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Bronfenbrenner's Ecological Systems Theory in Childhood Resilience and Motivation in Learning: A Literature Review

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Abstract

This article discusses the use of Bronfenbrenner's Ecological System Theory as a framework to analyze childhood resilience in the developmental system. The study objectives are to explore Bronfenbrenner's ecological systems theory about childhood resilience and motivation in learning, aiming to enhance children's resilience by understanding the continuous, direct impact of this system on young people's learning opportunities, activities, and behaviors. The study framework of human development examines the quality of a child's environment and its impact on children's resilience and motivation, as outlined in Bronfenbrenner's ecological system theory. The theory explains students' motivation in learning at early stages. The theory concluded that the system plays an essential role in children's motivation and resilience for learning and development.

Keywords

Childhood, Resilience, Motivation, Bronfenbrenner's Ecological System

1. Introduction

In Bronfenbrenner (1979)'s ecological theory, the system theory argues that development is impacted by multiple systems surrounding and interacting with an individual (Flynn & Mathias, 2023). This model incorporates the concept of bidirectional influence, which considers both the impact of the setting on the person and the reciprocal influence of the person on the environment, as well as the notion of indirect influence. Ecological systems theory takes it one step further, stating that the various factors in children's social environments are of varying importance to their schooling and growth. From this standpoint, parents —the

adults who participate in children's microsystems and are the most constant individuals in their immediate surroundings, except for teachers—play a critical role in their children's education and development (Bronfenbrenner, 1979; Ihmeideh & Oliemat, 2015; McClure et al., 2017).

From a developmental systems perspective, resilience can be defined as the capacity of an active system to adapt successfully to challenges that threaten the system's function, survival, or development (Masten, 2011, 2014, 2018). This definition is intended to be scalable across system levels, from micro to macro, and across diverse disciplines. Resilience applies to understanding many complex adaptive systems, including the whole person, the immune system within a person, a family, an economy, a business organization, a school, a community, or a society, as well as numerous dynamic ecosystems across the planet. The theory conceptualizes children's development as a process of bi-directional and reciprocal relationships (represented below by the arrows) between a developing individual and those within their immediate environment (parents and teachers within the microsystem) (Bronfenbrenner, 1979).

A person's resilience will reflect significant general principles of development drawn from the development system theory. Human development arises from the interactions of an individual's genetic inheritance (DNA plus any other heritable epigenetic marks) with many different interacting systems at multiple levels over time (Gottlieb, 2007). A human individual is embedded in various systems, such as a family and later a school, which are in turn embedded in higher-order systems, such as a community. The significant contribution of Bronfenbrenner's ecological theory (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 1998) to developmental science emphasizes the role of context, as represented by these other systems, in the development of individuals. A child interacts directly with microsystems such as the family or a set of friends or a team, and indirectly with many other systems external to these proximal systems, such as a parent, workplace or large, distal macrosystems that influence a child or her microsystems indirectly, such as a government.

Motivation to learn can be defined as the willingness and readiness to engage with the materials presented in a developmental program (Cole et al., 2004). These motivations for learning have been found to significantly influence learners' level of focus and the extent of effort they put into the learning process (Abeysekera & Dawson, 2015). Brown (postulated that the choice of learning strategies varies from learner to learner. Some learners may adopt direct learning strategies, while others will choose indirect ones.

Resilience can be broadly defined as the capacity of a system to adapt successfully to challenges that threaten its function, survival, or future development (Masten, 2014). This definition is intended to be scalable across system levels and portable across disciplines. Resilience is a characteristic of complex adaptive systems, encompassing not only individual humans but also families, economies, ecosystems, and organizations (Masten, 2015). This definition can also be applied to systems within an individual, such as the human immune system.

When individuals face adversity from various life experiences, learning activities, and social interactions, some can recover positively from these challenges, while others struggle to overcome setbacks (Masten et al., 1990). In particular, childhood represents a key developmental period during which sociologists, psychologists, educators, and clinicians can determine future health trajectories and social skills by examining how children think about and respond to issues (Pawlina & Stanford, 2011; Southwick et al., 2016). Resilience is an individual's ability to adapt completely to energetic circumstances where normal functioning has been disrupted, which may lead to undesirable outcomes (Luthar & Cicchetti, 2000; Masten et al., 1990). By familiarizing resilience at earlier stages of life, they can be safeguarded against such undesirable results, including externalizing problems and other profound mental illnesses (Irfan Arif & Mirza, 2017; Zolkoski & Bullock, 2012). The studies show that more resilient parents and resilient teachers can experience emotional growth and development in both home and school settings, compared to children with less resilient role models (Kourkoutas et al., 2015; Nolan et al., 2014).

