

Multiple Observations and Triangulation: Indispensable for Scientific Assessment of Aggressive Behavior in Young Children

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Abstract: Educational observation is a core method for assessing aggressive behavior in young children. However, single observation segments are susceptible to situational factors, subjective bias, and other influences, posing a risk of misjudgment. Based on theories of cognitive development, sociocultural theory, and ecological systems theory, and drawing on the current state of domestic and international research, this study analyzes specific misleading manifestations of single observation segments, such as misinterpreting occasional behavior as aggressive tendencies and labeling. It elaborates on the core characteristics of multiple observations (multiple time points, multiple situations, multiple observers) and triangulation (multiple methods, multiple data sources, multiple researchers). The research aims to examine the reliability and validity of assessing aggressive behavior in young children, demonstrating the necessity of multiple observations and triangulation for enhancing assessment reliability, capturing the essence of behavior, and reducing errors. This provides theoretical and practical support for the scientific assessment and educational intervention of aggressive behavior in young children.

1. Research Background and Purpose

(1) Research Background

Educational observation is a primary vehicle for assessing young children's social behavior. Its value lies in capturing children's authentic social behaviors in daily contexts such as area play and outdoor interactions, tracking the dynamic developmental trajectory of behaviors, and interpreting the essence of behaviors by considering the situational context, thereby providing a precise basis for assessment. Aggressive behavior in young children directly impacts the quality of social development, including peer relationship formation and social skill cultivation, making it a key focus of assessment. However, the diverse manifestations and complex motivations underlying aggressive behavior in young children make accurate judgment challenging, necessitating reliance on meticulous and objective educational observation to overcome this difficulty.

(2) Research Purpose

This study aims to examine the reliability and validity of assessing aggressive behavior in young children by combining multiple observations and triangulation, and to explore the misleading risks

associated with single observation segments.

2. Current Research Status in China and Abroad

(1) Limitations of Single Observation Segments

Scholar Zhang Xiao (2021) points out that in educational research, relying on a single observation or data source can easily lead to observation bias and situational effects, resulting in one-sided or even erroneous judgments of student behavior. Research relying on a single method often "captures only one aspect of a phenomenon," making it difficult to eliminate the limitations inherent in that method and prone to misinterpreting occasional or context-specific behaviors as stable individual traits.^[1] Scholar Liu Yunsheng (2022) emphasizes that "process evaluation" must integrate multiple data sources to prevent "one-dimensional, one-sided" evaluations from being misleading.^[2]

(2) Current Research Status on Aggressive Behavior in Young Children

1) Classification of Aggressive Behavior

Scholar Guo Wei categorizes aggressive behavior based on purpose into instrumental aggression and hostile aggression. Instrumental aggression involves harming others to obtain something desired, such as fighting over toys. Hostile aggression is not aimed at obtaining an object but at harming another's body, feelings, or self-esteem, such as retaliation or domination. Based on the target, aggression is classified into physical aggression and social aggression. Physical aggression involves direct physical confrontation causing bodily harm, like fighting or violence. Social aggression, also known as relational aggression, refers to damaging another's interpersonal relationships through non-confrontational and indirect means like social exclusion, gossip, slander, etc.^[3] In her research, scholar Gai Xiuling classifies aggressive behavior based on its form into physical aggression, verbal aggression, and relational aggression. She defines verbal aggression as acts directly implemented by the aggressor using spoken words, manifested as humiliating, mocking, cursing, or nicknaming others.^[4]

2) Influencing Factors of Aggressive Behavior

Regarding factors influencing aggressive behavior, domestic research typically analyzes three aspects: biological factors, individual factors, and social environmental factors. First, biological factors: Scholar Zhang Qian suggests that compared to normal children, aggressive children show lower balanced development and cooperative functions of the cerebral hemispheres, indicating weaker anti-interference ability in the left hemisphere and weaker gestalt cognition ability in the right hemisphere, which might be a neuro psychological basis for aggressive behavior.^[5] Scholar Guan Hongyun found through investigation that children in good health are less prone to aggressive behavior, while children with illnesses (e.g., asthma) are more prone to it. Children with chronic illness histories often experience fear, irritability, and anxiety due to physical symptoms, which can manifest as aggressive behavior.^[6] Second, individual factors: These include temperament, personality, moral development, social skills, self-esteem, etc. Children with irritable, excitable temperaments are more likely to exhibit aggressive behavior. Children with higher levels of moral development display more prosocial behavior and less aggression. Children with poor social skills have weaker problem-solving abilities and are more likely to resort to aggression when facing conflicts. Third, social environmental factors: These mainly encompass family, school, peer groups, and mass media. Family aspects include structure, parenting styles, and parent-child relationships. School factors involve campus climate and teachers' teaching attitudes. Peer groups depend on interactions among children. Mass media refers to the negative influence of violent films, programs, and negative reports.

