

# An Integrative Exploration of the Characteristics, Structure and Effectiveness of Metaverse Counseling for Children and Adolescents

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## Abstract

This study aims to integratively analyze the user characteristics, counseling structure, and effectiveness of metaverse counseling studies conducted for children and adolescents. To achieve this purpose, a literature review method was applied to relevant studies published in Korean accredited academic journals, and a total of five articles that met the research purpose were finally selected for analysis. The analysis focused on four categories: user characteristics, utilized metaverse platforms, counseling structure (counseling format, session composition, and theoretical foundation), and counseling effectiveness. The analysis of counseling structure revealed that metaverse counseling was primarily utilized for elementary school students, and various platforms such as MetaForest, ZEP, MAVE, Spatial Studio, and ifland were applied. In addition, differences were identified in interaction methods and counseling environments depending on the platform. Group counseling was the predominant counseling format, and short-term interventions consisting of 6 to 10 sessions were found to be the most common structure. Some studies applied cognitive behavioral therapy and solution-focused therapy; however, many studies showed limitations in that their theoretical foundations were not clearly presented. The analysis of effectiveness demonstrated positive outcomes, including enhanced self-understanding and identity formation, improved behavioral regulation and reduction of problem behaviors, and strengthened interpersonal and group relational functioning. This study is meaningful in that it integratively reviews the structural characteristics and effectiveness of metaverse counseling for children and adolescents and provides foundational data for the theoretical establishment and practical application of digital-based counseling.

Keyword : metaverse counseling, children and adolescents, counseling structure, counseling effectiveness

## 1. Introduction

Recent expansions in non-face-to-face environments and advancements in digital technology have brought significant changes to counseling practices, particularly by presenting new possibilities in counseling settings for children and adolescents. Children and adolescents, as generations highly familiar with digital environments, demonstrate strong adaptability to interactions within online and virtual spaces, and these characteristics are closely related to changes in counseling media. Although traditional non-face-to-face counseling has advantages such as anonymity and accessibility, it has generally been used as a supplementary method to face-to-face counseling due to limitations in nonverbal

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communication [1]. However, with the recent development of technologies such as virtual reality (VR), metaverse environments that provide experiences similar to real-life settings have emerged, attracting attention as a new alternative that enables more immersive and interactive interventions in counseling for children and adolescents [2].

The metaverse refers to a digital environment in which users interact through avatars within spaces that integrate virtual and real worlds [3]. These characteristics provide a foundation for expanding experiential immersion and relationship formation within counseling settings. In particular, because children and adolescents are highly familiar with avatar-based interactions and activities in virtual spaces, the metaverse can function as a counseling environment that reflects their developmental characteristics and media preferences. In the counseling field, the metaverse is understood as a means of implementing therapeutic interactions between counselors and clients through virtual spaces and various digital tools. Text and voice communication, creative activities, and game-related elements may serve as important mediators that facilitate participation among children and adolescents. In addition, avatar facial expressions and gesture functions may help compensate for the limitations of nonverbal communication [4].

Previous domestic and international studies have reported that metaverse-based counseling can produce positive effects for various populations, including children and adolescents. Studies targeting individuals have shown that anonymity and psychological distance promote self-disclosure and counseling participation [5], while studies targeting groups have reported that interactions within virtual spaces strengthen peer support and group cohesion [6]. In particular, studies involving children and adolescents have identified positive changes in areas related to developmental tasks, such as game literacy, peer relationships, and behavioral regulation.

At the same time, metaverse counseling has also been noted to involve ethical and technical limitations, including concerns regarding personal information protection, data security, and communication distortions caused by technological errors [7]. Nevertheless, metaverse counseling is considered to hold meaningful potential in counseling for children and adolescents due to its high accessibility, sense of presence, and ability to reduce participants' psychological burden [2].

