

Quality Evaluation of Primary Education (General Subject Teacher) Professional Students

-- Based on the Enrollment Data of Chongqing University of Arts and Science for Primary School General Subject Teacher from 2014 to 2021

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Abstract: In view of the "teacher fever" in China in recent years, this paper analyzes the quality of the primary education (general subject teacher) major of Chongqing University of Arts and Science from 2014 to 2021, the ratio method (the ratio of the lowest admission score to the provincial control line) was used to assign points for the quality evaluation of individual students, and SPSSAU was used to conduct relevant data analysis. According to the analysis, the quality of students of primary school general subject teacher major from 2014 to 2021 shows a trend of gradual increase, indicating that the training plan of primary school general subject teacher is attracting more and more attention and attention from examinees, parents and society, and has become an important choice for more and more college entrance examination students and families.

Keywords: General teachers, Primary education, Quality of students, Enrollment data.

1. Introduction

In recent years, the training plan for primary school teachers, which is related to the implementation of the rural revitalization strategy, has attracted much attention. Primary school general subject teachers are the important support for rural education to relieve the teacher dilemma faced by rural education. In 2006, Hunan province took the lead in launching a special program to train rural primary school teachers. In 2012 and 2018, the Ministry of Education and other ministries and commissions jointly issued the Opinions on Vigorously Promoting the Construction of Rural Compulsory Education Teachers and the Action Plan for the Revitalization of Teacher Education (2018-2022), which promoted the nationwide implementation of the training plan for primary school general education through various means such as government-funded targeted training and refunding of fees upon Posting. Training and supplementing rural primary school teachers of general subjects, training and supplementing rural junior high school teachers of one specialty and multiple abilities. [1-2]

The quality of students affects the quality of talent cultivation and the survival and development of colleges and universities. Under the background of the new college entrance examination reform, how to stabilize the quality of students has become an important factor for the survival and development of colleges and universities. Taking the student quality analysis of Chongqing University of Arts and Sciences as an example, this paper makes an in-depth analysis of the student quality changes of the major in each year by analyzing the student quality of the major from 2014 to 2021.

2. Data and Method

2.1. Research Data Sources

The relevant data of this paper are from the undergraduate

enrollment data of primary Education (General subject teacher) major of Chongqing University of Arts and Sciences from 2014 to 2021. [3]

2.2. Statistical Analysis Method

Excel is used for data processing, and SPSSAU is used for descriptive statistical Analysis and Analysis of Variance (ANOVA for short) for research data. [4-5]

2.3. Methods of Quality Evaluation of Individual Students

The theoretical hypothesis of this study is that the higher the minimum admission score is, the higher the quality of individual students will be. The annual provincial control line and the minimum admission score are dynamic and not comparable, so the ratio method is used for relevant evaluation. Calculation method: The ratio of the lowest admission score to the provincial control line of the year is used to assign the score to the quality of the student. Finally, the variance analysis of the difference between the maximum score and the lowest score in the actual enrollment of arts and sciences and the provincial control line is used to deeply analyze the changes in the quality of students. [3]

3. The Results of The Study

3.1. Primary School General Subject Teacher Professional Student Source Situation

Chongqing University of Arts and Science primary Education (General subject teacher) major is only open to students from Chongqing. The enrolled students enjoy "tuition free, accommodation free, subsidized living expenses" and other relevant policies. After graduation, they will be recruited to teach in schools of signed districts and counties through special recruitment. General subject teachers of rural primary schools will teach in primary

schools of rural towns and townships and below. From 2014 to 2021, our school enrolled a total of 1120 primary school general subject teachers. The annual enrollment number is the quota set by the Education Commission and the target for each district and county. Among them, the quota of liberal arts and science (poor) is the quota set by the Education Commission for poor students. Specific data are shown in Table 1 below.