The procedure by which stable modification in stimulus-response ratios is developed due to functional environmental interaction via the senses (Lachman, 1997). This definition validates the expression that we learn every day and anywhere. The learning environment shapes students' learning outcomes, attitudes, and behaviors. Positive and supportive learning surroundings can improve students' motivation, engagement, and achievement, while a negative or unsupportive environment can hinder their learning and well-being. Therefore, understanding the factors that influence the learning environment and how to create a positive and effective learning environment is critical for educators, policymakers, and researchers (Khairul Amali et al., 2023).

2. Literature Review

2.1. Why Study Child Resilience

Although exposed to stressful events and chronic stress (Honig, 1986; Johnson, 1986), children vary significantly in their responses to stress, including stressors of considerable gravity, many of whom exhibit adverse sequelae. Resilience is central to developmental psychopathology (Cicchetti & Gerbazy, 1993; Masten, 1989) and prevention and wellness (Cowen, 1994; Cowen & Work, 1988). This is also true for developmental psychopathology, as it is based on the premise that knowledge of normal development can inform the study of deviant consequences (Masten, Best, & Germezy, 1990). Knowledge of pathways that lead to resilience under adversity can also inform preventive strategies and advance a richer psychology of wellness (Cowen, 1994). That is the reason children need resilience for future developmental consequences.

2.2. Micro-Level Contextual Influences on Children's Resilience and Motivation in Learning

Nurturing our children's health and well-being is a family responsibility and a

social priority. By concentrating on reducing threats to children's health through mass vaccination campaigns, advancements in sanitation and food handling, and advances in primary health care, most children in industrialized countries enjoy better health than their counterparts several generations ago (Hatzistergos, 2007). Newman suggests that a more effective strategy would focus on eliminating threats to children's well-being and developing their capacities to manage risk effectively. He concludes that promoting childhood and adolescents' resilience is likely more effective as it emphasizes the "protective processes" that promote well-being more than identifying and eliminating risk.

According to Bronfenbrenner, the actions and connections in the child's direct environments, including parents, school, and the academic community, are the layers most relevant to the child and comprise the structures with which the child has direct contact. The circumstances included in the structure of the microsystem are family, school, neighborhood, or childcare environments. The associations influence two directives at this level: away from the child and toward the child. For example, a child's parents may impact their child's beliefs and behavior; on the other hand, the child also affects their parents' behavior and beliefs. Bronfenbrenner displays how bi-directional effects happen at all levels of the environment (Perera, 2023).

According to Wolters & Pintrich (1998), the comparisons' motivation and self-regulated learning in various mathematics, English, or social science classrooms revealed that differences in the motivational and cognitive components of learning could certainly be noticed, but that the relations among these components remain similar across the contexts. Gurtner et al. (2001) state that the type of lesson or setting also determines motivation and learning. According to Gerlach (1994), group work will be positively appreciated by students only if they are influenced by the educational value of cooperating with peers.

By teaching resilience at earlier stages of life, children can be safeguarded against such undesirable outcomes, including externalizing problems (aggression and rule-breaking) and other profound mental illnesses (Irfan Arif & Mirza, 2017; Zolkoski & Bullock, 2012). The role of teachers and school-based intervention will be explored as sources for bolstering resilience among children (Nolan et al., 2014). Alternative perspectives on resilience pathways, including the microsystem, will also be addressed in the implications of resilience research for play-based approaches and educational psychologists.

The theory has been applied extensively within the field of education to help design effective learning environments that emphasize classroom experiences and focus on the influences of families, communities, societies, and the broader culture. The Early Childhood Education Program, Head Start, is an example of an intervention. In 1965, Urie Bronfenbrenner served as a government advisor for the development of the program (Bailey et al, 2021). The program takes a holistic approach, supporting infants, toddlers, and preschoolers to promote school readiness.

The Head Start program's approaches aim to develop children's mental and physical abilities by improving their health, self-confidence, and verbal, conceptual, and relational skills. The Head Start program is designed to enhance children's mental and physical development by improving their health, self-confidence, verbal skills, conceptual understanding, and social relationships while also increasing parental involvement. According to Levitan (1969), the budget for Head Start in the 1966-1967 period allocated funds for early childhood education, health services, and nutrition. The remaining budget was dedicated to parental involvement, social services, and mental health services. The National Institute for Early Education Research has rated the quality of the Head Start program around the median of the social distribution (Espinosa, 2002). Nonetheless, the program may still provide significantly better outcomes compared to informal childcare options (Loeb, 2016), particularly in terms of skills and increased parental involvement.

