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## University English multimode teaching discussion under intersexuality theory view

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### ABSTRACT

Multimode university English education is a kind of multiple communications media-based educational pattern, it not only greatly promotes students' interests in English learning, but also promotes English ability from listening, speaking, reading and writing each aspect. The paper discusses multimode teaching application in university English under intersexuality theory view, and evaluates university English multimode from multimode English facility construction, multimode English teachers cultivation, multimode curriculum cultivation and other aspects. By evaluation results, it shows multimode English has good development trend, and fits for university English education development and cultivation.

### KEYWORDS

University English; Multimode teaching; Fuzzy comprehensive evaluation; Intersexuality theory.



## INTRODUCTION

As early as 20<sup>th</sup> century, western scholars Kress and VanLeeuwen provided definite concepts on multimode discourse theory, which was also implementing exchanging and representation by multiple kinds of medias, however media included symbol, action, language and others multiple expression modes that was also by virtue of ears, mouth, hands and other expressive tools as media to pass on.

Due to human activities tend to be frequently, only limited in language communication was far from perfect, and people have already learnt multiple media exchanging and communication ways let people life to be more interesting. The multimode development and interaction is called multimode essence.

According to voices and language, the paper divides multimode discourse analysis theory media system into language media and non-language media. We carry on information transmitting and supplement by language media and non-language media. As TABLE 1 show.

**TABLE 1 : Language and non-language multimode expression**

		Semi-language	Tone		
			Acoustics		
Language			Layout		
			Font		
		Pure language	Voice		
			Text		
Multi-media discourse media system	Body		Action (gestures)	Expression	
			Countenance	Eyes contact	
				Five sense organs	
				Gesture	
				Posture	
	Non-language		limbs	Swing	PPT
				Acoustics	Network
			Non-physical	Tool	Laboratory
					Interpret room
				Environment	

As TABLE 2 shows, the paper gets multimode discourse affiliation relationship in form and relationships.

## FUZZY EVALUATION MODEL ESTABLISHMENT

### Fuzzy comprehensive evaluation model

Fuzzy comprehensive evaluation model fits for fuzzy computation that multiple factors are uncertain, the paper utilizes fuzzy comprehensive evaluation, and steps are as following:

At first, the paper establishes factor set  $U$  :

$$U = (U_1 \ U_2 \ \dots \ U_k)$$

Secondly, establish factor set  $V$  (evaluation set),

**TABLE 2 : Multimode discourse form and relationships**

Multimode discourse form and relationships	Form	Language	Vocabulary Grammar	
		Vision	Graphic shape Graphic grammar	
		Sound sensation	Acoustic shape Acoustic grammar	
		Feeling	feeling shape feeling grammar	
	Relationships	Complementary	Reinforcement	Stand out Come here Expansion Coordinate
			Nonreinforcement	Crossover Unite Redundancy
			Overlapping	Offset Exclude Whole and part
		Non-complementary	Insourcing	Abstract and concrete
			Language environment interaction	Independent Rely on

The paper establishes evaluation matrix fuzzy mapping from  $U$  to  $V$ , obtained fuzzy relation as following matrix show, :

$$R = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1n} \\ r_{21} & r_{22} & \cdots & r_{2n} \\ \vdots & \vdots & & \vdots \\ r_{m1} & r_{m2} & \cdots & r_{mn} \end{bmatrix}$$

The paper establishes weight set,  $A = (a_1, a_2, \dots, a_n)$ , it meets conditions:

$$\sum_{i=1}^n a_i = 1 \quad a_i \geq 0$$

Fuzzy relation  $R$  every line will reflect the line influence factors to object judgment degree, meanwhile,  $R$  every column will reflect the column influence factors to object judgment degree.

$$\sum_{i=1}^n r_{ij} \quad j = 1, 2, 3, \dots, m$$

Secondly the paper carries on following computation according to fuzzy comprehensive evaluation:

$$\begin{aligned}
 B &= A \cdot R \\
 &= (a_1, a_2, a_3, \dots, a_n) \cdot \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1n} \\ r_{21} & r_{22} & \cdots & r_{2n} \\ \vdots & \vdots & & \vdots \\ r_{m1} & r_{m2} & \cdots & r_{mn} \end{bmatrix} \\
 &= (b_1, b_2, b_3, \dots, b_n)
 \end{aligned}$$

In  $V$ , fuzzy combination is evaluation set  $B$ . To sum up, actually fuzzy comprehensive evaluation obtained multimode system simple change model is as Figure 1 shows:

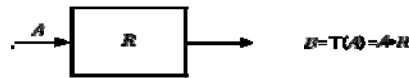


Figure 1 : Simple change model

According to Figure 1 marked contents, it gets fuzzy comprehensive evaluation change model, and can establish corresponding every factor grade evaluation transformation function, evaluation factors  $u_1, u_2, u_3, u_4, u_5$  membership functions can be expressed as following formula (1), (2), (3) shows:

$$u_{v1}(u_1) = \begin{cases} 0.5(1 + \frac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\ 0.5(1 - \frac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\ 0, & u_i < k_2 \end{cases} \tag{1}$$

$$u_{v2}(u_1) = \begin{cases} 0.5(1 - \frac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\ 0.5(1 + \frac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\ 0.5(1 - \frac{u_i - k_3}{k_2 - k_3}), & k_3 \leq u_i < k_2 \\ 0.5(1 - \frac{k_3 - u_i}{k_2 - u_i}), & u_i < k_3 \end{cases} \tag{2}$$

$$u_{v1}(u_1) = \begin{cases} 0, & u_i \geq k_2 \\ 0.5(1 - \frac{k_1 - u_i}{k_2 - k_3}), & k_3 \leq u_i < k_2 \\ 0.5(1 + \frac{k_3 - u_i}{k_2 - u_i}), & u_i < k_3 \end{cases} \tag{3}$$

**Combine with Fuzzy evaluation model to make multimode teaching evaluation on university English**

By above model principle established factor set  $U$ , among them  $U = (U_1 \ U_2 \ U_3 \ U_4)$ . Among them multimode English facility construction  $U_1$ , multimode English teachers cultivation  $U_2$ , multimode curriculum cultivation  $U_3$ , others  $U_4$ , it gets 3. The paper establishes small factors sets in four important factor sets.

**TABLE 3 : Chinese university English multi-mode teaching evaluation indicator system**

Multimode English facility construction $U_1$	Multimode English teachers' cultivation $U_2$	Multimode curriculum cultivation $U_3$	Others $U_4$
Campus facility introduction $u_{11}$	Multimode English Teachers cultivation $u_{21}$	Multimode English contests $u_{31}$	Education observation and communication $u_{41}$
Campus facility maintenance $u_{12}$	Multimode English faculty cultivation $u_{22}$	Extracurricular activity $u_{32}$	Multimode English education development $u_{42}$
Test flow construction $u_{13}$	Advanced teaching pattern introduction $u_{23}$	Multimode English speech $u_{33}$	Multimode English undertakings revitalization $u_{43}$
Daily facilities construction $u_{14}$	Multimode English staff cultivation expenses $u_{24}$	Multimode English entertainment pattern $u_{34}$	

By TABLE 3 listed factors, it gets evaluation set.

$$U_1 = \{u_{11}, u_{12}, u_{13}, u_{14}\}$$

$$U_2 = \{u_{21}, u_{22}, u_{23}, u_{24}, u_{25}\}$$

$$U_3 = \{u_{31}, u_{32}, u_{33}\}$$

$$U_4 = \{u_{41}, u_{42}, u_{43}, u_{44}\}$$

By collecting data and analyzing, it gets four factors importance degree ranking statistics as TABLE 4 shows.

**TABLE 4 : Four factors importance degree ranking statistics**

Classification	Rank 1	Rank 2	Rank 3	Rank 4
Campus fitness facility $U_1$	23	7	4	0
School sports staff cultivation $U_2$	0	0	15	18
Sports curriculum organization cultivation $U_3$	0	9	13	12
Others $U_4$	3	21	9	0

By TABLE 2 sorting, it gets multimode English facility construction  $U_1$ , multimode English teachers cultivation  $U_2$ , multimode curriculum cultivation  $U_3$ , others  $U_4$ , four aspects ranking matrix.

$$U_2 = \{23, 7, 4, 0\}$$

$$U_2 = \{7, 18, 8, 0\}$$

$$U_3 = \{0, 9, 13, 12\}$$

$$U_4 = \{3, 0, 9, 21\}$$

Obtained weighted vector from rank 1 to rank 2:

$$\beta = \{\beta_1, \beta_2, \beta_3, \beta_4\} = \{0.4, 0.3, 0.2, 0.1\}$$

$$U_i^* = U_i \cdot \beta^T$$

$$U_1^* = 14, U_2^* = 9.4, U_3^* = 4, U_4^* = 5.6$$

The paper takes normalization processing:

$$U_1^* = 0.35, U_2^* = 0.3, U_3^* = 0.2, U_4^* = 0.15$$

It gets:

$$\bar{A} = (0.35 \quad 0.3 \quad 0.2 \quad 0.15)$$

The paper establishes remarks membership, as TABLE 5 show.

