



Innovative Development of Counselling Psychology With Virtual Reality Technology

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Abstract. With the continuous development of Internet technology, psychology is no longer an independent discipline, but has become a consulting project with comprehensive ability. Especially with the support of virtual reality technology, how to realize the innovation and development of consulting psychology has become a key social research problem. In order to better adapt to the general development law of consulting psychology, starting from the basic meaning of Internet virtual reality technology, this paper forecasts its development trend, and analyzes the development characteristics and influence ability of virtual reality technology according to the feedback of the public. On this basis, the development direction under virtual reality technology is adjusted to the innovative demands of counselling psychology, so that the two complement each other and promote each other together. Combining the developmental characteristics of virtual reality technology and counselling psychology, only by combining virtual reality technology and establishing a more perfect psychological defence in the context of the Internet can we comply with the developmental laws of psychological thought and promote the rapid development of counselling psychology in the direction of continuous innovation.

Keywords: Virtual Reality Technology, Counselling Psychology, Innovative Development, Universal Laws, Psychological Appeals.

1 Introduction

The subject of psychology has only been around for a little over a hundred years since it became independent, but in this relatively short period of its development, psychology has achieved a great deal. Conventional psychological thinking holds that every psychological project must be carried out with the human being as its object of study, but the complexity, diversity, mutability and uncontrollability of the human psyche have meant that the development of psychological theory has always been marked by differences, conflicts, disputes and antagonisms, which means that psychology has not yet become a fully unified subject of study. As an important part of psychological thought, counseling psychology is obviously different from traditional psychological concepts in essence. Most of the research objects of

counseling psychology are normal people, not patients as people often say. As the main form of counseling psychology, psychological counseling can help people correctly understand themselves and stimulate their personal potential while establishing a healthy self-image, so that the individuals receiving counseling can find their own life value [1]. In short, conventional psychology is to help yourself become a better individual, while consulting psychology is to help others become a better self. The former mainly serves patients with mental or mental diseases, while the latter can serve everyone.

Virtual reality technology is an in-depth form of immersive experience that can bring real sensory enjoyment through virtual environments. In the context of the Internet, virtual reality emphasises the interactive experience relationship between the user and the device used. Compared to non-interactive experiences, virtual reality gives the initiative of the sensory experience to the user, freeing him or her from a passive relationship and enabling him or her to experience the chosen scene according to their personal wishes. As the user's mind is not influenced by network technology, this technical tool allows the user to schedule the guidance data within the scene. In the process of participating in the experience, users can interact with the virtual environment with the help of tools such as data gloves, when they can not only truly perceive the changing form of the external virtual environment, but also produce a certain real-time feeling with it [2]. In recent years, with the continuous development of Internet application, virtual reality technology has become a more common method of scene experience. Therefore, some researchers boldly imagine whether the combination of virtual reality technology and counseling psychology will lead psychological counseling to a higher level of development space? Based on the above research background, this paper makes an in-depth exploration on the innovative development of Consulting Psychology under virtual reality technology.

2 Analysis Of The Development Characteristics Of Virtual Reality Technology

2.1 Basic Meaning

From a macro perspective, virtual reality is the combination of a virtual space with a realistic scenario, thus enabling participants to have a different sensory experience. On a theoretical level, virtual reality is a computer simulation system whose application aims to help people get a realistic feel for the virtual world created by the Internet. For reasons of authenticity, the data involved in building virtual reality worlds must be entirely sourced from life and, after computer processing, this data information can be directly converted into electronic signals for direct recognition and retrieval by other network applications. The scenes people feel when immersed in the virtual reality world do not really exist, but are expressed through three-dimensional models. Therefore, these phenomena cannot be directly obtained by the naked eye, but need the help of specific conversion devices [3]. With the development and progress of scientific and technological means, virtual reality technology is widely

used in various fields, among which the development of psychological consulting project is the most prominent. It is specified that P_1 represents the real scene vector, β represents the virtualization experience coefficient, i represents the initial assignment of scene virtualization processing, and α represents the experience perception standard value. By combining the above physical quantities, the virtual scene vector P_2 can be expressed as:

$$P_2 = \sum_{i=1}^{+\infty} \beta |P_1|^{\alpha-1} \tag{1}$$

2.2 Development Trend

As a branch of Internet technology, virtual reality cannot be developed without the strong support of Internet technology. Therefore, in order to realise the promotion and practice of virtual reality technology in the established field, it is necessary to fully implement Internet application technology and, on this basis, increase the efforts to build a practical platform, which provides a dependent environment for sensory equipment on the one hand and avoids the delayed promotion of Internet information on the other. The following figure predicts the development of virtual reality technology in the future.

