Research on Higher Vocational English Stratified Education based on Virtual Reality Environment

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Abstract
In this paper, the author researches on the higher vocational English stratified education based on virtual reality environment. The stratified classroom in English teaching is a new information tool for English teaching. In order to improve the efficiency and effectiveness of English teaching, this paper studies the establishment of a hierarchical classroom for English comprehensive teaching based on artificial intelligence. For English learning, only language teaching is not enough and so as for just language learning. Successful English should cultivate students’ intercultural communicative competence and integrate language socio cultural factors into students’ language teaching. This paper establishes a hierarchical teaching mode of Comprehensive English teaching based on virtual environment, and puts forward some suggestions, aiming at improving students’ English achievement and intercultural communicative competence.

Keywords: Higher vocational, English stratified education, Virtual reality environment

1. Introduction

In recent years, people have paid more and more attention to the importance of culture teaching in English teaching. English teaching and culture teaching is an integral part of English teaching, and an important goal of English teaching is to cultivate students' intercultural communicative competence from a global perspective. Successful English should cultivate students’ intercultural communicative competence and integrate language socio cultural factors into students' language teaching. Successful English teaching is an important guarantee for successful cross-cultural communication. However, in real life, language teaching and culture teaching disconnect, leading to many communication misunderstandings and failures. Therefore, it is necessary to strengthen the cultural penetration in English teaching. In the context of globalization, with the deepening of ethnic and ethnic communication, intercultural communication is becoming more and more frequent. As a communicative language, language awareness has stored a great deal of knowledge and experience, and plays an important role in intercultural communication.

In the context of globalization, people of different cultural backgrounds must meet the following conditions before they can communicate effectively. Besides mastering a foreign language, we need to understand foreign cultures, understand and understand the differences between native culture and foreign culture, so that we have enough language and cross-cultural communicative competence.

China has undergone a series of foreign language teaching reform, but the result is not satisfactory: Students' language and practical abilities are strong, lack of social and cultural competence and cross-cultural competence. The teaching of College English is a typical example. Through in-depth research, we found seven main reasons for this problem.

The main methods are shown as:
1. Foreign language teaching ignore the important role of culture in foreign language teaching and communication.
2. Language teaching community lacks a mature cross cultural language teaching model, especially the cross culture college English teaching model.
3. Most schools from the concise English Chinese Dictionary hope to have a set of College English courses that include the necessary cross-cultural communication programs.
4. English teachers and students have insufficient understanding of intercultural communication.
5. Teachers lack the training of culture teaching and have the opportunity to contact Anglo American culture.
6. English teaching materials for intercultural communication are very few.
7. Schools lack systematic methods and standards for assessment of cultural competence.

Language teaching, which aims at fostering master of foreign languages, has a history of more than 100 years. Its evolution includes four main stages.
1. Teaching grammar to cultivate students' reading ability.
2. Emphasize the imitation and repetition of children's native language acquisition, and improve the students' listening and speaking ability.
3. On the premise of cognition, efforts should be made to cultivate the students' ability to use English in an all-round way or to develop communicative competence.
With the input of language and culture, the students' social and cultural ability and intercultural communication ability are made hard. So far, there are no more than twenty systematic methods and methods in language teaching, of which five are the most influential. They are grammatical translation, direct, language learning, cognitive and communicative. The first four methods and methods are all for teaching language knowledge and improving language ability, all of which have made great contributions to language education, but they ignore cultural factors.

2. The basic framework in English teaching

The study of intercultural communication began in the 50s of last century. Scholars from all over the world work together to build a unique theoretical framework and research method for Intercultural Communication Research Based on anthropology, psychology, linguistics, media studies, sociology, philosophy and cultural studies. Edward Hall, an American anthropologist, is known as the father of intercultural communication. He has made an in-depth study of the relationship between culture and communication. The silent language published in 1959 is considered to be the basic work of intercultural communication research. Intercultural Communication Theory: Current Perspectives, published in 1983 by Gudykunst, is considered as an independent and mature interdisciplinary communication research.

The achievements of intercultural communication research are of the highest value in foreign language teaching and related fields. With the development of intercultural communication research, scholars have realized that language teaching can never be without cultural factors. Foreign language communication is exactly intercultural communication. The important criterion of modern foreign language masters is whether they have cultural cognitive ability or cross-cultural competence. Culture teaching in the context of language education has gone through three main stages: developing reading ability, cultivating communicative competence and developing intercultural communicative competence, and forming four teaching modes: external culture mode, cross culture mode, multicultural mode and cross culture mode. Cross cultural communication of language, culture and communication, culture, communicative principle, communicative competence concept, connotation of intercultural communication, the concept of intercultural communicative competence, the phenomenon of cultural differences in cross-cultural communication, each participant to understand others speech according to the customs and predict their own. According to the principles of intercultural communication, the ideal goal of foreign language teaching is to help students communicate with each other in target culture and cultivate students' intercultural communicative competence (Milosavljević, 2015).

