

A Study Of Psychological And Environmental Factors Affecting Intelligence Of Higher Secondary School Students

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Abstract

Intelligence has long been considered a central construct in psychology and education, as it plays a decisive role in students' academic achievement, problem-solving ability, and overall adjustment in life. In contemporary educational contexts, intelligence is no longer viewed as a purely innate or fixed capacity but as a dynamic outcome of continuous interaction between psychological and environmental factors. The present paper is a conceptual study that attempts to analyze and explain the major psychological and environmental factors influencing the intelligence of higher secondary school students. Psychological factors such as motivation, emotional stability, self-concept, mental health, and learning habits, and environmental factors such as family background, school climate, socio-economic status, peer group, and cultural environment are critically examined. The paper argues that intelligence develops and functions within a complex psycho-social framework and cannot be understood in isolation from the learner's environment. The higher secondary stage is a crucial developmental period marked by academic pressure, identity formation, and career-related decisions, making students especially sensitive to both internal and external influences. By synthesizing theoretical perspectives and findings from educational psychology, the paper highlights the need for a holistic and supportive educational environment that nurtures not only cognitive abilities but also emotional and social competencies. The study emphasizes the role of teachers, parents, and educational institutions in creating conditions that promote optimal intellectual development. It concludes that balanced attention to both psychological and environmental dimensions is essential for the effective development of students' intelligence and overall personality.

Keywords: Intelligence, Psychological Factors, Environmental Factors, Higher Secondary Students, Learning Environment, Academic Development

1. Introduction

In the modern educational system, the concept of intelligence occupies a central position, as it is closely related to learning, academic achievement, problem-solving, and adjustment to life situations. Traditionally, intelligence was considered an inborn and relatively fixed capacity. However, contemporary psychological and educational thought emphasizes that intelligence is not merely a product of heredity but is also significantly shaped by environmental experiences and psychological conditions. Today, intelligence is understood as a dynamic and multifaceted construct that develops through continuous interaction between the individual and the environment. The higher secondary school stage is a very critical period in a student's life. It is a stage of transition

from adolescence to early adulthood and is marked by rapid physical, emotional, social, and intellectual changes. During this period, students face increased academic demands, competitive examinations, and important career-related decisions. At the same time, they experience psychological challenges such as stress, anxiety, identity formation, and the need for social acceptance. All these factors have a direct or indirect influence on their intellectual functioning and academic performance. Students' intelligence cannot be fully understood without considering the psychological conditions under which they learn and the environmental contexts in which they grow. Factors such as motivation, emotional stability, self-concept, and mental health interact with family environment, school climate, socio-economic status, peer influence, and cultural background to shape students' intellectual development. Therefore, a comprehensive understanding of intelligence requires an integrated approach that takes into account both psychological and environmental dimensions. In this context, the present conceptual paper attempts to analyze the major psychological and environmental factors affecting the intelligence of higher secondary school students.

2. Concept of Intelligence

Intelligence is one of the most widely studied and debated concepts in psychology. In simple terms, intelligence refers to the ability to learn, understand, reason, solve problems, and adapt effectively to new situations. Different psychologists have defined intelligence in different ways. Alfred Binet considered intelligence as the ability to judge, understand, and reason well. Wechsler defined intelligence as the global and aggregate capacity of an individual to act purposefully, think rationally, and deal effectively with the environment.

Modern views of intelligence go beyond a single, unitary ability and recognize it as a complex set of cognitive, emotional, and practical competencies. Theories such as Gardner's Multiple Intelligences and Sternberg's Triarchic Theory have further broadened the scope of intelligence by including creative, practical, and social dimensions. In educational contexts, intelligence is generally reflected in students' ability to understand concepts, apply knowledge, think critically, and solve academic and real-life problems.

It is now widely accepted that intelligence is not determined solely by heredity. Although genetic factors provide a basic potential, the actual development and expression of intelligence depend largely on psychological conditions and environmental opportunities. Thus, intelligence is best understood as the outcome of a continuous interaction between the learner's inner world and the surrounding environment.

