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Case Study On The Effect Of Audiovisual Media On The Concentration Of Children With Adhd (*Attention Deficit Hyperactivity Disorder)*

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ABSTRACT

Children with Attention Deficit Hyperactivity Disorder (ADHD) experience major difficulties in attention control, impulse regulation, and behavioral self-regulation, which affect their engagement in classroom learning. This study aims to describe the effect of audio-visual media on improving learning concentration in an early childhood student with ADHD tendencies. The research employed a qualitative descriptive approach using a case study method involving a five-year-old boy enrolled in an Islamic kindergarten. Data were collected through participant observation, interviews with teachers and parents, and supporting documentation, including developmental records and psychological assessment results. The findings indicate that prior to the intervention, the child showed limited attention span, high distractibility, and difficulty following learning instructions. After the implementation of structured learning activities supported by audio-visual media, improvements were observed in attention duration, active engagement in learning activities, and the ability to follow simple instructions. Audio-visual media were effective in directing the child's attention through the integration of visual and auditory stimuli, thereby reducing environmental distractions. This study concludes that audio-visual media have the potential to serve as an effective pedagogical strategy to support learning concentration in children with ADHD when applied consistently and developmentally appropriately in early childhood education settings.

Keywords: *ADHD, Learning Concentration, Audio-Visual Media, Early Childhood Education*

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INTRODUCTION

Early Childhood Education (ECE) represents a foundational period in human development, marked by rapid growth in cognitive, social emotional, language, and self regulation capacities. During this stage, learning experiences significantly influence children's readiness for subsequent educational levels and long term academic adjustment. Developmentally appropriate and inclusive practices are therefore essential to ensure that all children, including those with special educational needs, receive equitable and meaningful learning opportunities. Inclusive ECE emphasizes responsiveness to individual

differences and the adaptation of instructional strategies to accommodate diverse developmental profiles (Yuliana & Saputra, 2022; Marlina & Putri, 2020).

Within inclusive early childhood settings, children with Attention Deficit Hyperactivity Disorder (ADHD) constitute a group requiring specialized pedagogical attention. ADHD is a neurodevelopmental disorder characterized by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with academic engagement and social functioning. In classroom contexts, young children with ADHD often struggle to sustain attention, follow structured instructions, and regulate behavior, which can hinder their participation in learning activities (Barkley, 2015; Utami & Widyaningrum, 2021). These characteristics highlight the necessity of instructional approaches that intentionally support attention control and behavioral regulation in early learning environments.

From a theoretical perspective, ADHD is closely associated with deficits in executive functioning, particularly in behavioral inhibition, working memory, and sustained attention (Barkley, 2015). Executive function difficulties directly affect children's capacity to maintain concentration during structured learning tasks. In early childhood contexts, concentration is not merely an individual trait but is shaped by environmental stimuli and instructional design. Teachers play a crucial role in structuring learning environments that reduce distractions and provide supportive scaffolding for attention regulation (Kurniawati & Lestari, 2020; Wulandari & Febriani, 2023). Consequently, pedagogical strategies that integrate structured, engaging, and multisensory elements are considered promising in supporting children with attention related challenges.

One instructional approach that aligns with these needs is the use of audio visual media. Audio visual media combine visual and auditory stimuli to present information in a concrete and engaging format. According to the Cognitive Theory of Multimedia Learning, learning is enhanced when information is processed through dual channels, namely visual and auditory pathways, which facilitate deeper cognitive integration (Mayer, 2009). By activating multiple sensory modalities, audio visual media may help sustain attention and reduce cognitive overload, particularly for learners who experience executive functioning difficulties. Furthermore, the use of mediated tools in learning resonates with sociocultural perspectives that emphasize the role of instructional supports in guiding children's development within structured contexts (Vygotsky, 1978).

Empirical studies have indicated that audio visual media can enhance learning engagement, motivation, and attention in early childhood settings. Research within inclusive education contexts also suggests that structured and stimulating media may benefit children with special educational needs by directing focus and increasing task persistence (Astuti & Hidayat, 2021; Safitri & Ananda, 2022). However, much of the existing research has employed quantitative or group experimental designs, with limited in depth qualitative exploration of how audio visual media specifically influence concentration behaviors of young children with ADHD in inclusive early childhood classrooms. This gap underscores the need for case study investigations that provide contextualized insights into instructional implementation and learner responses.