From the preceding discussion process, we can see that the process of cluster analysis is multivariate statistical analysis. The main effective definition is the property classification process, and then there will be the relationship between the attributes analyzed, which is the basic process of cluster analysis. However, clustering analysis is based on effective classification of variables. Usually, samples or variables are regarded as points in multi-dimensional space, and then the distance between two points is calculated. Another approach is to describe the similarity between the elements of the sample selected according to their proximity. According to the specific evaluation data of previous corresponding clustering analysis and college students' English assessment, in order to get the clustering map, we can establish the same effective classification by students' ability and spectral knowledge of structural knowledge. Figure 1 shows the basic framework of intercultural communication.

![Figure 1. The basic framework of cross cultural communication](image)
in the postgraduate stage of computer-aided autonomous language learning. The more time students spend on computers, the more time they invest in English by computer technology. With regard to the actual situation of computer-assisted autonomous English learning, graduate students have achieved positive results in terms of language learning process and strategy use in addition to metacognitive strategies. The data of independent sample T test show that there are significant differences in frequent language learning process between frequent computer users and users who are not using computers as well as the use of strategies under CALL. There are also significant differences in sex. In addition to some significant differences between language learning process and strategy use, there are significant differences in the expectation aspect of curriculum, especially in strategic guidance and online feedback.

3. The visual environment

In the field of visual environment, emotional computing has become a new hot spot in recent years. It has attracted the attention and energy of experts and scholars in many fields. Emotion model is the key technology of affective computing, through in-depth study of human emotions in cognitive science, has been growing, beginning in human-computer interaction, wearable computer, robot, games and other fields are widely used, has more features of human nature. In this paper, emotional computing is introduced into the field of motion simulation, and the combination of affective modeling technology and virtual reality technology provides a new means for athletes training. This paper first introduces the background and significance of the research, summarizes the current mainstream methods of athlete training, analyzes the importance of psychological training, puts forward the way of absorbing virtual reality technology, and creates virtual game environment for athletes’ psychological quality training. The Emotion Modeling of the audience is the key research work in this paper. In this respect, this paper studies the OCC emotional model, analyzes its organizational structure and rules, and continues to study the emotional process framework of emotional rationality (Balboacastillo, 2015; Varshney, 2015).

Visualization is the theory, method and technology of transforming scientific data into visual graphics or images displayed on screen, and then interacting with computer graphics and image processing technology. It was first proposed by the German philosopher Kant in nineteenth Century. In his view, schema refers to a kind of "primary imagination", it is a kind of hidden in the depths of the human soul, belonging to the transcendental category, while in the later Piaget, Bartlett and Rumelhart, is there a cognitive structure in the body, it is dynamic, changing. The concept map is a graphical method, in which the nodes represent concepts, relations between the links represent the concept, which is based on the theory of AusubeFs learning theory was first proposed in 1960s by Professor Novak of Cornell University, this theory is in his study of children’s subjectivity knowledge understanding situation put forward, and is applied to teaching. Has become an important method for teaching, knowledge construction is started from the observation and understanding of things, through the existing concepts to study, think The student builds the concept network and then constantly supplements the new content to the network. In order to make learning meaningful, individual learners should connect the new knowledge with the learning concept (Fuster, 2015; Jiang, 2015).

With the development of personalized human-computer interaction, more and more attention has been introduced into the research of affective human-computer interaction in academia and industry. In this context, affective computing was proposed by Professor Rosalind Picard of Massachusetts Institute of Technology in 1995. It has been widely applied in many fields, such as medical treatment, layered robot, e-commerce, safety and so on. Although the research of emotional computing is widely used, there are still many open problems. Because of the uncertainty of emotion, the traditional machine learning algorithm can not deal with this uncertain reasoning problem very well, and probability theory provides us the foundation of modeling of emotional uncertainty. Although probability theory has existed since seventeenth Century, due to the development of probabilistic graphical models (PGM), including Bias network (BN) and hidden Markov model (HMM), our ability to use probability theory effectively is relatively new. With the rapid development of computer science and technology, visual environment technology has been widely used in various fields. At present, the problems of the theory, method and application of visual environment are becoming more and more common. The concept of visual environment is shown in Figure 2.

