

A Study on the Construction of the Index System of Turn Section Assessment under the Background of Higher Vocational Enrollment Expansion

---Middle and Higher Vocational Education is Integrated with Five-year Vocational Education

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Abstract

as the "overpass" in the modern vocational education system, the integrated five-year vocational education in middle and higher vocational colleges is playing an increasingly important role in the context of the country's vigorous development of vocational education. The process management and transfer assessment of middle and higher vocational colleges are the links that are difficult to be implemented in practice. After all, the secondary vocational schools are not attached to the higher vocational colleges that link and cooperate with them, but are teaching units with independent teaching and student management systems. This paper adopts the data analysis method, through the comparison of the turning section examination results data, to dig the potential problems, put forward the construction of the turning section examination selection index system.

Keywords

higher vocational college enrollment expansion; middle and higher vocational integration; transfer section assessment selection.

1. Introduction

It is a major decision and deployment made by the CPC central committee and the state council to expand the enrollment of higher vocational colleges on a large scale, and it is also an important policy starting point to cope with the new situation and challenges at home and abroad. Starting from 2019, higher vocational enrollment expansion, as an important national policy to stabilize employment and promote development, will continue to be promoted in the next two years, according to the government work report. We will expand enrollment by 1 million in 2019 and by 2 million annually in 2020 and 2021, with a total enrollment increase of nearly 5 million in three years. Where does the expansion come from? According to the enrollment data of the first phase of higher vocational college enrollment expansion in zhejiang province in 2019, graduates from ordinary high schools and secondary vocational schools accounted for the majority of the enrollment, while those from four categories accounted for a relatively low proportion. The author believes that in the next two years, secondary vocational students are still an important part of the enrollment expansion of higher vocational colleges in zhejiang province. Among them, secondary vocational students who participate in the integrated five-year vocational education in middle and higher vocational colleges will be the potential enrollment expansion students, because so far, only a small number of such secondary vocational students. In order to ensure that this kind of secondary vocational students will become the source of high-quality students for higher vocational enrollment expansion in the future, the author conducts a research on the

implementation of integrated five-year vocational education in middle and higher vocational colleges in recent years, including the study on the evaluation mechanism of "three-two-stage" transfer.

2. Raise Questions

About deepening the zhejiang province department of education in higher vocational guidance of five-year vocational education integration work (faculty into zhejiang [2019] 47) clear "around the colleges should strengthen the integration of the five-year vocational education personnel training in vocational process management, establish and improve the evaluation mechanism, the students in the secondary phase expires, should carry on the appropriate evaluation, after the inspection qualified rear can into higher vocational stage continue to learn." The author believes that the "examination" in the document is not only the process of selecting students, but also the evaluation of the quality and effect of the integrated vocational education in middle and higher vocational colleges. The form of "examination" can be diversified and the subject of examination can be diversified. In general, higher vocational colleges play a leading role in the process of "three-two-stage" assessment, as the framer and executor of relevant system documents. Therefore, it is necessary to conduct scientific research and judgment on the new situation and take precise measures, otherwise the expected assessment effect will not be achieved. According to the survey, due to the lack of process management, uncoordinated teaching management, the phenomenon of "two skins" has not been eliminated and other factors, some higher vocational colleges have serious disconnection in the content, difficulty and other aspects of the transfer assessment of students connected with secondary vocational schools, and the single transfer assessment cannot reflect the real level of students. In addition, because most higher vocational colleges and secondary vocational schools do not set up specialized departments for teaching and student management related to the five-year program, there is a phenomenon of wryness when encountering specific affairs, resulting in a long-term backlog of various problems, no matter which party is just too tired to deal with. In some sense, the assessment of the transition is equivalent to the college entrance examination, so the preparation, process implementation, process supervision and other links need to be completed through frequent communication and seamless docking between the two sides. But in fact, due to the poor cohesion, not timely, personnel change frequently and other reasons, in the assessment of the organization will often appear problems, and even lead to contradictions. In addition, under the background of higher vocational college enrollment expansion, the acceptance rate of the transfer section shows a trend of increasing year by year (>95%), and the elimination rate of the transfer section examination is low and the selection function is not prominent, which is undoubtedly a challenge to the necessity of the transfer section examination.