Table 1. Source of students of primary school general Subject Teacher major from 2014 to 2021

year	enrollment				
	Total	Science	Science (poverty)	Liberal arts	Liberal arts (Poverty)
2014	60	28	2	29	1
2015	60	41	1	17	1
2016	230	161	0	69	0
2017	230	143	18	60	9
2018	180	110	15	47	8
2019	180	109	17	47	7
2020	130	78	13	33	6
2021	50	27	3	18	2

3.2. Quality Evaluation of Primary School General Subject Teachers' Professional Students

3.2.1. Quality Evaluation and Analysis of Primary School General Subject Teachers

The research results show that the ratio of the minimum admission score to the provincial control line of primary school general subject teacher in our school from 2014 to 2021, namely, individual student quality score (minimum score assigned), is tested by single sample T to see whether the two items, the lowest score assigned to science and the lowest score assigned to arts, are obviously different from the figure 0.0. [6] The lowest scores of science and arts were significant ($P < 0.05$), which means that the average values of the two items, namely the lowest score assigned to science and the lowest score assigned to arts, are statistically different from the number 0.0. The research results show that there are two items: the lowest score assigned to science and the lowest score assigned to arts, and their average value is significantly higher than the figure 0.0, with a statistical difference. There is a significant difference in the quality level of individual students, indicating that the quality of students is steadily improving. See Table 2 for specific data.

Table 2. T test of student quality of primary school general subject teacher from 2014 to 2021

Name	Sample size	Minimum	Maximum	Average	Standard deviation	t	p
Science is assigned the lowest score	8	0.991	1.287	1.146	0.106	30.675	0.000**
The lowest score for arts is assigned	8	1.010	1.243	1.147	0.087	37.249	0.000**

* $p < 0.05$ ** $p < 0.01$

If the display shows a significant difference ($P < 0.05$), specific differences can be compared through average value, and Effect size can also be used to study the difference amplitude; Cohen's D value was used to represent the effect size (difference magnitude), and the larger the value was, the greater the difference was. When Cohen's D value was used

to represent large effect size in the single sample T test, the critical points of small, medium and large effect size were 0.20, 0.50 and 0.80, respectively. Cohen's d value calculation formula is the absolute value/standard deviation of the difference, and the specific data is shown in Table 3 below.

Table 3. An in-depth analysis of the quality of primary school teachers' professional students - effect size index

Name	Average	Comparing the digital	difference	difference 95% CI	df	Standard deviation	Cohen's d value
Science is assigned the lowest score	1.146	0.000	1.146	1.057 ~ 1.234	7	0.106	10.845
The lowest score for arts is assigned	1.147	0.000	1.147	1.074 ~ 1.219	7	0.087	13.169

3.2.2. Comparative Analysis on The Quality of Primary School General Subject Teachers in Different Years

ANOVA method was used to conduct one-way ANOVA analysis on student quality of primary school general subject teachers in different years to study the differences of two items, namely, the lowest score assigned to science and the lowest score assigned to liberal arts. The research results

show that from 2014 to 2021, there is no significant difference in the lowest score assigned to science and the lowest score assigned to liberal arts by the samples of primary school general subject teachers in different years, indicating that the minimum score of liberal arts and science admission shows a gradual upward trend. [7] See Table 4 for specific data.

Table 4. Quality variance analysis of primary school general subject teachers

Year (mean)	2014	2015	2016	2017	2018	2019	2020	2021
Science is assigned the lowest score	0.99	1.00	1.11	1.16	1.18	1.20	1.23	1.29
The lowest score for arts is assigned	1.01	1.02	1.17	1.15	1.20	1.17	1.22	1.24

Through further analysis of the quality of students of primary school general teacher major in each year, ANOVA comparison of minimum score assignment of science in each year, ANOVA comparison of minimum score assignment of liberal arts in each year, all analysis pairs in each year are shown in figure 1, 2 and 3. The analysis results show that: The minimum score of science in all years of primary school

general teacher majors showed an overall upward trend, while the minimum score of liberal arts in 2017 and 2019 decreased slightly compared with the previous year, but showed an overall upward trend, indicating that the quality of both liberal arts and science students is steadily improving, and the quality of science students is slightly higher than that of liberal arts.

