

# The Change of Vocational Interests among Junior and High School Students

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## 1. Introduction

Our institute has been engaged in developing and supporting the Vocational Readiness Test (VRT), which for the past 30 years has been widely used as a career-guidance tool in junior and senior high schools nationwide. The first version was developed in 1972 by the National Institute of Employment and Vocational Research, an organization affiliated with the Ministry of Labour (today the Ministry of Health, Labour and Welfare). It was subsequently revised in 1991, but no major reviews have been undertaken since then. However, in the more than 15 years since the last revision, the environment related to young people's career and occupational choice has changed greatly.

The first change was a rise in matriculation rates and the longer period of time spent in school. According to the 2005 edition of the *School Basic Survey*, 97.6 percent of all students who graduated from the compulsory junior high educational curriculum in March 2005 enrolled in senior high or other schools, while the matriculation rate for university or other higher educational institutions was 47.3 percent. Both of these were the highest figures on record. Considering that the rates were 94.7 percent and 30.7 percent, respectively, when the VRT was last revised in 1991, the number of young people entering employment upon high school graduation these days has gradually declined, while the number moving on to higher education has steadily increased (MEXT, 2005).

A second change that can be cited is the rise in the unemployment rate for young people. The percentage of completely unemployed young people rose abruptly among males and females alike from the mid-90s, climbing to 12.8 percent for the 15 to 19 age range by 2002 and 9.8 percent for those aged 20 to 24 by 2003. There have since been slight signs of improvement, but unemployment rates among the young remain at high levels compared to other

age groups. The growing number of *freeters*, young people who remain informally employed after graduation or quit after brief periods of company employment, has also become a problem (MHLW, 2005).

The current situation is such that continuing onto senior high from junior high school has become a matter of course and over 40 percent enroll in university. However, at the same time the likelihood of not being able to enter the work force after graduation is higher than before. In this context, how have the vocational interests of junior and senior high school students changed compared to 15 years ago? If the quality and level of their interest in work have changed, their vocational interests cannot be accurately measured by criteria devised with data collected more than a decade ago.

According to testing standards set forth by the American Psychological Association (APA) 1999, tests need to be reviewed every 10 to 15 years to maintain high reliability, as social conditions change with the passage of time and it is likely that the basic data collected for standardization purposes has also changed. Particularly for assessments such as the VRT, which use profession-specific job content, professions themselves vanish over time and in some cases job content changes substantially even within the same employment category.

With this in mind, in 2003 we began research into revising the VRT, collecting data on young people from the perspective of their vocational interests. In 2005, we gathered data from a total of 27,000 junior and senior high students from around Japan and verified the data's reliability and appropriateness as a standard group (Matsumoto, Muroyama, 2005; Muroyama, Matsumoto, 2005). In a parallel study, we collected VRT data from the past 10 years and analyzed changes in the vocational interests of this age group. By looking at their vocational interests, we could clarify what types of work they currently found interesting, as well as how the work-related interests of students today had changed compared to previous junior and senior high students.

The purpose of this paper is to review the current situation regarding junior and senior high school students' vocational interests, using replies regarding their interest in work from data collected with the VRT.

## **2. Content of Vocational Readiness Test**

The VRT is a vocational interest assessment developed primarily for junior

and senior high students (National Institute of Employment and Vocational Research, 1989). The assessment involves reading a questionnaire and filling in an answer sheet in pencil.

The test is composed of three subordinate criteria: In Test A, answers regarding whether one would like to engage in specific types of work are supplied in response to written descriptions of job content, indicating one of three levels of interest. There are 54 questions in all. For Test B, responses regarding descriptions of various activities in daily life are provided, and

**Table 1. VRT Criteria Overview and Sample Questions**

	Interest themes	Concepts	Sample VRT questions
Tests A and C (using Holland's six interest categories)	1. Realistic	Interested in practical, realistic work and activities, such as operating machines and equipment, making things, and caring for plants and animals	Design furniture, lighting and other facets of a room's interior
	2. Investigative	Interested in research, pondering matters logically, and engaging in investigative work and activities	Scientific research at a university or research lab
	3. Artistic	Interested in music, art, literature, and creative, artistic work and activities	Act out various roles in films or plays
	4. Social	Interested in caring for and assisting people, services and sales, and work and activities involving contact with people	Perform hotel customer services such as reception desk work or providing information
	5. Enterprising	Interested in activities involving planning new enterprises and programs and operating and managing organizations	Manage one's own store
	6. Conventional	Interested in work and activities involving handling matters accurately and properly, according to a set methods	Organize documents using a word processor or PC
Test B (DPT)	Basic Orientation		Q: When you think of travel, you first:
	1. Data	Individual character traits oriented toward handling of various kinds of knowledge, information and concepts	A: Buy and read a travel guide
	2. People	Individual character traits mainly oriented toward activities involving direct contact with people	B: Seek friends to accompany you
	3. Things	Individual character traits oriented toward directly handling "Things" such as machinery, tools and devices	C: Organize the things you will take with you

