

## Research Article

# Analyze on Experimental Algorithm of Modern Apprenticeship Soft Skill Training: A Case Study of M Enterprise

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In the era of the rapid development of Internet technology and information technology, the transformation of traditional industrial structure, and the emergence of new industries, the competition between talents will become more intense, and the society has put forward higher requirements for talents. Modern apprenticeship, as a new educational concept of school-enterprise co-education, will bring new educational reform to the training of higher vocational talents. Taking M enterprise as an example, this paper conducts an experimental study on the cultivation of “soft skills” of higher vocational students by modern apprenticeship. The experimental algorithm is used to analyze it. The findings are as follows: (1) In the process of promoting modern apprenticeship, higher vocational colleges pay attention to the construction of campus culture, which is conducive to internalizing “soft skills” into students’ own quality; (2) the clear career development path of enterprises can make students realize the importance of “soft skills” and clarify their training objectives, which is conducive to exerting their own initiative and constantly improving their own necessary “soft skills”; (3) enterprises attach importance to the cultivation of students’ “soft skills” and strengthen the cultivation path through real job practice, which is not only conducive to enhance the attraction of modern apprenticeship but also conducive to the talent reserve of enterprises.

## 1. The Introduction

The modern apprenticeship training model is a new exploration direction of deepening education reform in higher vocational education in China. Since the implementation of the Opinions on the Pilot Work of Modern Apprenticeship in Education in 2014, a total of 562 units have participated in the pilot work in three batches, including 410 higher vocational colleges, which have become the main force in the implementation of modern apprenticeship. With modern apprenticeship the production teaching fusion new university-enterprise cooperation gradually of the implementation of the cultivation mode in our country, as to improve the quality of talent cultivation, the main carrier of cultivating technology skilled talents, higher vocational colleges how to in such a mode to cultivate students’ professional spirit, professional awareness, enhance its “soft skills,” become urgently needs to solve the problem. This paper studies the apprenticeship education in higher vocational colleges to cultivate students’ soft skills,

mainly in order to analyze the existing problems in the current soft skills training in higher vocational colleges, and provide some reference for higher vocational colleges to carry out soft skills education.

## 2. Research Overview

The term soft skills was coined by the U.S. Army in the late 1960s. It refers to the sociological term of emotional intelligence, which is composed of a series of elements that can reflect individual traits, including personality traits, social skills, communication skills, language skills, and personal behavior. The Collins English Dictionary defines “soft skills” as “certain desirable qualities of some form that do not depend on what you have learned”: they include common sense, the ability to work with people, and a positive and flexible attitude. Soft skills are essentially human personality skills. Soft skills are non-technical, intangible, and personality-specific skills, which are characteristics and abilities of attitudes and

behaviors rather than knowledge or technical abilities. Sahoo Malabika pointed out in his research that educators cultivate students' soft skills mainly through the following ways: case study, role play, group project, online discussion, increasing the number of group homework, classroom discussion and debate, extracurricular activities, and extra courses [1]. Connor Annemarie believes that soft skills can be cultivated in the following ways: students' participation in enterprise practice during holidays, communication and learning in interdisciplinary courses, real contact with customers and participation in real work projects, teaching and lectures by experts, teamwork, role playing, motivation and encouragement, and interactive lectures [2].

In recent years, domestic scholars have also made active exploration on this issue. It is generally believed that soft skills include learning ability, management ability, communication ability, collaboration ability, and other key occupational abilities. Domestic scholars also divide soft skills into two basic qualities (moral quality and psychological quality) and seven basic abilities (effective communication, teamwork, interpersonal integration, problem solving, self-building, innovation ability, and information processing). And from playing the role of classroom teaching, infiltration of soft skills training; combined with the hotel management mode, strengthen the soft skills training of students; to carry out colorful community activities; make use of school propaganda board, teacher board newspaper, class capacity layout and other positions in advance to let students feel and understand the corporate culture of several aspects of cultivation.

