



Research on the Influence Mechanism of the Engagement of Course Learning Process Evaluation for Undergraduates

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Abstract. Students' participation in the process evaluation of course learning is a key factor affecting their growth and development. From the perspective of student participation, the structural equation model is used to analyze the relationship between "institutional environment- the engagement of course learning process evaluation -student gain". To explore the impact of institutional environment on participation in process evaluation of different dimensions. The results show that both dimensions of participation in the course learning process evaluation are affected by the institutional environment, which directly affects students' learning gains, and autonomous participation has a greater impact on students' gains. According to the research results, suggestions are made for undergraduate education in colleges and universities.

Keywords: Process evaluation · Course · Student engagement · Students harvest · Influence mechanism

1 Introduction

With the rise of the "student-centered" educational concept, ensuring and improving the quality of talent training has become an important issue facing my country's higher education [1], and it is necessary to pay attention to the degree of students' participation in related activities during the course study [2]. Since the new curriculum reform in 2001, the process evaluation in curriculum learning has become an important reform content. In October 2020, the State Council issued the "Overall Plan for Deepening the Reform of Education Evaluation in the New Era", which clearly requires "strengthening process evaluation" [3]. This paper takes undergraduates' participation in course learning process evaluation as the main research object, analyzes the correlation between "institutional environment-course learning process evaluation participation-student gain", and examines the institutional environment's participation in curriculum learning process evaluation The influence of college students has enriched the research on process evaluation participation of undergraduates in colleges and universities.

2 Variable Description and Research Assumptions

2.1 Participation in Course Learning Process Evaluation

Process evaluation refers to the gradual value construction process that occurs in the learning process and emphasizes the participation of the learner's main body [4]. Individuality is a developmental evaluation method. The concept of student participation was formally put forward by Kuh, who believed that student participation not only emphasized the participation behavior of students themselves, but also paid attention to the influence of the resources invested by the school. This paper draws on the research of Chen Na [5] to divide the evaluation of the course learning process into two dimensions: regular participation and autonomous participation.

2.2 The Impact of Institutional Environment on Student Participation

The theory of college influence factors focuses on the interaction between the college environment and student development, and explores the dynamic development process of students from the aspects of individual students, college organization and structure, and the overall environment [6]. This paper measures the impact of the institutional environment on student participation from the aspects of evaluation design, teacher guidance, resources and services [7]. The curriculum setting and teaching methods of colleges and universities can effectively promote students' learning participation; the interactive teaching and feedback mechanism of teachers in the classroom have a significant impact on student participation [5]; schools provide rich learning resources and experimental conditions to meet the needs of students, to provide auxiliary support for teaching activities.

2.3 Research Hypothesis

This paper builds a research model according to the logical structure of "input-process-output", as shown in Fig. 1, aiming to explore the correlation between the institutional environment, participation in course learning process evaluation and students' gain. The input variable is the institutional environment, including three factors: evaluation design, teacher guidance, and resources and services. The process variable refers to the degree of students' participation in the process evaluation of course learning, which is divided into autonomous participation and regular participation. The output variable refers to the students' gains in the course learning process evaluation, which is divided into three dimensions: practical gain, cognitive gain and emotional gain. The research hypothesis is put forward: Institutional environment indirectly affects student gain through two dimensions that affect undergraduate students' participation in course learning process evaluation.

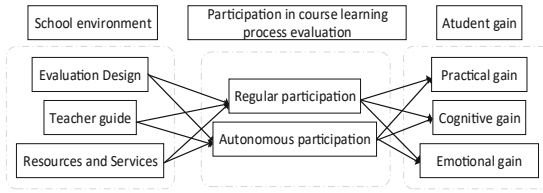


Fig. 1. Theoretical research framework

3 Research Methods

3.1 Questionnaire Design

On the basis of mature scales in existing research [4, 5], this paper develops a questionnaire related to the evaluation of undergraduate course learning process. The questionnaire includes the basic information of the respondents, the institutional environment, the students’ experience in the course learning process evaluation participation and the students’ gains. The research scale uniformly uses a 5-point Likert scale, in which “1” means “completely disagree” and “5” means “completely agree”.

3.2 Data Collection and Processing

The first draft of the questionnaire was formed with reference to previous research and interviews, and a small-scale pre-investigation was conducted and revised to form a formal questionnaire. A total of 280 electronic questionnaires and 200 paper questionnaires were distributed, and a total of 456 questionnaires were recovered, including 28 invalid questionnaires and 428 valid questionnaires. The effective rate of the questionnaire was 89.17%.

4 Empirical Results and Analysis

4.1 Reliability and Validity Test

The reliability test results (Table 1) show that the overall Cronbach, α is 0.937, and Cronbach’s α of each latent variable are also above 0.8, indicating that the questionnaire has good internal consistency.

In this study, the AVE method was used to test the discriminant validity of the questionnaire (Table 2). The square root value of the AVE of the variables involved in the study was greater than the absolute value of the correlation coefficient between it and other variables, and each AVE value was greater than 0.5. The variables have good discriminant validity.