students can choose one of three possible responses that best fits their situation. There are 18 questions. Test C has the same 54 questions as Test A, but the responses concern whether one has the confidence to be a success at each choice in the future, and the answers are divided into three levels. Table 1 provides examples of items from each test.

The results of Tests A and C are tabulated with points allocated according to the 1992 Holland theory describing six categories of vocational interest (RIASEC). For Test B, points are computed according to three orientations: data, people or things-oriented.

### **3. Standardization Survey Overview**

#### **(1) Objectives**

We conducted research into standardization with the goals of reviewing the assessment categories used up to now, revising portions of the criteria, and creating standards based on new data.

#### **(2) Assessment questions**

We added 18 new questions to the 54 items in the current version of Tests A and C, for a total of 72 questions. Furthermore, we used DPT similar to the current version to get basic orientation frameworks for Test B, but changed the style of the replies, having the students answer whether descriptions of activities in daily life were accurate or not. We prepared 96 questions for Test B. We also asked students to answer questions included at the end of the questionnaire for the purpose of examining correlations with their perceptions of employment, asking about the courses they liked and how much they were thinking about their future career paths.

#### **(3) Methods**

##### **i. Selection of number of schools to participate in survey**

We divided Japan into six regional blocks based on the 2004 *School Basic Survey*. We additionally divided junior high schools into two groups by type—300 or more students and less than 300 students—and determined the number of schools after considering the sizes of the schools in each block around the country. High schools were divided into seven types based on curricula, considering the numerical distributions of the schools and students in determining the number of schools from each block around the country. We set

our data collection targets at a minimum of 6,000 junior high and 8,000 senior high students.<sup>1</sup>

### ii. Selection/recruitment of schools to participate in survey

Based on the numbers of schools by block and type, we first obtained assistance from the ministries of Health, Labour and Welfare (MHLW) and Education, Culture, Sports, Science and Technology (MEXT) in recommending schools that fit the profiles. Then we asked the recommended schools if we could conduct the survey, with all the members of one class from each grade participating, in principle (Table 2).

### iii. Testers

Questionnaires, reply forms, and instruction manuals were sent to participating schools and the surveys were conducted primarily by the career counseling departments at participating schools.

### iv. Survey period: June to August 2005

**Table 2. Distribution of Surveyed Schools**

School/curriculum type		Junior high schools (38)		Senior high schools (58)						
		Less than 300 students	300 or more students	General studies, articulation rate less than 70%	General studies, matriculation rate 70% or more	Agriculture; fisheries	Industrial arts; information science	Business	Home economics; nursing; social welfare	Other integrated studies
Region	Hokkaido/Tohoku	3	3	5	4	0	0	0	1	0
	Kanto	4	6	6	6	1	1	1	2	0
	Tokai/Chubu/Hokuriku	4	4	4	2	1	2	1	0	1
	Kinki	2	4	4	1	0	1	1	1	0
	Chugoku/Shikoku	3	1	2	1	0	0	0	0	0
	Kyushu/Okinawa	1	3	4	2	1	1	0	1	0
Total		17	21	25	16	3	5	3	5	1

<sup>1</sup> The six years of elementary school (ages 7-12) and three years of junior high (13-15) are compulsory under Japan's education system. Enrollment in three-year senior high schools (ages 16-18) involves choosing a school (curriculum) and sitting for an entrance exam.

#### (4) Results

##### i. Current vocational interests of junior and senior high students

Table 3 provides the numerical data gathered by type of school and curriculum. We used the questions in Test A, which gauges vocational interests, to calculate the mean and standard deviation as a way of examining the level of interest in Holland's six scales. Note that for the purposes of comparison with the standardized data from 1991, the same 54 questions as in 1991 were used from among the 2005 data to calculate points by scale. The data tabulation process involved deriving the total points for each of the six scales by scoring two points for "Interested," one point for "Neither," and zero for "Not interested" for the nine questions pertaining to each of the six scales. The point distribution range was 0 to 18. Table 4 provides each scale's average points by school attributes.