In April 2021, the National Vocational Education Conference creatively puts forward the concept and strategy of building a skilled society, calling for accelerating the construction of a skilled society in which the state attaches importance to skills, society advocates skills, and everyone learns skills and has skills. Under the background of "made in China 2025" strategy, for higher vocational students, in a solid grasp of professional skills, to be able to do jobs to the task, but also have a certain language expression ability, team cooperation ability, the innovation practice ability, etc., which is held in addition to professional "hard skills" but also grasp the corresponding "soft skills" [3]. Therefore, higher vocational colleges should through the depth of enhancing university-enterprise cooperation promote the work-integrated learning, implement modern apprenticeship training mode, improve the professional technology and to develop highly integrated professional spirit, and cultivate the students' sense of social responsibility, professional awareness, professional quality, innovation spirit, and practice ability, so as to realize the comprehensive promotion of students' "soft skills."

To a certain extent, studying the cultivation of "soft skills" of higher vocational students by modern apprenticeship can be interpreted as exploring the current situation of school-enterprise cooperation and its internal contradictions, and on this basis, thinking about the path and direction of the deep integration of industry and education. In this way, first of all, higher vocational colleges can pay more attention to the cultivation of students' "soft skills" and strive to solve the problem of "two skins" between the training specifications of graduates and the employment needs of

enterprises. Secondly, it can arouse students' attention to "soft skills" and solve the deep problems of their career development [4]. Third, enterprises can emphasize the learning of specific skills and the learning of generic skills, namely, "soft skills," in the process of promoting school-enterprise cooperation, so as to improve the quality of reserve managers. The talent training model under modern apprenticeship system is shown in Figure 1.

### 3. Experimental Algorithm Research of Modern Apprenticeship Training "Soft Skills"

#### 3.1. Research Hypothesis

- (1) Higher vocational colleges pay attention to the cultivation of students' "soft skills," which can effectively solve the problem of "two skins" of graduates' training specifications and enterprises' employment needs
- (2) Students in the modern apprenticeship system should consciously improve their "soft skills," which can strengthen their social adaptability and sustainable development ability, and improve the quality of employment
- (3) Targeted training by enterprises in the process of post-practice can significantly improve students' "soft skills"

3.2. *Research Objects.* This study selected 600 students from 11 majors in 3 departments of a vocational college, including computer application majors, computer network technology majors, and communication technology majors in the Department of Information technology [5]. Accounting computerization, e-commerce, aviation service, logistics service and management, and Chinese cuisine majors in the Department of Economic Management; mechanical and electrical technology application major (fitter direction), mechanical and electrical technology application major (electrical direction), mechanical and electrical technology application major (industrial robot direction), and other majors in the Department of Mechanical and electrical Mining. All the subjects were randomly divided into two different groups, namely, the experimental group and the control group. The general situation of the research objects is shown in Table 1, and the detailed statistical results of the source, major, and grade of the survey objects are shown in Figures 2–4.

#### 3.3. Research Tools and Processes

3.3.1. *Research Tools.* Data processing flow of SPSS17.0 algorithm:

- (1) Create field – input number – save (processed under Data View and Variable View, respectively)
- (2) A simple description of the data (N, maximum, minimum, mean, variance)
- (3) Descriptive Statistics → Descriptives → Select variables → OK

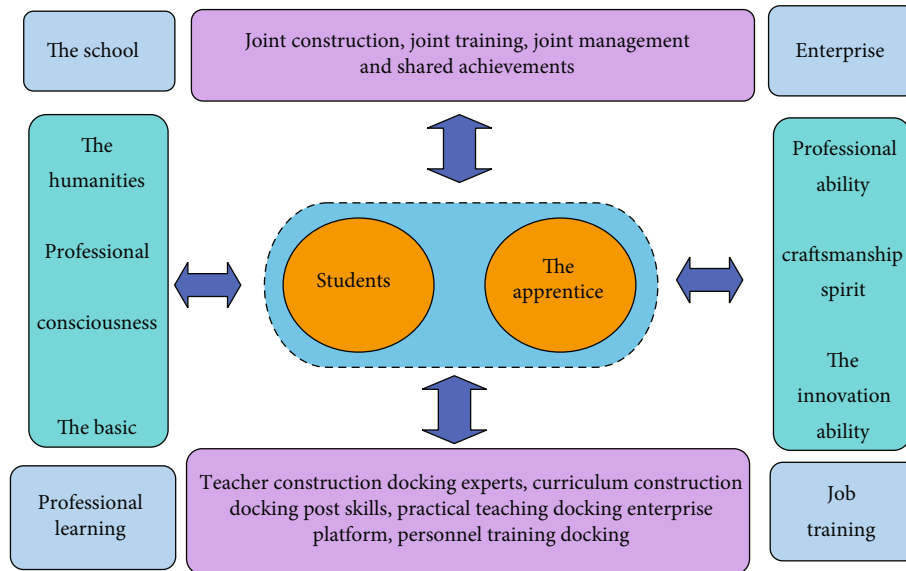


FIGURE 1: Talent training model of modern apprenticeship.