3. Relevant Data Research

Based on the statistical analysis of the transfer assessment data in 2017 and 2018 for the secondary vocational specialty in higher vocational colleges, the author conducted an empirical study on the effect of the original transfer assessment method.

3.1. Data Source Collection

In wenzhou, the author's higher vocational college has cooperated with 12 secondary vocational schools in 2017 and 2018. There are a total of 15 higher vocational majors connected with 13 secondary vocational majors, mainly including mold design and manufacturing, numerical control technology application, electrical and electrical technology, marketing, e-commerce, mechanical design and manufacturing, digital media application

technology, etc. Wenzhou secondary vocational schools have cooperated with our school to have a total of 30 secondary and vocational bridging classes from 2014 to 2016. In that year, the transfer assessment method was mainly sampling and selection examination. Under normal circumstances, the sampling test of vocational college majors for secondary vocational college students was carried out at the end of each semester. The person in charge of vocational college majors selected the courses to be sampled in the semester, and assigned a special person to prepare and review the examination papers, so as to separate the teaching and examination. Due to the lack of clear requirements on the number of doors to be tested in the secondary vocational stage in the relevant system documents, the number of doors to be tested in the related majors varies greatly, with at least 1 door and at most 4 doors. The selection examination is carried out in the fifth semester of the secondary vocational school, and the examination plan is formulated by the higher vocational major to determine the examination method, examination subjects and grading standards. Higher vocational colleges arrange specially-assigned personnel to the secondary vocational schools to patrol the examination, and organize the examination paper marking after the end of the examination. The final admission score is made up of the average score of multiple sampling tests and the score of the selection test plus the usual score of the secondary vocational stage in accordance with a certain proportion.

3.2. Statistical Analysis of Data

(1) statistical analysis of the scores of 40 sample test courses of 20 secondary and higher vocational schools in 2017-2018.

The author selected 20 classes from the high vocational bridging classes to conduct data analysis on the two sample test results of each class (see table 1 and table 2), and collected the data of the highest score, lowest score, mean value, passing rate and standard difference of each class. There were 27 sampling courses with the lowest score below 30, accounting for 67.5% of the total number of sampling courses. There were 20 sampling courses with an average score below 60, accounting for 50% of the total number of sampling courses. There were 19 sampling courses with a pass rate of less than 50 percent, accounting for 47.5 percent of the total. The standard deviation of the results of 40 sampling courses is between 0.1 and 21, and 23 sampling courses with standard deviation greater than 10, more than half of the total number of sampling courses, indicating that most sampling courses have a large degree of dispersion and do not form a normal distribution.

(2) Statistical analysis of the test results of the 2017-2018 20 secondary vocational school and vocational college entrance examination

The author also compared and analyzed the test scores of 20 classes from 30 connected classes. One class had a minimum score of 2, the other had a minimum score of 10. There were 7 classes with an average score below 60, accounting for 35%. There were 12 classes with a failure rate of more than 10%, accounting for 60%. There are 10 classes with standard deviation greater than 10, accounting for 50%, indicating that some classes have a large dispersion of selection test scores and cannot form a normal distribution.