The basic equation of the algorithm is as follows (1) (Solanki, 2015; Hodge, 2015):

$$\hat{f}_H^a (x) = \frac{1}{\Gamma(1+\alpha)} \int_0^\infty \left\{ \frac{f(t)}{t-x} \right\}^\alpha (dt)^\alpha = \frac{1}{\Gamma(1+\alpha)} \int_0^\infty f(t)g(x-t)(dt)^\alpha = f(x) * g(x), \tag{1}$$

The equation is as follows:

$$\partial_j \left( C_{ijkl} \partial_k u_l + e_{ijl} \partial_l \varphi \right) - \rho u_i = 0 \tag{2}$$

Under the linear theory, that is:

$$\partial_j (e_{ijkl} \partial_k u_l - \eta_{ijl} \partial_l \varphi) = 0 \tag{3}$$
The linear equation can be expressed into the following simplified forms:

\[ L(\nabla, \omega) f(x, \omega) = 0 \]
\[ L(\nabla, \omega) = T(\nabla) + \omega^2 \rho J \]  

(4)

In which,

\[ T(\nabla) = \begin{bmatrix} T^i_k(\nabla) & \tau(\nabla) \end{bmatrix}, \quad J = \begin{bmatrix} \delta^i_k & 0 \\ 0 & 0 \end{bmatrix}, \quad f(x, \omega) = \begin{bmatrix} u^i_k(x, \omega) \end{bmatrix} \]

(5)

Consider delay, the L can be expressed as:

\[ L^0 = \begin{bmatrix} C^0_{ijkl} & e^0_{ijkl} \\ e^0_{ijkl} & -\eta^0_{ijkl} \end{bmatrix} \]

(6)

These functions can be expressed in the following form:

\[ C(x) = C^0 + C^i(x), \quad e(x) = e^0 + e^i(x), \quad \eta(x) = \eta^0 + \eta^i(x), \quad \rho(x) = \rho_0 + \rho_1(x) \]  

(7)

The value with superscript of 1 represents the difference below:

\[ f^1(x) = f(x) - f(0) \]

(8)

The equation of motion is as follows:

\[ \partial_j (C^i_{ijkl} \partial_k u_j + e^i_{ijkl} \partial_k \phi) - \rho u_j = 0 \]  

(13)

Under the linear theory, that is:

\[ \partial_j (e^i_{ijkl} \partial_k u_j - \eta^i_{ijkl} \partial_k \phi) = 0 \]  

(14)
4. Establishment of integrated english teaching stratified classroom

In the past ten years, Internet technology has developed rapidly. However, the speed that the Internet brings new business is far from meeting its growing demand. Under the environment of Web 2, the demand of Internet users has gradually shifted to a large number of traditional portal business Internet businesses. Meanwhile, for Internet Co, the relative cost of storage resources and computer hardware is rising, the cost of data center construction and maintenance is improving, and personnel management and energy consumption are also increasing. To solve these problems, we must have a new platform and mechanism for the coordinated scheduling of limited resources, and more efficient and efficient data acquisition and processing. In this context, a new service computing model based on distributed computing has emerged as the times require, this is the visual environment.

With the concept of visual environment, the continuous emergence of term and technology, and a lot of reports, people have greatly increased the enthusiasm of visual environment technology in the adoption and implementation of enterprises. Microsoft, IBM, Google, Amazon, Alibaba and other large companies have put forward their own visual environment infrastructure. The concept and technology of visual environment are relatively new, and their significance is quite extensive. The application of visual environment in the Internet is increasing. Provide your own visual environment platform and service to the outside world (Bom, 2016; Liu, 2015).

There is a new visual environment changes appeared with the research on visual environment of global upsurge in the field of IT, the major international and domestic IT companies have launched their own products in the visual environment, visual environment of these products are all through the network to provide service to users, so the data safety, reliability and robustness of visualization environmental services are challenges. With the wide application of the visual environment, the software architecture will also face the challenge, and the data business will change.

Although the specific methods are very different, the data management methods of sensor networks generally follow similar topics. Among the three popular technologies, Cougar and Tiny DB use database methods to manage sensor data, while direct diffusion is another category. Unfortunately, up to now, there has been no further research on sensor network data mining. The network topology is shown in Figure 3.

Figure 4 shows a hierarchical classroom for Integrated English teaching based on visual environment. There are 21 universities at the fourth level. This stage is mainly the middle reaches of the school, the number is 18. The other four university levels are distributed, seventh are more complex and different at all levels. The total number of 27 universities in the country is ranked fifth, mainly secondary professional schools and secondary professional schools, ranking tenth and thirteenth. There are 31 universities at the sixth level, involving a number of universities, and the first two types of universities, respectively, 1, 8, 13, 2, 7. The seventh, eighth level is mainly colleges and universities, the total number of seventh colleges and universities is 44, and the first two universities occupy 11 and 24 respectively.