TABLE 1: Overall situation of the research objects.

Students	The number of	The proportion	Is do not	The number of	The proportion	Grade	The number of	The proportion
City	75	13.25%	Department of Information Technology	171	30.21%	In grade one	245	43.29%
Cities and towns	115	20.32%	Department of Economic Management	178	31.45%	Second grade	201	35.51%
Rural	376	66.43%	Electromechanical Mining Department	217	38.34%	The third grade	120	21.20%
A combined	566	100	A combined	566	100	A combined	566	100

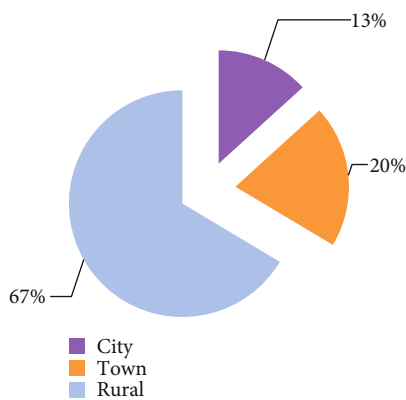


FIGURE 2: The proportion of origin of the study subjects.

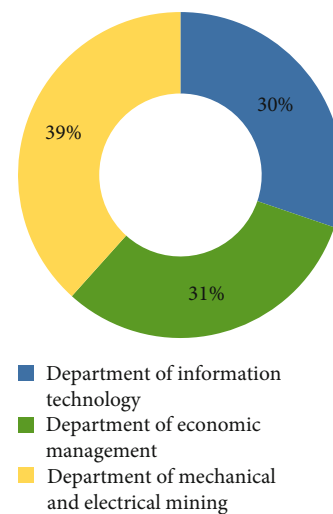


FIGURE 3: Proportion of subjects' majors.

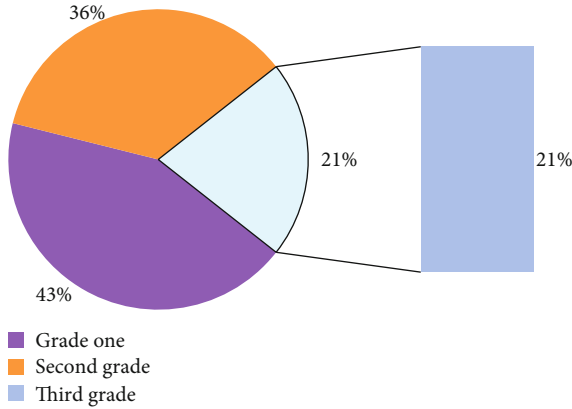


FIGURE 4: Proportion of study subjects in grade.

- (4) Graphs → Histogram → Select variables → OK
- (5) Analyze → Compare Mean → Independent-Samples T test → Select variables and group variables → Set group variable values → OK

The calculation formula used in SPSS17.0 algorithm is:

- (1) Chi-square statistical test; the calculation formula is as follows:  $\chi^2 = \sum (f_0 - f_n) / f_n$
- (2) The formula for calculating the number of columns is obtained by modifying the chi-square statistic. The specific formula is as follows:  $C = \sqrt{\chi^2 / (\chi^2 + N)}$
- (3) The Y coefficient is often used to calculate the correlation coefficient between nominal variables. The calculation formula is obtained by modifying the chi-square statistic:  $y = \sqrt{\chi^2 / (N(x - 1))}$
- (4) The formula for calculating the mean absolute difference of AAD is as follows:  $AAD = (\sum |R_T - M|) / N$
- (5) The calculation formula of COD dispersion coefficient is as follows:  $COD = ((\sum |R_T - R|) / N) / M$
- (6) The calculation formula for the median of COV is as follows:  $COV = ((\sum (R_T - M)^2) / M) / M$

**3.3.2. Research Process.** This study adopted a “post-test” experimental design, selected M enterprises that met the research conditions, and measured students’ soft skills with the soft skills scale adopted by M enterprises in the data collection [6]. Since M enterprise is a leading enterprise in the industry, the “soft skills” scale designed by M enterprise is representative to some extent. The scale is a five-level scale, which consists of 12 different soft skills and related questions. The cumulative value of a person’s response to the scale will give the overall soft skill value of the respondent, the cumulative average value reflected by the scale, and the average value reflected by each item of the scale.

