



Analysis of the Effectiveness and Influencing Factors of the Construction of Internship and Practical Training Base Under STC Teaching Mode

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Abstract. This paper investigates the 2019–2021 graduates of Baoshan College from internship and practical training base hardware construction, institutional mechanism construction, faculty, practical teaching system, school-enterprise cooperation, social services, social benefits, economic school level, talent training and other aspects through literature research method, research method, and statistical analysis method, etc. Based on the survey data, we analyze the factors influencing the internship and practical training base under STC teaching mode for factor analysis and the factors influencing the internship training base on social benefits, economic school level, talent training for linear regression analysis, and propose construction countermeasures based on the regression analysis results.

Keywords: STC teaching mode · internship and practical training base · construction effectiveness · analysis of influencing factors

1 Introduction

In 2011, the Ministry of Education pointed out in the Opinions on Promoting Reform and Innovation in Higher Vocational Education and Leading the Scientific Development of Vocational Education that emphasis should be placed on the practical nature of higher teaching, and that schools and enterprises should cooperate in organizing practical training and try their best to make the on-campus practical training environment match or even be identical to that of enterprises [1–4]. The Opinions on Comprehensively Improving the Quality of Higher Education states that if higher education institutions want to run with characteristics and standards, and if they want to improve the effect of talent training, they should focus on the construction of practical training and practical training bases, and they should devote themselves to improving the conditions of the internship and practical training bases [5, 6]. Higher education, as a service-oriented,

employment-oriented education that aims to cultivate highly qualified and skilled personnel, the practical aspect of teaching has been placed in a very important position. Practical teaching is an important way to enhance students' hands-on ability and enable them to fully apply their theoretical knowledge to practical work, and it is also an essential part of the school's training objectives. The practical teaching conditions have a great impact on practical teaching, so the construction, management, and reasonable use of the internship and practical training base is a subject that must be well-studied in higher education institutions [7–9].

2 Construction of Internship Training Base Under STC Teaching Mode

The STC teaching mode based on “self-directed learning - traditional teaching - cross-collaborative learning” was formally proposed in 2016, where S refers to self-directed learning, i.e. a standardized learning behavior in which the learning subject makes full use of high-quality Internet resources to meet personalized learning needs under the condition of self-planning and deployment of learning progress; T refers to traditional teaching, where the learning subject receives knowledge from the teacher in a fixed environment, and the main mode of teaching is offline; C refers to collaborative learning [10]. After years of teaching practice has made certain achievements, combined with the promotion of the STC teaching mode, the construction of internship and practical training base content around the STC teaching mode, as shown in Fig. 1.

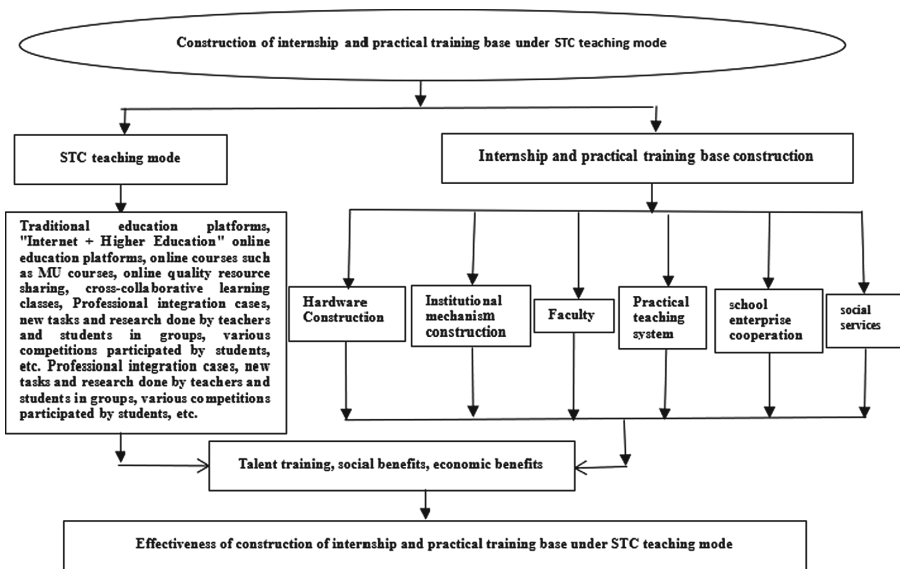


Fig. 1. Construction of internship and practical training base under STC teaching mode

