Ecological Theory: Preventing Student Bullying to Promote Culture of Peace

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Abstract—**The classic ecological theory of Bronfenbrenner is used as a framework for reviewing the risks and factors found associated with the involvement of bullying in school during childhood and adolescence. The theory consists of five environmental systems starting from personal interaction to the influence of a broader culture. After reviewing various literature related to bullying, it is found that the structure or location factors in which children have direct contact include peers, family, community, and school (microsystem), the relationship between family and school such as parental involvement in their children's school (mesosystem), the perception of the teacher or staff about the school environment (ecosystem), the social structure in which students live (macrosystem), and changes in family structure through divorce, displacement, or death (chronosystem) are the main factors causing many bullying behavior in school. Some of our recommendations to prevent and to reduce bullying as an effort to promote a culture of peace include; build partnerships between schools and the environment, improve teachers' ability to manage conflict, review approaches used in implementing punishment, and build a positive school climate.**

Keywords— *ecological theory, bullying, student*

I. INTRODUCTION

Bullying is a form of aggressive behavior, a behavior designed to hurt other people. There is no universal agreement on the definition of bullying, but there are some consensus that bullying is an aggressive behavior that meets two additional criteria: (1) repetition, it occurs more than once and (2) there is a power imbalance which makes it difficult for victims to defend themselves [1]. Bullying can occur in a variety of contexts, in childhood and adulthood. Children, youth, teachers, staff, parents and other members of a community are expected to be able to recognize and to realize that bullying is a serious problem. They must be aware of various forms of bullying, not just physical bullying [2]. Data on bullying cases in America reported by the Josephson Institute of Ethics provide data on cases of bullying in America after surveying 43,000 teenagers, the result of which 47% of teenagers aged 15-18 years had experienced bullying and 50% of teenagers had interfered, teased, and ridiculed other students. The National Association of Elementary School Principals reports that every seven minutes, a child is bullied in

a school environment, and every month there are three million students absent from school because they feel uncomfortable. An estimated 18 million children were bullied in 2013 [3]. Similar occurrences were also experienced by other countries which later made bullying a global issue that was very urgent to find a solution [4].

Bronfenbrenner introduces a model of human development ecology as an effort to advance science [5]. He emphasizes the importance of conducting experimental studies in the environment around children, such as schools. Many experts expressed their support for this model, revealing that young people are in systems that have direct, indirect, and dynamic influence in their development processes and behavior. This model is often referred to as a socioecological model and focuses on understanding how individual characteristics influence the way they interact with the environmental context to prevent bullying behavior [6]. Although Bronfenbrenner's framework has often been applied to widespread child development, its manifestation to school bullying is still limited. Thus, in this article, this framework is used to organize and to inform our understanding of the causes of bullying behavior conducted in schools to find out what steps need to be taken to prevent and reduce bullying behavior as an effort to promote a culture of peace in schools.

II. THE BRONFENBRENNER ECOLOGICAL THEORY

The ecological theory of child development was introduced by Uri Bronfenbrenner, a psychologist from Cornell University in the United States [7]. Ecological theory considers that human development is influenced by environmental contexts. Reciprocal relationships between individuals and the environment that will shape the individual behavior. Environmental information for children is to describe, organize and clarify the effects of various environments. Ecological theory attempts to see human interaction in systems or subsystems. The definition of ecology according to Bronfenbrenner is:

> The ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded[8].

There are three important things that must be considered from the definition of ecology according to Bronfenbrenner; (1) a person's development is not only seen as a tabula rasa and environment that influences, but grows dynamically, moves progressively and reshapes the environment in which a person lives, (2) requires a reciprocal process, mutual influence and direct interaction between individuals with environment, and (3) the environment as a place for the development process is not limited to just one setting but is an interrelated unit between several settings [9].

Every biological creature or organism develops in the context of an ecological system that can support or weaken growth. People need to know about the ecology of the sea or forest if you want to understand the development of trees and fish. Likewise, with humans, it is necessary to understand the development of human environmental ecology to understand human development [10]. In simple terms, these interactions are seen in the following picture:
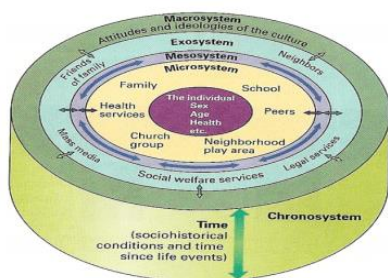

Fig. 1. Bronfenbrenner's Ecological Theory

Bronfenbrenner's ecological theory consists of five environmental systems ranging from personal interaction to the influence of wider culture. Bronfenbrenner calls these systems as microsystem, mesosystem, ecosystem, macrosystems, and chronosystem (Figure 2.1).