In this study, the SPSS17.0 algorithm was used to statistically analyze the questionnaire data, so as to find out the

existing problems in the training of soft skills of students in a vocational college and to provide data support and factual basis for the following research. It is assumed that the significant difference in soft skills between the experimental group and the control group is the result of the implementation of modern apprenticeship to train students in soft skills. The significance of the influence will be calculated using paired sample *t*-test, and the analysis results will also prove or deny the hypothesis [7]. Other relevant data were collected for both the experimental and control groups to avoid the influence of any external variables, such as stage of personality development, other training, and mental maturity.

**3.4. Data Collection.** The questionnaire of this study was compiled, revised, distributed, and collected over a period of more than two months [8]. The distribution of questionnaires was organized and collected by teachers of various majors. A total of 600 questionnaires were distributed and 600 of them were collected.

There were 34 invalid questionnaires and 566 valid questionnaires, with an effective recovery rate of 94.33%. In the effective 66.43% of the students were from rural areas, 20.32% from urban areas, and 13.25% from urban areas. The students from information technology department accounted for 30.21%, the students from economic management department accounted for 31.45%, and the students from mechanical and electrical mining department accounted for the proportion is 38.34%; 43.29% came from the first grade, 35.51% from the second grade, and 21.20% from the third year level; 66.9% were boys and 33.1% were girls. Teachers’ questionnaires were distributed by teachers in selected vocational schools. Out of 100 questionnaires, 98 were valid, with an effective recovery rate of 98%.

### 3.5. Research Results and Conclusions

**3.5.1. Students’ Knowledge of Soft Skills in Different Majors.** By sorting out and analyzing the data collected from the questionnaire, it is found that there are some differences in the understanding of soft skills between the two groups of students, as shown in Table 2 and Figure 5. In the control group, 18.1% of the students know the concept of soft skills very well, 50.3% of the students know it generally, and 28.1% of the students do not know it. In the experimental group, 18.0% students know very well, 50.0% students know generally, and 32.0% students do not know [9]. In general, only 18.0% of the students in the two groups understood it very well, and most of them did not understand it very well.

**3.5.2. Analysis of Gender Differences in Soft Skills.** Based on the results of the questionnaire, a questionnaire survey on soft skills was conducted for students of different genders, and the ability of students of different genders in course teaching and practical training was objectively analyzed [10]. The specific situation is shown in Table 3 and Figure 6. The best ability for boys is teamwork ability, while the best ability for girls is communication ability. The most deficient ability for boys was self-confidence, while the most deficient ability for girls was the ability to use numbers.

TABLE 2: Questionnaire of students' cognition of soft skills.

Group project	Know very well	General understanding	Do not understand
The control group	18.1	50.3	28.1
The experimental group	18	50	32

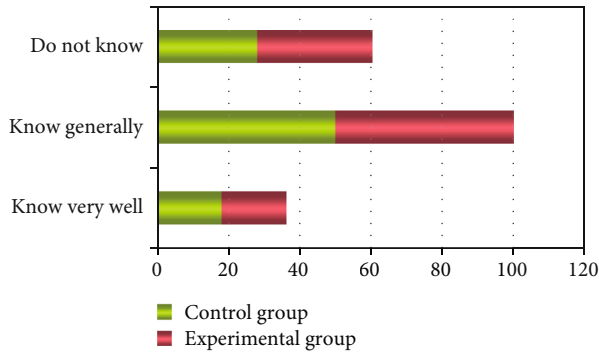


FIGURE 5: Students' cognition of soft skills in different majors.

**3.5.3. Analysis of Factors Affecting Soft Skills Training Courses.** As shown in Table 4 and Figure 7, the factors affecting the soft skills training course include the school's emphasis, students' self-emphasis, self-learning ability, the original soft skills quality and level, teachers' teaching methods, teachers' teaching ability, teaching resources, and teaching equipment [11]. Among them, the proportion of self-importance is 21%, self-learning ability is 18%, and the proportion of school importance is 17%. The original quality and level of soft skills of students is 13%, and the proportion of teachers' teaching methods is 12%. The proportion of teachers' teaching ability, teaching resources, and teaching equipment is the smallest. Therefore, the biggest difficulty affecting the implementation of soft skills curriculum is the lack of attention from students and schools, and the lack of students' learning ability and original knowledge level. To improve the level of soft skills of students, schools, students, and teachers need to work together. Students and teachers should constantly reflect on themselves and improve their attention.