(3) Value of Multiple Observations

Scholar Jiang Jun notes that in observing young children's behavior, methods like event sampling (e.g., conducting 20 consecutive days of observation focused on aggressive behavior) can cover multiple kindergarten scenarios such as daily play, meals, and outdoor activities. This allows not only for precise recording of the frequency and duration of target behaviors but also for detailed documentation of the situational context. Through long-term, continuous data accumulation, it becomes possible to clearly distinguish between occasional incidents and persistent behavioral trends, providing an objective basis for subsequent accurate judgment of behavior nature and cause analysis.^[7] Scholars Zhang Wenxin et al. point out that in child behavior research, longitudinal studies often involve following the same cohort of children over an extended period (e.g., from kindergarten entry through graduation). By periodically recording the frequency, type, and conflict resolution methods related to their aggressive behavior, researchers can clearly outline the developmental trajectory of the behavior with age. This approach effectively verifies the stability of the behavior (e.g., whether a child's aggression persists long-term) or its trend of change (e.g., whether it decreases with improved social skills), providing key evidence for in-depth analysis of long-term influencing factors behind the behavior and aiding in more accurately judging children's social development status.^[8]

(4) Application of Triangulation in Educational Research

Triangulation was first proposed by Webb et al. (1966), aiming to "use two or more methods to verify the same proposition" in order to reduce the error associated with a single method.^[1] Xie Lixin points out that in pedagogical research, triangulation achieves multi-dimensional verification through the coordinated application of observation, questionnaires, and interviews: observation directly records subjects' actual behavior, questionnaires systematically gather their cognitive perspectives and views, and interviews delve into emotional attitudes and underlying motivations. These three aspects—behavior, cognition, and emotion—mutually validate each other, compensating for the limitations of a single method, making research conclusions more comprehensive and objective, and effectively enhancing research credibility.^[9] Scholars Lin Gang et al. believe that the "triangulation method," by mutually validating evidence from literature, archaeology, and anthropology, and adhering to technical routes combining theory and practice, quantitative and qualitative analysis, and micro and macro perspectives, can greatly enhance the effectiveness of research.^[10] Scholar Zhang Lian argues that in conducting case study research, the diversity and reliability of data sources are always a key concern. Applying the "triangulation" research method to educational case studies, forming a "data triangle," "method triangle," "researcher triangle," and "theory triangle," is of significant importance for improving the reliability and validity of research data and results.^[11]

(5) Research Summary

In summary, within research on aggressive behavior in young children, the limitations of single observation segments have been explored to some extent: a single observation segment provides only an instantaneous snapshot of behavior. It is susceptible to specific situations and the observer's subjective cognitive biases, and it fails to cover the complete context in which the behavior occurs. This can lead to misjudgments about a child's aggressive tendencies, affecting the objectivity of the assessment. To overcome this limitation, the necessity of multiple observations is widely emphasized. Through multi-dimensional recording across different times, situations, and interaction partners, the frequency, core triggers, and long-term developmental trends of aggressive behavior can be systematically captured, enabling a more accurate understanding of the behavior's essence and reducing judgment bias caused by fragmented observation. Building on this, triangulation, which integrates methods like observation, interviews, and questionnaires, further corrects the limitations of single methods through cross-validation of multi-dimensional data, effectively enhancing the credibility and generalizability of research conclusions. This provides a more robust

research foundation for the scientific assessment of and intervention in aggressive behavior among young children.

3. Theoretical Basis

(1) Cognitive Development Theory

Piaget's theory of cognitive development posits that young children are in the "preoperational stage," characterized by egocentrism in their thinking. They have difficulty seeing things from another's perspective, and their behavior often stems from their own cognitive logic (e.g., "The toy I'm playing with is mine"), rather than malicious intent. Therefore, educators must understand their developmental stage of thinking to accurately interpret behavior.

(2) Sociocultural Theory

Vygotsky's sociocultural theory emphasizes that children's development occurs through interaction with their social environment. No behavior can be understood in isolation from the sociocultural context (e.g., classroom rules, peer relationships) in which it occurs. Therefore, observation must include the interactional context to discover the true meaning of the behavior.

(3) Ecological Systems Theory

Bronfenbrenner's ecological systems theory posits that child development is nested within a series of interconnected environmental systems, from the micro system (family, classroom), mesosystem (home-school connections), to the macro system (cultural values). Single observation is often limited to a single moment within the micro system. Therefore, multiple observations and triangulation are precisely aimed at bridging the micro and meso systems, allowing us to see how a child's behavior at home, parental rearing styles, etc., influence their behavior in kindergarten, thereby gaining a more macro and systematic perspective.

4. Specific Manifestations of Misleading Judgments of Aggressive Behavior in Young Children Caused by Single Observation Segments

(1) Core Characteristics of Single Observation Segments

Definition of "Single Observation Segment": In behavioral observation research, a single observation segment refers to the smallest analytical unit where a researcher completely records a behavioral process exhibited by an observed subject within a continuous, limited time frame (ranging from seconds to minutes) in a natural setting. In short, it refers to a one-time, short-duration recording of a child's behavior at a specific time, in a single space, by a single individual.