Table 1. Data related to the scores of 20 sample test courses of the 20 secondary vocational school and higher vocational colleges connecting classes from 2017 to 2018

Class Num.	Sampling test 1 The highest score	Sampling test 1 The lowest score	Sampling test 1 Mean	Sampling test 1 Pass rate	sampling test 1 Standard Deviation
1	87.0	15.0	46.6	21.6%	15.7
2	78.0	20.0	44.3	20.0%	16.3
3	81.0	17.0	45.6	16.3%	0.1
4	76.0	21.0	38.5	9.1%	12.8
5	78.0	25.0	54.8	40.4%	12.2
6	83.0	46.0	71.2	88.9%	8.9
7	83.0	42.0	67.4	77.0%	8.7
8	77.0	27.0	56.9	96.0%	6.7
9	84.0	30.0	59.9	50.0%	12.8
10	70.5	26.5	48.1	17.1%	11.4
11	57.5	11.0	28.2	0.0%	9.9
12	98.0	8.0	75.8	85.4%	18.2
13	86.0	19.0	62.6	65.6%	15.5
14	88.0	13.0	38.2	10.8%	16.8
15	85.0	41.0	70.3	86.0%	9.2
16	81.0	25.0	54.9	38.3%	12.2
17	79.5	20.0	56.2	45.8%	13.5
18	83.5	39.0	75.8	92.7%	10.9
19	95.0	60.0	77.4	100.0%	9.9
20	91.0	61.0	76.9	100.0%	7.5

Table 2. Data related to the scores of the other 20 sample test courses of the 20 secondary vocational school and higher vocational colleges connecting classes from 2017 to 2018

Class Num.	Sampling test 2 The highest score	Sampling test 2 The lowest score	Sampling test 2 Mean	Sampling test 2 Pass rate	sampling test 2 Standard Deviation
1	71.0	32.0	46.9	8.3%	8.3
2	66.5	23.0	43.3	9.1%	9.5
3	71.0	20.0	44.8	8.3%	11.3
4	82.0	16.0	51.2	39.3%	0.2
5	94.0	27.0	77.6	91.5%	12.5
6	75.0	41.0	65.4	80.8%	8.7
7	89.0	74.0	83.0	100.0%	3.5
8	99.0	17.0	68.4	79.2%	19.5
9	65.0	31.0	46.8	4.2%	7.6
10	60.5	24.0	42.4	2.5%	8.7
11	65.0	10.0	37.3	6.7%	13.8
12	98.0	58.0	81.4	97.8%	10.1
13	96.0	5.0	69.5	77.8%	21.0
14	98.0	18.0	52.8	31.9%	19.1
15	72.0	25.0	58.6	62.0%	12.1
16	96.0	10.0	69.9	79.8%	14.7
17	95.0	24.0	72.4	87.5%	13.3
18	89.0	48.0	83.2	97.5%	6.8
19	95.0	78.0	86.3	100.0%	3.8
20	85.0	30.0	68.2	81.0%	11.8

Table 3. Data related to the test results of the entrance examination of the 20 secondary vocational school and higher vocational colleges connecting classes from 2017 to 2018

Class Num.	The Highest Score	The Lowest Score	Mean	Pass Rate	Standard Deviation
1	77.0	12.6	53.9	34.3%	14.0
2	83.2	30.1	52.6	27.2%	12.0
3	85.6	16.4	62.0	66.7%	16.0
4	82.5	22.0	49.1	13.0%	12.9
5	89.0	30.0	58.0	38.3%	10.5
6	82.5	39.0	73.8	97.1%	7.4
7	80.5	61.5	75.0	100.0%	4.1
8	85.0	57.0	74.9	97.6%	6.4
9	86.0	42.0	72.4	96.0%	7.8
10	92.5	55.0	71.6	90.7%	8.9
11	88.7	33.1	67.0	77.0%	12.0
12	82.2	18.6	59.8	67.3%	17.4
13	100.0	70.5	89.4	100.0%	6.1
14	86.9	18.3	62.8	72.0%	20.2
15	95.0	2.0	58.4	48.8%	17.4
16	81.0	43.0	67.6	85.0%	7.9
17	77.0	10.0	55.4	35.3%	8.7
18	94.0	25.0	69.1	64.6%	19.1
19	92.5	78.5	85.4	100.0%	3.5
20	97.0	69.0	87.0	100.0%	6.2