Although studies on metaverse counseling for children and adolescents have gradually increased, existing research has tended to focus primarily on the effectiveness of individual programs. Research that integratively analyzes the overall characteristics, counseling structure, and effectiveness of these studies remains limited [8]. In particular, there has been insufficient accumulation of studies that systematically organize and compare characteristics according to counseling targets, especially with a focus on children

and adolescents.

Accordingly, this study aims to integratively analyze the major user characteristics, utilized platforms, counseling structures, and effectiveness of metaverse counseling studies conducted for children and adolescents. Through this analysis, the study seeks to systematically examine the structural characteristics and effects of metaverse counseling within the context of counseling for children and adolescents and to provide foundational data for the theoretical establishment and practical application of digital-based counseling in the future.

The research questions of this study are as follows. First, what are the major user characteristics observed in metaverse counseling for children and adolescents? Second, what platforms have been utilized in metaverse counseling? Third, what patterns appear in the counseling structure of metaverse counseling, including counseling format, session composition, and theoretical foundations? Fourth, what is the effectiveness of metaverse counseling?

## **2. Methodology**

### **2.1 Research Subjects and Data Collection**

To ensure the validity and reliability of the study, the analysis was limited to studies published in Korean accredited academic journals that objectively presented the effectiveness of metaverse counseling and specifically applied metaverse counseling to children and adolescents while reporting its effectiveness. The subjects of this study were children and adolescents. Based on Article 1 of the United Nations Convention on the Rights of the Child, children and adolescents are legally defined as individuals under the age of 18. However, from a developmental psychological perspective, Jean Piaget's theory of cognitive development and Erik Erikson's theory of psychosocial development suggest that childhood and adolescence are qualitatively distinct stages in terms of cognitive, emotional, and social development. Therefore, this study distinguishes between these two groups while analyzing them integratively in consideration of developmental continuity.

First, literature collection was conducted primarily through RISS, DBpia, and KCI using the keywords "metaverse counseling" and "metaverse psychotherapy." No restrictions were placed on the publication period, and all relevant studies published in Korea up to December 2025 were collected. After excluding duplicate studies, materials that did not align with the purpose of the study were removed from the analysis. The analysis was then limited to studies targeting children and adolescents. Based on these selection criteria, a total of five studies addressing metaverse counseling and its effectiveness published

in Korean academic journals were finally selected for analysis.

## 2.2 Research Analysis Categories

This study aimed to analyze the overall trends and effectiveness-related characteristics of metaverse counseling research for children and adolescents in Korea by applying a literature review method to the five selected academic journal articles. The research analysis categories, developed based on the analytical criteria suggested in previous studies [9], are summarized in [Table 1].

[Table 1] Criteria for Analysis

	Analysis Criteria		Content
Literature Review	Participant Characteristics		Elementary school students, middle school students, high school students
	Utilized Metaverse Platforms		Metaforest, ZEP, MAVE, Spatial Studio, ifland
	Counseling Structure	Counseling Sessions	Short-term intervention structure consisting of 6-10 sessions
		Counseling Format	Group counseling, individual counseling
Theoretical Foundations		Cognitive behavioral therapy, solution-focused therapy, and related counseling approaches	
Effectiveness	Effects of Metaverse Counseling Interventions		Improvement in class cohesion and empathy, enhancement of game literacy and game self-regulation, reduction in juvenile delinquency and promotion of social problem-solving abilities, improvement in peer relationships

## 3. Results

### 3.1 Major User Characteristics Observed in Metaverse Counseling for Children and Adolescents

The analysis of participant characteristics revealed that the study subjects were classified into elementary school students, middle school students, and high school students. When examined by participant group, studies focusing on elementary school students were found to be conducted more frequently than those involving other groups. The major themes of metaverse counseling were broadly distributed across areas such as game literacy, classroom cohesion and empathy, adolescent delinquency, and enhancement of peer relationships.