4.2 Hypothesis Testing

In this study, AMOS software was used to test the research hypotheses. Test the overall fit index of the model. Among them, $\chi^2/df = 1.290 (<3)$, $GFI = 0.857$, $AGFI = 0.834$, $RMSEA = 0.036$, the overall fitness indicators of the model all meet the standard, indicating that the model has a good effect (Table 3).

Table 1. Reliability test

| Variable | Cronbach's α |
|--------------------------|---------------------|
| Evaluation Design | 0.906 |
| Teacher guide | 0.881 |
| Resources and Services | 0.854 |
| Regular participation | 0.876 |
| Autonomous participation | 0.891 |
| Practical gain | 0.865 |
| Cognitive gain | 0.877 |
| Emotional gain | 0.888 |

Table 2. Discriminant validity test table

| | evaluation gesign | teacher guide | resources and services | regular participation | autonomous participation | practical gain | cognitive gain | emotional gain |
|-----------------------------|----------------------|------------------|------------------------------|--------------------------|-----------------------------|-------------------|-------------------|-------------------|
| evaluation gesign | 0.859 | | | | | | | |
| teacher guide | 0.370** | 0.84 | | | | | | |
| resources and services | 0.262** | 0.186** | 0.786 | | | | | |
| regular participation | 0.597** | 0.404** | 0.240** | 0.788 | | | | |
| autonomous participation | 0.533** | 0.274** | 0.315** | 0.511** | 0.837 | | | |
| practical gain | 0.468** | 0.245** | 0.330** | 0.555** | 0.471** | 0.776 | | |
| cognitive gain | 0.332** | 0.275** | 0.358** | 0.454** | 0.379** | 0.402** | 0.826 | |
| emotional gain | 0.256** | 0.203** | 0.414** | 0.316** | 0.505** | 0.394** | 0.350** | 0.837 |
| AVE | 0.739 | 0.706 | 0.618 | 0.622 | 0.701 | 0.603 | 0.683 | 0.702 |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5 Conclusions and Recommendations

5.1 Conclusion

In the institutional environment, evaluation design and teacher guidance have a direct impact on regular participation, and evaluation design, resources and services have a direct impact on autonomous participation. Because the difficulty and acceptance of evaluation design are based on the prediction of students' ability and participation performance by educational managers, the impact of evaluation design on students' regular participation is more obvious. Teachers' guidance and feedback can help students

Table 3. Hypothesis test results

| path | coefficient | S.E. | C.R. | p | test result |
|---------------------------------------------------|-------------|-------|-------|-------|-------------|
| Evaluation design → Regular participation | 0.568 | 0.063 | 7.579 | *** | established |
| Evaluation design → Autonomous participation | 0.500 | 0.065 | 6.715 | *** | established |
| Teacher guidance → Regular participation | 0.206 | 0.063 | 3.102 | ** | established |
| Teacher guidance → Autonomous participation | 0.060 | 0.068 | 0.877 | 0.381 | invalid |
| Resources and services → Regular participation | 0.085 | 0.061 | 1.374 | 0.169 | invalid |
| Resources and services → Autonomous participation | 0.228 | 0.069 | 3.412 | *** | established |
| Regular participation → Practical gain | 0.487 | 0.067 | 6.062 | *** | established |
| Regular participation → Cognitive gain | 0.385 | 0.074 | 4.876 | *** | established |
| Regular participation → Emotional gain | 0.082 | 0.074 | 1.125 | 0.261 | invalid |
| Self-initiated participation → Practice gain | 0.310 | 0.057 | 4.279 | *** | established |
| Autonomous participation → Cognitive gain | 0.224 | 0.068 | 2.964 | ** | established |
| Autonomous participation → Emotional gain | 0.519 | 0.074 | 6.729 | *** | established |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

participate in teaching activities, and it is easier to stimulate students' regular participation. Many schools have introduced self-assessment methods based on information technology, such as electronic archives, which is conducive to enhancing their sense of self-efficacy and autonomous participation.

Regular participation can have a positive impact on students' practical and cognitive gains, and autonomous participation has a significant positive impact on students' practical, cognitive and emotional gains. When students are the subjects of process evaluation, students can reflect on their own learning methods and learning strategies, which not only consolidates the knowledge and skills they have learned, but also improves their cognitive level in learning strategies, learning methods, etc. It indirectly promotes students to improve their own practical gains, but because regular participation occurs passively, it is difficult for students to obtain a positive positive emotional experience in the process evaluation.

5.2 Recommendations

First, from the perspective of students, undergraduates should follow the teacher's requirements, actively participate in the course activities, and complete the basic requirements of the course during the course study. At the same time, they should also actively cultivate their interest in the study of this major outside of class to enhance their learning gains.

Second, from the perspective of teachers, timely and effective feedback should be given in the process of process evaluation, which can not only help students fully understand and improve themselves, but also help to enhance students' attention to process evaluation. While strictly requiring students to abide by classroom discipline, it increases the interest of process evaluation and improves students' enthusiasm for independent participation.

Third, from the perspective of schools, we should provide sufficient resources, facilities and service support, establish an external supportive campus environment, and provide favorable technical conditions for the application and promotion of process evaluation in Colleges and universities. Help teachers understand students' learning progress and learning situation, and facilitate the evaluation of students' learning process.

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