

Effectiveness of Virtual Reality in Individual Counseling to Enhance Public Speaking Skills: A Study among 7th Graders

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Abstract

Improving public speaking skills is necessary to help students build self-confidence, enhance communication skills, and support their education and careers. This research uses a qualitative method where the researcher is the key instrument, with purposive sampling of data sources and triangulation techniques for data collection. The study finds that: (1) The use of Virtual Reality (VR) during individual counseling for middle school students significantly aids in improving public speaking skills, as evidenced by the change from 0% in initial observations of public speaking skills before VR counseling to 75% after VR counseling, and from 8.3% to 66.6% in the second client. (2) VR counseling impacts students by boosting their public speaking skills and encouraging them to improve academically and non-academically. (3) VR counseling proves to enhance public speaking abilities in terms of verbal communication, vocal control, and visual expression, with students demonstrating clearer language and structure, better volume regulation, and improved self-expression in public.

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1. Introduction

Public speaking is the intentional and structured process of addressing a group of people with the aim of providing information, influencing, or entertaining the audience. Public speaking is quite alike to presentation, where the difference is the latter is usually meant for commercial or academic environment (Yee et al., 2014). Another definition of public speaking is the process of delivering topics in front of the audiences, whether in the classroom for students or at work for those who are already working (Nadia & Yansyah, 2018). It is not an easy task and requires proficiency in language and consistency so that listeners can understand the message conveyed. Fear and anxiety pose significant challenges, especially for beginners who lack experience in public speaking. Mastering skills can boost self-confidence and motivation, making it easier for individuals to perform their tasks. This is particularly true for communication skills, such as public speaking. Students who are confident in their public speaking abilities will find it easier to face future life challenges. Essentially, every individual has knowledge to share with others, making it crucial to develop public speaking skills (Fatikah et al., 2023).

According to Piaget cognitive development during the formal operational stage (ages 11-15 years) is characterized by mental states similar to those of adults. Children at this stage can apply logical thinking to both concrete and abstract problems, form ideas, and realistically think about the future. Therefore, theoretically, children in this stage should be capable of interacting and speaking in public. At this stage, children also begin to develop the ability to question assumptions and analyze different (Wardani, 2022). Although they still tend to focus on their own viewpoints, they start to understand that others may have different views and learn to consider these perspectives. While theoretically, children at this age can think abstractly, in practice, applying this thinking when speaking in public requires practice. They need to learn how to communicate complex ideas in a way that is easily understood by the audience. Children need to apply logic to structure coherent and easy-to-follow arguments. This involves systematically organizing their speech, from introducing ideas, developing arguments, to drawing conclusions. Despite their cognitive ability to think critically and logically, facing an audience in real-life situations can induce anxiety that affects their performance. This is a practical challenge that cannot be entirely overcome by cognitive ability alone. In real-life

situations, children need to learn to adapt their delivery based on different audiences. This ability requires social understanding and empathy, which go beyond the formal logic of cognitive theory. Piaget's theory shows the potential of children's abilities, but to apply them effectively in public speaking, they need real experience, feedback, and reflection on their performance.

Theoretically, children aged 11-15 have the cognitive ability to think logically and abstractly, which supports public speaking skills. However, practical application requires additional skills such as communication structure, emotion management, and social adaptation, which can only be gained through practice and real-life experience. The combination of cognitive ability and practical experience will ultimately determine their success in public speaking. This is also evidenced by initial field observations that contradict the theory, where children aged 11-15 actually face issues in public speaking. This was evident during observations at 7th-grade classes at SMP Negeri 2 Kaligondang, Indonesia, where children often remained silent when asked to come forward for presentations and introductions. Out of a class of 36 students, 75% exhibited low public speaking skills when speaking in front of others. This presents a challenge for school counselors to improve public speaking skills among children.

However, observations in real-life settings often contradict this theory, as seen during observations at 7th Grade of Public Junior High School (*SMPN*) 2 Kaligondang, Indonesia, where students frequently remain silent when asked to present or introduce themselves. Out of a class of 36 students, 75% exhibit low proficiency in public speaking. Consequently, it becomes the duty of the school counselor to enhance public speaking skills among these children. Students with low public speaking skills may struggle with peer adaptation and face obstacles in their education and careers. Therefore, targeted actions are needed to address this issue.

School counselors can employ various counseling services to improve students' public speaking skills, with individual counseling being one effective method. According to Hellen individual counseling allows students to receive direct guidance from a counselor to discuss personal issues (Nasution & Abdillah, 2018). Individual counseling is the primary effort in addressing client issues. There are several counseling techniques that a counselor needs to master if they want the individual counseling process to be successful. Similarly, there are several stages that should be carried out, including the introduction phase, problem exploration, interpretation, intervention, and evaluation. These stages and counseling techniques should be understood and mastered by the counselor (Suhertina, 2014). By utilizing individual counseling services, it is expected that the public speaking abilities of students at Public Junior High School (*SMPN*) 2 Kaligondang, Indonesia can be enhanced.

