

Evaluating Classification Research for Machine Translation Course Teaching

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Abstract: Teaching evaluation can be divided into different types, additionally their functions and applicable conditions are different. According to different standards, teaching evaluation can be divided into different types: (1) according to different evaluation functions, it can be divided into pre-evaluation, intermediate evaluation, and post-evaluation; (2) according to different evaluation reference standards, it can be divided into relative evaluation, absolute evaluation, and individual difference evaluation; (3) according to different evaluation and analysis methods, it can be divided into qualitative and quantitative evaluation; (4) according to the different evaluation subjects, it can be divided into self-evaluation and others' evaluation. This paper introduced research work using different types of teaching evaluation in the machine translation course according to different situations. The research results showed that the rational selection of different types of teaching evaluation methods and the combination of these methods can greatly promote teaching.

Keywords: Evaluating classification; Teaching; Machine translation

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1. Introduction

The rational selection of different types of teaching evaluation methods and the combination of these methods can greatly promote the teaching^[1]. Teaching evaluation can be divided into different types based on their functions and applicable conditions^[2]; (1) according to different evaluation functions, it can be divided into pre-evaluation, intermediate evaluation, and post-evaluation; (2) according to different evaluation reference standards, it can be divided into relative evaluation, absolute evaluation, and individual difference evaluation; (3) according to different evaluation and analysis methods, it can be divided into qualitative and quantitative evaluation; (4) according to the different evaluation subjects, it can be divided into self-evaluation and others' evaluation^[3].

2. Evaluating classification according to the evaluation function

The teaching evaluation can be divided into pre-evaluation, intermediate evaluation, and post-evaluation according to the different evaluation functions as described below^[4].

2.1. Pre-evaluation

Pre-evaluation is also called diagnostic evaluation^[5]. Pre-evaluation is an evaluation activity to determine the learners' readiness for learning. Pre-evaluation is generally conducted before the beginning of teaching activities. For example, assessment and placement test during enrollment is belong to the pre-evaluation phase. In essence, the pre-evaluation is an activity to determine the existing problems, as well to analyze

these problems.

2.2. Intermediate evaluation

Intermediate evaluation is an evaluation of students' learning results in order to improve teaching techniques in the process of teaching design ^[6]. Questioning in class can be regarded as the simplest intermediate evaluation. Through intermediate evaluation, teachers and researchers can effectively grasp the learning results or research results of each stage, understand the existing problems and deficiencies, and adjust or improve teaching in time.

In "The 2021 3rd Demonstration Courses for Thought of Northeastern University and 2021 Ministry of Education Industry-University Cooperation Collaborative Education Project," we used the above evaluation methods to comprehensively evaluate students' learning ability at the beginning, in the process, and at the end of the course. Using this evaluation scheme, the evaluation results were more objective and accurate ^[7].

2.3. Post-evaluation

Post-evaluation is an evaluation of the final results of teaching activities when the teaching activities are completed, such as the final examination, graduation examination, and appraisal meeting ^[8]. Because the post-evaluation is always carried out after the completion of an activity, it is often called the summative evaluation.

3. Evaluating classification according to the evaluation standards

The teaching evaluation can be divided into relative evaluation, absolute evaluation, and intra-individual difference evaluation according to the different evaluation standards as described below ^[9].

3.1. Relative evaluation

Relative evaluation is to select one or several individuals in the set of evaluated objects as the benchmark, and then compare each evaluation object with the benchmark to determine the relative position of each evaluation object in the set ^[10]. The test for relative evaluation is generally called norm-referenced test. It has a wide sampling range of test questions, and the test results show the relative level of students' learning. Because the norm is actually close to the average level of the student group, the score distribution of this test conforms to the law of normal distribution.

It is quite good to use relative evaluation to understand the overall performance of students and the differences between students, or to compare the academic performance of different groups. The disadvantage is that the benchmark may change with different groups, therefore it is easy to make the evaluation standard deviate from the teaching goal and could not fully reflect the advantages and disadvantages of teaching, and provide a basis for improving teaching ^[11].

3.2. Absolute evaluation

Absolute evaluation is to determine a standard outside the set of evaluated objects, which is called objective standard ^[12], where the advantages and disadvantages are compared with the objective evaluation criteria ^[13]. The evaluation standard is generally based on the curriculum standard, and the evaluation rules are determined from it. The test for absolute evaluation is generally called standard reference test. The sampling of the test questions will predetermine the teaching objectives. The test results mainly indicate the degree of achievement of the teaching objectives; therefore, the distribution of the test results is usually biased.

