AJPESH 4 (1) (2024): 10-17 e-ISSN 2797-0426
ACPES Journal of Physical Education, Sport, and Health http://journal.unnes.ac.id/journals/ajpesh

Perceived Effect of Virtual Reality Headset on Students' Dancing Performance

Centhony Amil[1*], Harlyn Mae Ompoc[2], Rimarc Valencia[2]

[1]Misamis University, Ozamiz City, Philippines
[2]Mindanao State University - Iligan Institute of Technology, Philippines

*Corresponding Author: camil.lnnchs@gmail.com

Submitted: 2024-06-05. Revised: 2024-07-26. Accepted: 2024-08-08

Abstract. This study aims to examine the student's perception on the appropriateness of virtual reality headset as an aid in learning and performing dance. A descriptive-correlational type of research was employed. Sixty Physical Education students were chosen as respondents of the study. They were asked to wear a 3D Virtual Reality Box for an average of one minute. Inside it was a mobile phone with a dance video. A self-made questionnaire was then given for them to response. It is a likert scale that contains a series of statements on the appropriateness of the tool, inviting the respondents to respond to each based on how strongly they feel on each statement. The results shows that age, familiarity on the use of VR and the rate on the appropriateness of VR use is significantly correlated with the perception on the use of virtual reality on dancing performance. This implies that the more familiar and aware the respondents are with VR, the more they perceived that this is an appropriate tool in performing dance better. Furthermore, those who believe that virtual reality headset is appropriate as a learning tool in dancing also has a higher perception on the efficacy of VR headset on students' dancing performance. This result suggests that teachers in physical education may consider using the virtual reality headset as a tool in teaching dance.

Key words: Virtual Reality Headset; Dance Performance; Appropriateness of VR

How to Cite: Amil, C., Ompoc, H. M., & Valencia, R. (2024). Perceived Effect of Virtual Reality Headset on Students' Dancing Performance. *ACPES Journal of Physical Education, Sport, and Health*, *4*(1), 10-17.

DOI: http://dx.doi.org/10.15294/ajpesh.v4i1.6546

INTRODUCTION

Throughout time, technology has made great impact on people's lives. It helps in various ways to ease the way of living. As new generations are born and raised in a digital era where the technologies are quite advanced, many people love technology and resist the traditional learning ways. That makes technologies more efficient by means of integrating different kinds of ICT materials. Virtual reality technology brings a plus to the education of the new generations (Hicks, 2016). It offers various capabilities that are able to provide promising support for education. Some of these capabilities include the ability to allow the learners to visualize and interact with the three-dimensional virtual representation, experience the virtual environment in real-time, visualize abstract concepts, articulate their understanding of phenomena by constructing or manipulating the virtual environments, visualize the dynamic relationships between several variables in a virtual environment system, obtain an infinite number of viewpoints of a virtual environment, allow individuals to interact with each other in collaborative virtual environment, as well as visit and interact with events that are unavailable or unfeasible due to distance, time, cost, or safety factors. With such capabilities, in which some are unique to this particular technology, virtual reality offers many educational benefits that if appropriately implemented will bring a positive impact to its application to education (C. J. Chen, 2009).

Since education and technology have become intertwined, it provides student with an immersive learning experience like no other tool. It allows them to virtually set foot into the world of learning and explore. This synergy has yielded excellent results all around the world. Technology has transformed education like never

before. Today, students are quite comfortable with using technology as a learning tool. We have witnessed the revolution of online education and digital classrooms; virtual reality is next in line. Virtual reality was born to transform the video gaming industry. It has now started doing the same in the education sector. It provides student with an immersive learning experience like no other tool. Further, student can experience a 360-video shot or a 3D environment and learn (Beas DevRalhan, 2016). Furthermore, study shows that virtual reality delivers significant and rewarding outcomes for students and teachers by increasing cognitive memory; Test scores and knowledge retention improved when a VR-based education was utilized (Kolo, 2017).

Thus, this study aims to examine the appropriateness of this virtual reality specifically the headset on dance performance.

METHODS

Respondents

The respondents were 60 students (30 male, 30 female) who are sophomore and junior physical educations majors of MSU-Iligan Institute of Technology. Their Ages range from 16-20 years old. They were specifically chosen as sample since they were enrolled in a dance major in the semester that this study was conducted. Also, the aforementioned University is the only one in the province that offers a degree in Physical Education.