(2) Common Manifestations of Misleading Judgments of Aggressive Behavior in Young Children Caused by Single Observation Segments

Mistaking an impulsive act for a persistent aggressive tendency: Recording only a single instance of hitting, kicking, etc., and immediately labeling the child as "aggressive," while ignoring the possibility that the behavior was an occasional emotional loss of control. ^[12]

Labeling Tendency: Teachers or assessors, lacking multiple samplings, may readily use fixed labels such as "highly aggressive" or "combative," which negatively impacts subsequent educational interventions.

Amplification of Observer Subjectivity: The observer's mood, expectations, or preconceived notions can be amplified when recording a single segment, leading to over-interpretation of negative behavior. ^[13]

Misinterpreting Self-Defense as Proactive Aggression: In a conflict, only observing the child's counter-action, without witnessing the peer's provocation, leads to misjudging passive defense as proactive aggression.

Limitations of Recording Method: Using event sampling rather than continuous recording can easily omit the antecedents and consequences of the behavior, making the single segment appear "abrupt" and misleading judgment. ^[14]

5. Necessity of Multiple Observations and Triangulation

(1) Core Characteristics of Multiple Observations and Triangulation

1) Multiple Observations: Basic Meaning and Key Features

Basic Meaning: The practice of employing multiple recordings, different situations, or different observers to document behavior within the same research theme. Common dimensions include time (multiple sampling points), setting (classroom, playground, play area, etc.), and observer (teacher, researcher, peer).

Key Features:

Repeatability: The same behavior is captured at different time points.

Situational Diversity: The same behavior appears in different activities or environments.

Observer Independence: Perspectives from different recorders complement each other.

2) Triangulation: Basic Meaning and Key Features

Basic Meaning: The cross-usage of two or more data sources, methods, or theoretical perspectives to test and enhance the credibility of research findings. Common types include: method triangulation (observation + interview + questionnaire), data triangulation (quantitative + qualitative), and researcher triangulation (multiple researchers coding independently).

Key Features:

Multiple Data Sources: Obtaining information about the same phenomenon through different channels.

Cross-Comparison: Results from different sources mutually validate each other or explain discrepancies.

Enhanced Validity: Reduces systematic error associated with a single method.

(2) Necessity of Multiple Observations

Enhancing Observational Reliability: A single observation captures only instantaneous behavior and is susceptible to chance factors (mood swings, external interference). Multiple samplings allow testing whether the behavior exhibits a stable pattern of occurrence, thereby improving measurement consistency. Systematic observation frameworks inherently require multiple, structured recordings to form a reliable data chain. ^[15]

Capturing Situational Variation: Aggressive behavior in young children often manifests differently across various activities (free play, structured tasks) or peer group compositions. Multi-situational observation can reveal situational triggers, preventing the misjudgment of occasional impulses as persistent tendencies.

Reducing Observer Bias: The subjective expectations of different observers can introduce systematic error in recordings. Through independent coding by multiple observers and subsequent cross-comparison, personal biases can be identified and corrected.

(3) Necessity of Triangulation

Enhancing Research Validity: A single method (e.g., relying solely on observation) is often limited by data constraints (recording only visible behavior, struggling to capture internal motivations). Triangulation, through multi-source data (observational records, interview statements, questionnaire scales) that mutually corroborate findings, enhances the internal validity of conclusions.

Identifying and Explaining Causes of Conflict: When discrepancies arise between different data sources, researchers can further explore underlying reasons (e.g., observer omission, respondent

social desirability bias), thereby deepening the understanding of the phenomenon.

Enhancing Credibility: In pedagogical research, triangulation has been systematically described as "avoiding the data limitations brought by a single research method from three angles," significantly boosting the persuasiveness of research findings in both academic and practical contexts.

6. Conclusion

This study systematically demonstrates, from both theoretical and empirical perspectives, the inherent limitations of single observation segments in assessing aggressive behavior in young children, as well as the necessity of combining multiple observations with triangulation. Single observation segments are constrained by time, context, and observer subjectivity, which can easily lead to the misjudgment of occasional behavior as a stable aggressive tendency, resulting in labeling risks and deviations in educational intervention. Multiple observations—through repeated recording across multiple time points, multiple situations, and multiple observers—can effectively capture contextual variability and developmental trajectories of behavior, thereby enhancing the reliability of observation results. Triangulation, through cross-validation across multiple methods, multiple data sources, and multiple researchers, compensates for the systematic biases of single data sources and strengthens the validity and credibility of research conclusions.

Based on cognitive development theory, sociocultural theory, and ecological systems theory, this study further argues that the scientific assessment of aggressive behavior in young children must move beyond isolated interpretations of momentary behavior and instead focus on understanding the causes and meanings of behavior within broader temporal, spatial, and social-relational networks. Educational practitioners should establish a cyclical assessment mechanism of "observation - verification - re-observation" to avoid premature conclusions or labeling. Future research may further explore specific operational paradigms of multiple observations and triangulation across different cultural contexts and age groups of young children, and develop corresponding observation tools and training systems, so as to promote the scientization and precision of social assessment in young children.

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