3. Psychological Factors Affecting Intelligence

Psychological factors play a crucial role in determining how effectively a student uses his or her intellectual potential. Some of the major psychological factors influencing intelligence are discussed below.

1. **Motivation:** Motivation is one of the most powerful psychological factors affecting learning and intellectual performance. A highly motivated student shows greater interest, persistence, and effort in academic tasks, which leads to better understanding and higher achievement. Intrinsic motivation, in particular, encourages students to explore, think deeply, and learn meaningfully. Lack of motivation, on the other hand, may result in underachievement even among intellectually capable students.

2. **Emotional Stability and Mental Health:** Emotional stability is essential for effective intellectual functioning. Students who are emotionally stable and mentally healthy are better able to concentrate, think clearly, and solve problems. Anxiety, stress, fear, and emotional disturbances can negatively affect attention, memory, and reasoning abilities, thereby hindering the effective use of intelligence.
3. **Self-Concept and Self-Confidence:** Self-concept refers to the way students perceive themselves and their abilities. A positive self-concept and healthy self-confidence encourage students to take intellectual risks, attempt challenging tasks, and persist in the face of difficulties. A negative self-concept, on the other hand, may lead to fear of failure, avoidance of challenges, and underutilization of intellectual potential.
4. **Learning Habits and Study Skills:** Effective learning habits and study skills significantly influence intellectual performance. Students who know how to plan their study, manage time, take notes, revise systematically, and apply appropriate learning strategies are able to make better use of their cognitive abilities and achieve higher levels of understanding.
5. **Attitude towards Learning:** A positive attitude towards learning, school, and teachers fosters curiosity, interest, and engagement, which are essential for intellectual growth. Negative attitudes may create psychological barriers that prevent students from fully using and developing their intellectual capacities.

Table 1: Psychological Factors Influencing Intelligence of Higher Secondary School Students

Psychological Factor	Description	Expected Influence on Intelligence
Motivation	Internal drive that encourages students to engage in learning tasks and persist in academic activities	Increases attention, effort, and effective use of cognitive abilities
Emotional Stability	Ability to remain calm, balanced, and free from excessive anxiety or stress	Improves concentration, memory, and problem-solving ability
Self-Concept	Students' perception of their own abilities and self-worth	Enhances confidence, risk-taking in learning, and academic engagement
Mental Health	Overall psychological well-being, including absence of anxiety, depression, or severe stress	Supports clear thinking, sustained attention, and learning efficiency
Study Habits	Methods and strategies used by students for learning and revision	Improves organization, comprehension, retention, and application of knowledge
Attitude towards Learning	Students' feelings and beliefs about school, teachers, and education	Creates interest, curiosity, and readiness to learn, which strengthens intellectual functioning

Interpretation

This table conceptually explains how internal psychological conditions shape the effective development and use of intelligence. Positive psychological factors are expected to enhance cognitive functioning, while negative conditions may hinder intellectual performance.

4. Environmental Factors Affecting Intelligence

Along with psychological factors, environmental conditions play a decisive role in shaping the development and expression of intelligence.

1. **Family Environment:** The family is the first and most influential environment of the child. A supportive, stimulating, and emotionally secure home environment promotes language development, curiosity, and intellectual growth. Parental education, attitudes towards learning, and involvement in the child's education significantly affect intellectual development.
2. **School Climate and Teaching Quality:** The school environment and quality of teaching have a profound impact on students' intellectual development. A positive, democratic, and academically stimulating school climate encourages thinking, questioning, and creativity. Teachers who use effective teaching methods, provide feedback, and encourage critical thinking help students to develop and use their intelligence more effectively.
3. **Socio-Economic Status:** Socio-economic status influences access to educational resources such as books, technology, coaching, and a conducive learning environment. Students from economically and socially advantaged backgrounds generally get more opportunities for intellectual stimulation, although supportive schools and policies can help bridge this gap.
4. **Peer Group Influence:** Peers play an important role during the higher secondary stage. A peer group that values learning, achievement, and positive behavior can motivate students to perform better academically and intellectually. Negative peer influence may distract students from studies and reduce their academic engagement.
5. **Cultural and Social Environment:** Cultural values, social expectations, and community attitudes towards education also shape students' intellectual development. A culture that respects knowledge, encourages questioning, and values education creates a favorable environment for the growth of intelligence.

