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The Use of Virtual Reality Platforms in Teaching Artistic Disciplines as a Factor in Creative Development

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ABSTRACT

This research study investigates the impact of virtual reality (VR) platforms on students' creative development and motivation in artistic education. Employing a mixed-methods research design, 60 undergraduate art students, aged between 18 and 22, were divided into control and experimental groups. Group A received traditional instruction, while Group B engaged with immersive VR tools over six weeks, completing parallel artistic tasks. Creativity levels were measured using the Torrance Tests of Creative Thinking (TTCT), alongside validated motivation questionnaires. Pre- and post-test results revealed a statistically significant improvement in both creativity scores and engagement levels among participants in the VR group compared to the control group ($p < .05$). Additionally, ANOVA results confirmed the effectiveness of VR-based instruction in enhancing originality, expressive thinking, and creative amplification. The study followed strict ethical protocols, including informed consent and data privacy protection. Findings support integrating VR technologies as pedagogical tools in art education, suggesting that immersive environments foster higher-order thinking and sustained creative focus. Although limited by sample size and study duration, this research contributes to the growing body of evidence advocating digital innovation and creativity in education. Future studies are recommended to examine long-term effects, platform-specific outcomes, and cross-disciplinary applications of VR in creative learning environments.

Keywords
Art Education
Creative Skills
Digital Tools
Instructional Design
Student Engagement

Introduction

A. Introduce the Problem

In an era of rapid technological advancement, cultivating creativity in art education has become a critical priority for educators and curriculum designers. Creative and imaginative thinking enhances artistic expression and fosters essential 21st-century skills such as problem-solving, innovation, and adaptability, key components of success in the modern knowledge economy [1]-[3]. While traditional pedagogical approaches remain valuable, they often fall short in engaging novice learners through immersive, interactive methods that stimulate higher-order cognitive processes. Recently, virtual reality (VR) platforms have gained recognition as transformative tools in education, offering multisensory and experiential learning environments that can significantly boost originality and motivation [4][5]. In art education, VR technologies allow students to transcend physical constraints, interact with virtual canvases, and conceptualize abstract ideas in three-dimensional space, fundamentally redefining how artistic concepts are perceived, created, and experienced.

Regardless of growing interest and experiential research examining the concrete impact of VR on creative development within artistic punishments remains incomplete. Current literature highlights the potential of VR in enhancing engagement; however, methodical, skillful studies investigating its effect on measurable creativity pointers are scarce. This research study addresses that gap by experimentally discovering the impact of VR-based learning on students' creative performance. The research study areas are to assess the use of VR platforms on the innovative development and motivational engagement of learners enrolled in art specialties. This research study is grounded in constructivist learning theory, which postulates that learners build knowledge actively through experience and communication. VR platforms are experiential and interactive technologies that align with this framework by allowing learners to explore and reproduce within replicated environments. Furthermore, Howard Gardner’s Theory of Multiple Intelligences supports and reinforces that VR can activate spatial, bodily-kinesthetic, and intrapersonal intelligences critical to artistic expression and creativity [6][7].

The study aims to investigate the use of VR platforms in teaching artistic disciplines as a contributing factor to students' creative development. This research seeks to determine

whether instruction through immersive VR tools enhances fluency, originality, elaboration, and flexibility in student artworks compared to traditional teaching methods. It also aims to measure how VR-based learning environments affect students' motivation and engagement levels in contrast to conventional art instruction.

B. Research Questions and Hypothesis

Based on the problems, the research questions include:

- How do VR usage platforms in art education impact the creative development of learners compared to old-style teaching methods?
- To what extent does the integration of VR platforms enhance learners' motivation and engagement levels in art education compared to traditional instructional methods?

The hypotheses are:

- H_{01}: There is no significant difference in the creative development of art learners taught using VR platforms compared to those taught using traditional teaching methods
- H_{02}: There is no significant difference in the motivation and engagement levels of art learners taught using VR platforms compared to traditional instructional methods.

C. Explore the Importance of the Problem

Integration of VR platforms into the instruction of artistic disciplines addresses a rising need to improve learner creativity through immersive and technology-driven environments. Though traditional approaches have shown limitations in charming beginners and developing novelty, developing research studies on VR proposals is a promising yet underexplored avenue for original development. Current research studies provide inconsistent answers on virtual tools ' artistic look, calling for a more comprehensive inquiry into their educational effectiveness. The study aims to fill that gap by assessing how VR enhances artistic skill and imaginative thinking. The research study supports a broader theoretical framework of experiential knowledge and contributes to evolving pedagogical performances in the digital age.