**3.5.4. Analysis of Students' Soft Skills.** The average soft skill values of the experimental group and the control group were obtained by the responses of the respondents to the scale (Table 5).

According to Table 5, the average soft skill value of the experimental group was 95.4, and the average value of the control group was 86.5. It indicates that the control group also has good soft skill value on average, but the statistical analysis between the two groups shows that the soft skill level of the experimental group is significantly higher than that of the control group when  $t$  is 4.7 and  $\alpha$  is 0.01. This indicates that apprenticeship students can significantly improve their soft skills through post-practice in enterprises under the condition that the school pays more attention to them [12]. At the same time, it can be inferred that enter-

prises can comprehensively improve students' employability by strengthening the training of soft skills in post-practice.

As shown in Table 6, when  $\alpha$  is 0.01, the experimental group is significantly higher than the control group in terms of oral expression ability, honesty, teamwork, risk awareness, stress resistance, influence, teaching/training ability, and time management [13]. When  $\alpha$  was 0.05, there were significant differences in self-motivation, critical thinking, interpersonal skills, academic research ability, and problem-solving ability between the experimental group and the control group.

Figure 8 shows the comparison of specific soft skills competency values between the experimental group and the control group. From the above figure, it is clear that the students who received soft skills training through participating in modern apprenticeships scored above average on all parameters of soft skills. Assuming that there is homogeneity in external factors between the control group and the experimental group, the above results can be attributed to the experimental group's participation in modern apprenticeship and the joint attention and training of the schools and enterprises [14]. This also indicates that students can significantly improve most soft skills through participating in modern apprenticeship training.

**3.6. Research Discussion and Conclusions.** Based on the above analysis, the following conclusions can be drawn:

- (1) A good campus cultural atmosphere is the prerequisite for students to improve their "soft skills"

Selection experiments, the experimental group is from the school and industry leading modern apprenticeship class M enterprise cooperation; in promoting the implementation of the modern apprenticeship between process, the school attaches great importance to conduct can improve students' "soft skills" campus culture activities, including enterprise enrolled, co-building school training base, the professional learning and curriculum practice in the enterprise culture, and management measures for the administration; The enterprise assigns technical or management experts to come to the school to communicate with students face to face and give lectures, to answer the perplexity in students' growth, and to strengthen the guidance of career planning; the school attaches great importance to the enterprise practice activities, virtually let the students learn corporate culture, love and dedication, sense of responsibility, team spirit, and other qualities [15]. Through the construction of campus culture atmosphere, the essence is to internalize the "soft skills" into the students' own quality and really effectively enhance the students' "soft skills."

TABLE 3: Analysis table of soft skills difference of students of different genders.

Project	Self-learning ability	Time management skills	Ability to work in teams	Communication skills	Problem-solving skills	The innovation ability	Information technology capabilities	Digital application ability	Foreign language ability	The psychological quality	Self-confidence	Aesthetic ability
Male	116	102	241	213	207	169	177	137	150	75	87	97
Female	64	63	121	104	106	85	68	46	54	60	57	47



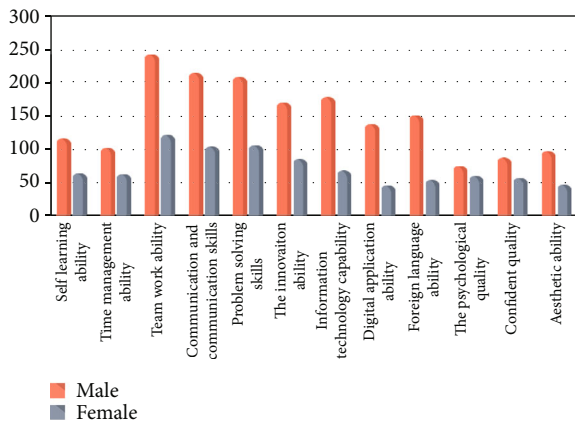


FIGURE 6: Analysis of soft skills differences among students of different genders.

