they may view the school with suspicion and distrust. Because their experiences in school failed to pay off, they expect little from the school for their children. They are less likely than middle class parents to provide a quiet place for their children to study.

Different Kinds of discipline persist in different homes. In authoritarian home, the adolescent becomes submissive and is afraid to take the initiative in assuming responsibility. Constantly in his attempts to achieve independence the adolescents develops such a strong resentment against his parents that he will not communicate with them. An adolescent whose parents use democratic control has more harmonious relationship with his like parents. Since they trail him like a near adult, he likes and respects them and is willing to go to them for advice and help to his problems. He enjoys his home life more and is more appreciative of what his parents do for him. As a result the climate of the home is more warm and acceptable.

If a child gets a sense of security from his home, such a feeling will enable him to cope more adequately with the task of classroom learning and other problem he encounters at school, but the more the home climate is characterized by such qualities as punitiveness, disorganization or extreme rigidity, the more likely it is to produce problem behaviour in children.

Family is considered as a prominent socializing agency of education. It is one of the most significant primary groups, the groups which are first in influencing the individual and in shaping his attitudes, scientific attitude and behaviour pattern. Family being a primary group promotes intimate face to face association and interaction, which is more educational than any other personal interaction. Family constitutes the first world of the child, not only does it make the first physical and mental contribution to his life but by continuous, intimate, numerous and varied associations it becomes major source of education. It satisfies most of the needs of the child and provides emotional experiences, which stimulate or retard the learning activities of children. There is a positive relationship between student's performance and happy home life. Gilmore in one of his studies found that non achievers had poor relationship with father and mother and were dependent and passive. The achieving students had much happier relationship with his father, a closer identification with his mother and marked equality of independence.

Parental encouragement, activities and interest at home, and parental participation in schools and classroom positively influence achievement. Moreover, it seems that the most useful variety of parents' involvement is contact between parents and their children in the home which encourages and adds school achievement. For example, students who read to their parents and who talk with their parents about reading (using either their home languages and or English) have markedly higher reading gains than students who do not have this opportunity. Parental encouragement and a supportive home environment is a contributing factor to the educational achievement. He added the students were —always encouraged to go to library and just read even if it was for fun. Henry. M. Codjoe (2007).

Students do a great deal of learning outside the classroom. A teacher should not forget that children have accomplished a vast amount of non-academic learning before they enter school and that they contribute to learn from non-academic sources. There are certain factors which can be included in the home environment that has been effecting student's achievement for and has been considered as important influential factors.

I. Economic Resources at Home

The role of economic resources of family always has to be considered in students' achievement, especially in a country with such economic disparities.

II. Cultural Resources

Families that value highly their children education spend proportionally more on cultural goals and other schooling resource finally affects the educational success of their children.

III. Parents' Participation

Parental participation is measured by indicators such as the amount of time spent by parents talking to children about books, movies, T.V programmed, etc., listening to music with them, having family meals together, talking about school issues, helping them to do homework, and giving incentives for children's high achievement.

IV. Family Structure

Beyond family background and family cultural resources, other family characteristics can affect students' achievement. Family daily routine (indicated by behaviour rules, organized schedule, trust, punctuality, cleanliness, etc., family's general psychological climate indicated

by parents' relationship, educational approach to the child, frequency of parent's participation at the child's activities, constant presence of stress indicated by economic problems in the family, loss of beloved ones, disease and addictions) are some of the factors to be considered.

V. Home Processes

Studies of home process are behavioural in nature, looking at what parents do rather than what they have, what they believe, or who they are. The home processes that are most conducive to children's successes in school are often referred to as the "curriculum of the home". Home processes variables are highly predictive of students' school learning.

VI. Socio Economic Status

As socio economic variable were separated from other family variable, such as family structure and family behavioral patterns, the apparent impact of socio economic condition on learning became less dramatic than was originally assumed.

Components of Home Environment

Parental Involvement: Parents who actively engage in their children's education, such as scientific discovery, scientific inquiry, in the development of scientific attitude, monitoring homework, attending parent-teacher conferences, and providing academic support, tend to have children who perform better in science subject and academically.

Educational Resources: Access to science books, books, scientific journals, periodicals, magazines, computers, educational materials, and a quiet study space can significantly impact a student's ability to learn and succeed.

Socioeconomic Status: Families with higher socioeconomic status often have greater access to educational resources and opportunities, which can positively influence academic achievement.

Parental Expectations and Values: Parents who hold high expectations for their children's education and prioritize academic success are more likely to have children who excel.

Home Climate: Home environment with scientific aids and equipment, positive and supportive home atmosphere characterized by open communication, emotional security, and encouragement can foster a love of learning.

