Research on the Theoretical Construction and Application of Computer Virtual Technology in Research Travel

Lanfeng Lu1,*

1Department of Culture and Law, The Open University of Zhuhai, Zhuhai, Guangdong, China, 519000

*Corresponding author e-mail: T16092105045@cityu.mo

Abstract. With the increasing appeal of Research travel (hereinafter referred to as RH) education, primary and secondary school students' RH has been gradually carried out, which will gradually be close to western education. RH is a teaching method based on naturalism theory, life education and leisure education theory, which can promote the development of primary and secondary school students. With the rapid development of computer technology, VR technology has been gradually applied to various fields. With the increasing scale of RH, VR technology is gradually applied to design related courses. Therefore, primary and secondary school teachers should change the traditional education concept. Through the construction of RH course platform, the school can cultivate teachers' comprehensive ability, which will also improve students' travel learning experience. Firstly, this paper analyzes the important role of VR technology in RH. Then, this paper puts forward some problems. Finally, this paper constructs the implementation process of research tourism.

Keywords: VR Technology, Research Travel, Theoretical Construction

1. Introduction
RH is a traditional form of education in the West. It is a way to organize group travel according to students' age characteristics and subject teaching content. Through RH, we can broaden students' horizons and enrich their knowledge, which will deepen the intimacy with nature and culture[1]. Through RH, schools can increase students' experience of collective life style and social public morality. Since 2013, some provinces and cities have begun to carry out exploratory pilot projects, which has incorporated RH into the teaching plan of primary and secondary schools. RH strengthens the construction of comprehensive practical courses for primary and secondary school students, which changes the original closed school running direction to the open one[2]. Therefore, the development of RH is from examination oriented education to quality education, which will promote the development of RH in the field of tourism and leisure. RH is a new type of tourism product, which reflects the industrial value of RH. Through careful design and scientific organization, carrying out RH teaching in primary and secondary schools can avoid travel risks to the greatest extent. RH has brought great market effect to local tourism resources[3].
Through HowNet search, academic papers on RH began in 2013, which are more reflected in the concept definition, curriculum design, base building, platform development and so on. However, the research institutions of RH are still blank, which is very disadvantageous to the experience promotion and coordinated development of national RH. Therefore, we need to strengthen the ontology research of RH, which requires us to dig into the theoretical basis of RH. Therefore, we need to construct the theoretical construction of RH according to VR technology, which can deeply reflect on the humanistic value and educational significance of tourism\textsuperscript{[4]}.

2. The important role of VR technology in RH

VR technology plays an important role in RH, as shown in Figure 1.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure1.png}
\caption{The important role of VR technology in RH.}
\end{figure}

2.1. Solve the choice of RH content

Through VR technology, we can carry out virtual RH. Through "one exhibition hall, one commentator" + "one experience room, one set of equipment, one pair of glasses" + "one experience", we can meet the requirements of primary and secondary school students for RH, including travel content, safety, etc. Through VR technology, we can experience the unlimited capacity and fantasy experience of RH, which can reflect the selection of red research course content. Through VR technology, RH will become relaxed, rich, intelligent, vivid and interesting, which effectively ensures the educational effect of red RH. VR technology can ensure the effect of red RH, which will alleviate the problems of poor autonomous learning ability and limited acceptance ability of primary and secondary school students. Through VR technology, we can carry out virtual red RH, which will bring students a kind of fantastic experience. Through rich content, we can make up for the shortage of primary and secondary school students, which will ensure the educational effect of red RH for primary and secondary school students\textsuperscript{[5]}.

2.2. Provide choice space

RH is a comprehensive practical course, which requires the school to determine the choice of curriculum space, including time, content, form, etc. When carrying out the red RH in school, the school must make relevant travel plans according to the characteristics of primary school students of different grades. Through comprehensive consideration of the relevant content, primary and secondary school students can safely complete the postgraduate travel course. After the event, the school can carry out RH, which will become a kind of collective travel and learning. The purpose of research tourism is to be designed by teaching and research organizations of schools, which is a variety of research courses. Through VR technology, we can show different courses to primary and secondary
school students, which will enhance the experience of students. Through independent choice, the school makes corresponding arrangements according to the choice of students\textsuperscript{[6]}.  

2.3. *Enrich the presentation form of curriculum*

Modern marketing theory holds that all products are composed of the core part, the form part and the extension part. RH course is designed on the basis of cultural resources according to the characteristics and needs of research and learning audience. We can divide the RH product into three parts: core content, formal content and extended content, as shown in Figure 2. Through VR technology, we can enrich the presentation form of RH course, which will fill the problem that primary and secondary school students are difficult to focus on. Through VR technology, schools can set up virtual RH courses, which can reproduce cultural resources in the form of stories. Through VR technology, primary and secondary school students can participate in historical events. Through feeling, we can deepen the memory of history of primary and secondary school students. Through the multi-dimensional presentation form of personal experience and real communication, schools can enhance the interest of primary and secondary school students in the course of RH, which will improve the effectiveness of RH\textsuperscript{[7]}.  