Thus, the cultural identity of modern Europe has gradually developed. More and more Europeans began to form a unified European consensus, forming a European identity to promote intercultural communication, which led to the establishment of the European Union. Cultural identity is the basis for the study of intercultural communication. The breakthrough of this study is to explore cultural identity from the perspective of intercultural communication and study through a cross disciplinary approach. Cultural identity involves all aspects, national identity or collective identity. In order to achieve the success of intercultural communication, the degree of cultural identity must be strengthened.
Because of the many courses of intercultural communication, we must first understand the process of intercultural communication in each other's culture and cultural identity, the importance, in order to achieve success in intercultural communication; intercultural communication is successful or not, depends on the degree of cultural identity, which is the focus of this paper. In the experimental section, there are 6 grades in 9 categories of 6 universities. The best results are the best universities in the first batch of universities. Second batches of universities and second batches of universities were ranked second. The intermediate level of the second universities and universities is level third. The worst of the first universities is the fourth. The worst of the secondary schools and the second universities is level five, and the rest is grade six. There are 9 levels of the 6 universities, and the results are shown in Table 1 as shown below. Based on concept map, visual interaction is to make full use of modern information technology to operate schema theory, and then express individuals' implicit map through concept map, and strive to form visual interaction mode between teachers and students. The application of visual interaction based on concept map has achieved good results in English writing teaching, which can stimulate students' interest in learning and improve their autonomous learning ability. In view of the main problems in the teaching of English writing, the author puts forward some effective strategies from the perspective of the visual interaction of the concept map.

Table 1. The experiment result of 9 sub-items

<table>
<thead>
<tr>
<th>Type of the university</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st level</td>
<td>0.94</td>
<td>0.91</td>
<td>0.78</td>
<td>0.98</td>
<td>0.91</td>
<td>0.88</td>
<td>0.88</td>
<td>0.63</td>
<td>0.84</td>
</tr>
<tr>
<td>2nd level</td>
<td>0.84</td>
<td>0.78</td>
<td>0.66</td>
<td>0.90</td>
<td>0.74</td>
<td>0.85</td>
<td>0.75</td>
<td>0.62</td>
<td>0.74</td>
</tr>
<tr>
<td>3rd level</td>
<td>0.86</td>
<td>0.81</td>
<td>0.68</td>
<td>0.92</td>
<td>0.77</td>
<td>0.84</td>
<td>0.75</td>
<td>0.50</td>
<td>0.73</td>
</tr>
<tr>
<td>4th level</td>
<td>0.81</td>
<td>0.75</td>
<td>0.61</td>
<td>0.89</td>
<td>0.70</td>
<td>0.82</td>
<td>0.70</td>
<td>0.41</td>
<td>0.67</td>
</tr>
<tr>
<td>5th level</td>
<td>0.78</td>
<td>0.72</td>
<td>0.60</td>
<td>0.83</td>
<td>0.67</td>
<td>0.73</td>
<td>0.65</td>
<td>0.53</td>
<td>0.66</td>
</tr>
<tr>
<td>6th level</td>
<td>0.76</td>
<td>0.68</td>
<td>0.57</td>
<td>0.82</td>
<td>0.62</td>
<td>0.76</td>
<td>0.60</td>
<td>0.38</td>
<td>0.62</td>
</tr>
<tr>
<td>7th level</td>
<td>0.71</td>
<td>0.64</td>
<td>0.53</td>
<td>0.75</td>
<td>0.58</td>
<td>0.71</td>
<td>0.57</td>
<td>0.47</td>
<td>0.59</td>
</tr>
<tr>
<td>8th level</td>
<td>0.65</td>
<td>0.58</td>
<td>0.49</td>
<td>0.68</td>
<td>0.50</td>
<td>0.62</td>
<td>0.47</td>
<td>0.37</td>
<td>0.52</td>
</tr>
<tr>
<td>9th level</td>
<td>0.57</td>
<td>0.50</td>
<td>0.43</td>
<td>0.57</td>
<td>0.39</td>
<td>0.50</td>
<td>0.36</td>
<td>0.28</td>
<td>0.44</td>
</tr>
</tbody>
</table>
5. Conclusion

In order to improve the efficiency and effectiveness of English teaching, this paper discusses the comprehensive English teaching stratified classroom based on the visual environment. Successful English should cultivate students’ intercultural communicative competence and integrate language socio cultural factors into students’ language teaching. Successful English teaching is an important guarantee for successful cross-cultural communication. However, in real life, language teaching and culture teaching disconnect, leading to many communication misunderstandings and failures. Although the research of emotional computing is widely used, there are still many open problems. Because of the uncertainty of emotion, the traditional machine learning algorithm cannot deal with this uncertain reasoning problem very well, and probability theory provides us the foundation of modeling of emotional uncertainty. Based on the visual environment, this paper establishes a comprehensive teaching mode of Comprehensive English teaching, and puts forward some suggestions, aiming at improving students' English achievement and intercultural communicative competence.

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