Microsystem is a setting where individuals spend a lot of time. Some contexts in this system include families, peer groups, schools, and neighbors. In this microsystem, individuals interact directly with parents, teachers, peers, and others. According to Bronfenbrenner, students are not passive recipients of experience in this setting, but students are people who interact reciprocally with others and help construct these settings [11].

Mesosystem consists of relationships and processes that occur between two or more settings that contain people who are developing (for example, the relationship between home and school, school and workplace, etc.). In other words, a mesosystem is a system of microsystems. For example, one important ecosystem is the relationship between school and family. In a study of one thousand eighth graders, who examined the combined effects of family and school experience on student attitudes and achievements when students passed the transition from the last year of junior high school to early high school [11]. Students who are given more opportunities to communicate and make decisions, whether at home, at school or in the community, show better initiative and academic value.

Ecosystem is a larger social system where children are not involved in direct interaction but are so influential on the development of children's character [11]. Sub system consists of the environment of the workplace of parents, acquaintances of siblings, siblings, or other relatives, and regulations from the school. For example, work experience can affect a woman's relationship with her husband and children. A mother can receive a promotion that demands that she makes more trips that can increase marital conflict and changes in parent-child interaction patterns. Another sub-ecosystem system that does not directly touch the child's personality, but the influence is newspapers, television, doctors, extended families, and others. Other examples, in school life, school boards and supervisory boards. They determine the policies that will be applied in schools. The policies made certainly affect students. The influence given can be in the form of good and bad influences.

Macrosystem is a broader culture [11]. Culture is a broad term that includes the role of ethnicity and socio-economic factors in child development. Culture is the widest context in which students and teachers live, including the values and customs of the community. For example, some cultures (such as those in Islamic countries; Egypt or Iran), emphasize traditional gender roles. Other cultures (such as in the United States) accept more varied gender roles. In most Islamic countries, the education system promotes male domination. Whereas in other western countries, schools actively express the value of equality between men and women. One aspect of the student's socioeconomic status is poverty which affects the developmental factors of students and their ability to learn, although some students from poor neighborhoods are very tenacious. Other macrosystem sub-system consists of the ideology of the state, government, religion, law, and so forth.

Chronosystem is a sociohistorical condition of child development. Chronosystem includes changes or consistency over time not only in the person's characteristics, but also in the environment in which the person lives [11]. For example, today's students are the first generation to grow in an electronic environment filled with computers and new forms of media, the first generation to grow in the sexual revolution, and the first generation to grow in irregular cities, where there are no more boundaries between cities , rural, or suburban.

III. BULLYING

Bullying is a form of violent behavior both physically and psychologically to someone or a group of people who are weaker by someone or a group of people who consider themselves in power [12]. This power makes bullies feel free to do anything to hurt their victims. Whereas the victims perceive themselves as someone who is weak, helpless, and always threatened (Levine, 2014). Such perceptions then perpetuate bully behavior in various schools.

Bullying is divided into three types, namely physical, verbal, and relational [13]. Physical bullying is the most visible bullying. Therefore, physical bullying is easier to identify compared to other types of bullying. Some behaviors are included in the type of physical oppression; hitting, strangling, punching, kicking, biting, and other behaviors that hurt the victim's physique [4]. The stronger and more mature of the bullies, the more dangerous types of attacks are done, although sometimes not intended to seriously injure.

Verbal violence is the most commonly used form of bullying by both women and men [4]. Verbal violence is easy to do and can be whispered before parents or peers without being detected. Verbal violence can be in the form of calling someone with a nickname that is usually associated with physical condition, reproach, slander, cruel criticism, humiliation, statements leading to sexual harassment, terror by telephone using harsh language, letters containing threats of violence and gossip.

Relational suppression is the most difficult type of bully to detect from the outside [4]. This suppression is related to the weakening of the victim's self-esteem systematically through neglect, exclusion or avoidance. The latter is the most powerful oppressive tool. The child who is the subject of his friends' talk is most likely not to know or hear the talk. However, they still feel the effect. This behavior can include hidden attitudes such as aggressive views, glances, sighs, shuddering shoulders, scorn, mocking laughter, and harsh body language.
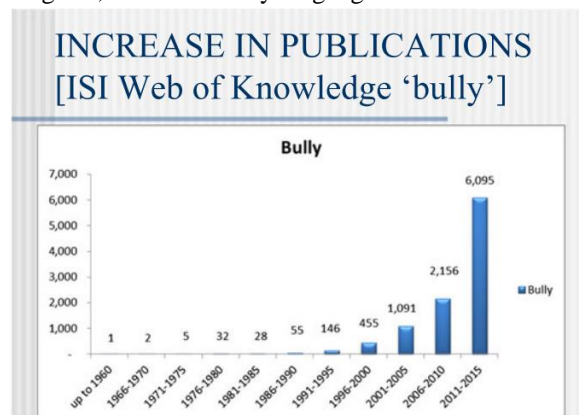

