

**Development of Vocational Readiness of Junior and Senior High School
Students: Through Analysis of Research on Standardization of
Vocational Readiness Test**

Summary

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Research Period

Fiscal 2004 to fiscal 2006

Objective of the Study Research

This report summarizes materials obtained in the process of “research on revising the Vocational Readiness Test,” with a central focus on the analysis of research on standardization. The objective of this research was to prepare a new version of the “Vocational Readiness Test,” which had not been revised since issuance of the second version in 1989. The newly revised third version was published in 2006 as a result of the research. The aim of this report is to summarize data obtained in the research on standardization concerning the vocational interests of about 27,000 junior and senior high school students throughout the country, which was collected in the process of the revision, and to consider the vocational development of junior and senior high school students.

1. Composition of This Report

This report consists of three parts, specifically, Parts I, II and III. In Part I, Chapters 1 to 4 introduce the background, objective, method and results of the revision as well as the content of the “Third Version of the Vocational Readiness Test,” which was completed as a revised version, thereby obtaining an overview of the whole of research relating to the revision of this time.

Parts II and III summarize the results of analysis of data obtained in the research on standardization that was conducted in 2005.

Part II summarizes the results of analysis of test items from various viewpoints. Chapter 5 considers differences among school years and between genders, etc. in terms of vocational interests, basic orientation and the degree of confidence about performing duties, targeting junior high school students, on the basis of the results of Tests A, B and C. Chapter 6 conducts the same analysis as that in Chapter 5, for high school students, and compares junior and senior high school students. Chapter 7 considers differences in the tendency of answers between the third version and the second version of the test, with the use of items chosen in the revision of this time. Chapter 8 examines relationships among the subscales of Tests A, B and C and the disagreement between the results of Test A and Test C. Chapter 9 calculates the difference between points for the category with the highest point and those for the category with the lowest point with respect to each student for each test, and defines the difference as the “degree of differentiation.” Then, the chapter makes comparisons of the “degree of differentiation” between school years and between genders. Chapter 10 considers what can be known from the results of analysis of data on standardization with respect to “special

tabulation” part, which is prepared for deeper interpretation of the test results.

Part III looks at the relationships between courses to which students belong and answers to the test items and questionnaire items (favorite subjects, least favorite subjects, degree of preparedness for career), which students were asked to answer together with the test items at the time of standardization. Chapter 11 considers differences in vocational interests, basic orientation and the degree of confidence about performing duties depending on the course to which a student belongs, targeting high school students. Chapter 12 considers, targeting junior and senior high school students, the relationships between favorite/less favorite subjects at school and vocational interests. Chapter 13 examines how answers to the question, “how much do you think about future career path and work,” relate to the “degree of differentiation.”

Statistical materials calculated in preparation for the revision and informative basic materials are placed together in the appendix at the end of this report.

2. Method of Research

(1) Research Targets

At the time of research on standardization, we could obtain cooperation from 38 junior high schools and 62 senior high schools nationwide. The breakdown of research targets by the school year of junior and senior high schools and by gender is as shown in Figure 1. For junior high schools, we took samples from schools with 300 or more students and those with less than 300 students. For senior high schools, we took samples from schools in the following seven curriculum categories: (1) general studies with matriculation rate of less than 70%, (2) general studies with matriculation rate of 70% or more, (3) agriculture/fisheries, (4) industrial arts/information sciences, (5) business, (6) home economics/nursing/social welfare and (7) other/integrated courses.

Figure 1 Breakdown of Research Targets

		Total	Males	Females
Total of junior and senior high school students		27,092	13,675	13,417
Junior high school students	Total	10,966	5,596	5,370
	1st year	3,721	1,905	1,816
	2nd year	3,616	1,825	1,791
	3rd year	3,629	1,866	1,763
Senior high school students	Total	17,104	8,409	8,695
	1st year	6,561	3,244	3,317
	2nd year	6,584	3,185	3,399
	3rd year	3,959	1,980	1,979

(2) Questionnaire

We prepared a questionnaire for standardization consisting of three parts, specifically, Test A (vocational interests), Test B (basic orientation) and Test C (degree of confidence about performing duties). These three tests constitute the “Vocational Readiness Test.” The number of items in Tests A and C is 72 while the number of those in Test B is 96. In addition, at the end of the questionnaire, we asked students to answer the following questions: (1) What professions do you want to try in the future? (up to three answers; free answer); (2) What are your favorite and least favorite subjects among those you learn at school? (selective and free answer); (3) To what extent have you decided your future career path?; (4) How much do you think about your future work?