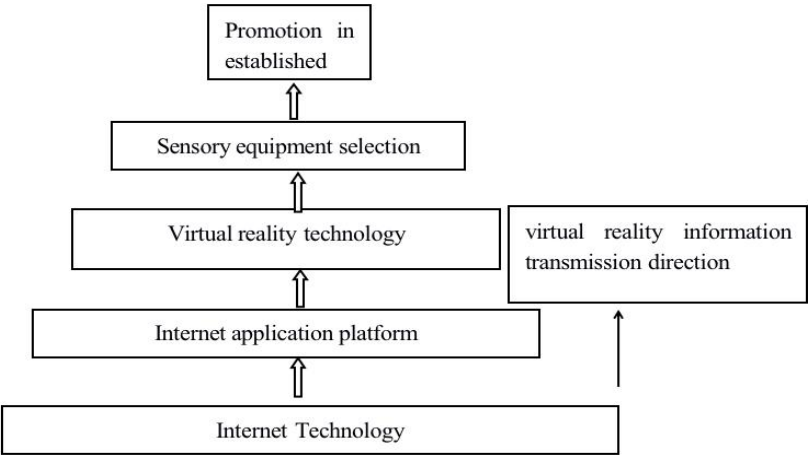


Fig. 1. Virtual reality technology development direction forecast

Combined with Figure 1, it can be seen that the development form of virtual reality technology basically conforms to the pyramid principle - Internet technology, as the bottom part of the tower, can provide the basic support role for the upper application technology and operation platform, and can integrate the massive data and information resources in the Internet environment and use them as the development power of virtual reality technology. Internet application platforms, as a derivative structure of Internet technology, can provide hardware equipment support for virtual

reality technology, and in terms of technology promotion, the stability capacity of the platform structure determines whether the technological means has the capacity for stable development. Virtual reality technology, as the core development direction, plays an important role in connecting the top to the bottom, downwards with the hardware equipment structure provided by the Internet application platform to create a realistic virtual space environment for the participants, and upwards with the selected sensory equipment to bring the participants directly into the virtual reality environment so that they can have a different sensory experience in it [4]. The form of sensory equipment chosen determines the actual direction of development of virtual reality technology. For special research directions such as counselling psychology, the virtual reality environment should be constructed to provide a relatively comfortable environment in which counsellors can better talk about their personal problems and ultimately relieve their stress in the virtual environment.

2.3 Influence Capacity

If we take the promotion of innovative developments in counselling psychology as a core reference, the main impact capabilities of virtual reality technology are reflected in the following areas.

Table 1. Value of the impact role of virtual reality technology

N o.	Direction	Influence capacity
1	Determining the form of development of counselling psychology	The faster the pace of development of virtual reality technology, the richer the presentation of psychological counselling
2	Building a more stable counselling psychology environment	Participants can directly immerse themselves in the virtual reality environment, relieving the mental stress caused by face-to-face communication
3	Increasing the rate of development of counselling psychology programs	As the rate of development of virtual reality technology accelerates, the manifestations of counselling psychology projects will be significantly diversified and their rate of development will be appropriately facilitated
4	Helping people understand the importance of psychology	In a virtual reality environment, it is easier for participants to let go of his or her guard and really engage in the counselling environment, thus making it easier to solve troubling problems

In order to enable the comprehensive innovation and development of counselling psychology, when perfecting virtual reality technology, attention should be paid to the unity between the two, so as to guarantee the stable development of the Internet

interaction platform on the one hand, and to help people solve a range of psychological problems using counselling psychology tools on the other.

3 Innovative Development Direction of Counseling Psychology

3.1 Needs Of Different Groups For Psychological Assistance

With the rapid spread of virtual reality technology, different people's perceptions of psychological thinking have begun to change, and the theoretical and practical aspects of psychological assistance have developed to some extent. Innovation is both a renewal of ideas and the creation and refinement of new forms of psychological counselling [5]. The table below reflects how the perception of psychology has changed over the last 10 years for different groups of people.

Table 2. Statistics on cognitive ability in psychology

Year	Total number (persons))	Number of patients with underlying psychological problems (persons)	Percentag e	Number of patients requiring psychological counselling (persons)	Percentage
2012	10000	1721	17.2%	522	5.1%
2013	10000	1945	19.5%	704	7.0%
2014	10000	2037	20.4%	833	8.3%
2015	10000	2216	22.2%	1003	10.0%
2016	10000	2568	25.7%	1390	14.0%
2017	10000	2734	27.3%	1412	14.1%
2018	10000	3150	31.5%	1666	16.7%
2019	10000	3782	37.8%	2134	21.3%
2020	10000	4649	46.5%	3001	30.0%
2021	10000	5615	56.2%	4670	46.7%

Analysis of Table 2 shows that the number of patients with underlying psychological problems shows an increasing trend year on year and an increasing rise in the number of units. Prior to 2014, the number of patients requiring psychological counselling remained below 10%, as the social pressure on people at this stage was relatively low and their psychological problems were therefore relatively minor. Since 2019, the number of patients with potential psychological problems has increased significantly, which means that the pressure on people's lives is increasing, and more and more people are experiencing psychological problems of varying degrees, and more and more people are in need of psychological counselling to relieve their psychological burdens, which has to a certain extent contributed to the rapid development of The rapid development of virtual reality technology. Since 2020, virtual reality technology has developed to such an extent that counselling psychology has been able to integrate well with it, so that although the number of patients with underlying psychological problems is relatively high, the majority of patients are able to channel their emotions better.