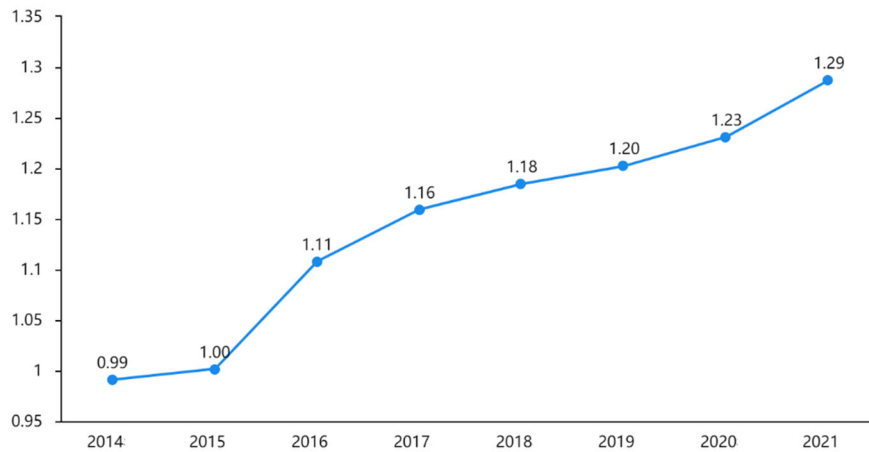


Figure 1. Comparison of ANOVA between year and science

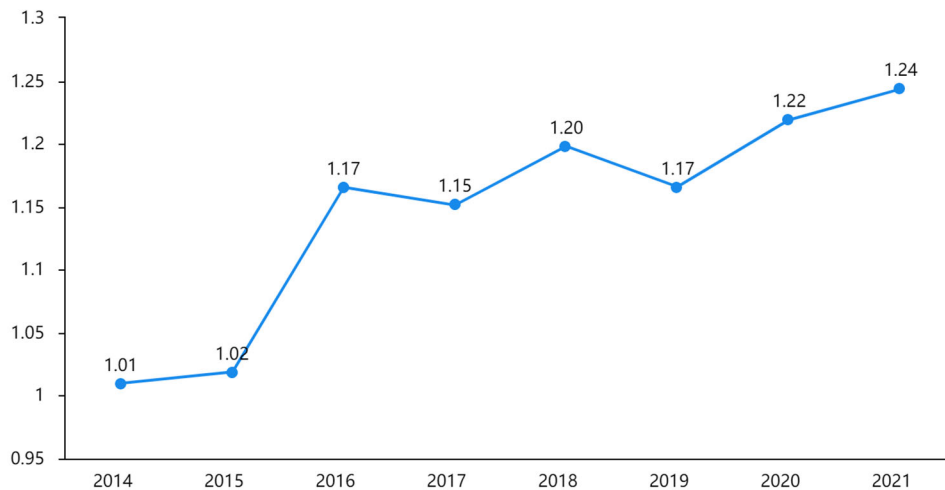


Figure 2. ANOVA comparison of year and arts lowest score

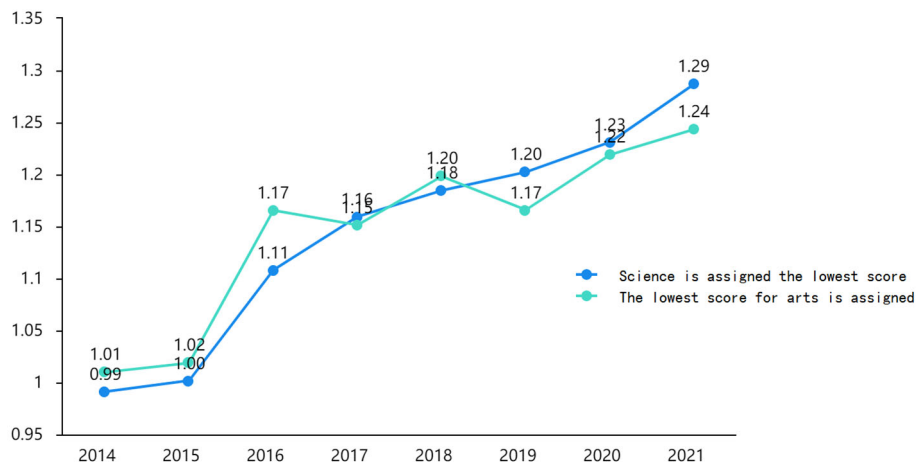


Figure 3. Year and all term ANOVA comparison chart

In ANOVA, partial Eta square is used to represent the effect size (the magnitude of the difference), and the larger the value

is, the greater the difference is. Partial Eta square value is calculated by SSB/SST . In ANOVA, Cohen's F can also be

used to represent the effect size, which is calculated by $\sqrt{\text{partial Eta squared}/(1-\text{partial Eta squared})}$. The analysis results show that the quality of primary school general

teachers majoring in arts and science has been steadily increasing at the same time. See Table 5 for specific data.

Table 5. An in-depth analysis of the quality of primary school teachers' professional students - effect size index

Analysis of item	SSB(Difference between groups)	SST(Total deviation)	Partial Eta party (Partial η^2)	Cohen's f value
Science is assigned the lowest score	0.078	0.078	1.000	Infinity
The lowest score for arts is assigned	0.053	0.053	1.000	Infinity

Through to the general elementary school teachers' professional sample for science from 2014 to 2021 different years minimum points assigned and arts minimum points assigned to variance analysis, the analysis results show that

the liberal arts admission minimum points assigned all showed a trend of general rise steadily, science of slightly higher than the liberal arts graduate matriculate quality at the same time, the specific data as shown in the table below 6, 7.

Table 6. Intermediate process value of variance analysis of professional student source of primary school teachers

Items	Differences	Sum of squares	Degrees of freedom	The mean square
Science is assigned the lowest score	Between groups	0.078	7	0.011
	Within the group	0.000	0	null
	Total	0.078	7	
The lowest score for arts is assigned	Between groups	0.053	7	0.008
	Within the group	0.000	0	null
	Total	0.053	7	

Table 7. Results of quality variance analysis of primary school general subject teachers

Year (mean)	Science is assigned the lowest score	The lowest score for arts is assigned
2014	0.99	1.01
2015	1.00	1.02
2016	1.11	1.17