3. Main Analysis Results

(1) Vocational Readiness Seen from Vocational Interests, Basic Orientation and the Degree of Confidence about Performing Duties

In the “Vocational Readiness Test,” the results of Tests A and C are organized based on Holland’s six categories of vocational interests (RIASEC), and each category includes nine items. In addition, Test B has the following three subscales as basic orientation: data orientation (orientation D), people orientation (orientation P) and thing orientation (orientation T). In Test A, students evaluate the degree of interest in the stated duties on a scale of zero to two, while in Test C, students evaluate the degree of confidence about performing the stated duties well on the same scale. In respective tests, students rate the degree of interest and confidence as zero, one or two points. Then, the average of the total of points (up to 18 points) was calculated with respect to each category. In Test B, students are asked to answer whether or not various actions in daily life fit them. Then, a “yes” answer was counted as one point. The total of points for 24 items was averaged with respect to orientation D and orientation P while the total of points for 16

items was averaged for orientation T. Figure 2 shows the results of these tests as mentioned above by the school year of junior and senior high schools. In addition, Figure 3 shows the result of calculation of the mean and standard deviation with respect to each scale by gender.

Figure 2 Mean (M) and Standard Deviation (SD) with Respect to Each Scale by the School Year of Junior and Senior High Schools

Name of test	Scale	Junior high school students						Senior high school students					
		1st year (n=3,721)		2nd year (n=3,616)		3rd year (n=3,629)		1st year (n=6,561)		2nd year (n=6,584)		3rd year (n=3,959)	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Test A	R	5.29	4.90	5.48	5.03	5.66	5.09	5.48	5.02	5.28	5.00	5.81	5.19
	I	5.15	4.81	4.87	4.79	4.80	4.80	4.17	4.52	4.18	4.59	4.27	4.60
	A	6.94	4.89	6.81	4.85	6.72	4.70	6.53	4.68	6.35	4.65	6.37	4.69
	S	6.28	4.69	6.38	4.52	6.66	4.67	6.51	4.63	6.54	4.65	6.83	4.70
	E	6.27	4.35	6.33	4.31	6.43	4.47	6.05	4.38	5.85	4.32	6.07	4.44
	C	4.66	4.25	4.89	4.36	5.38	4.52	5.26	4.56	4.90	4.44	5.34	4.57
Test B	D	10.12	4.99	10.18	5.03	10.41	4.90	10.15	4.96	10.48	4.97	11.26	4.89
	P	15.19	4.96	14.69	5.08	14.67	5.10	14.45	5.00	14.15	5.10	14.52	5.02
	T	7.92	3.83	7.36	3.89	7.22	3.84	7.07	3.86	7.16	3.85	7.62	3.88
Test C	R	5.16	4.96	5.26	5.11	5.62	5.22	5.43	5.06	5.34	5.01	5.83	5.27
	I	4.54	4.74	4.27	4.67	4.28	4.73	3.74	4.36	3.79	4.37	3.81	4.41
	A	6.09	4.74	5.71	4.54	5.41	4.39	5.20	4.34	4.87	4.18	4.90	4.25
	S	6.29	4.72	6.42	4.61	6.81	4.69	6.66	4.68	6.85	4.65	7.09	4.78
	E	5.35	4.49	5.19	4.37	5.21	4.44	4.80	4.25	4.67	4.18	4.78	4.28
	C	4.83	4.59	5.19	4.80	5.90	4.95	5.84	4.87	5.83	4.82	6.26	5.00

Note: For Tests A and C (RIASEC), the figure shows the average of the total of points for nine items. For Test B, regarding D and P, the figure shows the average of the total of points for 24 items, respectively, while regarding T, the figure shows the average of the total of points for 16 items.