Measures

Descriptive-correlational method was employed. Data were gathered through a self-made questionnaire. It has two classification. First is on familiarity and awareness on the 3D virtual reality headset; and the second is on the appropriateness of this VR as a tool in performing dance efficiently. Questions were a likert scale that contains a series of statements, inviting the respondents to respond to each based on how strongly they feel on each statement.

Procedure

Following the approval of the Department of Physical Education's Chairperson, the identified participants were informed about their right to decline to participate and to withdraw from the study. The willing volunteers were presented with an information sheet and informed consent. Once done, each one was given an average of one minute to tried on the 3D virtual reality box with a mobile phone containing a dance video. Then, they were instructed to answer the questionnaire and were encouraged to ask questions anytime. The convenience, time preference, and well-being of the participants were given consideration.

Data Analysis

Data analysis was carried out using SPSS Version 20.0. Frequency and percentage distribution were used to assess the demographic profile of the respondents. Pearson R was utilized to evaluate correlation between variables. The results showed that p was smaller than the accepted level of significance $\alpha=0.05$ is considered as statistically significant.

RESULT AND DISCUSSION

Profile of the Respondents

Table 1. Frequency and Percentage of the Respondents' Familiarity and Awareness with Virtual Reality Headset

Rating	Frequency	Percentage (%)
Slightly Aware of VR Headset	25	42%
Aware of VR headset	32	53%
Have a plan to make use of VR over the next year or two	1	2%
We have already begun making use of VR Headset	2	3%
TOTAL	60	100%

Table 2. Frequency and Percentage of the Respondents' Top Concerns to the use of Virtual Reality Technology.

Concern	Frequency	Percentage (%)
Too much like a game	24	40%
May cause headache or brain damage	18	30%
Expensive or difficult to implement	4	6.7%
Might be a distraction	0	0%
Not enough VR Headset Available yet	0	0%
No Concerns about VR Headset	14	23.3%
TOTAL	60	100%

Table 3. Frequency and Percentage of the Respondents' Rate on the Appropriateness of Virtual Reality Headset as a Learning Tool in Dancing.

Description	Frequency	Percentage (%)
Appropriate	55	92%
Not Appropriate	5	8%
TOTAL	60	100%

Perception on the Use of Virtual Reality Headset on Dancing Performance

Table 4. Overall Weighted Mean of the Respondents' Perception on the Use of Virtual Reality Headset on Dancing Performance

Question	Strongly Agree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree	Weighted Mean
Increase dancing performance	1	0	2	14	16	27	5.08
Is effective because it makes learning fun	3	0	3	12	20	22	4.87
Promotes student collaboration	0	1	9	8	17	26	5.03
Promotes development of sensory motor skills	1	0	4	14	17	24	4.97
Is a valuable instructional tool	0	4	5	14	17	20	4.73
Is too costly in terms of	0	4	8	10	17	21	4.72
resources time and effort	0	3	10	11	16	20	4.67
Make student more competent educators							
Makes dancing more interactive	1	1	7	13	23	15	4.68
Brings students to a whole new	2	0	3	9	24	22	4.98

level of learning							
Is easier than any medium	1	4	6	10	21	18	4.67
Motivates students to get more involve in dancing	3	0	3	8	20	26	5.00
Will increase the student's confidence	0	2	5	13	16	24	4.92
Makes dancing easier to learn	0	0	3	14	20	23	5.05
Is effective in different genre of dance	0	2	2	11	18	27	5.10
Could develop myself in dancing	0	1	1	10	18	30	5.25
Make me a productive individual	0	1	6	11	20	22	4.93
					Overall Weighted Mean		
			4.92				

Significant Relationship between Independent Variable and Dependent Variable

Table 5. Results of the Test Statistics on the Significant Relationship between Independent and Dependent Variable

Independent Variables (Respondents' Background)	Dependent Variable (Perception on the Use of VR Headset)		
	r-value	p-value	Remarks
Age	-0.544	0.000	Significant
Familiarity & Awareness	0.267	0.039	Significant
Top Concerns	0.125	0.341	Not significant
Rate on the Appropriateness of VR use	0.308	0.016	Significant