2017	1.16	1.15
2018	1.18	1.20
2019	1.20	1.17
2020	1.23	1.22
2021	1.29	1.24

3.2.3. Analysis on the Difference Between the Highest and Lowest Score of Primary School General Subject Teacher Enrollment and Provincial Control Line

The variance analysis was used to study the differences of four items in the year: the difference between the lowest score of science and the provincial control line, the difference between the highest score of science and the provincial control line, the difference between the lowest score of arts and the provincial control line, and the difference between the highest score of arts and the provincial control line. It can be seen from the table above: The samples in different years show no significant difference in the difference between the lowest and provincial control line of science, the highest and provincial control line of science, the lowest and provincial control line of arts, and the highest and provincial control line of arts. It means that the difference between the lowest and provincial control line for science, the highest and provincial control line for science, the lowest and provincial control line

for arts, and the highest and provincial control line for arts in different years all show consistency without difference. The results show that: Samples of different years for science and provincial lowest point line difference, the highest science and provincial difference control line, arts and provincial lowest differential control line, control line difference are all arts with highest province won't show significant difference, liberal arts admission and minimum points with provincial difference of control line are in rising trend year by year, the overall increase year by year, the professional quality of candidates for admission in Compared with the difference between the highest score of science and the provincial control line, the difference between the highest score of arts and the provincial control line is higher, and the quality of science students is slightly higher than that of arts students. The admission scores of science department increased steadily year by year from the reduced score in 2014, and the highest score was 175 points higher than the provincial control line in 2021. The specific data are shown in Table 8 below.