Figure 3 Mean (M) and Standard Deviation (SD) with Respect to Each Scale by Gender

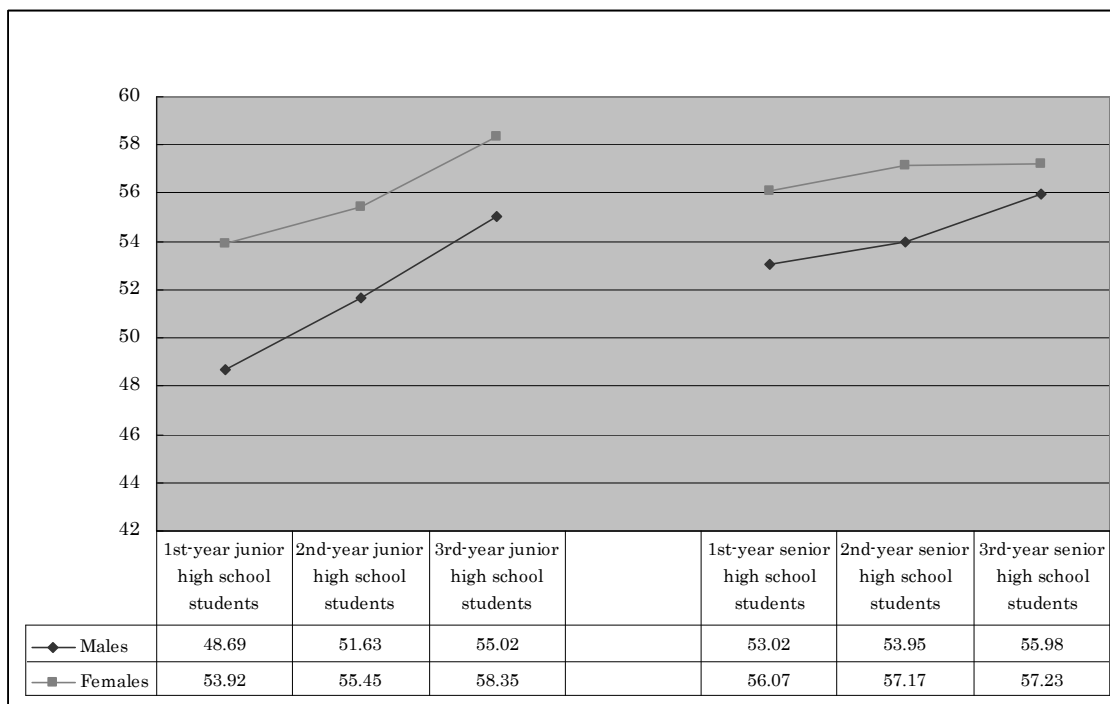
Name of test	Scale	Junior high school students (by gender)				Senior high school students (by gender)			
		Male (n=5,596)		Female (n=5,370)		Male (n=8,409)		Female (n=8,695)	
		M	SD	M	SD	M	SD	M	SD
Test A	R	8.13	4.86	2.71	3.40	8.08	4.98	2.96	3.66
	I	6.39	4.95	3.43	4.13	5.37	4.78	3.06	4.04
	A	5.23	4.26	8.48	4.80	5.62	4.41	7.20	4.78
	S	4.60	3.90	8.35	4.56	4.98	4.14	8.16	4.59
	E	6.49	4.49	6.19	4.26	6.21	4.47	5.75	4.27
	C	4.88	4.33	5.07	4.45	4.79	4.33	5.48	4.67
Test B	D	9.98	5.19	10.50	4.72	10.53	5.13	10.54	4.80
	P	13.79	5.27	15.95	4.55	13.42	5.23	15.25	4.69
	T	7.87	3.96	7.13	3.73	7.54	3.96	6.93	3.78
Test C	R	8.04	5.05	2.54	3.33	8.12	5.05	2.95	3.63
	I	5.79	5.00	2.88	3.88	4.95	4.70	2.64	3.70
	A	4.60	4.16	6.93	4.67	4.62	4.12	5.38	4.36
	S	4.93	4.14	8.14	4.65	5.55	4.40	8.07	4.64
	E	5.56	4.61	4.93	4.23	5.15	4.42	4.36	4.00
	C	5.35	4.86	5.26	4.73	5.69	4.88	6.17	4.87

Chapters 5 and 6 make comparisons of differences in the average depending on the school year and gender, as shown in Figures 1 and 2, respectively for junior and senior high school students. The result showed difference between genders more clearly than difference among school years. In addition, it is interesting that difference between genders was more obvious in vocational interests and the degree of confidence about performing duties than in basic orientation. In other words, it was found that although difference between genders is not so large on the level of behaviors in daily life, from the viewpoint of vocational activities, professions preferred by boys and those preferred by girls have already been clearly divided at the stage of junior high school. Specifically, boys prefer professions using machines or tools like those in category R, or research activities like those in category I and professions relating to management and planning like those in category E while girls prefer professions including lots of personal services like those in category S and professions in the artistic category like those in category A. With respect to basic orientation in daily life, there is not much difference in terms of orientation D. However, we could obtain the result that points for orientation P are higher among girls while those for orientation T are higher among boys.