Based on school size, there was no large difference in the average of each vocational interest theme among junior high students. However, there appeared to be a slightly larger disparity between areas of high and low interest in schools with 300 or more students compared to those with less than 300. Points also tended to approximate senior high students' inclinations—lower for the realistic, investigative, and conventional themes and higher for the artistic, social and enterprising themes. That fact that interest in themes diverged between high and low itself illustrates the differentiation in interests, as well as the indication of a tendency for individualism to be more pronounced among students the larger the size of the school, was a particularly interesting point.

**Table 3. Number of Students from Which Data Was Collected for Standardization Survey**

Schools	School attributes		Total	Male	Female
Junior high (10,966)	Size	Less than 300 students	2,677	1,394	1,283
		300 or more students	8,289	4,202	4,087
Senior high (16,717)	Curriculum	General studies, matriculation rate under 70%	8,259	3,935	4,324
		General studies, matriculation rate 70% or more	4,441	2,210	2,231
		Agriculture/fisheries	786	429	357
		Industrial arts/information sciences	1,818	1,566	252
		Business	331	52	279
		Home economics/nursing/social welfare	778	8	770
		Other/integrated courses	304	91	213

**Table 4. Test A Interest Theme Averages/Standard Deviations by School Attributes**

School Attributes	Junior high (by size)		Senior high (by curriculum)						
	Less than 300 students (2,677)	300 or more students (8,289)	General studies; matriculation rate under 70% (8,259)	General studies; matriculation rate 70% or more (4,441)	Agriculture; fisheries (786)	Industrial arts; information sciences (1,818)	Business (331)	Home economics; nursing; social welfare (778)	Other; integrated courses (304)
Categories	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
R	6.18 (3.93)	5.90 (3.99)	6.09 (4.24)	5.34 (3.94)	6.90 (4.14)	8.18 (4.25)	5.57 (3.86)	5.58 (3.72)	4.69 (3.75)
I	5.00 (4.67)	4.73 (4.70)	3.61 (4.21)	5.24 (4.94)	3.98 (4.37)	4.90 (4.65)	2.90 (3.59)	2.78 (3.73)	2.39 (3.62)
A	6.30 (4.65)	6.41 (4.65)	5.77 (4.47)	5.83 (4.52)	5.30 (4.05)	5.33 (4.50)	7.44 (4.62)	6.99 (4.44)	5.87 (4.53)
S	6.72 (4.42)	6.80 (4.46)	6.98 (4.36)	6.62 (4.32)	6.47 (4.21)	5.36 (4.12)	8.95 (4.34)	8.76 (4.33)	6.72 (4.26)
E	6.37 (4.35)	6.43 (4.38)	5.91 (4.36)	6.61 (4.58)	5.86 (4.12)	6.21 (4.51)	7.38 (4.18)	6.76 (4.36)	5.80 (4.15)
C	5.08 (4.43)	4.94 (4.37)	4.86 (4.37)	5.05 (4.40)	4.55 (4.12)	4.88 (4.46)	7.64 (4.98)	5.45 (4.61)	4.89 (4.40)

For senior high students, on the other hand, it can be seen that vocational interest theme averages differed substantially depending on the rate at which students in general studies moved on to higher education and curricula. Industrial arts/information sciences scored highest, 8.18, in the Realistic scale, followed by agriculture/fisheries, 6.90. For the Investigative scale, general studies with a matriculation rate of over 70 percent had the highest average, 5.24, followed by industrial arts/information sciences, 4.90. In the artistic/social/enterprising/conventional categories, and business and home economics/nursing/welfare curricula ranked high, in first and second respectively.

The link between the content of what was studied at school and vocational interests was substantiated by the results: Vocations in the Realistic scale — involving handling machines and objects and outdoor activities—were popular among those in industrial arts, information sciences, agriculture and fisheries courses. Interest in investigative themes, which had a low average overall, was high among those in general studies with a high matriculation rate, industrial

arts, and information sciences. The average for the Creative scale, which similarly had a low overall average, was conspicuously high among those in business courses related to white collar, business professions. This could also perhaps be a reflection of students' choices regarding the type of school in which they would enroll, based on their original vocational interests at the time they selected a high school.