The criteria of absolute evaluation are relatively objective. If the evaluation is accurate, following the evaluation, each evaluated person can clarify the gap between himself and the objective standard, which

may encourage the evaluated person to make positive progress. However, absolute evaluation has disadvantages, and the main disadvantage is that it is difficult to be objective. It is easily influenced by original experience and subjective will of the evaluator.

3.3. Intra-individual difference evaluation

The evaluation of intra-individual differences is neither to establish the benchmark within the evaluated group nor outside the group, but to compare the past and present of the evaluated individual, or to compare several aspects of it.

In intra-individual difference, the evaluation process respects an individual characteristic ^[14]. In addition, take care of individual differences, and judge the current situation and trend of learning through vertical and horizontal comparison of various aspects within individuals. However, in practice, the evaluation of intra-individual differences is rarely used alone, and it is often used in combination with relative evaluation. Because the evaluated person has not been compared with other students with the same conditions, it is difficult to determine his/her actual level or gap, and the incentive effect is not obvious.

4. Evaluating classification according to the evaluation analysis methods

The teaching evaluation can be divided into qualitative and quantitative evaluation according to the different evaluation analysis methods as described below ^[15].

4.1. Qualitative evaluation

Qualitative evaluation is a qualitative analysis of an evaluation data. It uses logical analysis, such as analysis and synthesis, comparison and classification, induction, and deduction to process the data obtained from the evaluation. There are two kinds of analysis results: (1) Descriptive materials with low quantitative level or even no quantitative concept ^[16]; And (2) The other is produced by combining quantitative analysis, including quantitative, but descriptive materials. In general, qualitative evaluation is not only used to test and analyze the results or products, but also pays more attention to the dynamic analysis of the relationship between processes and elements ^[17].

4.2. Quantitative evaluation

Quantitative evaluation is from the perspective of quantity, using mathematical methods such as statistical analysis and multivariate analysis to summarize regular conclusions from complex and chaotic evaluation data ^[18]. Because teaching involves human factors, various variables and their interaction are relatively complex. Therefore, in order to prompt the characteristics and regularity of data, the direction and scope of the quantitative evaluation should be specified by qualitative evaluation. It can be concluded that qualitative and quantitative evaluation is inseparable, and they complement each other. We can't unilaterally emphasize one side and ignore the other.

5. Evaluating classification according to the evaluation subjects

The teaching evaluation can be divided into self-evaluation and others' evaluation according to the different evaluation subjects as described below.

5.1. Self-evaluation

Self-evaluation, also known as internal evaluation, refers that the evaluation object as the evaluation subject, further evaluates itself according to certain evaluation standards ^[19]. For example, the students evaluate their performance in terms of academic achievements, attitudes, methods, and others by themselves. The validity of self-evaluation is guaranteed due to better understanding of their own situation. At the same

time, self-evaluation also helps the subject to cultivate and improve their self-reflection consciousness and ability ^[20]. However, due to the lack of external reference standards, self-evaluation is easy to make the evaluation subject to overestimate or underestimate their own advantages or disadvantages.

5.2. Others' evaluation

Other's evaluation, also known as external evaluation, refers to the evaluation activities carried out by organizations or individuals other than the evaluation object according to certain evaluation standards, such as the teachers' evaluation of the students' learning, evaluation among students, etc. ^[21] Because the subject of others' evaluation is the organization or individual outside the evaluation object, allowing a more objective way to determine the achievements and existing problems of the evaluation object, and the reliability of the evaluation results is higher. However, the organizational work is more complex and requires more time and manpower.

6. Conclusion

This paper introduced the research work of using different types of teaching evaluation in our machine translation course according to different situations. This research showed that the rational selection of different types of teaching evaluation methods and the combination of these methods can greatly promote the teaching mode.