Discussion

The findings of this study provide a comprehensive understanding of respondents' familiarity, awareness, concerns, and perceptions regarding the use of virtual reality (VR) headsets, particularly in the context of learning tools for dancing. The results provide a detailed view of the respondents' engagement with virtual reality (VR) headsets, reflecting their awareness, concerns, and perceptions regarding the technology, especially as a tool for learning dance. The data shows that a significant portion of the respondents, 53%, are aware of VR headsets, while 42% are slightly aware. However, only a small fraction, 5%, have plans to use or are already using VR headsets. This suggests that while awareness of VR technology is relatively high among students, its adoption is still in its early stages (Al Jahwari et al., 2022). The limited number of respondents actively engaging with VR could indicate potential barriers to its widespread use, such as cost, accessibility, or a lack of perceived necessity (Evans Leighton, 2019; Ghobadi & Sepasgozar, 2020). Despite these challenges, VR shows promise in higher education, with 71.5% of students reporting enhanced learning outcomes in a purpose-designed VR laboratory (Marks & Thomas, 2021). Students generally view VR as having useful pedagogical implications (Baxter & Hainey, 2019), and factors such as perceived facilitating conditions and compatibility significantly affect intention to use VR for educational purposes (AL-Oudat & Altamimi, 2022).

The respondents' concerns about VR technology are varied, with 40% expressing that VR feels too much like a game, which may undermine its seriousness as an educational tool. Additionally, 30% are concerned

about potential health risks, such as headaches or brain damage, associated with VR use. These concerns highlight the need for more research and education on the safe and effective use of VR technology. A smaller group, 6.7%, finds VR expensive or difficult to implement, suggesting that cost and practical challenges may also hinder its broader adoption (Sarkar et al., 2020). Interestingly, none of the respondents viewed VR as a distraction or cited a lack of available headsets, indicating that these are not significant barriers to VR use among the surveyed group. However, 23.3% of respondents reported no concerns at all, pointing to a segment of the population that is either well-informed about or unconcerned with the potential risks associated with VR (Leighton, 2019; Baxter& Hainey, 2019). To fully realize VR's educational potential, addressing these challenges and developing appropriate content and implementation strategies is crucial.

In terms of the appropriateness of VR as a learning tool in dancing, a resounding 92% of respondents find it suitable, reflecting strong support for VR's educational potential in this area. This positive perception is further reinforced by the overall weighted mean of 4.92, indicating that, on average, respondents moderately agree with the use of VR in enhancing dance performance. This finding suggests that VR is not only seen as a viable tool but is also appreciated for its potential to enhance learning experiences in creative and performing arts. Various studies have supported this finding showing that virtual Reality (VR) has emerged as a promising tool in education, particularly in creative and physical disciplines. Studies have shown strong support for VR's educational potential in dance, with 92% of respondents finding it suitable and an overall weighted mean of 4.92 indicating moderate agreement with its use (Alhamad et al., 2023). VR's immersive nature enhances engagement, motivation, and learning experiences in sports education and dance training (Mai Geisen et al., 2023; Al-Fayyadh et al., 2023). Pre-service teachers recognize VR's potential to offer unique experiences but express concerns about implementation and self-efficacy (Cooper et al., 2019). VR dance applications positively impact physical and mental well-being (Sarupuri et al., 2023). Students generally show willingness to adopt VR in higher education, particularly in IT and creative disciplines (Alfalah et al., 2017; Baxter & Hainey, 2019). Enhanced usability and spatial ability in VR environments correlate with increased learning satisfaction and positive educational outcomes (Serna-Mendiburu & Guerra-Tamez, 2024).

The analysis also reveals significant correlations between age, familiarity, awareness, and the perceived appropriateness of VR use, with p-values of 0.000, 0.039, and 0.016, respectively. These correlations suggest that as individuals become more familiar with and aware of VR technology, they are more likely to view it as an appropriate tool for learning, particularly in specialized areas like dance. This emphasizes the importance of increasing exposure and education around VR to foster greater acceptance and utilization of the technology in educational settings. Studies indicate that VR can enhance student engagement, knowledge retention, and skill development (Vats & Joshi, 2022; Au & Lee, 2017). Educators and students generally perceive VR positively, recognizing its potential to create novel pedagogical approaches and support active learning (Gavin J. Baxter & T. Hainey, 2019; G. Cooper et al., 2019). However, challenges such as high costs, technical infrastructure requirements, and content development complexities hinder widespread adoption (Sam Kavanagh et al., 2017; Babajide Tolulope Familoni & Nneamaka Chisom Onyebuchi, 2024). Research suggests that increasing exposure and education around VR technology may foster greater acceptance and utilization in educational settings (Gavin J. Baxter & T. Hainey, 2019). As VR continues to evolve, it is expected to play an increasingly significant role in transforming educational practices and enhancing learning experiences.