Table 2: Environmental Factors Influencing Intelligence of Higher Secondary School Students

Environmental Factor	Description	Expected Influence on Intelligence
Family Environment	Emotional, educational, and cultural climate at home	Provides early stimulation, language development, and learning support
School Climate	Overall academic, emotional, and social atmosphere of the school	Encourages curiosity, critical thinking, and intellectual engagement
Teaching Quality	Methods, strategies, and competence of teachers	Enhances understanding, reasoning ability, and application of knowledge
Socio-Economic Status	Economic and social position of the family	Determines access to books, technology, coaching, and learning

		resources
Peer Group	Influence of friends and classmates	Can motivate achievement or distract from academic goals
Cultural Environment	Values, beliefs, and traditions of society regarding education	Shapes attitudes towards learning, achievement, and intellectual effort

Interpretation

This table shows that intelligence develops within a social and educational context. A supportive environment provides opportunities for intellectual growth, while an unfavorable environment may restrict the full expression of intellectual potential.

5. Interaction between Psychological and Environmental Factors

Psychological and environmental factors do not operate in isolation; rather, they continuously interact with each other. For example, a supportive school environment can enhance students' motivation and self-confidence, while a positive self-concept can help students make better use of available learning opportunities. Similarly, a stressful home or school environment may lead to anxiety and low motivation, which in turn negatively affect intellectual performance. Therefore, intelligence should be viewed as the product of a dynamic and reciprocal interaction between the individual and the environment.

Table 3: Interaction between Psychological and Environmental Factors

Psychological Factors	Environmental Support	Expected Outcome on Intelligence
High Motivation	Supportive family and school	Very high intellectual performance and academic growth
Positive Self-Concept	Encouraging teachers and peers	Better problem-solving and learning confidence
Emotional Stability	Stress-free learning environment	Improved concentration and memory
Good Study Habits	Resource-rich school environment	Higher academic achievement and cognitive development
Poor Mental Health	Negative or stressful environment	Underutilization of intellectual potential

Interpretation

This table conceptually explains that intelligence is the product of continuous interaction between inner psychological conditions and outer environmental supports.

6. Educational Implications

The analysis of psychological and environmental factors affecting intelligence has several important implications for education. Schools should focus not only on content delivery but also on creating a supportive and stimulating learning environment. Teachers should pay attention to students' motivation, emotional well-being, and self-concept, and should use teaching methods that encourage thinking, creativity, and active learning. Guidance and counseling services should be strengthened to help students deal with stress, anxiety, and academic pressure. Parents should be encouraged to provide a supportive home environment and to take an active interest in their

children's education. Educational policies should aim at reducing socio-economic inequalities and providing equal learning opportunities to all students.

7. Conclusion

Intelligence is a complex and dynamic construct that cannot be explained solely in terms of heredity or cognitive ability. The present conceptual analysis clearly shows that both psychological and environmental factors play a vital role in shaping the development and expression of intelligence among higher secondary school students. Factors such as motivation, emotional stability, self-concept, and learning habits interact continuously with family environment, school climate, socio-economic conditions, and peer influence. The higher secondary stage, being a critical period of academic and personal development, requires special attention from educators, parents, and policymakers. A holistic and supportive educational approach that addresses both the inner psychological needs of students and the external environmental conditions can help in the optimal development of their intellectual potential. Thus, nurturing intelligence is not merely a matter of teaching but of creating a balanced, healthy, and enriching educational ecosystem.

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