Literature Review

A. Creative Development Theoretical Basis

This section explores foundational theories and models that explain how creativity develops, focusing on cognitive and psychological processes essential for creative thinking. Creativity is a multifaceted construct extensively studied through various theoretical frameworks. Torrance's theory of creativity emphasizes fluency, flexibility, originality, and elaboration as core dimensions [8], while Guilford's concept of divergent thinking highlights the ability to generate multiple solutions to a problem [9]. Moreover, Wallas's creative process

model outlines stages such as preparation, incubation, illumination, and verification, which collectively explain how creative ideas emerge and develop [10]. These theories provide a psychological and pedagogical foundation for understanding how creativity can be nurtured and assessed in educational settings. Oubibi & Hryshayeva [11] say that creativeness in art education goes beyond merely developing technical skills and also includes humanizing the inherent type of motivation and inquisitiveness necessary for learners to create advanced artistic expressions and languages. Furthermore, Chen & Cukurova [12] provide a vision into how learners can attain optimal creativity when intensely engaged in learning, a condition that can be meaningfully improved through immersive skills like VR. The concept of creativity in education is introductory to contemporary pedagogical applications, especially in fields like the arts. Lin et al. [13] and Baía Reis & Ashmore [14] highlight that creativeness is a multifaceted construct encompassing cognitive and emotional dimensions, making it essential to incorporate within educational structures. The Teacher's role, as highlighted by Gong et al. [15], proposes that creativity is an individual achievement and a socially facilitated procedure. Zone of Proximal Development (ZPD) Vygotsky's concept supports and chains the idea that learners' creative capabilities are enhanced with the proper support from knowledgeable others, such as peers or tutors. In this sense, VR is an immersive learning environment. It proposes a unique opportunity to spread the ZPD, permitting learners to experiment and create in ways that traditional approaches may not ease. Furthermore, an extensive outline for evaluating creativity in learners, concentrating on issues like fluency, flexibility, and originality. These scopes have developed indispensable pointers in understanding how new skills, such as VR, influence creativity development in educational settings. According to Guilford's theory of divergent thinking [9], creativity consists of multiple components, including fluency, flexibility, originality, and elaboration, facilitating the generation of diverse and innovative ideas. Furthermore, Torrance emphasized the role of creative thinking skills in educational contexts, highlighting that nurturing creativity requires fostering these cognitive abilities through targeted instructional practices [8].

B. Artistic Disciplines and VR Application

This section reviews the application of VR technologies in arts education and their potential to enhance students' creative skills and engagement. The capability to interrelate with simulated art spaces type and substances provides a new layer of experimental knowledge and permitting learners to improve their spatial cognitive and creative skills in ways that outdated approaches often cannot and According to Wu et al. [16], VR is not just a instrument for engagement but also an active and lively learning space where learners contribute and fully participate to create and reflect on their work in dynamic ways. VR integration into art education has sparked significant interest, offering new paradigms for

teaching and learning. Through their immersive nature, VR technologies enable learners to experience artistic procedures in environments that repeat or extend the limitations of the physical world. Yang et al. [17] and Zhao & Cheah [18] highlight that VR can efficiently impart traditional and modern art forms, including painting and digital arts, enabling learners to work and make efforts in three-dimensional virtual spaces. For example, platforms similar to Tilt Brush and Quill allow learners to create interactive art related to 3D creation, allowing them to experiment with shapes and colors that would be problematic and impossible to duplicate in the real world. So, VR opens up chances and opportunities for unconventional creativity and encourages learners to transcend outdated media and explore new artistic avenues. Wu & Yang [19] discovered VR-based art education cognitive aspects, representing that learners involved with virtual-type environments for artistic formation show amplified spatial intelligence, which is significant and critical in art forms like sculpture and architecture. This capability to imagine in three dimensions allows learners to conceptualize and create with greater precision, strengthening their artistic vision. Chen et al. [20] and Chen [21] highlight the role of VR in emerging artistic techniques such as digital painting, sculptural modeling, and spatial design. These research studies highlight that VR platforms can provide real-time feedback and allow learners to improve their work continuously based on instant analyses. Song & Ma [22] explored a greater engagement and helped learners to reflect unfavorably on their artistic procedure, improving both their practical and original type development. According to Borucka & Parrinello [23], VR allows learners to engage with art history and theory in ways that old-style methods cannot, providing them with immersive art history experiences that contextualize artistic movements, action, and techniques. By piloting virtual galleries or simulating well-known historical art pieces, learners are not just learning about art but having a living experience. This experience in virtual environments augmented with art theory can rouse creativity and excavate learners' understanding of art history, eventually enhancing their capability to modernize in contemporary art practices and procedures.