Table 1. Correlation coefficient (r) between the factors influencing the internship and practical training base and the effectiveness of construction under the STC teaching mode

	HC	IMC	Faculty	PTS	SEC	Social services
Social benefits	0.857***	0.939***	0.939***	0.956***	0.876***	0.565***
Economic benefits	0.867***	0.954***	.918***	0.914***	0.860***	0.546***
Talent training	0.865***	0.947***	0.966***	0.948***	0.901***	0.683***

Note: HC, Hardware construction; IMC, Institutional mechanism construction; PTS, Practical teaching system; SEC, School-Enterprise cooperation; ***, $P < 0.001$

3 Linear Regression Analysis of Factors Influencing the Effectiveness of the Construction of Internship and Practical Training Base Under the STC Teaching Mode

3.1 Correlation Analysis of the Factors Influencing the Internship and Practical Training Base and the Effectiveness of Its Construction Under the STC Teaching Mode

The results of the correlation analysis between the influencing factors and the construction effectiveness of the internship and practical training base under the STC teaching mode are shown in Table 1. The correlation coefficient of each indicator is between $(-1, 1)$, a significant level $P < 0.01$, indicating that there is a significant positive correlation between social benefits, economic school level, talent training, and hardware construction, institutional mechanism construction, faculty, practical teaching system, school-enterprise cooperation, and social services, which is statistically significant and can be regressed for analysis.

3.2 Linear Regression Analysis of the Factors Influencing the Internship and Practical Training Base and the Effectiveness of Its Construction Under the STC Teaching Mode

Principle of the multiple linear regression model: Suppose a certain dependent variable y is influenced by k independent variables x_1, x_2, \dots, x_k with n sets of observations $(y_{1a}, y_{2a}, \dots, y_{ka})$, $a = 1, \dots, n$. The structure of the multiple linear regression model then takes the form of

$$y_a = \beta_0 + \beta_1 x_{1a} + \beta_2 x_{2a} + \dots + \beta_k x_{ka} + \varepsilon_a \quad (1)$$

where $\beta_0, \beta_1, \dots, \beta_k$ are parameters to be determined; ε_a is a random variable. If b_0, b_1, \dots, b_k are the fitted values of $\beta_0, \beta_1, \dots, \beta_k$ respectively, then the regression equation is

$$\hat{y} = b_0 + b_1 x_1 + b_2 x_2 + \dots + b_k x_k \quad (2)$$

where: b_0 is a constant; b_0, b_1, \dots, b_k are called partial regression coefficients. The significance of the partial regression coefficient $b_i (i = 1, \dots, k)$ is the value by which the dependent variable y changes on average for each unit change in the independent variable x_i when all other independent variables $x_j (j \neq i)$ are fixed.

Multiple linear regression models applied to multiple (more than two) elements also have interactions and correlations with each other, as correlation analysis shows that each influencing factor is relevant for each construction effectiveness indicator. In the following, social benefits, economic school level, and talent training are taken as dependent variables respectively, and hardware construction, institutional mechanism construction, faculty, practical teaching system, school-enterprise cooperation, and social services are put into the regression model as independent variables to obtain Table 2, in which Model 1 is the linear regression analysis of the influence factors of practical training base construction on social benefits, Model 2 is the linear regression analysis of the influence factors of practical training base construction on economic benefits, Model 3 is the linear regression analysis of the influence factors of practical training base construction on talent training.

From the data in Table 2, it can be obtained that the R^2 for models 1, 2, and 3 are 0.952, 0.933, and 0.978 respectively, and the corrected R^2 is 0.952, 0.933, and 0.977 and $p < 0.05$ indicating that the model fits the sample well. The situation was statistically significant at the given significance level of 0.05, leading to the following conclusions:

Model 1: The expression for the model is

$$y = -0.547 + 0.072x_1 + 0.021x_2 + 0.193x_3 + 0.644x_4 + 0.209x_5 - 0.97x_6 \quad (3)$$

Table 2. Regression model

Variables	Model 1	Model 2	Model 3
Constants	-0.547	0.888	-0.335
Hardware construction	0.072*	0.197***	-0.081**
Institutional mechanism construction	0.021	0.396***	-0.004
Faculty	0.193***	0.069***	0.371***
Practical teaching system	0.644***	0.013	0.624***
School-Enterprise Cooperation	0.209***	-0.043*	0.195***
Social Services	-0.097***	-0.085***	0.235***
R ²	0.952	0.933	0.978
Adj R ²	0.952	0.933	0.977
F	1979.604***	1384.657***	4308.589***