**TABLE 5 : Remarks membership**

Evaluation way	Set scores interval			
	0-60	60-80	80-90	90-100
Very good	0	0	0.05	0.95
Good	0	0.05	0.9	0.05
Normal	0.05	0.9	0.05	0

The paper gets TABLE 6 by Chinese university English multimode teaching cultivation’s multimode English facility construction  $U_1$ , multimode English teachers cultivation  $U_2$ , multimode curriculum cultivation  $U_3$ , others  $U_4$  four aspects each indicator obtained evaluation.

**TABLE 6: Chinese university English multimode teaching each item indicator obtained evaluation value**

Each layer indicator	Evaluation value	Each layer indicator	Evaluation value
Campus facility introduction $u_{11}$	Normal	Multimode English contests $u_{31}$	Good
Campus facility maintenance $u_{12}$	Normal	Extracurricular activity $u_{32}$	Good
Test flow construction $u_{13}$	Normal	Multimode English speech $u_{33}$	Good
Daily facilities construction $u_{14}$	Normal	Multimode English entertainment pattern $u_{34}$	Normal
Facilities changing $u_{15}$	Normal	Education observation and communication $u_{41}$	Good
Multimode English Teachers cultivation $u_{21}$	Very good	Multimode English education development $u_{42}$	Normal
Multimode English faculty cultivation $u_{22}$	Very good	Multimode English undertakings revitalization $u_{43}$	Normal
Advanced teaching pattern introduction $u_{23}$	Good		
Multimode English staff cultivation expenses $u_{24}$	Good		

By above model, it gets single layer indicator weight factor fuzzy set is:

$$U_1^* = \{U_{11}, U_{12}, U_{13}, U_{14}, U_{15}\} = \{0.25 \ 0.25 \ 0.2 \ 0.15 \ 0.15\}$$

$$U_2^* = \{U_{21}, U_{22}, U_{23}, U_{24}\} = \{0.54 \ 0.1 \ 0.24 \ 0.14\}$$

$$U_3^* = \{U_{31}, U_{32}, U_{33}, U_{34}\} = \{0.4 \ 0.3 \ 0.1 \ 0.2\}$$

$$U_4^* = \{U_{41}, U_{42}, U_{43}\} = \{0.3 \ 0.4 \ 0.3\}$$

By TABLE 5, and combine with TABLE 3 remarks membership, the paper gets multimode English facility construction  $U_1$ , multimode English teachers cultivation  $U_2$ , multimode curriculum cultivation  $U_3$ , others  $U_4$  each aspect evaluation set:

$$\text{Multimode English facility construction } U_1 = \begin{pmatrix} 0 & 0 & 0.05 & 0.95 \\ 0 & 0 & 0.05 & 0.95 \\ 0 & 0.05 & 0.95 & 0.05 \\ 0 & 0.05 & 0.95 & 0.05 \\ 0 & 0.05 & 0.95 & 0.05 \end{pmatrix}$$

$$\text{Multimode English teachers' cultivation } U_2 = \begin{pmatrix} 0 & 0 & 0.05 & 0.95 \\ 0 & 0 & 0.05 & 0.95 \\ 0 & 0 & 0.05 & 0.95 \\ 0 & 0.05 & 0.9 & 0.05 \end{pmatrix}$$

$$\text{Multimode curriculum cultivation } U_3 = \begin{pmatrix} 0 & 0 & 0.05 & 0.95 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0.05 & 0.9 & 0.05 & 0 \end{pmatrix}$$

$$\text{Others } U_4 = \begin{pmatrix} 0 & 0 & 0.05 & 0.95 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0 & 0.05 & 0.9 & 0.05 \end{pmatrix}$$

Carry on following computation on above evaluation set:

$$B_i = A_i \cdot R_i$$

Make normalization processing with obtained  $B_i$ , it gets fuzzy evaluation matrix:

$$\bar{B} = \begin{pmatrix} B_1 \\ B_2 \\ B_3 \\ B_4 \end{pmatrix} = \begin{pmatrix} 0.07 & 0.26 & 0.13 & 0.42 \\ 0 & 0.15 & 0.76 & 0.54 \\ 0.14 & 0.24 & 0.21 & 0.17 \\ 0.14 & 0.2 & 0.3 & 0.36 \end{pmatrix}$$

It gets comprehensive evaluation value:

$$\text{It gets comprehensive evaluation value: } Z = U^* \cdot B = (0.29 \quad 0.32 \quad 0.21 \quad 0.18)$$

## CONCLUSION

The paper carries on fuzzy comprehensive evaluation on university English multimode teaching status, because  $0.32 > 0.29 > 0.21 > 0.18$ , it shows located indicator range is in score interval of 80-90, so it can show university English multimode teaching evaluation index is lower, it has good development tendency.

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