What Impact of Home Environment on Science Achievement

The home serves as the foundational learning environment for children. It is within this space that early cognitive, social, and emotional development takes place. A nurturing and stimulating scientific home environment can provide the bedrock for academic success in science, while a chaotic or impoverished one can hinder a child's potential towards science.

While the relationship between home environment and overall academic achievement is well-established, its specific influence on science achievement requires further exploration. Science, as a subject that often relies on inquiry, experimentation, and critical thinking, may be particularly susceptible to the effects of home environment.

For instance, a home rich in scientific exploration, such as through nature walks, science experiments, or access to science-related media, could cultivate a stronger interest and aptitude for science. Conversely, a home lacking these stimuli may hinder a student's development in this area.

Gender Perspective of Home Environment in Relation to Academic Achievement

Studies regarding home environment undoubtedly plays a significant role in shaping a child's overall development including academic achievement, gender can also influence these dynamics. So many such research studies revealed that influence of home environment on girls' academic performance is better than boys. By understanding the potential gender-specific factors at play, educators can develop more equitable and inclusive strategies to support all students' success.

Conclusion

The home environment serves as a critical catalyst for academic success, particularly in the realm of science. By understanding the specific components of home environment that impact science achievement, educators and policymakers can develop targeted interventions to support students from all backgrounds. Below points to improve achievement

- Foster collaboration between schools and families to create a supportive learning environment both inside and outside the classroom.
- Provide workshops and resources to help parents understand the importance of home environment and how they can support their child's academic growth.
- Incorporate real-world science experiences that connect with students' home lives and interests.
- Identify students who may benefit from additional support and provide tailored interventions based on their specific needs.

Bibliography and References

- [1]. Anindita Das and Talawar M.S. (2015). Effect of Home Environment on Academic Achievement of Secondary School Tribal Students of Kamrup District of Assam. *Dimensions of Education, Quarterly Education and Research Journal*, 5(1), ISSN: 22492437.
- [2]. Ashvinkumar R. Soni (2013). A Study of the Relationship between Academic Achievement Motivation and Home Environment among Standard 10th Pupils *International Journal for Research in Education* 2(4), ISSN: 2320-09.
- [3]. Farooq Nawaz Khan and et.al (2019). "Relationship between Students' Home Environment and their Academic Achievement at Secondary School Level" *Pakistan Journal of Distance & Online Learning* Volume: V, Issue II, 223-234.
- [4]. Julius Jose O. Bercasio and et.al (2023). "Home Environment and Achievement Motivation and their Effect on the Academic Performance of Selected Students of PSHS-BRC" *BU R&D Journal* Vol. 26 (1), ISSN (Print): 0016-4139 | ISSN (Online): 2719-082X.
- [5]. Linus Terry DZEVER (2015). "The Impact of Home Environment Factors on Academic Performance of Senior Secondary School Students in Garki Area District, Abuja -Nigeria" *Bulgarian Journal of Science and Education Policy (BJSEP)*, Volume 9, Number 1.
- [6]. Messiah Abeku Morgan and et.al (2023). "Effect of Home Economics Students' Self-Efficacy and Perception of Teachers Social Learning Environment Management Practices on Their Interest in Integrated Science" *Journal of Education and Practice* Vol.14, No.6, ISSN 2222-1735.
- [7]. Nidhi Kakkar, Ph.D. (2017). A study of academic achievement in relation to home environment of secondary school students, *An International Research Journal for Humanity Science and Eng. Language*, ISSN : 2348-3083, 3(13).
- [8]. Nimmi Maria Oommen (2015) Home Environment and Academic Achievement of Students at Higher Secondary Level, *International Journal of Current Research*, ISSN: 0975-833X, 7(7).

- [9]. Nnaekwe Uchenna Kingsely, Obiakor Mariagoretti Ijeoma (2018).“An Evaluation of Home Environment as A Social Factor That Influences Student Academic Performances in Secondary Schools in Enugu Urban”, in *Scholars Journal of Arts, Humanities and Social Sciences* ISSN 2347-9493.
- [10]. Shaheen Parveen (2019). Study of Home Environment and Academic Achievement of Senior Secondary School Students, P: ISSN NO.: 2394- 0344.
- [11]. Stanley U. Nnorom1 (2020). Home Environmental factors Influence on Academic Performance of Secondary School Students in Owerri Zone ii, Imo State, Nigeria, *Asian Journal of Advances in Research*, 3(4).
- [12]. Uloko Anthonia (2019). Influence of Home Environment on the Academic Performance of the Students in Some Selected Schools in Dekina Local Government Area in Kogi State, Nigeria. *International Journal of Contemporary Research and Review*, ISSN: 0976-4852.
- [13]. Prakash S. Siddaklavara (2022). A Study of Academic Achievement of Students Studying in Secondary Schools in Relation to Personality, Emotional Intelligence and Home Environment in Dharwad district, Ph.D. Thesis, Karnatak University, Dharwad.