Fig. 2. Number of publications with keyword 'bully' from ISI Web of Knowledge, by 5 years periods

Research on bullying has experienced a significant increase, especially in the last 30 years (Figure 2). It shows that the phenomenon of bullying has been regarded as a global problem, because these behaviors exist in each country. In fact, the perpetrators of bullying have been identified as having their respective roles [4]. The oppressor's role is divided into leaders (who initiate and lead bullying), assistants (who join in it) and reinforcers (who laugh or encourage bullying). In addition to victims, another role is as oppressors or victims (students who fall into two categories, namely bullies and victims, are likely to be provocative victims who disturb others and in turn attack); defenders (who help victims in several ways) and audiences (who are aware of bullying but ignore it).

IV. BULLYING BASED ON ECOLOGICAL THEORY

Bullying is an aggressive behavior and is usually carried out repeatedly by children or adolescents where they must know that the behavior will tend to cause danger, fear or distress to other individuals, including physical, psychological, social or academic harm, endanger individual reputation or harm individual property [2]. Factors that cause a child or youth to be involved in bullying based on Bronfenbrenner's ecological theory are divided into five systems; microsystem, mesosystem, ecosystem, macrosystem, and chronosystem [5]. The five systems are interrelated and have a major influence on the development of a child.

Microsystems consist of individual, family, and peer characteristics. Individual characteristics such as differences in age, sex, health status and psychological function are often used as tools for bullying at school. Often found, in the process of orientation of new students, senior students apply arbitrarily to their juniors. The causes can be various; want to be considered cool and powerful, revenge because it was once treated similarly, or just want to make its juniors ridicule. In addition to age differences, the research conducted by Espelage shows that dating relationships between male and female students are related to sexual abuse and violence [6]. It is because there is a desire to show its dominance in the couple. When talking about bully behavior, certainly physical and psychological differences cannot be excluded [14, 15].

Several studies in various countries prove that children with special needs are very vulnerable to intimidation. First, a 2008 study conducted in the United Kingdom found that 60% of students with disabilities reported being bullied compared to 25% of the general student population [16]. Second, all studies conducted in the United States found that children with disabilities were more likely to be victims of bullying and that the bullying experienced by these children was more chronic and directly

related to their physical condition [16]. Third, other studies have found that children with physical or disability conditions, such as cerebral palsy and downs syndrome, are more likely to be called names or aggressively excluded from social activities [17]. In addition, children who are overweight 1.2 times are more likely to be intimidated than their normal weight friends [16]. Then, children who are in obese conditions are 1.6 times more likely to experience intimidation than their non-obese peers, regardless of race, gender, or socioeconomic status [16].

Consistent monitoring of parents has long been recognized as a protective factor (for victims of acts of violence). Students who bully tend to have parents who do not provide adequate supervision or are not actively involved in the lives of their children [18,19]. In other words, the behavior of parents who tend to ignore them tends to encourage them to be aggressive and revenge. In a recent longitudinal study, it is shown that family conflict (yelling) is related to bullying in high school students [20]. Furthermore, children who are victims of bullying often come from families who have a history of abuse or parents who have inconsistent behavior. Therefore, family support is needed to prevent adverse effects for students who receive bullying behavior at school. When victims of bullying have warm relationships with their families, they have more positive outcomes, both emotionally and behaviorally [21]. This positive parent-child interaction gives children the opportunity to talk about their bullying experiences and can provide guidance on how to deal with these events. In fact, a supportive relationship with siblings can help bully victims to survive.

Bully behavior is often done openly. Students who are friends with other students (microsystem) will tend to participate in bullying their friends who are seen as weaker [22]. In a recent meta-analysis, Cook found that students who bully at school have higher social status than their peers [23]. Whereas students who are bullied are those who are ostracized. Furthermore, students can function to perpetuate bullying actively if they join or passively accept bullying behavior; on the other hand, students can intervene to stop bullying or defend victim behavior [6]. The more prevention of bullying behavior is well socialized, the greater the urge to participate in stopping the behavior. The developing literature base shows that female students are more likely to involve themselves in defending victims of bullying, then adolescents with high self-efficacy (for example, feeling able to help and involve themselves), have a positive attitude toward victims, empathy affective, and personal responsibility to intervene will also participate in preventing bullying behavior [24].