Notes: *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$

The significance of hardware construction, faculty, practical teaching system, school-enterprise cooperation, and social services is less than 0.05, and the significance of institutional mechanism construction is $0.572 > 0.05$, indicating that social benefits are positively influenced by hardware construction, faculty, practical teaching system, school-enterprise cooperation, and social services, and institutional mechanism construction has no direct influence on social benefits.

Model 2: The expression for the model is

$$y = 0.888 + 0.197x_1 + 0.396x_2 + 0.063x_3 + 0.013x_4 - 0.043x_5 - 0.084x_6 \quad (4)$$

The significance of hardware construction, institutional mechanism construction, faculty, school-enterprise cooperation, and social services is less than 0.05, while the significance of practical teaching system is $0.527 > 0.05$, indicating that economic benefits are positively influenced by hardware construction, institutional mechanism construction, faculty, school-enterprise cooperation, and social services, and the practical teaching system has no direct influence on economic benefits.

Model 3-3: The expression for the model is

$$y = -0.335 - 0.81x_1 - 0.004x_2 + 0.371x_3 + 0.624x_4 + 0.195x_5 + 0.235x_6 \quad (5)$$

The significance of hardware construction, faculty, practical teaching system, school-enterprise cooperation, and social services is $P < 0.005$, and the significance of institutional mechanism construction is $0.900 > 0.05$, indicating that economic benefits are positively influenced by hardware construction, faculty, practical teaching system, school-enterprise cooperation, and social services, and institutional mechanism construction has no direct influence on social benefits.

4 Countermeasures for the Construction of Internship and Practical Training Base Under STC Teaching Mode

4.1 Strengthen the Construction of the Teaching Staff and Attach Importance to Teacher Training

Analysis of the impact factors on the internship and practical training base shows that the faculty has the greatest degree of influence on the internship and practical training base. The level of practical training teachers is directly related to the practical training base giving full play to each function and rapidly improving the quality of personnel training. For the employment of practical training teachers adhere to the combination of independent training and introduction, using a variety of ways to cultivate: first, to carry out a variety of forms of skills training; second, the employment of full-time and part-time practical training teachers selected in place; third, to further improve the title and academic structure of practical training teachers inside and outside the school, the selection, recruitment, and introduction of highly educated, highly skilled full-time and part-time practical training teachers, all aspects of improving the comprehensive quality of the practical training teacher team.

4.2 Improve the Quality of Social Services of the Internship and Practical Training Base

In the analysis of the influence factors of the internship and practical training base, the social services have the least influence on the internship and practical training base. In the linear regression analysis of the influence factors of the internship and practical training base and the construction effectiveness, the less influential are social services. The internship and practical training base takes the initiative to invite the organization of national and provincial skills competitions. The organization of national and provincial skills competitions is a great opportunity to promote the practical training base and the school and has a clear impact on the honor and reputation of the school and the practical training base.

4.3 Strengthen Cooperation in the Construction of Internship and Practical Training Bases

For the strengthening of internship and practical training cooperation, schools can sign relevant agreements with enterprises, agreeing that enterprises will provide internship places for students and help schools to establish internship and practical training bases, while schools will provide teaching guidance, places for further education and cadre training, provide enterprises with sufficient resources for reserve staff, or cooperate in scientific research projects and provide technical support for enterprises.

5 Conclusion

This paper concludes that the degree of influence of the internship and practical training base under the STC teaching mode is in the order of faculty, institutional mechanism construction, school-enterprise cooperation, hardware construction, practical teaching system, and social services; social benefits are positively influenced by hardware construction, faculty, practical teaching system, school-enterprise cooperation, and social services; economic benefits are positively influenced by hardware construction, institutional mechanism construction, faculty, school-enterprise cooperation, and social services; social benefits are positively influenced by hardware construction, faculty, practical teaching system, school-enterprise cooperation, and social services. And construction countermeasures are proposed accordingly to provide useful references for the construction of the internship and practical training base of Baoshan College.

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Conflicts of Interest. The authors declare no conflicts of interest regarding the content and implications of this manuscript.

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