Addressing this gap, the present study adopts a qualitative case study approach to examine the effect of audio visual media on the learning concentration of a child with ADHD tendencies in an inclusive early childhood education setting. The primary research question guiding this study is: How does the use of audio visual media influence the concentration of a child with ADHD during classroom learning activities? The objective of this research is to describe the observed changes in attention focus, task engagement, and behavioral regulation during the implementation of audio visual instructional media.

This study contributes to the fields of early childhood education and inclusive education by providing an in depth qualitative account of instructional practice tailored to a child with attention regulation difficulties. Unlike previous group based studies, this research offers contextual and behavioral analysis at the individual level, thereby enriching understanding of how audio visual media function as pedagogical supports in real classroom environments. The findings are expected to inform teachers, practitioners, and researchers in developing responsive and evidence informed instructional strategies for young children with ADHD in inclusive ECE settings.

METHOD

Research Design

This study employed a qualitative descriptive approach using a case study design. The qualitative case study was selected to obtain an in depth and contextualized understanding of changes in learning concentration and attention related behaviors in a child with Attention Deficit Hyperactivity Disorder (ADHD) following the use of audiovisual media. A case study enables researchers to explore a phenomenon holistically within its real life setting, particularly when boundaries between the phenomenon and context are not clearly evident (Yin, 2014). This approach is considered appropriate for examining behavioral dynamics in inclusive early childhood classrooms, where learning processes are shaped by interactional and environmental factors (Merriam, 2009).

Subjects / Population and Sample

The subject of this study was a five year old male child, identified by the initial “K,” enrolled in an Islamic kindergarten implementing inclusive practices. The participant was selected using purposive sampling based on preliminary classroom observations indicating persistent difficulties in sustaining attention, controlling impulses, and maintaining concentration during structured learning activities. These characteristics align with behavioral indicators commonly associated with ADHD in early childhood (Barkley, 2015).

The research was conducted in the child’s regular classroom environment to maintain ecological validity and to ensure that behavioral responses occurred naturally within authentic learning situations. The classroom teacher and the child’s parents also served as secondary informants to provide complementary data regarding attention patterns and behavioral changes across school and home contexts.

Data Collection Procedure

Data were collected through participant observation, semi structured interviews, and documentation. Participant observation was conducted to systematically record the child's learning concentration before and after the implementation of audiovisual media. Observational indicators included duration of sustained attention, frequency of distraction, task engagement, and responsiveness to teacher instructions. Observations were carried out during regular classroom activities to capture natural behavioral patterns.

Semi structured interviews were conducted with the classroom teacher and the child's parents to gather in depth information about the child's attention characteristics, learning behaviors, and perceived changes during the intervention period. The flexible structure of semi structured interviews allowed the researcher to explore emerging themes while maintaining alignment with the research focus (Creswell, 2014).

Documentation was used to strengthen data validity and included lesson plans, learning records, developmental progress notes, and available psychological assessment reports. These documents provided contextual information and supported triangulation across data sources.

The audiovisual intervention was implemented over a two week period, consisting of six sessions with a duration of approximately 10 to 15 minutes per session. The media included short instructional videos, simple animations, and structured moving visual displays aligned with early childhood learning themes. The intervention design was conceptually grounded in the Cognitive Theory of Multimedia Learning, which emphasizes dual channel processing of visual and auditory information (Mayer, 2009), and in the executive function framework of ADHD, which highlights deficits in attention regulation and behavioral inhibition (Barkley, 2015).

Data Analysis

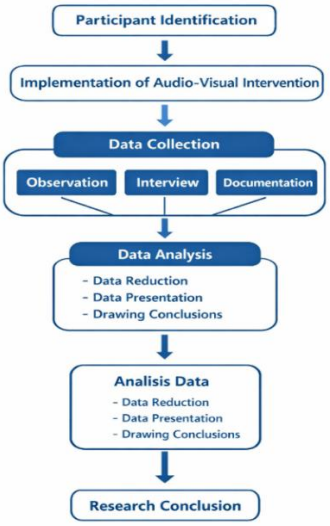
Data were analyzed using descriptive qualitative analysis following the interactive model proposed by Miles, Huberman, and Saldaña (2014), which consists of data reduction, data display, and conclusion drawing. During data reduction, observational notes, interview transcripts, and documentation were coded and categorized according to predefined indicators of learning concentration, including attention duration, distraction frequency, task persistence, and compliance with instructions.