Table 8. Results of ANOVA between the highest and lowest values and provincial control lines of arts and sciences

Year (mean)	2014	2015	2016	2017	2018	2019	2020	2021
The lowest difference between science and provincial control line	-4.00	1.00	45.00	63.00	79.00	88.00	95.00	128.00
The difference between science and provincial control line is the highest	43.00	43.00	115.00	136.00	147.00	145.00	166.00	175.00
Lowest difference between liberal arts and provincial control line	5.00	10.00	72.00	66.00	86.00	76.00	97.00	111.00
Liberal arts highest and provincial control line difference	49.00	35.00	111.00	110.00	111.00	134.00	158.00	131.00

By comparing the maximum and minimum scores of the actual enrollment of arts and science in each year with the variance analysis of provincial control line assignment, the comparison of all enrollment items in each year with the variance analysis of provincial control line assignment is shown in Figure 4, 5, 6 and 7. The analysis results show that: Liberal arts admission and minimum points with provincial difference of control line are in rising trend year by year, the

overall increase year by year, the admission to the professional quality of students in science points with province arts high compared with control line difference control line difference is higher, liberal arts and the lowest points with provincial difference of control line a little twists and turns, but the overall rise, slightly higher than the liberal arts science students quality. [8]

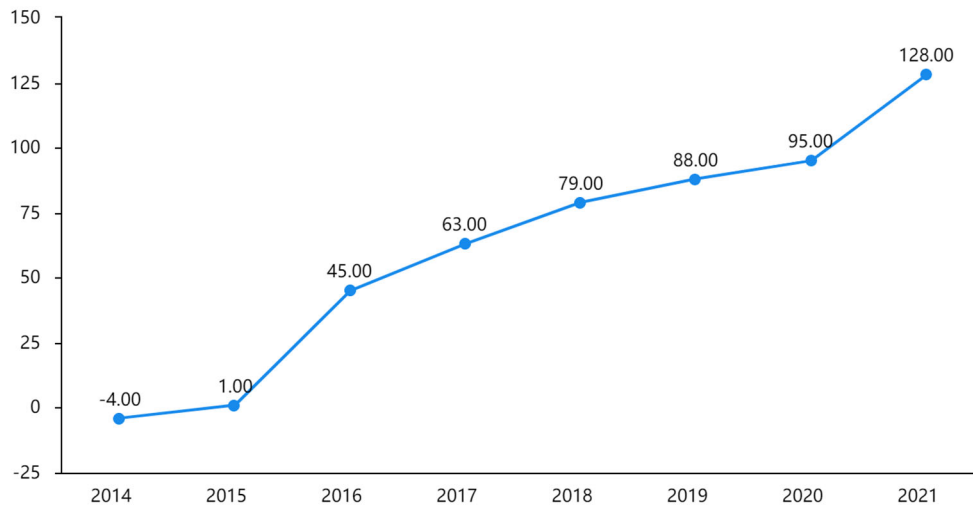


Figure 4. ANOVA chart of difference between minimum score of science and provincial control line