More specifically, three studies targeted elementary school students: one study analyzed changes in

classroom cohesion and empathy among fourth-grade elementary school students, another examined changes in game literacy among sixth-grade elementary school students, and a third analyzed changes in character development and social-emotional development among fourth- to sixth-grade elementary school students [10-12]. Two studies targeted adolescents, most of whom were referred for special education programs related to delinquency problems by institutions such as schools or courts [5][13].

### 3.2 Platforms Utilized in Metaverse Counseling

A total of five metaverse platforms utilized in existing metaverse counseling studies were identified: MetaForest, ZEP, MAVE, Spatial Studio, and ifland. Among these, MetaForest is a three-dimensional metaverse platform specifically designed for counseling settings. It is characterized by features such as voice modulation and facial expression tracking, which enhance anonymity while simultaneously supporting nonverbal communication.

ZEP is a two-dimensional general-purpose metaverse platform with strong compatibility with various edutech tools and includes mini-game elements. As a result, it was primarily utilized in metaverse counseling studies targeting elementary school students. Similar to MetaForest, MAVE was also developed specifically for counseling purposes and provides various counseling tools, such as counseling cards, family sculptures, and animal sculptures, enabling interactive and dynamic counseling activities [5].

Spatial Studio is a three-dimensional avatar-based metaverse platform that supports mobile devices, PCs, and HMDs (Head Mounted Displays), allowing accessibility across diverse device environments. In addition, ifland was utilized as a platform that provides various themed virtual spaces and supports the sharing of PDF files and video materials. The major characteristics of each metaverse platform utilized are presented in [Table 2], while the corresponding platforms are shown in [Fig. 1], cited from [9].

[Table 2] Utilized metaverse platforms

Metaverse Platform	Characteristics
Metaforest	3D environment, real-time facial expression tracking, voice modulation, provision of virtual counseling spaces, gesture buttons
ZEP	2D environment, map provision and editing support, video conferencing support, EdTech compatibility, mini-games
MAVE	3D environment, sense of family presence, sense of animal presence, provision of virtual counseling spaces, counseling cards
Spatial Studio	3D environment, provision of virtual spaces, HMC (Head Mounted Display) support
ifland	3D environment, provision of diverse virtual themed spaces, screen-sharing function



[Fig. 1] Metaverse-based platform

### **3.3 Counseling Structure in Metaverse Counseling (Counseling Format, Session Composition, and Theoretical Foundations)**

#### **3.3.1 Counseling Format and Session Composition**

An analysis of counseling formats used in metaverse counseling studies revealed that one study employed individual counseling, whereas four studies utilized group counseling. In terms of session composition, group counseling programs were implemented as short-term interventions ranging from 6 to 10 sessions, with session duration varying from 40 to 180 minutes. Individual counseling was also characterized by short-term intervention formats consisting of 1 to 7 sessions.

#### **3.3.2 Theoretical Foundations**

An examination of the counseling theories applied in metaverse counseling studies showed that one study [13] was based on solution-focused therapy, while another study [12] applied cognitive behavioral therapy (CBT). Study [13] reconstructed a solution-focused intervention program originally used in face-to-face settings for the prevention of recidivism and adapted it to the metaverse counseling environment. In this study, key session goals included resource exploration, recognition of personal strengths, and solution-oriented approaches, and the researchers examined whether solution-focused interventions could effectively contribute to recidivism prevention within a metaverse counseling context.

In addition, study [12] designed a group program aimed at improving game literacy and applied cognitive and behavioral intervention strategies centered on relationship building and goal setting. This study sought to examine whether CBT-based approaches could effectively enhance game literacy within metaverse counseling settings. In contrast, the remaining three studies did not specifically present the theoretical foundations underlying their counseling interventions.

### **3.4 Exploration of the Effectiveness of Metaverse Counseling for Individual and Group Targets**

This section explored the overall effectiveness of metaverse counseling according to counseling target types, focusing on studies conducted with children and adolescents in both individual and group counseling formats. Furthermore, content analysis of the outcomes reported in previous studies was conducted to derive the major categories of metaverse counseling effectiveness, which are summarized in [Table 3].