Data display involved organizing categorized information into matrices and narrative descriptions to facilitate pattern identification. Finally, conclusions were drawn through iterative comparison of data sources to identify consistent behavioral changes before and after the audiovisual intervention.

To enhance credibility, the study applied technique triangulation by comparing findings from observation, interviews, and documentation, as well as source triangulation by examining perspectives from both the teacher and parents. Ethical approval was obtained from the school administration, and informed consent was secured from the child's parents prior to data collection.

The overall research procedure consisted of participant identification, preparation and implementation of the audiovisual intervention, outcome measurement, and systematic data analysis, forming an integrated cycle of qualitative inquiry within the natural classroom setting.

Figure 1.



As illustrated in Figure 1, the study began with participant identification, followed by the preparation and implementation of the audio-visual intervention, outcome measurement, and data analysis.

FINDING

The research findings were obtained through participant observation, semi structured interviews, and documentation conducted before and after the implementation of audio visual media in classroom learning activities. The presentation of findings is organized according to the predetermined indicators of learning concentration: attention span, frequency of distraction, ability to follow instructions, motor activity, emotional regulation, and learning engagement. The findings are presented descriptively without interpretation.

Initial Condition of Learning Concentration Before Intervention

Based on participant observation during conventional classroom learning activities, the subject demonstrated limited learning concentration. The observed attention span lasted approximately 1 to 2 minutes before shifting to unrelated stimuli. Assigned tasks were frequently left unfinished. The child often left the seat during learning sessions.

The frequency of distraction was categorized as high. The child was easily distracted by classroom noise, peer movement, and surrounding objects. The ability to follow instructions was limited. The child required repeated verbal prompts and direct

assistance to complete simple sequential instructions. Motor activity was observed to be high and unstructured. The child frequently moved around the classroom and demonstrated difficulty maintaining a seated position.

In terms of emotional regulation, intense emotional responses were recorded when the child encountered situations not aligned with personal preferences. These responses included crying, screaming, and hitting the head. Interviews with the classroom teacher confirmed that the child required additional guidance compared to peers in order to remain focused and complete learning tasks. Documentation records showed frequent unfinished tasks and notes indicating concentration difficulties, although cognitive ability was described as adequate.

Learning Concentration After Implementation of Audio Visual Media

Following the implementation of structured audio visual learning sessions over two weeks, observational data indicated measurable changes across concentration indicators. The child's attention span increased to approximately 4 to 5 minutes during audio visual based learning activities.

The frequency of distraction decreased. Instances of leaving the seat and shifting attention to unrelated classroom stimuli were reduced. The ability to follow instructions improved. The child was able to follow simple step by step instructions with occasional teacher assistance. Motor activity appeared more controlled and goal directed during the learning sessions involving audio visual media. Emotional regulation showed observable changes. Fewer intense emotional reactions were recorded during structured learning activities.

Learning engagement increased. The child demonstrated more consistent participation and task completion during sessions that incorporated audio visual media. Teacher interviews reported that the child appeared more focused and more responsive during audio visual sessions. Parent interviews indicated similar behavioral patterns at home during activities involving visual or audio visual materials. Post intervention documentation showed more consistent task completion and improved participation during relevant learning sessions.

Summary of Observed Changes

Table 1 presents a comparison of learning concentration indicators before and after the implementation of audio visual media.

Table 1. Comparison of Learning Concentration Indicators

Indicator	Before Intervention	After Intervention
Attention span	1–2 minutes	4–5 minutes
Frequency of distraction	High	Reduced
Ability to follow instructions	Requires repeated guidance	Improved, occasional assistance

Motor activity	High and unstructured	More controlled and goal directed
Emotional regulation	Intense emotional responses observed	Fewer intense reactions observed
Learning engagement	Low and inconsistent	Increased and more consistent

Overall, the findings show observable differences in attention duration, distraction frequency, instruction compliance, motor control, emotional responses, and engagement levels between the pre intervention and post intervention conditions, as recorded through observation, interviews, and documentation.

DISCUSSION

Interpretation of Findings

The findings of this study demonstrate that the implementation of audio visual media was associated with observable improvements in the child's learning concentration. The increase in attention span from approximately 1 to 2 minutes to 4 to 5 minutes indicates a measurable change in sustained focus during structured learning activities. In addition, the reduction in distraction frequency, improved responsiveness to instructions, more controlled motor activity, and greater learning engagement collectively suggest that the intervention supported multiple dimensions of classroom behavior.