- (2) The real job practice of enterprises is an effective way to cultivate students' soft skills

Students in the experimental group entered M enterprise participated in the post-practice according to the standards and requirements of the enterprise, felt the professional role and corporate culture, complied with the rules and regulations of the enterprise, and consciously constrained their behavior. In the enterprise, the status of the students is changed to apprentice, and they are guided one to one by the master. In the initial practice of the waiter position, they are familiar with the working process with the master, observe the "unspeakable" meticulous operation behavior of the master in the working process, and cultivate their own professional ethics, communication skills, and time management skills [16]. After entering the time manager/department manager position practice, students will learn more about the master's working skills and problem-solving ability. At the same time, the master's attitude towards product excellence, seriousness, and rigor will subtly influence students to form a good professional quality [17]. So as to improve their teaching/training ability, leadership, problem-solving ability, attention to details, etc.; when I entered the position of human resources manager/restaurant general manager, I began to manage stores and lead teams as a grass-roots manager of the restaurant, so I need to improve my ability to withstand pressure, risk awareness, influence, quality awareness, etc.

Enterprise practice can make students fully understand the importance of soft skills in the future work and strengthen the practice, understanding, and experience of the comprehensive ability of enterprise positions, under the one-to-one guidance of enterprise masters, and can also effectively improve students' "soft skills."

- (3) Clear career development path and clear training objectives of students' "soft skills"

For M enterprise, a complete training system and a clear career development path can clarify the training objectives and effectively stimulate the improvement of students' "soft

skills" [18]. As soon as students in the experimental group enter the enterprise, they need to quickly adapt to the production environment and employment requirements of the enterprise, and they need to constantly learn and apply new skills, including time management, organization and planning, and work goal formulation. After being promoted to the position of time manager/department manager, students in the experimental group need to receive management training when they start to coach others and train new apprentices. To become a human resources manager, you will need to train employees, plan their development, and learn the key dynamics of teamwork; when promoted to general manager of a restaurant, skills are transferred to food and beverage service, where you learn to manage business decisions and people. You need to learn problem-solving skills, people management, and the ability to make important business decisions accurately.

Clear career development path will let the students about their career with an intuitive and thorough understanding, such as team cooperation ability and good interpersonal communication ability are undoubtedly of great significance to promotion manager, as the students for their own growth path after a more clear understanding, later in the learning process, they will give full play to their own subjective initiative, to continuously cultivate and improve the "soft skills" necessary for a manager.

#### 4. Thoughts on the Cultivation of "Soft Skills" of Higher Vocational Students

4.1. Higher Vocational Colleges Need to Pay Attention to the Cultivation of Students' "Soft Skills." The current stage, China's higher vocational colleges generally high-skilled applied talents as its training goal, is committed to consolidate students' professional foundation, improving the students' professional skills and other "hard power," but there are for students' professional spirit, professional quality, communication, teamwork, and time management "soft skills" such as the problem of insufficient emphasis. For higher vocational college students, the cultivation of their comprehensive competence should be composed of two parts: "hard strength" and "soft skills." The two parts should promote each other, complement each other, and develop in a coordinated way, so as to jointly improve students' comprehensive quality and core competitiveness. However, from the present point of view, the long-term neglect of "soft skills" training in higher vocational colleges leads to the lack of "soft skills" of higher vocational students. But in contrast, more and more enterprises begin to realize that the "soft skills" possessed by employees are one of the important factors for the success of enterprises [19]. This also causes, to a large extent, the serious disconnection between the students trained by higher vocational colleges and the demand for employment of enterprises, which also makes the "two skins" phenomenon between the cultivation of talents in higher vocational education and the demand for employment of enterprises for a long time. Therefore, paying attention to the cultivation of "soft skills" has become an important and urgent task in higher vocational education.

TABLE 4: Analysis table of influencing factors of soft skills course.

Project	School value	Level of self-importance	Self-learning ability	Previous soft skill level	The teaching method	Teacher teaching ability	Teaching resources	Teaching equipment
Percentage (%)	17	21	18	13	12	8	5	6

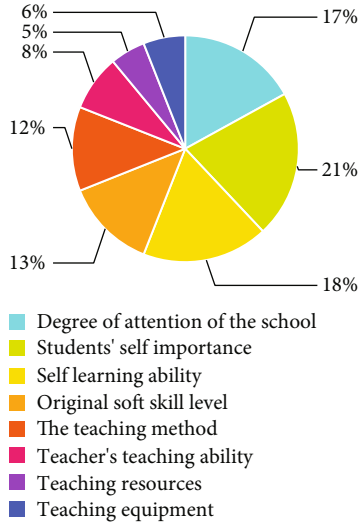


FIGURE 7: Proportion of influencing factors of soft skills courses.