To facilitate individual counseling services, an effective medium is necessary. One such medium is Virtual Reality (VR). The use of virtual reality in counseling to enhance public speaking has begun to be implemented by psychologists abroad, as evidenced by research revealing that virtual reality therapy and counseling methods help alleviate students' speech anxiety (Sarpourian et al., 2022). Elin Maulida and colleagues suggest that technological advancements such as VR have the potential to enhance engagement with services and improve treatment effects before, during, and after therapy. This has implications for counseling and guidance, as it allows for the execution of various activities due to the evolving times. With the use of VR, it is hoped that social anxiety and public speaking anxiety can be effectively reduced (Elin Maulida Rahmawati et al., 2023). On the other hand, the use of VR has proven effective in addressing the problem of fear of public speaking, as individuals who experience this fear tend to avoid speaking in public (Sigurvinsdottir et al., 2021). This indicates that virtual reality can be used as a medium in counseling sessions to enhance public speaking. With this technology, it is hoped that students can overcome their fear and anxiety associated with public speaking, thus improving their confidence and performance in real-life speaking situations.

Virtual reality (VR) solves this problem by providing a useful and immersive training environment that includes real-life conditions for individuals (Nazligul et al., 2017). Fuchs explains that virtual reality aims to activate someone's sensorimotor and cognitive activities within a digitally created world, which can involve imaginative, symbolic, or specific simulations from the real world (Jasuli & Fitriani, 2018). Based on existing research on virtual reality technology, it represents a novel method to address various health issues, including public speaking anxiety. Therefore, an analysis of public speaking anxiety disorders is required. The use of virtual reality greatly aids in improving public speaking, especially among children.

2. Method

Qualitative research embraces the concept of intersubjectivity usually understood to refer to how people may agree or construct meaning: perhaps to a shared understanding, emotion, feeling, or perception of a situation, in order to interpret the social world they inhabit (Turap et al., 2012). Reasons for Choosing a Qualitative Approach because this research is likely aimed at understanding how middle school students experience and perceive the use of virtual reality (VR) technology in the context of counseling. A qualitative approach allows the researcher to explore students' perceptions, experiences, and interpretations of this medium, which cannot be fully captured through quantitative data. Then because this research is theory development the research is to develop new theories or frameworks about the use of VR in counseling, a qualitative approach is very suitable because it can generate deep insights that may not be measurable or revealed through quantitative surveys or experiments.

Sampling of data sources is purposive, and data collection techniques involve triangulation where data collection is done through interview, observation and document study methods. and inductive data analysis, emphasizing meanings over generalizations. This study focuses on behavioral patterns that are difficult to measure numerically, based on individual observations (Sugiono, 2015). Data analysis in a phenomenological approach focuses on understanding the subjective experiences of individuals (Alase, 2017). Whether through thematic analysis or phenomenological categorization, the ultimate goal is to capture the essence of the experience of using VR in counseling, which can provide deep insights into how this technology affects the counseling process and students' lives.

In order to find out which research sample is suitable for obtaining VR-based counseling, coding is used to measure students' public speaking. Data obtained from observations are usually coded to identify themes or patterns. In this case, to assess the students with the lowest public speaking skills for individual counseling, a scale in the observation is needed. This coding allows the researcher to systematically organize qualitative data, making it easier to identify recurring themes and link the data with findings from other data collection methods (such as interviews or document studies). As for the observation scale, students who answer 'YES' receive a score of 1, while students who answer 'NO' receive a score of 0.

3. Results and Discussion

3.1. Results

The characters featured in the VR video for individual counseling are created using three photos converted into a 360° format and then made into a video. The photo depicts a forest atmosphere with clouds and an urban area, yet it appears cool and refreshing then photo make from 2D image transformed into a 3D scene, featuring trees, a pond, and land. Meanwhile, in the photo is related to the ocean. Additionally, a Minion character is included to enhance the VR's graphic design. Counseling sessions were similar to previous sessions, using VR equipment where the client mentioned and described aspects seen in the VR video (Figure 1).

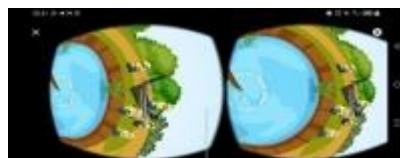


Figure 1. Design VR

The reason for using these characters instead of others is that they are targeted at children aged 11-15 years, who generally have a detailed understanding of their favorite cartoons. This helps them explore and express their thoughts when in the VR space with their favorite cartoon characters. The relaxing environment, combined with beautiful scenery, helps students feel more at ease in expressing their opinions, thus reducing anxiety or nervousness when speaking in public.