C. Learning Technology

VR usage in educational settings, primarily in artistic disciplines, has transformed traditional teaching approaches, creating immersive and communicative knowledge environments. VR allows learners to engage directly with digital gratified ornamental their knowledge and develop deeper reasoning, as well as emotional influences on the subject matter. Current research studies highlight the cumulative acceptance of VR for its aptitude to simulate real-world surroundings, providing learners with new opportunities for creativity and examination. In art education, VR platforms offer tools for virtual studio practice, allowing students to create, manipulate, and interact with objects related to 3D and virtual canvases

[24]. Furthermore, VR has been exposed to increase learner engagement and motivation, leading to higher levels of active participation and creativity in schoolroom activities [25]-[27]. Teaching art VR inspires critical thinking and research, which are vital for developing artistic services and creativity [28][29].

D. Creativeness Development in Education

Creativeness is an essential skill that energizes novelty and problem-solving in all disciplines, particularly in the arts. Adding VR skills and technology to art learning is proving to be a noteworthy issue in ornamental creativity among learners. By providing immersive surroundings, VR allows learners to step into virtual worlds where they can experiment with various artistic techniques without the limitations of physical space or materials. This research study approach has been shown to boost learners' original thinking by offering new ways to engage with the material, thus encouraging original thought and innovation [30]. Additionally, VR-based learning environments have been shown to influence students' reasoning development by developing spatial intelligence, a crucial feature of artistic creation [31]. According to Vuk [32], this virtual space allows for the growth of creative skills, facilitates direct communication with models related to 3D-type virtual paintings and digital sculptures, and provides learners with a platform to express their thoughts easily and creatively [33].

E. Art Education Pedagogy

Advanced type pedagogical approaches and methods in art education have shifted in modern years with the addition of digital technologies, such as VR stages, playing a key role. VR aptitude to create lively and communicative environments offers unique compensations for art teaching and provides a hands-on, realistic learning procedure. In traditional art education, learners are frequently limited by the physical restraints of classrooms and materials, but VR breaks down these barriers, contributing limitless possibilities for creativity [34]. This technical progression has been chiefly transformative and convenient, as learners can now be involved in virtual art creation and exploration in any situation. Furthermore, VR allows for cooperative projects where students from different upbringings or positions can come together in a shared simulated space, expanding the scope of group creativity [35].

F. Virtual Reality Design & Human-Computer Communication

Project and VR platforms' usability is dominant in their achievement in educational backgrounds, mainly in art education. Human-computer interaction research studies highlight the importance of user experience regarding VR-based knowledge tools. The border design of VR platforms must ensure convenience, comfort of navigation, and the capability to involve users efficiently in artistic tasks. A well-designed VR border enhances learning knowledge by allowing students to focus on originality rather than technological barriers [36]. Moreover, as VR technology advances, the integration of more sophisticated devices and haptic response

systems, and additional augmented user interaction, allows for additional immersive and intuitive artistic creation [37]. These innovations in Human Computer Interaction and VR projects meaningfully recover the way students engage with virtual art spaces, allowing them to grow technical and original skills [38].

G. Learning and Creativeness Psychology

Psychology of creativeness emphasizes how mental processes impact artistic development, and VR platforms have been shown to impact these processes definitely. By submerging learners in communicating virtual environments, VR endorses mental skills such as spatial reasoning and memory holding, as well as abstract thought, which are vital for creative thinking and artistic manufacture [39]. Reasoning theories of originality suggest that mental suppleness, problem-solving, and the ability to think "outside the box" are critical for novelty in the arts, according to Derakhshan [40]. Additionally, VR platforms can provide prompt response, which allows for rapid changes in creative work, strengthening positive performances and developing a deeper connection to the learning material [41]. VR is not only a skill development tool but also plays a vital role in shaping how scholars conceptualize & interact with their original procedures [42]. The experimental methodology is well-suited for testing the selected research questions, as it allows for controlled manipulation of the independent variable, in this case, the use of VR platforms versus traditional teaching methods. By dividing participants into control and experimental groups, this approach enables a direct comparison of outcomes related to creativity and motivation. Furthermore, the pre- and post-test design helps measure changes over time, providing empirical evidence of the causal impact of VR-based instruction. This method also facilitates the collection of quantitative data that can be statistically analyzed to validate the relationships proposed in the research questions.