These results are important because concentration in early childhood is foundational to task completion, instruction following, and classroom participation. For children with ADHD tendencies, difficulties in executive functioning often interfere with these basic academic behaviors. The observed improvements indicate that structured audio visual stimulation may function as an external support system that helps organize attention and reduce impulsive responses during learning activities.

From a developmental standpoint, the multisensory nature of audio visual media appears to align with early childhood learning characteristics, which favor concrete and dynamic stimuli. The integration of visual and auditory elements may have strengthened attentional focus by increasing stimulus salience and reducing reliance on internal regulatory processes that are still developing in young children with attention difficulties.

Relationship to Literature

The findings are consistent with Barkley's theory of executive function deficits in ADHD, which emphasizes impairments in attention control and behavioral inhibition (Barkley, 2015). The increased attention duration and reduced distraction observed in this study suggest that audio visual media may serve as compensatory external supports for executive function challenges.

The results also align with Mayer's Cognitive Theory of Multimedia Learning, which posits that dual channel processing through visual and auditory pathways enhances cognitive engagement and information processing (Mayer, 2009). The improved task

engagement observed during audio visual sessions supports the proposition that multisensory input can enhance attentional allocation in structured learning contexts.

Furthermore, from a sociocultural perspective, the findings resonate with Vygotsky's concept of mediated learning and scaffolding (Vygotsky, 1978). The effectiveness of audio visual media in this study was closely connected to teacher guidance, structured implementation, and supportive interaction. The media functioned not as an isolated tool, but as part of a guided instructional process within the child's zone of proximal development.

Empirical studies in inclusive early childhood settings have similarly reported that structured and engaging media can enhance attention and learning participation among children with special educational needs (Astuti & Hidayat, 2021; Safitri & Ananda, 2022). The present study extends these findings by providing in depth qualitative evidence from an individual case within an inclusive kindergarten context.

Limitations of the Study

Several limitations should be acknowledged. First, the study employed a single case design, which limits the generalizability of the findings to broader populations of children with ADHD. The observed improvements may reflect individual characteristics that cannot be assumed to apply universally.

Second, the intervention period was relatively short, lasting only two weeks. As a result, the findings do not provide information regarding the long term sustainability of concentration improvements. Behavioral changes observed during short term interventions may fluctuate over time.

Third, the study relied primarily on qualitative observation and interview data. Although triangulation was applied to enhance credibility, the absence of standardized quantitative measurement tools limits the precision of concentration measurement.

Implications

The findings of this study have practical and research implications. Practically, early childhood educators in inclusive classrooms may consider integrating structured audio visual media as part of instructional strategies to support children with attention regulation difficulties. However, such media should be implemented alongside consistent teacher guidance, clear instructions, and structured classroom routines.

For future research, studies involving larger samples and multiple cases are recommended to strengthen external validity. Longer intervention durations would allow examination of sustained behavioral change over time. Additionally, mixed method designs incorporating quantitative attention measurement instruments may provide more comprehensive evidence regarding the effectiveness of audio visual media in improving learning concentration among young children with ADHD tendencies.

Overall, this study contributes to the growing body of knowledge on inclusive early childhood pedagogy by highlighting the potential role of multisensory instructional media as supportive tools for attention regulation within authentic classroom contexts.

CONCLUSION

This study concludes that the use of audio-visual media in learning activities contributed positively to improving the learning concentration of an early childhood learner with tendencies of Attention Deficit Hyperactivity Disorder (ADHD). The improvement was reflected in an increased attention span, a reduction in distraction frequency, and an enhanced ability to follow simple instructions during learning activities.

The findings indicate that audio-visual media supported the creation of a more engaging and structured learning environment, which facilitated sustained attention and active participation. Nevertheless, the effectiveness of audio-visual media was closely linked to consistent teacher guidance, clear instructional scaffolding, and well-planned pedagogical strategies. Thus, audio-visual media should be viewed as a supportive instructional tool rather than a standalone intervention.

From a practical perspective, this study suggests that early childhood educators, particularly in inclusive educational settings, may consider integrating audio-visual media as an alternative strategy to support learning concentration in children with ADHD tendencies. However, given the single-case study design and the limited duration of the intervention, the findings cannot be generalized broadly. Future research is therefore recommended to involve larger samples, longer intervention periods, and mixed-method approaches to obtain more comprehensive and generalizable evidence regarding the effectiveness of audio-visual media in early childhood education.

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