A Design of Translation Competence Evaluation Based on Analytic Hierarchy Process

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Abstract. This paper explores the issue of translation competence evaluation by adopting Analytic Hierarchy Process (AHP), for AHP is a systematic and hierarchic evaluation system including a complex multi-objective decision-making method with multiple criteria, and multiple levels of indicators. Combining the quantitative method and the qualitative method, AHP has the merits of evaluating complex and difficult decision-making problems to obtain the optimal solution by calculating maximum weight, so AHP has become an important analytic evaluation tool in various field. Likewise, translation competence evaluation includes a detailed assessment of subcompetences, such as language knowledge application subcompetence, intercultural communication subcompetence, proofreading subcompetence [1] and so on, of which the components interact with each other and are not feasible to calculate accurately, thus formulating a complex decision-making system. However, AHP has the advantages in this aspect. Therefore, this paper attempts to study the adaptability and practicality of AHP in translation competence evaluation.

Keywords: Translation Competence Evaluation Design · Analytic Hierarchy Process (AHP) · Adaptability · Practicality

1 Introduction

Since Analytic Hierarchy Process (AHP) was proposed by Thomas L. Saaty, AHP has been widely employed in various decision-making fields for its characteristics of combining the quantitative method and the qualitative method and its systematic and hierarchic analysis, and simple and practical decision-making. AHP has the upsides of decomposing the complex system into simple units and transforming the complicated decision-making problem into the single objective in a single level of the hierarchy. At the same time, in translation or interpretation studies, translation competence evaluation is an indispensable study focus; however, translation competence evaluation has posed a huge challenge to the translators and interpreters for the indicators in translation competence evaluation are complicated and difficult to calculate precisely and also interact with each other. Therefore, choosing the appropriate method of evaluating translation competence plays an important part in translation competence evaluation. The advantages in evaluating the abstract things of AHP conforms with the evaluation of translation competence in translation or interpretation studies. There exist six translation subcompetences in the process of adopting AHP to evaluating the translation competence.

## 2 Determining the Core Evaluation Parameters

Determining the main parameters is the first stage in the evaluating the translation competence for the determining of the optimum parameters has a direct influence on the accuracy of the result of the translation competence. "What are the categories of translation competence? How to cultivate the translator's translation ability?" [2]. We need to have a clear idea about the components of the translation competence. And there are two study groups defining the components of the translation competence. PACTE (Process in the Acquisition of Translation Competence and Evaluation) conducted a serial studies of translation competence and finally classified translation competence into five subcompetences, namely, bilingual subcompetence, extralinguistic subcompetence, knowledge about translation subcompetence, instrumental subcompetence, strategic subcompetence and psychological components included [3]. Since then, the translation competence evaluation has attracted tremendous attention. At the same time, China's Translation Competence Evaluation Grade Standard was released by CATTI Project Center [1], specifying the relevant grades and the competences related to translation and interpretation in detail, in which, the translation competences include language knowledge competence, cross-cultural communication competence, translation competence, interpretation competence, translation technology application competence, and translation proofreading competence.

Combining PACTE's translation subcompetences and psychological components [3] and CATTI Project Center's translation competences [1], the core parameters and their core sub-indicators for translation competence evaluation can be listed as follows: 1. Bilingual subcompetence, mainly including the source and target language competences; 2. Extralinguistic subcompetence, basically consisting of encyclopedic knowledge and professional knowledge 3. Knowledge about translation subcompetence, generally constituting translation methods and knowledge about translation industry; 4. Instrumental subcompetence, commonly compromising translation tools and information source; 5. Strategic subcompetence, mainly including translation planning competence and translation problem-solving competence; 6. Translation proofreading subcompetence, basically composed of translation revision competence and translation evaluation competence, for the psychological components, commonly including, cognitive and attitudinal factors, and psychological mechanism cannot be reflected from the translation text.

3 Designing the Translation Competence Evaluation Model

AHP was not only used "to solve the human performance improvement problem" [4]. It was also used to evaluate translation quality [5] and in this paper, the Translation Competence Evaluation Model based on Analytic Hierarchy Process (AHP) is constructed as a three-hierarchy model consisting of the scheme, the rule and the target. In light of the targe, this Translation Competence Evaluation Model is intended to evaluate the translation competence of the translator or interpreter from the rule in this model. And the rule includes, bilingual subcompetence (abbreviated as BS), extralinguistic subcompetence (abbreviated as ES), knowledge about translation subcompetence (abbreviated as KATS), instrumental subcompetence (abbreviated as IS), strategic subcompetence

Table 1. Translation Competence Evaluation
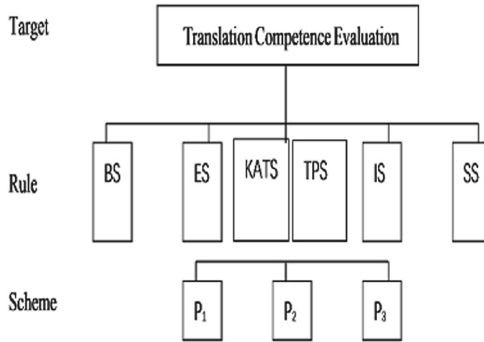
(abbreviated as SS), and translation proofreading subcompetence (abbreviated as TPS), which paly a decisive role in the translation competence evaluation. Finally, the scheme includes the translation text or interpretation text which is used to evaluate translation competence, in order to solve the decision-making problem of sorting out the highest translation competence of different translators or interpreters by adopting the quantitative method as shown in Table 1.