3.3. Problems Reflected

(1) There is a big gap in the academic level of the secondary vocational schools' secondary and high vocational title succession students, and the overall level is not high

Judging from the difference between the highest score and the lowest score in the sample test and selection test of a class, there is a large gap in the academic level of students in the secondary vocational school who are connected to the class, and the largest gap between the highest score and the lowest score is up to 80 points. The mean score of sampling test and selection test in some classes is lower than 60, indicating that the students' mastery of knowledge points and skill points in sampling test course cannot reach a high level. Compared with the students from universal high school, the students from secondary vocational school have poor learning autonomy. As a result, he is not active in systematic knowledge learning and does not have good classroom discipline. In the process of teaching, it is easy to put forward problems beyond the scope of the textbook. When transferred to higher vocational colleges, the gap between them and students of general high school in terms of learning habits and systematic knowledge becomes more prominent. Some teachers in higher vocational colleges who are responsible for the course teaching of connecting classes report that they do not know how to teach these students and feel anxious.

(2) Higher vocational majors do not have a good understanding of the academic level of students who are connected with secondary vocational majors

In the actual work, the connection between high and middle vocational colleges is not fully implemented at the micro level. Although some achievements have been achieved through years of practice, it is difficult to carry out many specific links due to the lack of communication with secondary vocational schools and the imbalance of teaching resources. The concrete performance is in the training goal level localization is not clear, the specialized aspect width is not narrow, the training program appearance is not identical, the curriculum

standard cannot carry out, the training quality lacks to follow up and so on. For students, due to the high proportion of transfer examination and admission, low elimination rate, learning interest and initiative can not be fully mobilized, lack of a benign learning competitive environment.

(3) The results of sampling and selection examinations cannot effectively reflect the real level of students

Since the test paper and selection examination paper are dominated by the higher vocational specialty, the knowledge points and skill points that the higher vocational specialty thinks need to be examined may not be taught in the secondary vocational school, so the average score of the test course is below 60 points. According to statistics, such courses account for a large proportion. If the average score is below 60, it means that most students' test results are not ideal, and the content of the test is likely to be out of touch with the teaching content. Therefore, the real level of students cannot be tested through the test and selection test.

4. The Construction of the Integrated Five-year Vocational Education Transfer Period Assessment and Selection Index System

Key performance indicators (KPI) are a performance appraisal tool for modern enterprises to formulate and gradually achieve their strategic goals. They are a project that can turn strategy into actions and results, that is, transform enterprise strategy into internal operation processes and activities. In addition to the internal performance management of enterprises, KPI is also gradually adopted by institutions such as universities and colleges, for example, it is used in the work performance assessment of university teachers, scientific research performance management, second-level college management, performance evaluation of administrative personnel, performance evaluation of university students' entrepreneurial enterprises and other fields.

Turn key period of assessment of the selection index determination of kpis should be based on a lot higher in related data analysis, the assessment of the two sides according to the actual situation after full communication selected multidimensional turn the key period of assessment selection index, then transfer the key to choose evaluation selection index refinement into the next level index, index of all items must be around in the integration of vocational quality development goals.

4.1. Determine Key Transition Assessment Selection Indicators (KPI)

In general, the main factors affecting the integrated development of middle and higher vocational colleges include the basic quality of students, the enrollment situation, the quality of students, the quality of talent training, and the teaching management. From these six basic dimensions, key assessment and selection indicators (kPI) are extracted, as shown in table 4:

Table 4. Evaluation and selection indicators (KPI) of key transition period for the integration of secondary vocational school and higher vocational colleges