Mesosystem includes interrelations between two or more microsystems, each containing an individual [5]. This interaction is between and among families, peers, and schools. The relationship among students,

teachers and administrators is important. There is no doubt that teachers and school officials can influence students' relationships with their peers and their perceptions of the school environment. A study found that the positive involvement of teachers in their students 'academic and social life significantly reduce students' insecurity when they were at school [25]. It is also important to note that students are more willing to seek help from teachers or school officials when teachers intervene in conflicts between friends. Finally, in a recent multilevel study of more than 4,000 high school students in 35 schools, students report that reducing school bullying can be suppressed if all parties participate in giving direction and support to students involved in bullying, both perpetrators and victims [26]. Another example of mesosystem structure is the influence of family functions on the selection of peers or the interaction between family characteristics and individual attributes. For example, a longitudinal study of high school adolescents found that monitoring parents for children's behavior can suppress the adverse effects of the environment. It can be seen from their reduced involvement in deviant behavior [27]. Conversely, impulsivity exacerbates the effects of adverse environmental influences by increasing involvement in deviant behavior.

Ecosystem occurs when experiences in other settings (where students do not play an active role) affect the experience of students and teachers in their own context. For example, because schools are part of the environment, an unsafe environment can influence bullying behavior because of inadequate adult supervision or negative social influences [28]. For this reason, a social control is needed, which is not only the family and the school who play an active role, but the environment as a place where students get along every day.

The macrosystem level is considered as a cultural blueprint that can determine social structures and activities that occur at the level of the direct system. Oppression, like other forms of aggression, varies in an intercultural context. Sociological theorists assert that school norms can perpetuate inequality, alienation, aggression, and oppression among students in relation to their ethnicity, gender and socio-economic background [29]. For example, students from different cultures have values that serve as their life guidelines. Sometimes, the feeling that culture is better than other cultures and underestimates the values contained in other cultures can encourage mocking behavior that leads to bullying behavior. In addition, those who grow up in an open and democratic culture tend to have a sense of tolerance for other cultures.

The final level of the ecological framework is chronosystem, including consistency or change (for example, historical or life events) of individuals and the environment during life's journey (for example,

changes in family structure). Studies have documented that changes in life events (for example, divorce) can produce children who tend to behave negatively [30]. When parents move in and out of intimate relationships, their children are faced with changes, challenges, and pressures associated with various family transitions [31]. Therefore, pre-adolescent children in divorced or remarried families show a higher level of aggression, disobedience, inappropriate class behavior, and decreased levels of self-regulation.

V. CONCLUSION

Although studies that use ecological theory to study bullying problems often arise, but there is still a need for a lot of effort to conduct investigations that consider complex interactions within and throughout the ecological system. Most of the research in this field focuses only on one or two structures in the microscopy system. Hence, the research is needed that gives special attention to other systems, such as ecosystems that are related to changes in family structure, changes in school staff and administration, and changes in the environment so that they can contribute to efforts to prevent bullying behavior in schools.

The research reviewed here supports a multisystem approach to the prevention of oppression. At the most basic level, all adults in school must participate in professional development opportunities to understand bullying, and how to recognize and intervene to support students. In addition, the school and students must work together to gain knowledge and skills to reduce bullying and promote a culture of peace. However. just working with staff members and students will not bring real change in bullying behavior. The following are practical implications of Bronfenbrenner's ecological theory relating to efforts to prevent bullying behavior in schools.

First, the school must build partnerships with families and the community environment. The school aids families in the form of information about how to care for children, the importance of family support for the child's growth and development process and understands the child's mindset according to his or her age. It must involve parents in the learning process at school [32].

Second, the school must build partnerships with community institutions and faith-based organizations to tackle bullying and ensure that their youth and families know where they can seek help. Some schools hold events with the topic of bullying by inviting resource persons engaged in the prevention of bullying.

Third, the ability of teachers to manage classes also influences school success in suppressing bullying behavior. Therefore, before starting to teach at school, teachers must be given training to deal with various problems related to students including bullying. Teachers are also advised to frequently exchange experiences with other teachers. From the discussion, it is expected to enrich teachers' insight in relation to efforts to recognize and prevent deviant student behavior [33]. Another promising way to achieve sustainable change in schools is to foster a sense of shared responsibility among teachers, for example, by having as many teachers as possible who work together to build understanding of existing problems and agree on rules that apply to students at the school democratically [34].

Fourth, although bullying at school remains a troubling and serious problem, it does not justify the use of punitive measures in schools. One alternative that can be used in determining penalties for students involved in bullying behavior is to use an authoritative discipline approach using rule-oriented and teacher-driven consistent mechanisms [35]. However, even though the school applies this mechanism, consideration needs to be made on various aspects. Because, if the rules applied are so rigid and curb students. Thus, the behavior of students who deviate at school will increase.

Fifth, the experience of researchers and practitioners has proven the power of building a safe and protective climate to prevent bullying behavior. In addition, to create classrooms that promote a culture of peace needs to involve values such as caring and helping each other. Possible mechanisms through "promoting a positive school environment and supporting a culture of peace are based on respect, care, mutual assistance, positive reinforcement of desirable behaviors combined with discipline and consistent consequences for inappropriate behavior" [36,37]. Although it is not the only way but promoting a positive school environment can strengthen pro-social skills [38].

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