Chapter 8 examines the relationships between interests (Test A) and confidence (Test C). The examination of the relationships between interests and confidence attached importance also in interpreting the "Vocational Readiness Test." Categories in which interests and confidence accord or do not accord with each other as well as the degree of accord are very important points to be checked. In the past, there was an unspoken understanding in the interpretation of results that students are interested in but do not have confidence in the investigative and artistic categories while they have confidence in but are not interested in the conventional category. The results of this research ended in supporting this interpretation.

In addition, Chapter 7 compares data collected as of the time of the second version of the test and data as of 2005 with respect to high school students, thereby showing decline in interests and confidence in general, in particular, a tendency of declining interests and confidence in the enterprising and conventional categories.

Figure 4 Changes in the Degree of Differentiation of Vocational Interests



(2) Degree of Differentiation with Respect to Each Scale and Changes Thereof by School Year and Gender

In Holland’s theory of vocational interests, the difference between points for the category with the highest points and those for the category with the lowest points in terms of vocational interests is defined as the “degree of differentiation,” and it is considered that the higher the degree of differentiation is, occupational awareness has further developed. Thus, we calculated the degree of differentiation by school, school year and gender with respect to each test, and examined the calculation results. Figure 4 shows the results concerning Test A (vocational interests). Looking at the results for junior and senior high school students together, the degree of differentiation is on an upward trend up to 3rd-year junior high school students. However, the value for 1st-year high school students drops to the extent of the value for 2nd-year junior high school students. Subsequently, the value follows an increasing trend until 3rd-year high school students. This result verified that the concept called the “degree of differentiation,” which is advocated in Holland’s theory, corresponds to vocational interests that developmentally change. By gender, the results indicated that the degree of differentiation was higher for girls than boys.

Chapter 13 in Part III considers the relationships between the level of decision-making on future career path and desired profession, which students think it is

(this is an item prepared as one of the questions at the end of the questionnaire), and the “degree of differentiation” that is actually measured through tests. The degree of differentiation is higher for students who think of their future career path and desired profession than for those who do not think of them. This result supports the propriety of the concept of the “degree of differentiation.” However, regarding answers, “I often think” and “I basically think,” the level of decision-making was not always directly proportional to the level of the degree of differentiation. This result indicated a gap between students’ own recognition and their actual occupational awareness.

(3) Relationships between Courses/Preference in Subjects and Vocational Interests

What are the relationships between the content learned in the learning process at junior and senior high schools and students’ vocational interests measured by the Vocational Readiness Test? In order to clarify this point, Chapters 11 and 12 in Part III analyze the relationships between courses at high schools and the test results, and the relationships between favorite/least favorite subjects and the test results, respectively.

Chapter 11 considers the test results concerning vocational interests, etc. in relation to courses at high schools. It has been confirmed that courses at high schools are strongly linked to students’ vocational interests. The obtained results also indicated relevancy, that is, a good accordance between the characteristics of Holland’s six categories and the content learned in the courses.

Chapter 12 examines the relationships between preference in subjects learned at junior and senior high schools and the results concerning interests, etc. in the Vocational Readiness Test. Looking at the relationships with the types of interests obtained through the Vocational Readiness Test, the characteristics of the types are also apparent in favorite subjects.

4. Conclusion

Looking through the above-mentioned various analyses concerning answers to the Vocational Readiness Test, although scales incorporated in the “Vocational Readiness Test” are designed to measure three things, that is, vocational interests, basic orientation and confidence about performing duties, the results obtained through the test are not just reflecting the level of the scales.

It seems that clues that indicate the relationships with a student’s favorite/least favorite subjects and activities are hiding behind the student’s profile concerning the six categories of vocational interests. In addition, the level of the entire profile, or the degree of differentiation, for a specific student can be read as a material to know the

level of the student's willingness and occupational awareness in comparison to many other students.

Moreover, the fact that differences between genders and among school years were clearly confirmed even for junior high school students supports well the fact that difference between genders in terms of vocational interests and the degree of confidence about performing duties arises even among junior high school students and it develops gradually. According to the Manual, the results of the "Vocational Readiness Test" shall not be interpreted in a fixed manner since the test targets young students, specifically, junior and senior high school students, to gain an understanding of the process in which their vocational interests change. The results obtained in this report are based on empirical understanding of the test results.