The ascension of higher vocational students' "soft skills" is a long-term and systematic project, need higher vocational colleges attention to the cultivation of students' "soft skills" and more ways to promote (juan-juan niu, 2014), and need to be in the curriculum, campus cultural activities, the second classroom, practice training project, and focus on training students' "soft skills," especially need to promote the depth of cooperation between colleges. The modern apprenticeship talent training model should be implemented, so that students can realize the comprehensive improvement of students' "soft skills" in the real post-practice and training of enterprises. In addition, teachers are a key factor in the quality of school teaching. The seniority of teachers is relatively fully competent for the teaching of subjects, which depends on their mentality and the direction of their hard work. Teachers' job burnout will lead to their own lax teaching, resulting in inertia psychology. Therefore, schools should always supervise the teaching of teachers, not only to the professional knowledge of teachers for irregular assessment but also to the teaching process, teaching methods, and teaching results for tracking evaluation.

**4.2. Students Need to Pay Attention to the Cultivation of "Soft Skills."** Higher vocational colleges at present, our country's most common, attach great importance to the professional knowledge and professional skills, such as the cultivation of the "hard power," and focus on the cultivation of the students' "soft skills" rarely; this directly led to the students do not know what is "soft skills," I do not know what companies focus on "soft skills," and more attention to the cultiva-

tion of their own "soft skills." Eventually caused the students' lack of cognition of "soft skills" has become one of the most important aspects of the lack of "soft skills" (Li Zhifang etc., 2018), and for "soft skills" in the enterprise pay more and more attention to the background, the defect became the main bottleneck in the process of their employment (jian-rong li, etc., 2019), is the deep reason for the higher vocational students leave and arrested development.

"Soft skills" is a necessary high-level ability for students in higher vocational colleges. It is necessary to improve students' emphasis on "soft skills." First, let them realize the importance of improving "soft skills" and guide them to change their view of learning. Secondly, we should actively guide students to actively participate in campus activities and second classroom activities. Finally, it is also necessary to guide students to take the initiative to enter the enterprise and personally experience the enterprise's demand for "soft skills" and the aspects that need to be improved in the post-practice, which is also the key to improve students' "soft skills."

**4.3. Enterprises Should Pay Attention to the Cultivation of Students' "Soft Skills."** In the human resources management association (Society for Human Resource Management), a survey conducted in 2019 found that three-quarters of employers are hard to find a company soft skills required to graduate [20]. This can be attributed to a mismatch between the standards of the schools mentioned above and the needs of the companies, as well as a lack of emphasis on working closely with the schools to develop the people they need, or a lack of emphasis on "soft skills."

On comprehensively advancing modern apprenticeship with the work of the notice issued, according to our country by the pilot to comprehensively promote the modern apprenticeship official arrival, modern apprenticeship, compared with the traditional apprenticeship, to a great extent, reflects the profound fusion, work-integrated learning as the core, through the school education and enterprise training, and the combination of theory learning and job practice. Skill operation and professional accomplishment are combined to improve the teaching effect of higher vocational education and realize the comprehensive growth of talents [21]. In the process of enterprise to promote modern apprenticeships, especially must pay attention to the cultivation of the students' "soft skills," experiment of M enterprise, for example, enterprise fine division of jobs, standardized operation flow, and students if limited to simple operation; on the one hand, parents and students worry about become "work" has the potential to become cheap labor; on the other hand, it is not conducive to the enterprise's management talent reserve. Both Germany and Switzerland have the largest



TABLE 5: Comparison of mean scores of soft skills between experimental group and control group.

	The average	The standard deviation	<i>N</i>	<i>t</i>	<i>p</i>
The experimental group	95.4	9.1	73	4.73 **	0.00
The control group	86.5	8.3	73		

Remarks: \*\* indicates an  $\alpha$  of 0.01.

TABLE 6: Differences in specific soft skills between the experimental and control groups.