The overall averages for junior high students based on school size were R 5.97, I 4.79, A 6.38, S 6.78, E 6.41, and C 4.98, with the social category the highest, followed by E, A, R, C, and I. On the other hand, the overall averages for senior high students based on matriculation rates and courses were R 6.09, I 4.12, A 5.81, S 6.80, E 6.19, and C 4.98. The social category was the highest, followed in order by E, R, A, C, and I. Other than A and R, which were in reverse order compared to junior high students, the order was the same. Junior and senior high students appeared to be interested in professions that incorporate categories S and E and not very interested in those involving C and I.

#### **ii. Comparison of 1991 averages and 2005 data**

Table 5 shows the basic data gathered nationwide for standardization purposes at the time the currently commercially available VRT was devised in 1991 along with data collected in 2005, summarizing the averages and standard deviations for Test A's six interest scales for junior and senior high students. The differences in the averages for interests among junior and senior high students then and can now be compared because the same questions were used to score the 1991 and 2005 data.

First, let us look at how interest rankings have changed. According to the 1991 junior high student data, the averages were E, S, A, C, R, I from top to bottom, and E, S, C, A, R, I for senior high students. In 2005, the ranking was S, E, A, R, C, I for junior high students and S, E, R, A, C, I for senior high students. Scales E and C ranked lower compared to 1991 and scales S and R rose in the standings.

Next, looking at overall point trends, it can be noted that 2005 averages declined overall compared to 1991. Even for scale S, which ranked first in interest compared to 1991, the score was lower than in 1991. Further, looking at scale E, which dropped noticeably lower, the scores were 7.75 and 8.65 for junior and senior high students, respectively, in 1991, but fell substantially to 6.41 and 6.19 in 2005. The declines for scale C were striking, from 6.69 to



4.98 for junior high students and 7.10 to 4.98 for senior high students.

Because the interest averages also serve as indicators reflecting students' feelings regarding work they would like to do, that scores tended to fall in the period of over 10 years from 1991 to 2005 is cause for concern. Interest in enterprising themes, reflecting interest in operating and managing organizations, planning and formulating ideas, and conventional themes related to standard types of professions such as white collar work declined in particular, demonstrating a flagging orientation toward devoting one's self to working in a company or organization. This is conceivably due to the effects of the corporate restructuring and disintegration of the lifetime employment system that occurred at the beginning of the 1990s.

In the following section, we will verify whether this drop in the averages was a trend peculiar to the 2005 data or, on the other hand, whether gradual changes over the past period of more than a decade led to these kinds of results.

**Table 5. Comparison of 1991 and 2005 Data for Vocational Interest Test A**

Interests	1991		2005	
	Junior high students (4,752)	Senior high students (8,489)	Junior high students (10,966)	Senior high students (16,717)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
R	5.87 (3.72)	6.32 (3.91)	5.97 (3.98)	6.09 (4.20)
I	4.96 (4.83)	4.74 (4.81)	4.79 (4.69)	4.12 (4.51)
A	6.99 (4.70)	7.09 (4.72)	6.38 (4.65)	5.81 (4.49)
S	7.19 (4.46)	7.36 (4.40)	6.78 (4.45)	6.80 (4.37)
E	7.75 (4.47)	8.65 (4.59)	6.41 (4.38)	6.19 (4.43)
C	6.69 (4.76)	7.10 (5.04)	4.98 (4.39)	4.98 (4.42)

#### **4. Overview of Previous Data Accumulated Over 10 Years**

##### **(1) Objectives**

Our goals were to gather data from the current VRT version conducted over the past 10 years, 1995 to 2004, investigate the changes in criteria related to vocational interests, and study changes in junior and senior high students' vocational interests over the years.

##### **(2) Survey questions**

The questions were used from the currently commonly-used Vocational Readiness Test published in 1991.

(3) Methods

We obtained the data for the VRTs conducted from 1995 to 2004 from the organization responsible for processing the VRT scores. At that point, school and individual names had been deleted so that the data could not be used to identify individuals. School attributes (junior or senior high and general studies, business or industrial arts courses), gender and grade appeared for the purposes of data tabulation. It should be noted that these data differed from data gathered for the purposes of standardization and did not always reflect the nationwide distribution of size and courses offered by junior and senior high schools, but we conducted the analyses thinking they could serve as useful references in reviewing the changes in points over the 10-year period. Table 6 shows the composition of the data covered by this analysis.