3.2 Improve People's Psychological Quality

The promotion of Internet application platforms has provided a good opportunity for the development of virtual reality technology. In this process, counselling psychology, based on virtual reality technology, has continued to innovate and improve, not only helping different social groups to solve a wide range of psychological problems, but also opening up a more innovative approach to inquiry-based therapy based on the original therapeutic ideas [6]. For people with psychological problems, they can release their inner burdens in a virtual environment and get positive encouragement and treatment from it. On the one hand, it can solve the basic psychological problems of the people and make their heart quality level continuously improved, on the other hand, it can promote the continuous development of counselling psychology and eventually make their creative development ability fully stimulated.

4 Development Direction Planning Of Counseling Psychology Based On Virtual Reality Technology

Counselling psychology is a new approach to the management of psychological problems developed on the basis of traditional psychology, which advocates the examination of the behaviour and psychological state of people with potential mental illness from a number of perspectives, including social, cultural, historical and contextual. With the support of virtual reality technology, counselling psychology emphasises the importance of verbal communication in the treatment of psychological problems, which not only highlights the value of cultural pluralism in the application of the patient's psychological emotions, but also provides a broader platform for the development of virtual reality technology on the Internet. The two complement each other so that the mental health of the community is effectively guaranteed, which also makes a significant contribution to the stability of social development relations.

Compared to traditional psychological thinking, counselling psychology is more naturalistic, believing that the construction of a human communication relationship helps patients to relax their negative emotions, and that with the use of virtual reality technology, both parties involved in the counselling can be integrated into a unified counselling environment and can enjoy the sensory experience while digesting the negative emotions and ultimately restoring the patient's psychological environment to a healthy state [7]. In the process of consultation and communication, attention should be paid to the changes in the patient's inner emotions. When the patient's emotions are relatively agitated, the proportion of virtual environment elements can be increased appropriately to suppress his or her psychological fluctuation; while when his or her emotions are stable for a long time, the proportion of virtual environment elements should be reduced to force his or her psychological emotions to fluctuate, so that the consultant can accurately grasp the form of sensory changes of the person being consulted, and actively and effectively channel his or her negative emotions. Let a denote the initial value of the virtual sensory experience coefficient, f denote the discrete performance coefficients of the psychological covariates of counselling under

the influence of virtual reality technology, ΔH denote the amount of unit change in psychological sensory experience behaviour, ϖ denote the innovative developmental metric value, τ and v denote two unequal counselling coefficients for psychological problems, l_τ denote the psychological developmental vector based on coefficient τ , and l_v denote the psychological developmental vector based on coefficient v . With the support of the physical quantities mentioned above, the expression for the cognitive role of counselling psychology under the action of virtual reality technology can be defined by associating equation (1) as:

$$D = \frac{\sum_{a=1}^{+\infty} f \times |\Delta H|}{\varpi \cdot P_2} \cdot \sqrt{l_\tau^2 - l_v^2} \quad (2)$$

In order to achieve effective planning of innovative developmental competencies in counselling psychology, it is necessary to determine the values of the performance characteristics of innovative developmental behaviours on the basis of their cognitive role expressions, which are solved as follows:

$$K = \frac{\mu \cdot D}{\xi(v_1 + v_2 + \dots + v_n)} \Big|_{n^2-1} \quad (3)$$

Where, μ represents the conversion and utilization rate of virtual reality technology, $v_1, v_2, \dots, v_n$ represent n different performance vectors of psychological counseling behavior, and ξ represents the execution intensity of psychological counseling behavior instructions.

5 Conclusion

With the support of virtual reality technology, in order to achieve the innovative development of counselling psychology, the following aspects should be taken into account.

Maintaining the stability of the application of the Internet platform as a basis for increased efforts to develop virtual reality technology and to combine a variety of different perceptual devices to build a virtual reality environment that is closer to real life.

Improving the practical form of the means of counselling psychology, all counselling questions must be set in accordance with the real emotions of the people being counselled, maximising the comfort of the people involved in counselling, enabling them to fully release their inner pressure in the virtual reality environment, and putting the practical meaning of the idea of psychological diversion into practice.

On the basis of the existing application mechanisms, virtual reality technology is combined with counselling psychology in a comprehensive manner, on the one hand can guarantee the stability of the emotions and inner feelings of the counselled person during the counselling process, on the other hand can avoid unreasonable guidance situations. In a sense, a good virtual reality environment is a prerequisite for the stable development of counselling psychology. In the future, relevant research units can start from the perspective of expanding the scope of application of virtual reality

technology to ensure the ability of counselling psychology to channel negative emotions, while achieving innovative development of this technical tool.

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