Soft skills	The experimental group			The control group			<i>t</i>	Alpha.
	The average	The standard deviation	<i>N</i>	The average	The standard deviation	<i>N</i>		
Self-learning ability	3.8	0.6	73	3.4	0.7	73	2.99 **	0.005
Time management skills	3.7	0.7	73	3.4	0.9	73	1.52	0.133
Ability to work in teams	4.1	0.7	73	3.7	0.6	73	2.27 **	0.029
Communication skills	4.0	0.9	73	3.5	1.0	73	3.05 **	0.005
Problem-solving skills	3.8	0.9	73	3.3	1.1	73	2.64 **	0.012
The innovation ability	3.4	0.8	73	3.8	1.1	73	2.11 **	0.038
Information technology capabilities	3.9	0.8	73	3.3	0.9	73	1.96	0.068
Digital application ability	4.0	0.9	73	3.8	0.7	73	2.56 **	0.018
Foreign language ability	4.2	0.7	73	3.8	0.6	73	3.12 **	0.003
The psychological quality	3.8	0.7	73	3.3	1.0	73	2.63 **	0.012
Confident quality	4.1	0.7	73	3.0	0.9	73	6.11 **	0.000
Aesthetic ability	3.9	0.8	73	3.8	1.0	73	1.071	0.291

Remarks: \* indicates  $\alpha$  is 0.05; \*\* indicates an  $\alpha$  of 0.01.

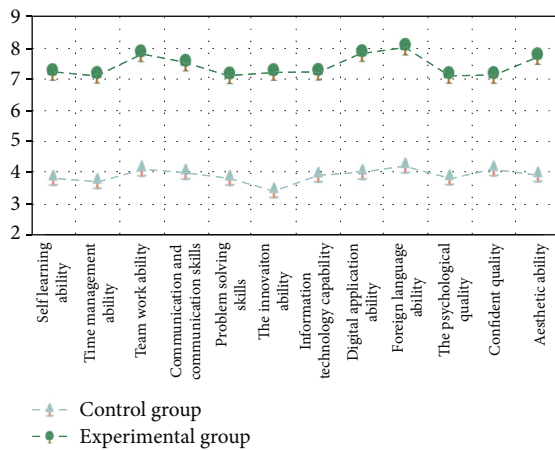


FIGURE 8: Comparison of soft skills between experimental group and control group.

number of apprentices in the service industry, which emphasizes the importance of generic skills, namely, “soft skills,” as well as specific skills learning (He Yangyong, 2019).

Be worth what carry is, according to a survey of modern apprenticeship in the process of implementation of parents in from larger resistance, blocking one reason is that the parents to select the children early to an industry is not approved, the “soft skills” is to be able to transfer between vocational skills, is transferable skills, even if the students change careers after apprenticeship training, but soft skills are needed for any business skills. In this aspect, enterprises

should pay more attention to the cultivation of students’ “soft skills” in addition to the training of professional knowledge and skills in the process of implementing modern apprenticeship in cooperation with schools.

## 5. Conclusion

The modern apprenticeship system plays an important role in the cultivation of soft skills of higher vocational students. Under the mode of modern apprenticeship, through the combination of enterprise post training and classroom teaching, the comprehensive ability and quality of students can be cultivated, and the comprehensive improvement of students’ “soft skills” can be realized. Through this experimental algorithm research, we can draw the following conclusions: A good campus cultural atmosphere is the prerequisite for the improvement of students’ soft skills; real job practice of enterprises is an effective way to cultivate students’ soft skills. A clear career development path clarifies the training objectives of students’ “soft skills.”

However, higher vocational colleges cultivate students’ “soft skills” is a complicated system engineering, and strengthening students’ “soft skills” is the current colleges and universities deepen the connotation of the construction of the strategic choice and inevitable requirement, and is an effective measure to improve students’ comprehensive ability and achieve high-quality technical skills, the key to talent training quality improvement. Production which requires higher vocational colleges should deepen teaching fusion, innovative talent training mode, build effective students’

“soft skills” training system, strengthening the construction of teaching team, innovation teaching evaluation system, create a good campus culture atmosphere, and so on, to achieve full, whole process, all-around education, promote students’ “soft skills,” to achieve the effective training of high-quality technical skills.

### Data Availability

The labeled data set used to support the findings of this study is available from the corresponding author upon request.

### Conflicts of Interest

The authors declare that there are no conflicts of interest.

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