CONCLUSION

This study aims to investigate the perceived effect of virtual reality headset on students' dancing performance. It aims to examine the students' perception on the appropriateness of virtual reality headset as an aid in learning and performing dance. A descriptive-correlational type of research was employed. The findings underscore the growing awareness of virtual reality (VR) technology among students, particularly in the context of its use as a learning tool for dancing. While a significant portion of respondents are familiar with VR, its actual adoption remains limited, pointing to potential barriers such as cost and accessibility. Despite these challenges, the strong support for VR's educational potential, especially in creative disciplines like dance, highlights its promise in enhancing learning experiences. Concerns about the game-like nature of VR and potential health risks underscore the need for further research and education on safe and effective VR use. The significant correlations between familiarity, awareness, and positive perceptions of VR suggest that increasing exposure to the technology could foster greater acceptance and utilization in educational settings. Thus, while challenges remain, the study indicates that VR has the potential to transform educational practices, particularly in specialized areas, by offering unique and immersive learning experiences.

.

ACKNOWLEDGEMENT

We extend our heartfelt gratitude to the study participants and the respective authorities for their invaluable assistance in facilitating the data collection process.

REFERENCES

African Virtual University (2017). ICT Integration In Education. Retrieved from http://www.avu.org/avuweb/en/courses/ict-integration-in-education/

Alfalah, S. F. (2018). Perceptions toward adopting virtual reality as a teaching aid in information technology. Education and Information Technologies, 23(6), 2633-2653.

Al-Fayyadh, F., Gilányi, A., & Alhamad, A. (2023, October). Evaluating Virtual Reality Application from the Teacher's Perspective in Dance Education. In 2023 IEEE 2nd International Conference on Cognitive Aspects of Virtual Reality (CVR) (pp. 000039-000044). IEEE.

AL Jahwari, L., Garaj, V., & Harrison, D. (2022). Embedding Immersive Technologies Into Product Design Education: Students'awareness of Virtual Reality As A Tool To Support The Development of Design Solutions. In DS 117: Proceedings of the 24th International Conference on Engineering and Product Design Education (E&PDE 2022), London South Bank University in London, UK. 8th-9th September 2022.

Alhamad, A., Gilányi, A., & Al-Fayyadh, F. (2023, October). Effectiveness and usability of virtual reality in physical education: A case study on dance teaching. In 2023 IEEE 2nd International Conference on Cognitive Aspects of Virtual Reality (CVR) (pp. 000109-000114). IEEE.

AL-Oudat, M., & Altamimi, A. (2022). Factors influencing behavior intentions to use virtual reality in education. International Journal of Data and Network Science, 6(3), 733-742.

Baxter, G., & Hainey, T. (2024). Using immersive technologies to enhance the student learning experience. Interactive Technology and Smart Education, 21(3), 403-425.

Baxter, G., & Hainey, T. (2019). Student perceptions of virtual reality use in higher education. Journal of Applied Research in Higher Education, 12(3), 413-424.

Bowman, D. A., Hodges, L. F., Allison, D., &Wineman, J. (1998).The educational value of an information-rich virtual environment (GVU Technical Report; GIT-GVU-98-05). Atlanta: Georgia Institute of Technology..

Chee, Y. (2001). Virtual reality in education: Rooting learning in experience. In Proceedings of the International Symposium on Virtual Education 2001, Busan, South Korea (pp. 43–54).Busan, Korea: Symposium Organizing Committee, Dongseo University. Retrieved July 16, 2009, from http://yamsanchee.myplace.nie.edu.sg/Publications/2001/ISVE2001 Invited.pdf.

Chen, C. J. (2006). The design, development and evaluation of a virtual reality based learning environment.

Australasian Journal of Educational Technology, 22(1), 39-63.

Chen, C. (2009). The design, development and evaluation of a virtual reality based learning environment.

Retrieved from https://ajet.org.au/index.php/AJET/article/download/1306/678.