[Table 3] Effectiveness and Major Categories of Outcomes by Counseling Target

Counseling Target	Specific Outcomes	Major Outcome Categories	Target Population	Supporting Study
Individual Counseling	Prevention of recidivism, promotion of behavioral change, improvement in continuity of counseling participation	Reduction of problem behaviors and rehabilitation	Delinquent adolescents	Ryu et al. (2023)
Group Counseling	Improvement in class cohesion, empathy, and peer understanding	Socio-emotional development and group cohesion	Elementary school students	Ahn et al. (2024)
	Improvement in game literacy and cognitive self-regulation	Cognitive and media literacy	Elementary school students	Lee & Jung (2023)
	Improvement in peer relationships, character development, and socio-emotional development	Socio-emotional and character development	Elementary school students	Park & Son (2025)
	Reduction in delinquent behavior and improvement in problem-solving abilities	Reduction of problem behaviors and enhancement of adaptation	Adolescents	Jeon & Bae (2024)

### 3.4.1 Exploration of the Effectiveness of Individual Metaverse Counseling

Previous studies on metaverse counseling indicate that diverse outcomes have been reported depending on the characteristics of counseling targets. In studies involving individual counseling, improvements such as recidivism prevention, behavioral change, and the promotion of self-understanding and self-reflection were reported [5].

### 3.4.2 Exploration of the Effectiveness of Group Metaverse Counseling

Various changes related to relational interaction and social functioning were identified in group-based metaverse counseling. Specifically, studies involving elementary school students reported improvements in class cohesion and empathy following participation in metaverse programs [11]. Positive changes were also found in areas related to behavioral regulation. In a metaverse-based game literacy program for elementary school students, improvements were observed in both game literacy and game self-regulation

abilities [12].

Furthermore, in a group program targeting adolescents referred for special education due to delinquent behavior, reductions in delinquency levels and improvements in social problem-solving abilities were reported [13]. Additionally, a peer relationship enhancement program for elementary school students demonstrated improvements in peer relationships and socio-emotional competencies [10].

### **3.4.3 Major Categories of Metaverse Counseling Effectiveness**

The counseling outcomes identified in individual and group counseling studies were further categorized through content analysis. The findings indicated that the effectiveness of metaverse counseling could be classified into the following subcategories: self-understanding and identity formation, behavioral regulation and reduction of problem behaviors, and improvement of interpersonal and group relational functioning.

#### **(1) Self-Understanding and Identity Formation**

A study applying a metaverse counseling program to adolescents requiring delinquency prevention education found significant improvements in levels of self-reflection [5]. These findings suggest that metaverse environments may provide participants with opportunities to reflect on their experiences and behaviors and to reconstruct personal meaning.

#### **(2) Behavioral Regulation and Reduction of Problem Behaviors**

Metaverse counseling has also demonstrated effectiveness in areas related to behavioral regulation and the reduction of problem behaviors. In a game literacy program for elementary school students, improvements were reported in the ability to regulate game use [12]. Moreover, a group program targeting adolescents referred for special education due to delinquent behavior reported decreases in delinquency levels and improvements in social problem-solving abilities [13]. These findings suggest that counseling interventions conducted within metaverse environments may positively influence participants' behavioral awareness and self-regulation abilities.

#### **(3) Improvement of Interpersonal and Group Relational Functioning**

Research on metaverse counseling has also identified improvements in interpersonal functioning and social interaction abilities as significant outcomes. Studies involving elementary school students reported enhanced class cohesion and empathy after participation in metaverse-based group programs [11]. Likewise, peer relationship enhancement programs demonstrated significant increases in character-related competencies such as sincerity, consideration, and responsibility, as well as socio-emotional competencies [10]. These findings suggest that avatar-mediated interaction and collaborative activities in virtual spaces may facilitate social exchange among participants.