![Figure 2. The RH product into three parts.](image)

3. *Problems in RH*

This paper is based on the field survey. 400 formal questionnaires were sent out, 369 effective questionnaires were sent out, and the effective rate was 92.25%.  

3.1. *Safe travel*

RH is a kind of educational practice outside school relying on social education resources, which requires the security of organization activities. Therefore, research tourism is a severe challenge to schools and teachers. According to the survey results, the main problem are lacking of overall planning and uncontrollable student behavior, respectively accounting for 61.3% and 54.8%. Details are shown in Figure 3.
3.2. Activity effect

RH evaluation system is a macro regulation of the upper level, which leads to the actual operation is not detailed enough. After the completion of research activities, some primary and secondary schools do not have a specific evaluation system, which is difficult to evaluate the effect of research and learning. According to the survey results, the main problem are mere formality and imperfect evaluation system, respectively accounting for 64.1% and 60.4%. Details are shown in Figure 4.

![Figure 3. Safe travel in RH.](image)

![Figure 4. Activity effect in RH.](image)

4. The construction of RH theory course

4.1. Implementation process of RH theory course construction

First of all, RH needs to determine the curriculum attributes, evaluation criteria and other basic foundation. Through the coordination of school work, we can generate operational research curriculum implementation process, which is the guarantee of high-quality RH activities. The core of RH is research study. At the same time, elective courses and community activities provide knowledge basis and basic conditions. Centralized travel is research-based learning for field investigation and data
collection. The implementation process of the course mainly includes the top-level design of the school's research and learning work, activity preparation, opening report meeting, extracurricular research, and final defense, as shown in Figure 5.

4.2. Integrated curriculum system
According to the curriculum standards, schools can create RH activities according to students' psychological characteristics, knowledge level and discipline characteristics. Combining with the local reality, the school will incorporate the RH into the education and teaching plan, which requires teachers to determine the content in combination with the students' physical and mental development status, characteristics of various stages and regions. At the same time, schools should develop and integrate various kinds of activity courses. By making full use of regional characteristics and cultural resources, the development of RH curriculum will be of great significance. Through the combination of RH and Chinese curriculum, schools can stimulate students' interest in learning Chinese. Through the active development of off campus exhibitions and other courses, schools can cultivate students' perception of beauty.

4.3. Improve the evaluation system
Tourism focuses on the fun of play. However, RH needs to be summarized and evaluated in time after the event, which will determine the effectiveness and quality of the implementation. The educational authorities should bring the RH into the evaluation of the whole school work and moral education as soon as possible. The school should establish the corresponding reward mechanism according to the students' performance in the travel, which will be an important standard to measure the students' comprehensive quality. Through the development of a variety of evaluation methods, we can achieve both process evaluation and result evaluation. By holding essay, photography, painting competitions and other activities, the school can further improve the comprehensive quality of students.
5. Conclusion
RH is an innovation in the field of education. Through the integration of tourism and education, we are bound to bring about changes in the two fields. RH is a complex project, which involves the joint efforts of the government, schools, parents and RH bases. Through the provision of high-quality research curriculum resources, RH will be better for the quality education of primary and secondary school students.

Acknowledgments
This research was partially funded by Research Grants from Chinese Ministry of Education (20YJCZH106) and Guangdong Provincial Department of Education (2019GXJK154).

References
[1] Ding Yunchao. RH: a new comprehensive practical activity course [J]. Chinese moral education, 2014 (09) : 82-89.
[2] Duan Yushan. Curriculum standards for RH (1) -- Preface, course nature and orientation, basic concept and curriculum objectives [J]. Geography teaching, 2019 (05) : 10-17.
[3] Guo Ge, "interest theory" in pedagogy and psychology [J]. Curriculum, teaching materials and teaching methods. 2016 (5): 14-21.
[4] Shi Yunhui, et al. Discussion on the construction of Guizhou smart tourism cloud computing service platform [J]. Journal of Qianan Normal University for nationalities, 2015 (7): 73-77.
[5] Wu Zhikui, Yang Jie. RH: an important way to cultivate students' core literacy [J]. Curriculum, teaching materials and teaching methods, 2018 (04) : 19-21.
[6] Zhang Cheng. Based on students' reality, carefully carry out RH [J]. Geography education, 2015 (3): 48-49.
[7] Zhang Quanwu. Dilemma and Transcendence of RH into school teaching [J]. Curriculum, teaching materials and teaching methods, 2018 (04) : 69-70.