The Object of KPI	KPI Num	Major Factors	KPI
Selecting Students	1	Basic Quality of Students	Morality of Students
	2		Academic Level of Students
	3		Physical Condition of Students
Assessment of Speciality	4	Enrollment	Average Score for Enrollment
	5		Enrollment Completion Rate
	6	Completion of the Transfer Plan	Attrition Rate
	7		Enrollment Rate of Transferring to Higher Vocational Colleges
	8	Development of Students	The Number of Students Awarded in the Professional Skill Competition
	9		The Number of Students Awarded in Various Comprehensive Quality competition
	10		The Number of Students Entering Colleges through a Separate Examination
	11		The Number of Students Recommended by Secondary Vocational School
	12	The Status of Integrated Education	Jointly Formulate the Talent Training Program
	13		Strictly Implement the Talent Training program
	14		Satisfaction Evaluation of Higher Vocational Specialties in Connecting with Secondary Vocational Specialties
	15		Communication status of middle and higher vocational schools
	16	Management of Teaching	Timely Submission of Materials
	17		Accuracy of submission
	18		Completeness of materials submitted

4.2. Set the Weight and Score Values of the Selection Indicators for the Key Turn Section Assessment

Turn key period of assessment of the selection index is determined, index weights and scores Settings will take higher vocational and professional, head of the department, professional technical secondary school leaders, teachers' representative, grade cooperation units, on behalf of the brainstorming method, measure average, every index of the judgment matrix is then used to calculate the weight ratio of the difference is asked to calculate the average weight, big difference of fine-tuning again, mainly to the weighting of six dimensions of KPI, as shown in table 5:

Table 5. Six- Dimension Weight (score) Allocation

Dimension KPI Index Weight	KPI	Weight (score)
Dimension1: Basic Quality of Students	1-3	A%(A1+A2+A3)
Dimension2: Enrollment	4-5	B%(B1+B2)
Dimension3: Completion of the Transfer Plan	6-7	C%(C1+C2)
Dimension4: Development of Students	8-11	D%(D1+D2+D3+D4)
Dimension5: The Status of Integrated Education	12-15	E%(E1+E2+E3+E4)
Dimension6: Management of Teaching	16-18	F%(F1+F2+F3)

4.3. Run the Evaluation and Selection Index System for Key Segments

According to the key transfer section assessment and selection indicators (kpis) determined and the weight and score values set, a selection and evaluation table was made to connect the assessment and selection of secondary transfer section. The management department of higher vocational colleges shall organize the leaders of departments, professional leaders, teachers' representatives, and representatives of cooperative units to score the scores, and then evaluate the assessment grade according to the total score of the assessment (see table 6 and table 7). Finally, higher vocational colleges according to the assessment level to determine the transition rate.

Table 6. KPI Assessment and Evaluation of Six Dimensions of Secondary Vocational Specialties

Specialties	KPI (1-3) (Scores)	KPI (4-5) (Scores)	KPI (6-7) (Scores)	KPI (8-11) (Scores)	KPI (11-14) (Scores)	KPI (12-15) (Scores)	KPI (16-18) (Scores)
Specialty 1	a1	b1	c1	d1	e1	f1	g1
Specialty 2	a2	b2	c2	d2	e2	f2	g2
Specialty 3	a3	b3	c3	d3	e3	f3	g3
Specialty 4	a4	b4	c4	d4	e4	f4	g4
Specialty 5	a5	b5	c5	d5	e5	f5	g5
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Table 7. Statistical Evaluation and Selection Results of Transition Section of Secondary Vocational school

Specialties	Specialty 1	Specialty 2	Specialty 3	Specialty 4	Specialty 5
KPI Total Score (Weight70%)	a1+...+g1	a2+...+g2	a3+...+g3	a4+...+g4	a5+...+g5
KPI Ranking	A	B	C	D	E
KPI Single Ranking	a1...	a2...	a3...	a4...	a5...
Qualitative Assensment (Weight 30%)	S1	S2	S3	S4	S5
Performance Assessment Score	S1+KPI(1)	S2+KPI(2)	S3+KPI(3)	S4+KPI(4)	S5+KPI(5)
Assessment Level	Excellent	Good	Medium	Pass	Failed

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