Chiou, (1995).Virtual Reality and Education. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.100.4449&rep=rep1&type=pdf

Cooper, G., & Thong, L. P. (2018). Implementing virtual reality in the classroom: envisaging possibilities in STEM Education. In STEM education: An emerging field of inquiry (pp. 61-73). Brill.

Curcio, I. D. D., Dipace, A., &Norlund, A. (2016).Virtual realities and education.Research on Education and Media, 8(2), 60–68. https://doi.org/10.1515/rem-2016-0019 GS Search

Dalgarno, B., Hedberg, J., & Harper, B. (2002).The contribution of 3D environments to conceptual understanding.In Proceedings of the 19th Annual Conference of the Australian Society for Computers in Tertiary Education (ASCILITE). Auckland, New Zealand: UNITEC Institute of Technology, Auckland, New Zealand.Retrieved July 16, 2009, from http://www.ascilite. org.au/conferences/ auckland02/proceedings/papers/051.pdf

Domingo, J.P., Alonte, J. B., Co, P., Alonte, A. B., Cong-O, D. L., Garcia, F. V., Nimor, C. F., Janson, M. C., &Nazuel, H. A. (2010). Physical education II: Beginner's dance book. (Rev. ed.). Valenzuela City: Mutya Publishing House, Inc.

Evans, L. (2018). The re-emergence of virtual reality. Routledge.

Falloon, G. (2010). Using avatars and virtual environments in learning: What do they have to offer? British Journal of Educational Technology, 108–122. https://doi.org/10.1111/j.1467-8535.2009.00991.x GS

Familoni, B. T., & Onyebuchi, N. C. (2024). Augmented and virtual reality in us education: a review: analyzing the impact, effectiveness, and future prospects of ar/vr tools in enhancing learning experiences. International Journal of Applied Research in Social Sciences, 6(4), 642-663.

Friden, T.P. The effects of familiarity in a perceptual matching task. Perception & Psychophysics 14, 487–492 (1973). https://doi.org/10.3758/BF03211187

Geisen, M., Fox, A., & Klatt, S. (2023). VR as an innovative learning tool in sports education. Applied Sciences, 13(4), 2239.

Ghobadi, M., & Sepasgozar, S. M. (2020). An investigation of virtual reality technology adoption in the construction industry (pp. 1-35). London, UK: IntechOpen.

Grubbs, S, (2017). The Data-Driven Case for Virtual Reality Learning. Retrieved from http://www.machinedesign.com/community/data-driven-case-virtual-reality-learning

Hicks, P. (2016).The Pros And Cons Of Using Virtual Reality In The Classroom. Retrieved from https://elearningindustry.com/pros-cons-using-virtual-reality-in-the-classroom

Hu-Au, E., & Lee, J. J. (2017). Virtual reality in education: a tool for learning in the experience age. International Journal of Innovation in Education, 4(4), 215-226.

Javidi G., (1995). Virtual Reality and Education. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.100.4449&rep=rep1&type=pdf

Kavanagh, S., Luxton-Reilly, A., Wuensche, B., & Plimmer, B. (2017). A systematic review of virtual reality in education. Themes in science and technology education, 10(2), 85-119.

Kolo, K. (2017, December 15). Virtual Reality: The Next Generation of Education, Learning and Training.

Retrieved February 28, 2018, from https://www.forbes.com/sites/forbesagencycouncil/2017/12/13/virtual-reality-the-next-generation-of-edu cation-learning-and-training/2/#22a3c6c8578b

Kumar, C. (2017). A new frontier: How can you profit from augmented and virtual reality? Business.com. Retrieved from https://www.business.com/articles/how-can-you-profit-from- augmented-and-virtual-reality/

Lindgren, Tscholl, Wang, & Johnson, (2016). Enhancing learning and engagement through embodied

interaction within a mixed reality simulation. Retrieved from https://experts.illinois.edu/en/publications/enhancing-learning-and-engagement-through-embodied-interaction-w i

Marks, B., & Thomas, J. (2022). Adoption of virtual reality technology in higher education: An evaluation of five teaching semesters in a purpose-designed laboratory. *Education and information technologies*, *27*(1), 1287-1305.