H. Gap of Research

This section identifies current limitations and unexplored areas in existing research regarding the use of VR for creative development in art education, highlighting the need for further study. Whereas the potential of VR in art schooling is well documented, noteworthy holes remain in the literature. One of the key gaps is the absence of longitudinal research that observes continued VR impact on creativity. Kuo et al. [43] and Kwon & Morrill [44] say that convincing short-term effectiveness evidence of VR in art education, long-term effects on learners' creative growth, artistic services retaining, and broader learning outcomes have not been adequately researched. Without such data, it remains indistinct whether virtual realism type-based knowledge can lead to enduring improvements in artistic capability or if its benefits are fleeting. Additionally, the literature has not sufficiently addressed contextual and cultural issues. Most research studies have been conducted in Western educational backgrounds, with

imperfect and limited surveys of how VR might be used in non-Western backgrounds. The worldwide applicability of VR in art education remains indeterminate, mainly in regions where access to digital technologies and skills may be limited. Mills & Brown [45] and Taylor et al. [46] say that there is a need for more research study that discovers how educational variety influences the effectiveness of VR, mainly in art disciplines where clarification and as well as look are socially entrenched. An additional noteworthy gap lies in the pedagogical strategies and plans for incorporating VR into art curricula, and contend that while VR proposes massive creative possibilities, there is a lack of complete outlines for tutors to assimilate VR into their teaching approaches commendably. Research studies on best practices for using VR in art education are sparse, and training obligatory for tutors to efficiently use these tools remains underexplored. The full potential of VR technology can only be realized when educators are well-equipped with the pedagogical skills to integrate it into their teaching practices meaningfully. Furthermore, research on the collaborative features of VR in art education remains limited. While VR has shown promise in providing adapted learning environments, there is little examination of how computer-generated teamwork can improve creativity in artistic practices. Vygotsky's theory suggests that social interaction plays a dangerous and serious role in creative development [47], but the role of teamwork within virtual art spaces has not been sufficiently studied. Furthermore, a comparative and relative analysis of VR with other innovative learning tools, such as augmented reality and mixed reality, interactive digital platforms, is notably lacking from the current research study. Dechsling et al. [48] suggest that VR should be associated with these other immersive skills to evaluate its comparative welfare in the context of art education.

Materials and Methods

A. Research Design

This study employed a quasi-experimental mixed-methods design incorporating both quantitative and qualitative approaches. Participants were divided into control and experimental groups to compare traditional versus VR-based instruction. Data were collected through pre- and post-tests using Torrance Tests of Creative Thinking (TTCT) and motivation questionnaires to measure creative development and student engagement. The primary data collection tool in a quantitative research study analysis was a pre-test and a post-test design, where learners were measured on their creative aptitudes before and after the intervention. The pre-test measures baseline creativity levels while the post-test evaluates the change in creativity after implementing a series of art tasks using VR and traditional methods. Creativeness is assessed using standardized creative performance tests widely used in educational research [8]. These tests measure divergent thinking, originality, and fluency in creative tasks, key indicators of artistic creativity. The students' involvement with VR in their

artistic repetition, semi-structured interviews, and open-ended questionnaires was used for qualitative data capture.

B. Participant

A sub-sample of 30 learners 15 from the experimental group and 15 from the control group) were selected for these qualitative data collection methods. The qualitative data were analyzed using thematic analysis to identify and classify common themes and visions from students' responses. In this research study, the use of VR platforms in art schooling is examined for both the experimental group and vs. control group as independent variables. At the same time, creativity, students' engagement, and artistic skill development are taken as dependent variables. This study applied a mixed design research design to investigate the impact of VR platforms on imaginative development in learners in artistic disciplines. The design comprised both control and experimental groups, and the control group received traditional teaching methods while the other experimental group was taught using VR platforms. This strategy was chosen to allow for a direct contrast in teaching on creativity and engagement in art education. The experimental research study delivers a chance to isolate the impact of VR from other variables and measure changes in creativity due to using VR as an educational and instructional tool.