Some students with low public speaking skills in the data observation are those who scored 0% and 8.3%, where at these levels, students mostly answered no, resulting in a percentage scale of 0%.

Meanwhile, students with a percentage scale of 8.3% are those who only gave one yes answer. The data of the clients who will receive counseling services to improve their public speaking skills using VR is presented in Table 1.

Table 1. Initial Observation Results

Name	Score	Category	Age
CFS	0%	Low	13 Years
RNF	8,3%	Low	12 Years

Following the initial observation results, individual counseling sessions were conducted, divided into three meetings each week. The results from these sessions indicated improvement in the clients, as demonstrated by immediate counseling assessments and short-term evaluations.

Based on the review conducted during the counseling sessions, low public speaking skills were observed to be influenced by both internal and external factors. In counseling with CFS, the main problem that makes afraid to speak in public due to past verbal bullying by peers. The client feared making mistakes such as mispronunciations, resulting in nervousness, silence, unclear voice, and embarrassment during public speaking. During counseling with RNF, it was found that the client had perfectionist tendencies. The client expressed a desire to appear perfect, which became burdensome during public speaking, leading to mistakes and loss of prepared words.

The interview findings regarding the use of VR in individual counseling revealed that CFS felt helped after VR counseling sessions, becoming more confident in expressing themselves and forming words clearly after using VR. CFS also felt comfortable using VR and understood the steps to take after counseling. RNF felt challenged to express opinions actively and asked questions more frequently after VR counseling. Both clients improved in verbal articulation, vocal control, and visual presentation during public speaking.

Based on school counselor observations of RNF, there was a 66.6% improvement in public speaking compared to the initial 8.3% score before counseling. RNF showed excellent verbal skills in delivering speeches and presentations, articulating words and sentences clearly, expressing ideas effectively, and using consistent language during presentations. RNF also improved vocal modulation, tone, and speaking speed, and effectively used body language to engage the audience.

In self-documentation studies, CFS demonstrated successful counseling outcomes using VR, evident in winning the favorite champion title in poetry writing competitions, which allowed CFS to create their anthology titled "Silent World." This success highlighted improved public speaking and the efficacy of VR in individual counseling sessions.

3.2. Discussion

The improvement in public speaking abilities in both clients demonstrates the effectiveness of using VR as a medium in individual counseling services to enhance public speaking skills (Sarpourian et al., 2022). Several aspects of using VR in counseling and public speaking can be reviewed to gauge the success of individual counseling services for both clients. Regarding the use of VR in individual counseling, utilizing desktop virtual reality as one of the media support types, several indicators tied to this aspect include role, understanding, efficiency, active engagement, and interactivity, each client expressing the utility of VR tools as a medium in counseling services to address their issues, particularly those related to public speaking.

VR allows students to practice speaking in front of virtual audiences in a controlled and safe manner, helping them to gradually confront and overcome their fears. This aligns with the principles of exposure therapy, where VR simulation experiences help students reduce public speaking anxiety. This aligns with a study titled "Design of Virtual Reality Exposure Therapy (VRET) to Enhance Audience Self-Presentational Efficacy," which revealed that the virtual reality exposure therapy (VRET) program can also improve audience self-presentational efficacy. This means that VRET is suitable for enhancing teenagers' confidence in handling social situations. The similarity lies in the use of VR as a tool in therapy, while the difference is in the technique used, which is VRET (Meditania et al., 2020).

In research by Gornelli titled "Virtual Reality Acceptance and Commitment Therapy Intervention for Social and Public Speaking: A Randomized Controlled Trial" revealed that virtual reality offers new and flexible ways to deliver psychological interventions. The aim of this study was to develop and investigate the effectiveness of a virtual reality-based intervention using Acceptance and Commitment Therapy (ACT) for public speaking anxiety and social anxiety. The similarity lies in the use of VR as a medium in therapy for clients. The difference is in the method, which is quantitative, and the counseling technique used is ACT (Gornelli et al., 2023).

In the study titled "Efficacy of Virtual Reality in Reducing Fear of Public Speaking: A Systematic Review," it is revealed that using VR provides a sense of real presence, which can evoke genuine emotions from the user. This leads to a controlled stimulus response in the environment, allowing the treatment of fear of public speaking to be addressed using the VRET (Virtual Reality Exposure Therapy) method. The study shows that using VR in therapeutic settings produces promising results, which also applies to various phobias, particularly social phobia (Nazligul et al., 2017). Overall, the aim of Virtual Reality Exposure Therapy (VRET) is to use virtual stimuli to trigger responses in individuals suffering from anxiety disorders, similar to those experienced in the presence of real or imagery-based counterparts of the same stimuli. Indeed, gradual exposure to a feared stimulus is known to induce systematic desensitization to that stimulus, thereby reducing the generated anxiety (Vanni et al., 2013).