McLellan, H. (1996). Virtual realities.In D. H. Jonassen (Ed.), Handbook of research for educational

communications and technology (pp. 457-487). New York: Macmillan Library Reference, USA. McLellan, H. (2003). Virtual realities.In D. H. Jonassen& P. Harris (Eds.), Handbook of research for educational communications and technology (2nd ed.), pp. 461-498. Mahwah, NJ: Lawrence Erlbaum

M. Hoffmann, K. Schuster, D. Schilberg, and S. Jeschke, "Next-Generation Teaching and Learning using the Virtual Theatre", 4th Global Conference on Experiential Learning in Virtual Worlds. Prague, Czech Republic, 2014.

Mikropoulos, T., Chalkidis, A., Katskikis, A., &Emvalotis, A. (1998).Students' attitudes towards educational virtual environments. Education and Information Technologies, 3(2), 137-148.

Ralhan, B. (2016). Do we really need Virtual Reality (VR) in education? Retrieved from http://computer.expressbpd.com/news/do-we-really-need-virtual-reality-vr-in-education/19052/

Rouse, M. (2015). Virtual reality Retrieved from http://whatis.techtarget.com/definition/virtual-reality

Roussos, M., Johnson, A., Moher, T., Leigh, J., Vasilakis, C., & Barnes, C. (1999). Learning and building together in an immersive virtual world. Presence: Teleoperators and Virtual Environments, 8, 247-263.

Roussou, M. (2004a). Examining young learners' activity within interactive virtual environments:

Exploratory studies (Technical Report No.RN/04/08). London, UK: University College London, Department of Computer Science. Roussou, M. (2004b). Examining young learners' activity within interactive virtual environments.In Proceedings, 3rd International Conference for Interaction Design & Children, (pp. 167-168).

Roussou, M., Oliver, M., & Slater, M. (2006). The Virtual Playground: An educational virtual reality environment for evaluating interactivity and conceptual learning. Virtual Reality, 10(3-4), 227- 240

Salzman, M. C., Dede, C., Loftin, R. B., & Chen, J. (1999). A model for understanding how virtual reality aids complex conceptual learning. Presence: Teleoperators and Virtual Environments, 8, 293-316.

Sarkar, P., Kadam, K., & Pillai, J. S. (2020). Learners' approaches, motivation and patterns of problem-solving on lines and angles in geometry using augmented reality. Smart Learning Environments, 7, 1-23. Sarupuri, B., Kulpa, R., Aristidou, A., & Multon, F. (2024). Dancing in virtual reality as an inclusive platform for social and physical fitness activities: a survey. The Visual Computer, 40(6), 4055-4070.

Selvarian, M. E. M. (2004). Being there in the VLE: A pan-pedagogical model for enhanced learning

through perceptual states of "presence".Unpublished doctoral dissertation, Temple University, Philadelphia, PA.

Serna-Mendiburu, G. M., & Guerra-Tamez, C. R. (2024, April). Shaping the future of creative education: the transformative power of VR in art and design learning. In *Frontiers in Education* (Vol. 9, p. 1388483). Frontiers Media SA.

Thurman & Mattoon, (1994).Using Virtual Reality in Training. Retrieved from

https://books.google.com.ph/books?id=PBtBjf1KYYAC&pg=PA85&lpg=PA85&dq=the+concept+of+VR+and+the+wave+of+research+and+development+accompanying+it+are+creating+new+form+of+simulation+that+may+lead+to+fundamental+improvements+in+simulation-based+training.

Vats, S., & Joshi, R. (2023, December). The Impact of Virtual Reality in Education: A Comprehensive Research Study. In International Working Conference on Transfer and Diffusion of IT (pp. 126-136). Cham: Springer Nature Switzerland.

Virtual Reality Society. (2017, June 28). Benefits of virtual reality in the classroom. Retrieved February 28, 2018, from https://www.vrs.org.uk/virtual-reality-education/benefits.html

Youngblut, C. (1997). Educational uses of virtual reality technology.Executivereport.Reprinted from

Educational uses of virtual reality technology (IDA Document Report Number D-2128). Alexandria, VA: Institute for Defense Analyses, 1998. VR in the Schools, 3(1). Retrieved July 16, 2009, from http://vr.coe.ecu.edu/vrits/3-1Young.htm

Zlokovic, J. (2008). Children and Virtual Reality -Some dilemas of Education. Retrieved from

https://www.dlib.si/stream/URN:NBN:SI:DOC-8DT1S5LN/67ad1a99-6afe-402b-af29-dc3c7a9e0cae/TEXT