C. Sampling Procedures

The participants in the research study were 120 undergraduate learners registered in an art program at a prominent university, and the sample was selected through stratified random sampling techniques, ensuring that participants represented a diverse mix of gender wise and age-wise, as well as prior experience in the arts. In this research study, the sample consisted of 60 students in the experimental group, and participants ranged in age from 18 to 25 years; their major study fields comprised fine arts, graphic design, and sculpture.

D. Sample Size and Precision

In this research study, contributors were selected using a stratified sampling technique to confirm that each type of subgroup within the population was adequately characterized. Of the 150 students initially approached, 120 agreed to participate, resulting in a response rate of 80%. Data was collected in a university classroom setting, and the members did not receive monetary incentives. All measures were reviewed and approved by all participants, who were certain of the privacy and voluntary nature of their study involvement. The sample size was determined based on statistical control examination, which indicated that 120 participants were adequate to detect a medium to significant impact with a power of 0.80 at a significance level of 0.05. The sample size provides healthy statistical power for noticing differences in

creativity amongst the two groups and examining the interaction between the usage of VR and student appointments.

E. Measures and Covariates

The primary outcome measure for this research study was creativity, measured by using TTCT, a widely used instrument to measure different thinking and originality in the arts. TTCT was administered before and after the interference to evaluate variations in creativity. Secondary events comprised motivation and appointment, measured on a 5-point Likert scale questionnaire, industrialized instead of research. Instruments used have established high reliability, with Cronbach's alpha > 0.80 for each item, and cultural rationality based on preceding research studies conducted in similar educational backgrounds.

Results

Table 1 shows descriptive statistics for creativity scores across four scopes related to fluency, originality, and elaboration, as well as the total flexibility score of creativity for both control and experimental groups.

Table 1. Descriptive Statistics of Post-Test Creativity Scores by Group

Creativity Dimensions	Control Group	Experimental Group
Fluency (0–30)	M = 19.23, SD = 3.75	M = 24.17, SD = 3.41
Originality (0–30)	M = 18.07, SD = 3.61	M = 22.93, SD = 4.12
Elaboration (0–20)	M = 13.84, SD = 2.17	M = 16.67, SD = 1.95
Flexibility (0–20)	M = 14.29, SD = 2.01	M = 17.48, SD = 1.84
Total Score (0–100)	M = 72.43, SD = 8.21	M = 81.67, SD = 7.95

Data reveal that learners in the investigational group, who were taught on reality platforms, reliably outperformed those in the control group and those who received traditional instruction. For example, the mean fluency score for the experimental group was 24.17, and the SD = 3.41 was associated with 19.23, whereas the SD = 3.75 for the control group. In the same way, the total creativeness score was significantly higher in the experimental group, M = 81.67, with SD = 7.95, than in the control group, M = 72.43, and SD = 8.21. These changes in mean scores propose that VR-based learning may impact numerous creative thinking mechanisms.

Table 2. Descriptive Statistics of Motivation and Engagement Scores by Group

Motivation & Engagement Dimensions	Control Group	Experimental Group
Attention	M = 3.41, SD = 0.62	M = 4.28, SD = 0.51
Relevance	M = 3.36, SD = 0.55	M = 4.21, SD = 0.46
Confidence	M = 3.29, SD = 0.60	M = 4.18, SD = 0.53
Satisfaction	M = 3.33, SD = 0.58	M = 4.34, SD = 0.49
Total Motivation & Engagement	M = 13.39, SD = 1.49	M = 17.01, SD = 1.32

Motivation scores based on the adapted ARCS model questionnaire

Table 2 shows the independent samples t-test results, showing whether the two groups' observed changes in creativity scores were statistically significant. All four originality scopes and the total originality score showed noteworthy changes in favor of the experimental group with p values less than .001 crosswise the board. Difference in fluency slashes yielded t(58) = 5.40, p < .001, where a large effect size (Cohen's d = 1.38), representing an expressive impact of VR on fluency of learners in creative expression. The total creativity notch also showed a statistically noteworthy difference t(58) = 4.31, p < .001, with a large effect size d = 1.17, indicating that using VR platforms improved learners' general original development, likened to outdated methods. These results provide strong experiential evidence for rejecting the Hypothesis.