#### **4. Discussion and Implications**

This study sought to comprehensively examine the applicability and effectiveness of metaverse counseling in digitally mediated environments by integratively analyzing studies on metaverse counseling for children and adolescents. Based on the findings, the following discussions and implications can be derived.

First, metaverse counseling was found to have high applicability when considering the developmental characteristics of children and adolescents and their familiarity with digital environments. In particular, the large number of studies focusing on elementary school students suggests that metaverse environments can function as counseling media capable of ensuring both accessibility and engagement even among younger age groups [10-12]. Furthermore, because metaverse counseling encompasses diverse topics such as game literacy, peer relationships, and delinquency prevention, it demonstrates the potential to be utilized for a broad range of psychological and behavioral interventions rather than being limited to specific problem areas.

Second, the characteristics of the platforms utilized in metaverse counseling were identified as key factors closely related to counseling effectiveness. Platforms specialized for counseling purposes, such as MetaForest and MAVE, contributed to increasing counseling immersion by providing functions that facilitate emotional expression and interaction [10]. In contrast, general-purpose platforms such as ZEP demonstrated strengths in terms of accessibility and ease of use [10][11]. These findings suggest that strategically selecting platforms appropriate to counseling goals and target populations is important in the design of future metaverse counseling programs.

Third, in terms of counseling structure, metaverse counseling tended to be operated primarily in the form of short-term group counseling interventions. Group counseling showed positive changes in relational domains such as classroom cohesion, empathy, and peer relationships [10][11], while groups of delinquent adolescents demonstrated reductions in problem behaviors and improvements in social problem-solving abilities [12][13]. In contrast, individual counseling showed more prominent intrapersonal changes, including enhanced self-understanding, emotional stability, and behavioral regulation, indicating that the domains of effectiveness differed according to counseling format.

Fourth, the application of theoretical foundations was found to remain at an early stage. Although some studies reported positive effects through the application of solution-focused therapy and cognitive behavioral therapy [13], many studies did not clearly present explicit theoretical foundations. This

suggests that the rapid expansion of metaverse counseling has not yet been sufficiently integrated with established counseling theories. Therefore, future research should reconstruct existing counseling theories in ways appropriate to metaverse environments and systematically verify the effectiveness of theory-based interventions.

Fifth, the effectiveness of metaverse counseling could be integrated into three core categories: enhancement of self-understanding and identity formation, improvement of behavioral regulation and reduction of problem behaviors, and strengthening of interpersonal and group relational functioning. These findings demonstrate that metaverse counseling can function as an integrative intervention environment that simultaneously promotes intrapersonal change and social interaction. In particular, avatar-mediated interaction may serve as an important mechanism that reduces participants' psychological burden while encouraging active participation.

However, this study has limitations in generalizing the structural characteristics of domestic metaverse counseling research because the analysis was limited to only five studies. In addition, caution is required in interpreting the findings because studies with different research designs, measurement tools, and application contexts were analyzed together in an integrated manner. Accordingly, the findings of this study should be understood at an exploratory level and further verified through future research using expanded data and more diverse research designs.

Based on these discussions, the following suggestions can be proposed. First, standardized program development and longitudinal studies examining long-term effects are needed to more clearly verify the effectiveness of metaverse counseling. Second, it is necessary to strengthen the integration between counseling theories and metaverse environments in order to establish theory-based intervention models. Third, studies systematically analyzing the relationship between platform characteristics and counseling effectiveness are required. Fourth, there is a need to develop customized metaverse counseling programs according to the developmental levels and problem characteristics of children and adolescents [14].

In conclusion, metaverse counseling represents an intervention approach with new possibilities for counseling children and adolescents, and it should continue to evolve into a more stable counseling model through further theoretical refinement and empirical accumulation.

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