Additionally, Albert Bandura's Social Learning Theory supports the relevance of this research. Bandura proposed that people learn through observing and imitating the behavior of others in social contexts (Feist & Feist, 2008). VR can present various social situations and behavioral models for students to emulate, provide immediate feedback, and help them understand and improve their skills. This theory is supported by the use of VR, as it offers students the opportunity to observe and practice public speaking skills in realistic contexts, enhancing communication skills through observation and practice.

There is also experimental research using VR methods consisting of four main components: a behavior detection module, audience performance assessment, interactive virtual agents, and an after-action report that displays performance videos along with feedback and training simulations. This study investigates the influence and individual differences of a public speaking training system involving VR and other forms of feedback. The research reveals that individual differences have an impact on the effectiveness of evaluating social skills training systems involving VR compared to other forms of feedback (Chollet et al., 2018).

There is also research that uses VR methods by focusing on the effectiveness of VR as a therapy for specific phobias through meta-analysis. This meta-analysis provides effect sizes, which in turn show the relationship between variables. To address the fear of public speaking or social anxiety, this research employs Cognitive Behavioral Therapy (CBT) techniques. However, there are some drawbacks to this method, as individuals may attempt to overcome their fear of public speaking without actually speaking in front of a live audience, which can lead to potential challenges in the therapy (Sanchez, 2022). This is supported by research conducted by Anderson and colleagues, where the CBT approach using VR exposure was able to reduce fear of public speaking. In self-assessment scores, participants showed significant improvement and were satisfied with the treatment (Anderson et al., 2005). The use of Virtual Reality Exposure Therapy (VRET) is considered quite effective due to the cognitive behavioral interventions implemented before and after the use of VR in relation to public speaking (Opriş et al., 2012).

The data above indicates that using VR as a medium in individual counseling to improve public speaking skills significantly aids students. Students participating in VR counseling sessions show significant improvement in various aspects of public speaking skills, such as verbal ability, articulation, intonation, and body expression. This demonstrates that the VR experience can effectively change behavior and strengthen communication skills. Moreover, VR use helps reduce students' anxiety levels when speaking in public. The use of VR is considered quite effective in addressing public speaking issues, as it allows individuals to communicate personally within a virtual world (Sakib et al., 2019). By allowing them to practice in a realistic yet safe simulation environment, VR helps reduce fear and increase confidence in real public speaking situations. Additionally, students show higher participation rates in VR counseling sessions compared to traditional methods

(Lestiono & Lee, 2024). The engaging and interactive experience offered by VR can enhance participants' motivation to actively engage in the learning process. The effectiveness of VR in helping to improve public speaking is evident, showing how VR works to enhance public speaking skills. The immersive experience offered by VR allows participants to experience sensations similar to real public speaking situations, thereby reinforcing learning through experience.

This study reveals numerous benefits of using VR as a medium for individual counseling to improve public speaking. VR allows students to practice public speaking in various virtual environments such as classrooms, auditoriums, or conference settings with virtual audiences. This helps reduce anxiety by providing a safe and controlled environment for speaking in front of an audience. Additionally, VR enables students to receive feedback on their performance, including analysis of speaking pace, facial expressions, and body language, so students can instantly understand what needs improvement in their public speaking skills.

Furthermore, students can practice repeatedly with VR simulations without limitations of time or location, making this practice less burdensome and allowing for gradual skill enhancement. This makes the use of virtual reality for individual counseling to improve students' public speaking skills more efficient and effective compared to traditional counseling methods. Traditional counseling often involves speaking in front of small groups or directly with a therapist, which can make children feel nervous and afraid and may not address issues effectively. On the other hand, traditional counseling or non-VR methods frequently encounter problems such as clients being unwilling to share their opinions due to fear or embarrassment.

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4. Conclusion

Using VR in counseling not only helps students address public speaking issues but also enhances their academic performance, as demonstrated by their participation in creative competitions and the development of ideas from counseling sessions. The use of VR as a counseling medium not only helps students overcome their problems but also increases awareness among teachers of technological advancements. The use of VR is effective in reducing anxiety and fear related to public speaking by providing a safe and controlled simulation of public speaking situations. Data shows significant improvement in public speaking skills among students after repeated exposure, aligning with the principles of exposure therapy. Then the implications indicate that VR offers students in public speaking settings a therapeutic approach that reduces the mental effort needed to visualize the scene and context, while also aiding in the reduction of Public Speaking Anxiety (PSA) (LeFebvre et al., 2021). Additionally, VR offers students the opportunity to observe and practice speaking skills with interactive feedback, supporting learning through observation and imitation, as seen in Social Learning Theory. The immersive experience of VR also enhances student engagement with the learning material, helping students feel more involved and motivated to improve their public speaking skills, including articulation, intonation, and body language.

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