English Language Education for Hotel Majors Based on Diversified English Teaching

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Abstract: In order to improve effectiveness of analysis on language fuzziness for business English in Hotel Majors with different development degree, a fuzzy meta association rule algorithm based on language fuzziness of business English to analyze hierarchy theory of evaluation model for ontology figure is proposed. First of all, evaluation model for ontology figure with language fuzziness of business English is evaluated based on analysis on language fuzziness of business English in document ontology figure and it is the process that entire KLSeeker system framework is divided into four modules to handle different kinds of ontology. Besides, with fuzzy meta association rule based on hierarchy theory, fusion algorithm of fuzzy meta association rule for language fuzziness of business English in Hotel Majors with different development degree has been constructed. Eventually, effectiveness of the algorithm is verified through stimulation experiment.

1. Introduction

With the progress of computer technology, computer technology has been introduced to business English in Hotel Majors and it becomes hot research. However, language fuzziness analysis on business English in Hotel Majors is core technology in Computer Assisted Language Learning (CALL) system. Current language learning environment and teaching model will be changed with this technology to improve language learning efficiency greatly and prompt, accurate, and objective evaluation and feedback will assist learners to find their English learning distance and their errors in English learning will be corrected during language pronounce learning[1~2].

At present, there are many representative ontology learning methods, such as literature [3~5], that are available to acquire needed ontology. However, the specific literature above needs tedious human intervention during ontology construction and learning process. These intervening measures may be in early stage.It indicates that it is during ontology extraction process before choosing match strategy with analytic hierarchy process, or at the end stage of domain ontology, namely during process of correction or reuse learning concept. Meanwhile, some scholars also consider human intervention can be put in middle stage of the algorithm for constructing concept and property of dynamic iterative learning method [7]. Because manual creation and maintenance of knowledge ontology for human is time-consuming and inefficient, simplified ontology learning method with minimum human intervention is the most practical and feasible research direction for semantic net processing and application area. What's more, it is a research with significance to learn ontology from text data because text data is an important source of human knowledge. In recent years, many ontology learning methods based on text data have been generally developed. Most researchers use methods such as machine leaning and statistic analysis to develop ontology construction method for artificial intelligence and try to extract domain ontology features from text data automatically. For example, as for literature [8~10], it is more convenient and effective to study English text data with these ontology learning skills. However, due to different language features, Chinese character is more complex and diversified compared with English words so that algorithm applied to English text data does not have a good computational efficiency. Whereas, there is no successful actual practice for classification system of English test. Therefore, constructing effective ontology learning system of English text data has theoretical and practical value.

The objective evaluation for English text is mainly oriented at mastering degree of speakers for

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sentence rhythm and key information. Through research on intonation of English word and in combination with computer programming technology, an objective evaluation system for language fuzziness analysis of business English is designed for process of dividing entire KLSeeker system framework into four modules for treating different types of ontology. Based on of fuzzy meta association rule of hierarchy theory, that fusion algorithm of fuzzy hierarchy meta association rule for business English in Hotel Majors with different development degree is aimed at improving analysis effect for language fuzziness of business English.

2. Ontology figure evaluation model for language fuzziness analysis of business language

2.1. Model description

In this section, how to generate DOG will be described and evaluation of language fuzziness of business English based on document ontology figure will be realized. KLSeeke is a complete system framework, and four components are defined and realized with it. The research content is as follows: (1) modeling of ontology figure (structure of ontology figure); (2) ontology learning (learning algorithm); (3) ontology generation (generation process); (4) ontology query (system operation of information retrieval). KLSeeker can be used for developing all kinds of intelligent application components with four defined ontology as base. Therefore, the progress that entire KLSeeker system framework is divided into four modules for treating different types of ontology is shown in Fig. 1.

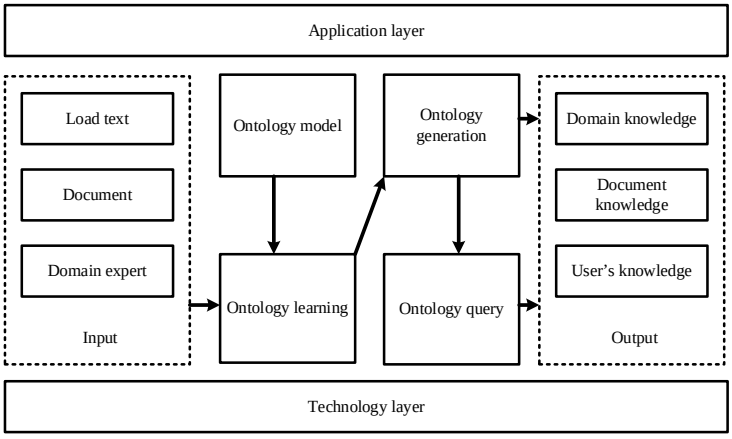

Fig. 1. Basic framework of KLSeeker system

Ontology figure is a new method of ontology creation for domain knowledge in KLSeeker system model. Ontology figure consists of different levels of concept units and it is related to different types of relations. The essence of it is- word system, and concept set is represented through mutual connection. Network model is formed with different concept units.

2.2. Word unit division

Word distribution is a factor evaluation feature of language fuzziness analysis for business English and it plays a significant role in statement organization and semantic expression. Therefore, first of all, words shall be divided for language fuzziness analysis of business English, if we need to observe layout feature of language fuzziness for business English. Division of sentences and words is mainly based on three features of language fuzziness for business English.