**Table 6. Data Composition (Number of Subjects) by Fiscal Year**

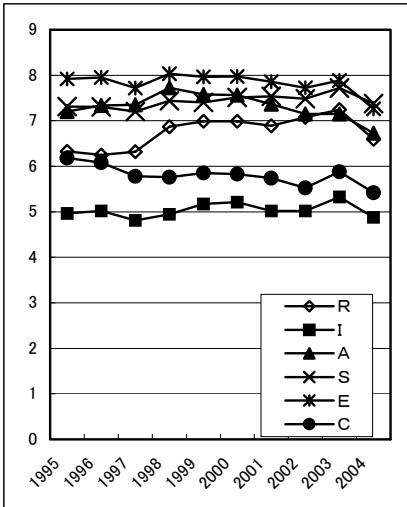
FY	Junior high students			Senior high students								
				General studies			Business			Industrial arts		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1995	11,145	10,201	21,346	16,623	16,366	32,989	3,880	8,372	12,252	59,548	47,387	106,935
1996	8,404	8,335	16,739	14,780	13,592	28,372	3,766	8,898	12,664	52,756	41,830	94,586
1997	8,862	8,628	17,490	11,260	11,618	22,878	3,236	7,193	10,429	49,542	38,662	88,204
1998	8,284	7,457	15,741	11,992	10,655	22,647	2,847	5,855	8,702	47,204	36,043	83,247
1999	4,907	4,206	9,113	6,190	6,174	12,364	1,234	2,947	4,181	25,876	19,939	45,815
2000	7,235	6,428	13,663	10,920	9,015	19,935	2,318	5,740	8,058	40,932	32,971	73,903
2001	6,651	6,137	12,788	9,403	7,956	17,359	2,483	4,944	7,427	39,774	30,153	69,927
2002	7,016	5,978	12,994	8,108	7,194	15,302	2,306	5,110	7,416	37,450	28,634	66,084
2003	5,701	4,915	10,616	8,685	6,366	15,051	1,884	3,627	5,511	38,441	25,143	63,584
2004	8,124	7,372	15,496	9,237	8,227	17,464	1,376	3,466	4,842	39,857	29,362	69,219

(4) Results

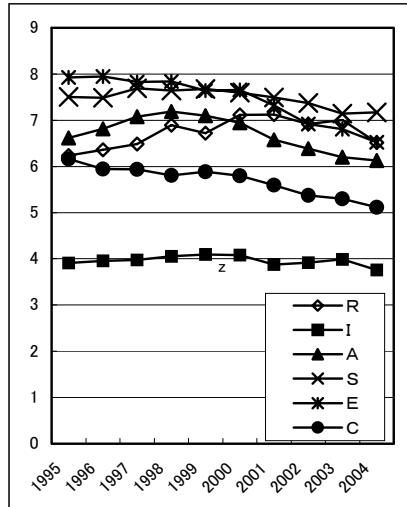
**1. Year-by-year comparison of vocational interest**

The results of Test A, which measures vocational interest, are rendered as graphs showing annual transitions from 1995 to 2004 for junior and senior high (general studies, business and industrial arts) students in Figures 1 to 4. The disparities among individual themes were fewer among junior high students compared to senior high students and the divergence of interests appeared not to be as advanced as among senior high students. Moreover, there were no noticeably consistent changes such as particularly large declines or increases in the figures when viewed in yearly trends (Fig. 1).

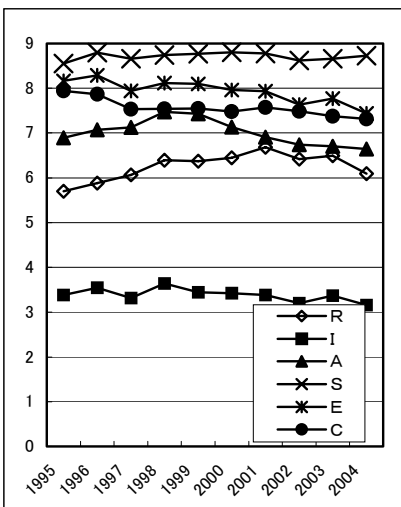
**Fig. 1 Junior High Students' Vocational Interest Trends**



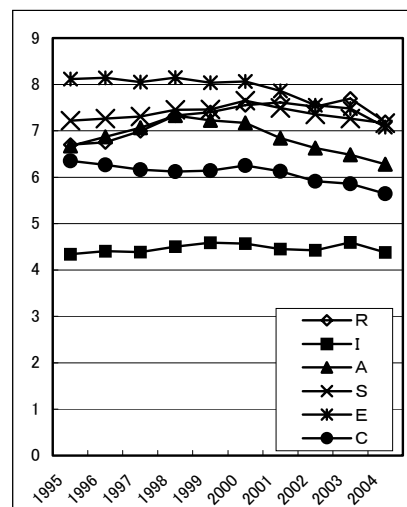
**Fig. 2 Senior High Students' Vocational Interest Trends (General Studies)**