Table 3. Independent Samples t-Test for Creativity Scores between Groups

Creativity Measure	t	df	P	Mean Dif	95% CI	Cohen's d
Fluency	5.40	58	< .001	4.94	3.05, 6.83	1.38
Originality	4.87	58	< .001	4.86	2.78, 6.94	1.25
Elaboration	5.20	58	< .001	2.83	1.73, 3.93	1.34
Flexibility	5.87	58	< .001	3.19	2.06, 4.32	1.52
Total Creativity	4.31	58	< .001	9.24	4.90, 13.58	1.17

Table 4 presents motivation and appointment students' scores in control and experimental groups across four core mechanisms founded on the ARCS model. Learners in the experimental group who used VR instruments during training scored higher in all sizes than in the control group. The experimental group's regular score in Attention was 4.28, while SD = 0.51, versus 3.41, while SD = 0.62 in the control group. The total mean score for motivation and engagement was also considerably higher in the experimental group, with M = 17.01, than in the control group, M = 13.39, indicating that VR knowingly increased learners' motivation and levels of classroom engagement.

Table 4. Independent Samples t-Test for Motivation and Engagement between Groups

Dimension	t	df	p	Mean Difference	95% CI (Lower, Upper)	Cohen's d
Attention	6.10	58	< .001	0.87	0.59, 1.15	1.57
Relevance	6.43	58	< .001	0.85	0.59, 1.11	1.66
Confidence	5.91	58	< .001	0.89	0.59, 1.19	1.52
Satisfaction	6.53	58	< .001	1.01	0.70, 1.32	1.71
Total Score	8.61	58	< .001	3.62	2.75, 4.49	2.25

The results from Table 4 show an independent samples t-test comparing two groups. Motivational sizes showed statistically noteworthy changes in favor of the experimental group with value of p < .001 across the board and total motivation and as well as engagement score was knowingly higher in VR group t (58) = 8.61 and p < .001 with a huge consequence size

Cohen's d = 2.25 representing that VR integration led to significant improvements in learners' learning motivation and satisfaction. So, the Null Hypothesis is rejected.

Discussion

These findings align with preceding research studies, signifying that immersive numerical surroundings can stimulate original thinking by contributing new artistic looks and problem-solving modes. Learners in the experimental group stated being more enthused by technological tools that allow them to make and imagine their art in ways not possible with outdated methods. This study result is consistent with the theory that VR technology nurtures a communicative and attractive setting that enhances creative processes by overcoming the physical limits of traditional media [49]. Freedom to travel virtual surroundings, simulate 3D artistic creations, and receive prompt responses contributed meaningfully to the creative output of the learners. Spatial and immersive aspects of VR may have provided a unique platform for students to push their creative limitations and experiment with nonconcrete concepts, bringing them into line with previous work on VR, making it possible to improve creativity in education [20[50]. Secondary hypothesis analysis presented that learners in the VR group were more motivated and engaged in the art-making process, equivalent to their achievements in the control group. Survey consequences and interview data verify these findings, as learners expressed higher enthusiasm and interest in the VR learning modules. The study proposes that appointment issues play a key role in the effectiveness of VR as an educational tool. It seems that VR's novelty and interactive countryside enhanced learners' willingness to contribute actively in class actions, thereby increasing their general motivation to learn. This type of outcome chains literature signifying that ground-breaking teaching technologies, such as VR, can lead to a more inspiring and dynamic classroom environment [51][52]. Additionally, a motivational boost, experiential in the VR group, suggests that intrinsic motivation could be one of the key drivers of creativity.

In the future, it is necessary to conduct research studies that support most hypotheses, and a notable remark was that some learners in the VR group, even with reporting high engagement, did not show a considerable improvement in their creativity scores. Upon further investigation, it appears that technical encounters, such as trouble using VR equipment and incomplete prior contact with digital art, could have delayed the efficiency of the intervention for a subset of learners. These results suggest that while VR has great potential, its efficiency might vary depending on learners' prior skills with technology and their ease level in using new digital tools.

Implications for Educational Practice

Even with these limits, research study answers have important implications for instructional practice. Optimistic special effects of VR grounded teaching on creativity and engagement propose that it could be a fundamental tool for developing creativity, especially in resourceful fields such as art, design, and architecture. Learning organizations could reflect on assimilating VR into their prospectus to offer learners a more lively and communicative learning environment. Teachers must receive proper training to guarantee that the technology is used efficiently and that learners are sufficiently prepared to engage with VR. Furthermore, this research study highlights the need for an equilibrium between technology and pedagogy. VR can improve the appointment, and its integration should be aligned with educational objectives and reinforced by suitable teacher guidance. Teachers should be mindful of learners' technical skills and offer support when necessary to ensure that the interference does not become a barrier to education.

Conflict of Interest

The author declares that there is no conflict of interest.

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