4   Calculating the Weights of the Core Parameters and Sub-indicators

After determining the core parameters and sub-indicators in the translation competence evaluation, it is necessary to calculate the weights of the core parameters and sub-indicators. This paper adopted the to calculate the weights of the core parameters and sub-indicators. This paper adopts 1–9 scaling method in operational researches by Thomas L. Saaty [6]. By using 1–9 scaling method, a scale of numbers from 1 to 9 is adopted to judge the relative difference between each two factors of bilingual subcompetence (abbreviated as BS), extralinguistic subcompetence (abbreviated as ES), knowledge about translation subcompetence (abbreviated as KABS), instrumental subcompetence (abbreviated as IS), strategic subcompetence (abbreviated as SS), and translation proofreading subcompetence (abbreviated as TPS). In order to obtain the index, the pairwise comparison matrix was constructed as shown in Table 2.

As shown in Table 3, The weight calculation results of AHP show that the weight value of BS is 0.2222; ES, 0.2041; KATS, 0.1842; IS, 0.1226; SS, 0.1373 and TPS, 0.1295.

The calculation result of AHP shows that the corresponding RI value is L25, CR = CI/RI = 0.0094 < 0.1, which conforms with the consistency check. Please refer to Eq. (1).

$$CR = \frac{CI}{RI} = 0.0094 < 0.1 \tag{1}$$

Table 2. The Pairwise Comparison Matrix of Translation Competences

Competences	BS	ES	KATS	IS	SS	TPS
BS	1	1.25	1.1111	1.4286	1.6667	2
ES	0.8	1	1.25	1.6667	1.4286	1.6666
KATS	0.9	0.8	1	1.25	1.4286	1.6666
IS	0.7	0.6	0.8	1	0.6667	0.8333
SS	0.6	0.7	0.7	1.5	1	0.83333
TPS	0.5	0.6	0.6	1.2	1.2	1

Table 3. The Results of AHP

Competences	Eigenvector	Weight	Maximum Eigenvalue	C Value
BS	1.3701	0.2222	6.0584	0.0117
ES	1.2582	0.2041		
KATS	1.1354	0.1842		
IS	0.756	0.1226		
SS	0.8463	0.1373		
TPS	0.7985	0.1295		

5   Discussion

AHP adopted in the translation competence evaluation mainly starts from the essence and elements of the translation competence evaluation, and attaches importance of qualitative analysis and quantitative methods. AHP is a procedure for solving multiple criteria decision making problems [7], for it decomposes the decision-making problem of determining the highest translation competence into the smaller parameters of bilingual subcompetence, extralinguistic subcompetence, knowledge about translation subcompetence, instrumental subcompetence, strategic subcompetence, and translation proofreading subcompetence, and gives them the weights, thus making the complex translation competence evaluation into a simple weight for calculation. Of course, on the other hand, AHP also has to some extent certain disadvantages of setting the parameters by the 1–9 scaling method in the pairwise comparison matrix. Of course, this paper is only a design model of AHP, so if we intend to adopt APH in the translation competence evaluation, we need to use the translations of the same text translated by different translators to verify the validity of this design model of AHP.

6 Conclusion

When AHP is adopted in the translation competence evaluation, AHP conducts the translation competence evaluation by using the mode of gradual decomposition, comparative judgment and systematic synthesis. AHP can be adopted as an important tool in evaluating translation competence with the notion of synthesizing the influence of various translation subcompetences on the results of the translation competence evaluation, and the weight setting of parameters and sub-indicators of each hierarchy will affect the translation competence evaluation directly or indirectly in the process of evaluating with the influence degree of each parameters and sub-indicators quantified, so AHP can be adopted for the systematic evaluation of the translation competence with multi-objectives, multicriteria and multi-subcompetences. AHP converts the abstract and unstructured decision-making problem of the highest translation competence into a mathematic and systematical issue in the course of evaluating translation competence and combines qualitative methods with quantitative methods to decompose the complex system of the translation competence evaluation into the smaller subcompetences. It also mathematicizes the translation competence evaluation process, transforming the translation competence evaluation with multi-subcompetences and multicriteria difficult to be quantified into a single objective decision-making issue of the highest translation competence. Through determining the quantitative relationship between the translation subcompetences by pairwise comparison, in the end AHP only needs to make a simple mathematical operation with the basic principles of analytic hierarchy process and the easy mathematic calculation.

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