(1) That excluding components that influence objective evaluation for sentence is included in pretreatment of word signal.

(2) The feature of loudness for stressed syllable in sentence will reflect in energy intensity of time domain and it indicates word-word basic rhythmic unit presents strong word energy. According to definition for short-time energy of word signal $s(n)$:

$$E_n = \sum_{m=-\infty}^{\infty} \left[s(n)\omega(n-m) \right]^2 \tag{1}$$

Energy value for language fuzziness of business language is extracted.

(3) Because there is certain difference of speaking speed for different people and pronunciation of the same sentence for different people will cause certain different duration of sentence. However, pronunciation of the same sentence for different people is subject to rule that unit duration of a sentence takes certain proportion of whole sentence.

(4) Due to strong word energy intensity of basic word unit, the first step for word-word basic rhythmic unit extraction can be conducted in accordance with the feature. The design is subject to double-threshold comparison method for word terminal detection. Through a large quantity of experimental verification, the following two threshold values are set in the design:

$$\begin{cases} T_u = \left(\max(sig\_in) + \min(sig\_in) \right) / 2.5 \\ T_l = \left(\max(sig\_in) + \min(sig\_in) \right) / 10 \end{cases} \tag{2}$$

(5) Because there is feature of slight long pronounce in stressed syllable of sentence, however, there may be large energy value in stressed syllable researched in first step and it indicates problem that auditory sense expression is loud pronunciation but with short duration. These units maybe short vowels that may be disturbed by signal peak and they don't constitute stressed syllable, and stressed syllable will be further sifted according to feature of light long pronounce in stressed syllable. The minimum unit of stressed syllable will be set to a approximate stressed vowel duration of 100ms. Before& after contrast of minimum unit duration is set (std indicate after set and test indicates before set): through the above steps, the division of word unit in sentence has been completed.

3. Experimental analysis

The system is aimed at improving business English level of trainer with certain English base in Hotel Majors with different development degree and assisting him to better handle sentence rhythm. At the time of training, language fuzziness analysis of specific business English is provided. Therefore, it can reduce influence of excessive read, less read, or wrong read of syllable on trainers. At the same time, excessive read, less read, or wrong read of syllable of trainer will lead to difference of sound duration so that marks will be deducted by the system.

The 10 sentences recorded by authoritative English teacher of experimental record act as standard sentences, and 10 sentences recorded by 10 English students serves as test sentences. Evaluation result consists of 4 grades, including A,B,C, and D, and hits of wonderful, good, attention, try again will be given respectively. First of all, the algorithm in the Thesis and algorithm in literature[13] will be analyzed in comparison in the experiment and difference calculation of standard sentence and mark grade will be quantified and test sentence will be conducted with divisor as A grade quantized value. At the same time, teacher's evaluation serves as measurement criteria and the result is shown in Table 1:

According to the data in Table 1, in pronunciation experiment comparison of sentence 1-3 for different students, evaluation result of acquired fuzziness analysis of business English proposed in the Thesis is more close to that of literature [13]. It shows that the method proposed in the Thesis has advantage in evaluation accuracy.

With statistic result as research object, data clustering and information fusion are processed for realizing ability evaluation of business English in Hotel Majors with different development degree. Test result for accuracy of evaluation and other indexes is shown in Table 2. It can be known from analysis that there is higher accuracy of teaching ability evaluation with the method in the Thesis with better use ration of teaching material.

Table 1 Comparison of experimental result

Student	Evaluation method	Sentence 1	Sentence 2	Sentence 3
Student 1	Algorithm in the Thesis	C	C	C
	Algorithm in literature [13]	C	B	C
	Teacher's evaluation	C	C	B
Student 2	Algorithm in the Thesis	B	C	C
	Algorithm in literature [13]	D	C	D
	Teacher's evaluation	B	C	B
Student 3	Algorithm in the Thesis	C	D	C
	Algorithm in literature [13]	B	D	B
	Teacher's evaluation	C	C	C
Student 4	Algorithm in the Thesis	C	C	D
	Algorithm in literature [13]	B	B	C
	Teacher's evaluation	C	C	D
Student 5	Algorithm in the Thesis	C	D	A
	Algorithm in literature [13]	C	D	B
	Teacher's evaluation	C	C	A

Table 2 Comparison of performance test

Evaluation cycle	Method in the Thesis		Literature[4]		Literature[5]	
	Accuracy of evaluation /%	Use ratio/%	Accuracy of evaluation /%	Use ratio/%	Accuracy of evaluation /%	Use ratio/%
1	98.21	98.02	87.43	89.12	83.23	86.33
2	97.09	97.67	86.55	87.34	82.12	87.30
3	96.33	99.03	88.76	89.31	86.09	79.31
4	98.54	96.34	89.43	87.67	88.23	78.92

4. Conclusion

Optimized model of English ability evaluation has been studied in the Thesis, and an English ability evaluation method based on big data fuzzy meta association rule clustering and information fusion has been proposed, while analysis model of constraint parameter index for language fuzziness evaluation analysis of business English in Hotel Majors with different development degree has been constructed and big data information model of English ability evaluation is analyzed with recurrence quantification analysis for realizing entropy feature extraction for information with constraint feature of English ability. Clustering and integration of index parameter for English ability is realized in combination with big data information fusion and clustering algorithm of meta association rule. On this basis, corresponding teaching material distribution plan has been prepared for realizing English ability evaluation. It can be known from the research that there is higher accuracy of English ability evaluation with the method in the Thesis with improved English teaching efficiency.

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