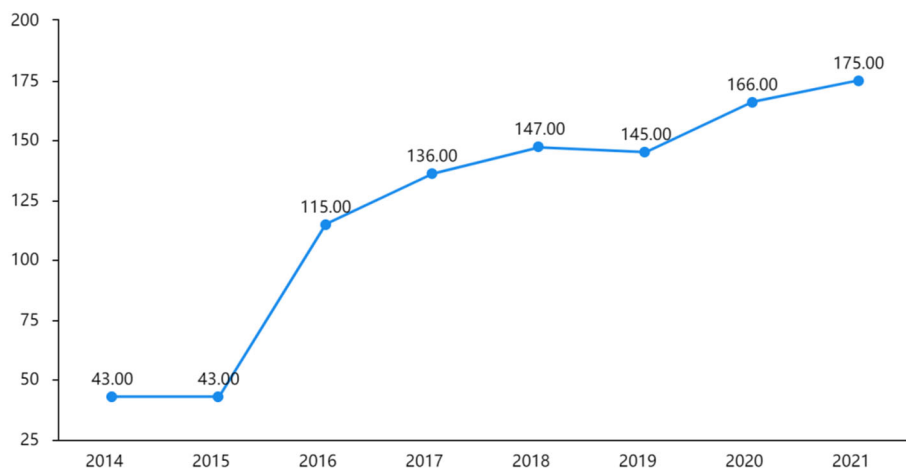


Figure 5. ANOVA diagram of the difference between the highest score of science and provincial control line

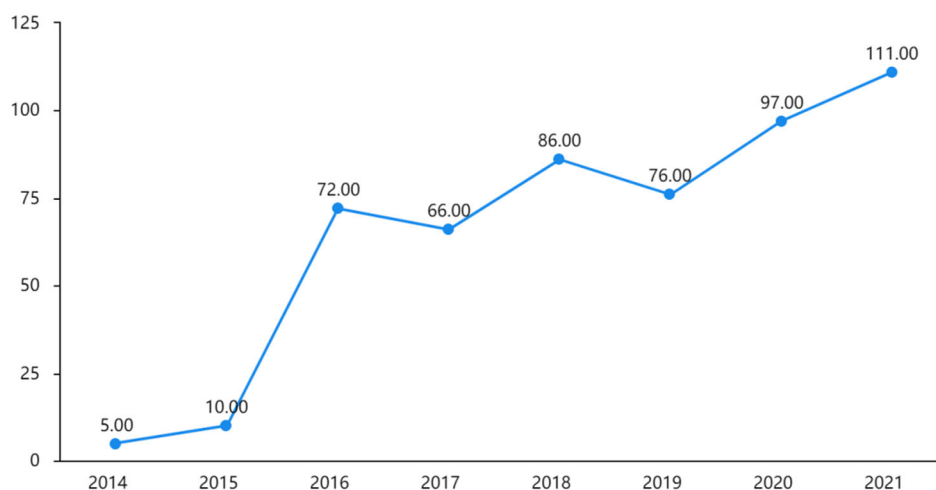


Figure 6. ANOVA chart of difference between liberal arts lowest score and provincial control line

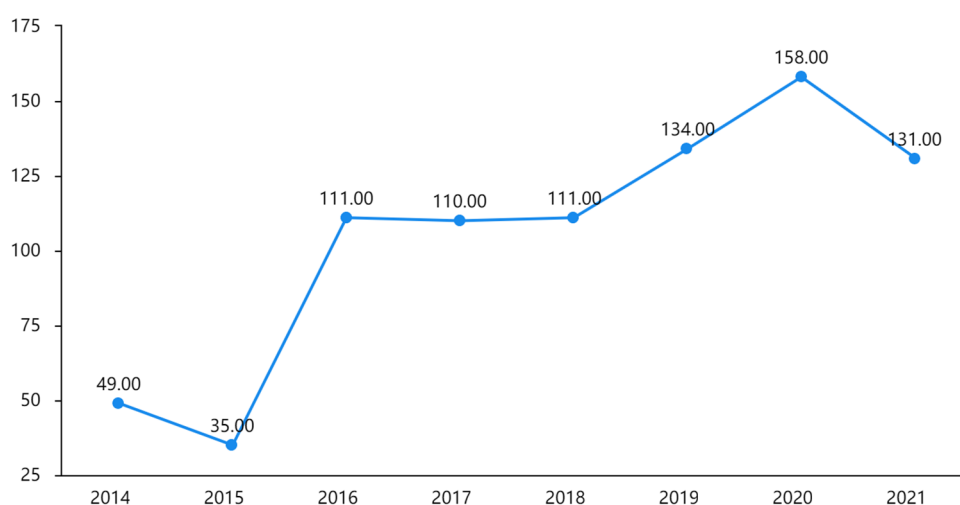


Figure 7. ANOVA diagram of the difference between the highest score in liberal arts and the provincial control line