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Disclosure statement

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References

- [1] Novak JD, Gowin DB, 1984, Learning How to Learn. Cambridge University Press, Cambridge. <https://doi.org/10.1017/CBO9781139173469>
- [2] Schueler BE, Bleiberg JF, 2022, Evaluating Education Governance: Does State Takeover of School Districts Affect Student Achievement. *Journal of Policy Analysis and Management*, 41(1): 162-192. <https://doi.org/10.1002/pam.22338>
- [3] Gavin M, Fitzgerald S, Mcgrath-Champ S, 2022, From Marketizing to Empowering: Evaluating Union Responses to Devolutionary Policies in Education. *The Economic and Labor Relations Review*, 33(1): 80-99. <https://doi.org/10.1177/10353046221077276>
- [4] Kabassi K, 2021, Comparing Multi-Criteria Decision-Making Models for Evaluating Environmental Education Programs. *Sustainability MDPI*, 13(20): 1-17. <https://doi.org/10.3390/su132011220>
- [5] Rao GV, Vijayalakshmi D, 2022, Preference for Mode of Learning for Knowledge and Skills by Professional Management Students During the COVID-19 Pandemic Period. *Management and Labor Studies*, 47(1): 22-39. <https://doi.org/10.1177/0258042X211020604>
- [6] Reaves S, Martinez-Torteya C, 2022, Understanding the Relation between Family Engagement in Education and Preschoolers' Socioemotional and Behavioral Functioning in a Primarily Latinx Sample. *Urban Education*, 57(4): 630-661. <https://doi.org/10.1177/0042085920974073>
- [7] Wu HL, Zhang F, Cheng JW, et al., 2019, Determine Teaching Content Using a Bottom-up Approach.

- Advances in Social Science, Education and Humanities Research, 369: 597-600. <https://doi.org/10.2991/ichess-19.2019.125>
- [8] Jojo S, 2022, Efficacy of an Online Reading Intervention Program “Literacy Pro” in Classifying Students as “At Risk” and “Not at Risk” among ESL School Students. A Logistic Regression Analysis, *Creative Education*, 13(3): 19. <https://doi.org/10.4236/ce.2022.133063>
- [9] Buzan T, Buzan B, 1996, *The Mind Map Book: How to Use Radiant Thinking to Maximize Your Brain’s Untapped Potential*, New York: Plume.
- [10] Wu HL, Zhou RY, Wang K, 2017, The Structure of Domain Entity Attribute Semantic Knowledge Base for Natural Language Processing: Proceedings of the International Conference on Computer. Electronics and Communication Engineering, *DEStech Transactions on Computer Science and Engineering*, 616-619. <https://doi.org/10.12783/dtce/cece2017/14609>
- [11] Wu HL, Zhou RY, Wang K, 2017, Knowledge Representation of Entity Attribute Frame for Natural Language Understanding. *DEStech Transactions on Computer Science and Engineering*, 173-176. <https://doi.org/10.12783/dtce/ameit2017/12296>
- [12] Stufflebeam DL, Coryn CLS, 2014, *Evaluation Theory, Models, and Applications*, 2nd Edition, Jossey-Bass, Indianapolis.
- [13] Wu HL, Wang K, 2020, Design of the Introduction Part of Information Processing and Machine Translation Course for Students Majoring in Computer Science and Technology. Proceedings of the 2020 International Conference on Information Science and Education, 543-546. <https://doi.org/10.1109/ICISE51755.2020.00122>
- [14] Millman J, 1981, *The New Handbook of Teacher Evaluation*, Sage Publications, London.
- [15] Bilro RG, Loureiro S, Angelino F, 2022, The Role of Creative Communications and Gamification in Student Engagement in Higher Education: A Sentiment Analysis Approach. *Journal of Creative Communications*, 17(1): 7-21. <https://doi.org/10.1177/0973258621992644>
- [16] Wu HL, Wang K, 2021, Natural Language Processing Subject Organizing by TTD Model Based on Stepwise Refinement Framework. Proceedings of the 2nd International Conference on Information Science and Education, 353-356.
- [17] Chatterjee S, 2022, The Higher Education Experience of Students During the COVID-19 Pandemic and the Impact on Mental Well-Being: A Review of the Literature, *Mental Health and Higher Education in Australia*, 209-238. https://doi.org/10.1007/978-981-16-8040-3_13
- [18] Perry RP, Smart JC, 2007, *The Scholarship of Teaching and Learning in Higher Education: An Evidence-Based Perspective*, Springer, Dordrecht.
- [19] Phey GD, 1996, *Handbook of Classroom Assessment: Learning, Achievement and Adjustment*, Academic Press, Cambridge.
- [20] Akdeniz G, 2020, A Survey of Attitudes, Anxiety Status, and Protective Behaviors of the University Students During the COVID-19 Outbreak in Turkey. *Frontiers in Psychiatry*, 695(11): 1-9. <https://doi.org/10.3389/fpsy.2020.00695>
- [21] Wu HL, Wang K, 2020, Organization of Knowledge Engineering Subject Using TTD Model Based on Stepwise Refinement Framework. Proceedings of the 2020 International Conference on Information Science and Education, 319-322. <https://doi.org/10.1109/ICISE51755.2020.00077>

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