2.3. Meso-System Level of Influence on Children's Resilience and Motivation in Learning

The concept of meso-systems not only helps to integrate the study of individual contextual factors (such as parents, teachers, and peers) but also begins to reveal a range of interesting higher-order effects that become visible only when the confluence of multiple contextual factors is considered together (Eccles & Roeser, 2015). The notion of mesosystems suggests a menu of questions to help enrich conceptualizations and studies of contextual factors that shape student motivation and its development.

The eco-developmental model recognizes that as children grow and develop, they spend more and more time with peers relative to their families. Pivotal work has acknowledged that parents who unintendedly reward coercive behavior from their children contribute to their rejection from normative peers because of a lack of social skill and, subsequently, affiliation with more antisocial peers. A substantial body of research has found delinquent peer affiliation to be an important risk factor in problem behavior and delinquency (Dishion et al., 1991). Community can be conceptualized as another microsystem like the family and peers, in which youth interact, or it could be thought of as a meso-system that facilitates interactions among the various spheres in the lives of youth, including their family, peers, school, work, and faith settings (Bronfenbrenner, 1979).

Research demonstrates that neighborhoods and communities where both families and youth feel supported result in more positive parenting, family cohesion, and positive identity development and academic achievement on the part of the youth, with less delinquency and problem behavior. Community as networks explores linkages between adults and youth within their communities (Burton et al., 1997). Institutional networks refer to places youth can go, while social networks refer to children's relationships with people within those institutional resources. For example, a youth center may be an institutional resource, while supportive

adults within that center serve as social resources. Social bonding can help build children's resilience and motivation, promoting prosocial development. This is psychologically affirming, resulting in increased conformity to social and behavioral norms, with benefits to human development (Coleman, 1987; Hirschi, 1971).

Children who experience problematic family functioning are also more likely to report negative affiliation (Dishion et al., 1991); appropriately structured out-of-school time settings could help foster more positive peer interactions, less delinquency, and proclivity toward substance use (Gottfredson et al., 2004). Routine activity theory posits that a more significant opportunity for youth delinquency exists when youth participate in unstructured, unsupervised activities with peers (Osgood et al., 2005). This is because peers often help motivate delinquent youth and assist them in rationalizing delinquency (Patterson et al., 1989).

In terms of application, recognizing the complex mesosystem that affects students highlights the need for those who wish to support children and youth to establish trustworthy and reliable connections, mutual understanding, and coordinated support. Generally, teachers are familiar with the effects of mesosystems. They understand their essential role in bridging the various worlds that students navigate. Teachers know that factors influencing motivation in the classroom are often tied to other aspects of students' lives, and they take seriously their responsibility to protect students from risks present in other microsystems, such as low parental involvement or association with disengaged peer groups. However, this critical social role often leaves many teachers feeling unprepared, overburdened, and lacking adequate support. Teachers need to take ownership of these systems to enhance their efforts (Skinner et al., 2022). While teacher training can emphasize the development of necessary skills for these challenging tasks, in-service teachers also require ongoing support from school staff and administrators, as well as assistance from their broader communities.

2.4. Exo-Level Contextual Influences on Children's Resilience and Motivation in Learning

The exo-system refers to the many different distal social interactions that can indirectly influence child development. Exo-systems shape the quality of meso and microsystem interactions. For example, communities that facilitate social networks between parental microsystems (Cowan, Cohn, Cowan, & Pearson, 1996) provide caregivers with potentially supportive relationships that make it easier for them to sustain the provision of quality childrearing. Research conducted by Emery & Laumann-Billings (1998) showed that families that are socially isolated because they have few links to broader social networks (being active in associations, access to knowledge in different settings) or community-based activities, who are affected by structured barriers such as unemployed, show increased rates of conflict and child abuse (Mackenzie, Kotch, & Lee, 2011).

According to Bronfenbrenner (1995), social organizations that influence children indirectly are part of this system, including the work settings and policies of

parents, extended family networks, community resources, and mass media. This layer indicates the larger social system in which the child does not function normally. As stated by Berk (2000), the structures in this layer influence the child's development by interrelating with some structures in the microsystem. For example, place schedules or community-based family resources can be provided as examples. The child may not be straight at this level. However, he feels the positive or negative force associated with interacting with his system.

According to Gurtner et al. (2001), exo-level elements refer to the type of school or program in which a student is involved, mostly without having chosen it. According to Midgley (1993), there have been changes in the organization and structure of schools. When transitioning from elementary to middle or high school, involvement in a special program section has been found to influence students' perceptions of school and attitudes toward schoolwork. Additionally, it is influenced by self-esteem or other psychological symptoms (Hirsch & Rapkin, 1987).