In ANOVA, partial Eta square is used to represent the effect size (the magnitude of the difference), and the larger the value is, the greater the difference is. Partial Eta square value is calculated by SSB/SST . In ANOVA, Cohen's F can also be used to represent the effect size, which is calculated by $\sqrt{\text{partial Eta squared}/(1-\text{partial Eta squared})}$. Results show that the general elementary school teachers' professional academic enrollment lowest points with

provincial difference control line, admission control lines are in general the difference between the highest and the provinces as well as increased steadily, the quality of liberal arts students are rising steadily at the same time, in which science admission control line biggest difference, the highest and the provinces that science scores, the specific data as shown in the table below 9 or 10.

Table 9. An in-depth analysis of variance of difference between the highest score, lowest score and provincial control line for arts and science - effect size index

Analysis of item	SSB(Difference between groups)	SST(Total deviation)	Partial Eta party (Partial η^2)	Cohen's f value
The lowest difference between science and provincial control line	14776.875	14776.875	1.000	Infinity
The lowest difference between science and provincial control line	18621.500	18621.500	1.000	Infinity
Lowest difference between liberal arts and provincial control line	10375.875	10375.875	1.000	Infinity
Liberal arts highest and provincial control line difference	12458.875	12458.875	1.000	Infinity

Table 10. Results of variance analysis of the difference between the highest score, lowest score and provincial control line of arts and science

Year	The lowest difference between science and provincial control line	The difference between science and provincial control line is the highest	Lowest difference between liberal arts and provincial control line	Liberal arts highest and provincial control line difference
2014	-4.00	43.00	5.00	49.00
2015	1.00	43.00	10.00	35.00
2016	45.00	115.00	72.00	111.00
2017	63.00	136.00	66.00	110.00
2018	79.00	147.00	86.00	111.00
2019	88.00	145.00	76.00	134.00
2020	95.00	166.00	97.00	158.00
2021	128.00	175.00	111.00	131.00

4. Conclusion

Based on the analysis of the quality of primary education (General subject teacher) major in Chongqing University of Arts and Science from 2014 to 2021, it can be seen from the above data that the quality of primary school general subject teacher continues to improve steadily, indicating that the training plan for primary school general subject teacher is attracting more and more attention from examinees, parents and the society. It has become an important choice for more and more gaokao students and families. Investigate its reason, at least you can get the following enlightenment: first, the state attaches great importance to the education, government spending on education to improve year by year, every year teachers is relatively stable, income also increased year by year, teacher's stability, the happiness index in the ascent, it is indisputable fact that, is attracting more and more students to enter oneself for an examination professional "hardcore" reason of teachers; Second, due to the specialty of primary school general subject teachers, enrolled students enjoy "tuition free, accommodation free, subsidies for living expenses" and other relevant policies. After graduation, they will be recruited to teach in schools of signed districts and counties through special recruitment. Rural primary school teachers to teach in rural villages and towns and below primary schools, not only can reduce the burden of the family, but also employment security, so this major is favored by more and more candidates; Fourth, people's ideas are changing, as we all know, "teachers are the most glorious career under the sun", "engineers of the human soul", "as the world model, as a teacher", "three feet platform, three inches of tongue, three inches of pen, three thousand peaches and plums; Ten years of trees, ten years of wind, ten years of rain, one hundred thousand beams ", "silkworms to the death of silk, wax torch ashes tears dry", and so on are increasingly popular.

Acknowledgment

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