2.5. Macrolevel Contextual Influences on Children's Resilience and Motivation in Learning

Macrosystems refer to those aspects of the social ecology that form the cultural backdrop to a child's bio-physio-social development. As the level of abstraction increases, it becomes increasingly complex to isolate particular, independent variables related to resilience, such as the transmission of culture, a family support policy, or an antistigma intervention. What remains available for measurement are only the functional indicators of a child's participation in what Habermas (1979) described as the lifeworld of the everyday: school attendance, other socially normative behavior, and life avoidance of substance abuse.

As stated by Bronfenbrenner, broader cultural values, laws, and governmental resources. It may be considered the furthest layer in the child's environment. According to Berk (2000) while not being a precise framework, this layer is contained of cultural values, customs, and laws. The effects of larger principles are defined by the macro system flow during the interactions of all other layers. For example, if the culture believes parents should be solely accountable for raising their children, it is less likely to offer resources to assist parents. The parents' ability or inability to take out that responsibility toward their child within the setting of the child's microsystem is similarly affected. According to Bronfenbrenner (1995), micro, meso, exo, and macro systems operate as distinct systems within themselves and about one another.

Macrolevel contexts refer to out-of-school environmental characteristics such as familial, cultural, economic, or political variables. Studies conducted in various cultural or ethnic contexts provide much evidence of their effects on motivation, perception of school, or appraisal of the motivational and emotional aspects of various work situations. According to Japanese and Chinese mothers, consider effort more important than ability for a given academic performance, whereas American mothers emphasize ability over effort. The pressure to find a good job

at the end of their schooling also introduces contextual elements in how students value and use the school (Gurtner et al., 2001).

Macrosystems are powerful forces that can hinder institutions from maintaining conditions that enable individual players—such as teachers, principals, parents, and peers—to foster motivationally rich and supportive educational experiences. These systems also directly impact motivational development by shaping students' experiences in specific environments, such as schools. Structural inequities are embedded not only in the physical infrastructure of schools but also in their organization and practices. Children from low-wealth, marginalized, and racial groups have unequal access to well-prepared teachers, modern learning materials, advanced programs, and extracurricular activities. Their social interactions are influenced by pervasive implicit biases regarding their strengths and potential, as well as assumptions about their inferiority and that of their families, cultures, and communities.

2.6. Chronosystem Contextual Influences on Children's Resilience and Motivation in Learning

The final stage of Bronfenbrenner's ecological model focuses on the role of time in shaping an individual's development. This system encompasses all a person's experiences throughout their life, including environmental events, major life transitions, and historical events. This dimension acknowledges the influences of historical events, personal experiences, and significant life transitions on development processes.

This system encompasses the dimension of time as it relates to a child's environment. Elements within this style can be either external, such as the timing of a parent's death, or internal, such as the physiological changes that occur with a child's aging. As children grow older, they may react differently to environmental changes and become more capable of determining how those changes will affect them. As this model suggests, the quality and context of the child's environment are critical to the ongoing development (Chen & Tomes, 2005). The complexity of interactions can rise as the child's physical and cognitive structures grow and mature.

As individuals progress through different stages of life, they may encounter various challenges and opportunities that shape their development. Each change in life changes history, impacting children's resilience and motivation to learn. The chronosystem recognizes that societal and cultural changes can influence an individual's development. For instance, the shift in attitudes towards mental health recovery or the emergence of new technologies can shape individuals' experiences and developmental outcomes across generations.

3. Conclusion

The resilience and motivation process mobilizes existing internal and external factors to reduce the adverse effects of stressors and achieve positive outcomes,

whether they are maintained or improved. During the development process, these elements are continually updated through the conscious or unconscious internalization of experiences, and thus, they change over time (Luthar et al., 2000). In Bronfenbrenner's theory, everything is interrelated. It focuses on the individual's drive and ability to influence within their specific environment rather than their sphere of influence (Christensen, 2016). They interact with each other, but to varying degrees and at different times in different ways, in each level of attitude and behaviors, students' perception of the classroom climate or environment, as well as the classroom goal structure, norms, and practices, belongs to a second level of contextual variables. At the meso level to the macro level, in the classroom and out of school, environmental characteristics, as well as various cultural and ethnic contexts, provide substantial evidence of their effects on motivation and perception of school. The study concluded that Bronfenbrenner's Ecological Systems theory explains students' motivation in learning at all stages. It is implied that every system mentioned in the Ecological Systems Theory plays a crucial role in students' resilience and motivation, with the understanding that understanding these systems can enhance learning.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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