**Fig. 3 Senior High Students' Vocational Interest Trends (Business)**



**Fig. 4 Senior High Students' Vocational Interest Trends (Industrial Arts)**



On the other hand, compared to junior high students, there were clear divisions in the interest scales senior high students liked or did not like. Interest levels particularly varied according to the course of studies. The ranking for general studies in 1995 was E, S, A, R, C, I from top to bottom, but S, E, R, A, C, I in 2004 (Fig. 2). Interest in scales E and C consistently declined when seen by yearly trends. Interest in scale R steadily climbed up to 2001, but has been declining somewhat in recent years. After peaking in 1998, interest in scale A has been falling bit by bit. The smaller disparity between the averages for scales of high and low interest in 2004 compared to 1995 was another tendency that was observed.

With no change in the 1995 and 2004 ranking for business studies, S, E, C, A, R, I, there were few yearly changes compared to general studies and industrial arts courses (Fig. 3). Among these, it could be seen that scale R showed a rising trend, interest in scale A had declined since peaking in 1998, and scale E has been on a gradual downturn. It was noteworthy that the averages for scales S and C were markedly higher for business studies compared to general and industrial arts courses, while lower on the other hand for scale I.

The ranking for industrial arts courses was E, S, R, A, C, I in 1995 and R, S, E, A, C, I in 2004 (Fig. 4). Quite similar to general studies courses, interest in scales E and C fell each year. Interest in scale R rose up until 2003, then fell slightly in 2004. Scale A has gradually fallen since peaking in 1998. Industrial arts courses were characterized by higher averages for scale R compared to general studies and business courses, while interest in the rest of the scales did not differ greatly from general studies courses. Another trend similar to general studies courses was that the averages for scales with high interest levels gradually fell compared to 1995, and the disparity with scales with low figures diminished.

Finally, observing annual changes in vocational interests, the overall downward trend for the averages seen in the data collected in 2005 appears to have been the tendency over the previous one to two years. However, we were able to confirm that interest in scales E and C had gradually fallen since a decade ago.

## **ii. Comparison of ranks of professions in which interest was high**

The VRT's Test A has students answer whether they would or would not like to do jobs whose content is specifically described and was designed so that

**Table 7. Comparisons of Top 10 Professions by Degree of Interest  
- 1995, 1999 and 2004**

General studies	1995		1999		2004	
Rank	Total number of students	32,989	Total number of students	12,364	Total number of students	17,464
1	Store owner	47.63	Store owner	42.32	Pre-school teacher	44.30
2	Pre-school teacher	37.74	Pre-school teacher	41.60	Clothing designer	37.70
3	Hotel front desk clerk	37.02	Clothing designer	40.50	Store owner	35.05
4	Trading company sales staff	36.54	Interior designer	36.83	Interior designer	33.86
5	Interior designer	32.95	Barber/hairdresser	34.12	Barber/hairdresser	27.79
6	OA equipment operator	31.07	Trading company sales staff	32.93	Gardener	27.29
7	Sales clerk	30.71	Musician	32.04	Machinery assembly line worker	26.84
8	Computer operator	30.48	Sales manager	31.67	Musician	26.53
9	Sales manager	30.43	Computer operator	30.88	Trading company sales staff	26.52
10	Clothing designer	30.36	Hotel front desk clerk	30.67	Composer	26.23

Business	1995		1999		2004	
Rank	Total number of students	12,252	Total number of students	4,181	Total number of students	4,842
1	Hotel front desk clerk	46.34	Pre-school teacher	48.51	Pre-school teacher	53.08
2	Pre-school teacher	45.45	Clothing designer	48.24	Clothing designer	47.23
3	Store owner	45.26	Interior designer	45.87	Interior designer	41.84
4	OA equipment operator	43.01	Store owner	43.65	Hotel front desk clerk	40.87
5	Computer operator	41.66	Computer operator	42.19	Cashier	40.36
6	Trading company sales staff	38.92	Barber/hairdresser	41.76	Computer operator	38.74
7	Interior designer	37.59	OA equipment operator	40.83	Store owner	38.54
8	Sales clerk	36.30	Hotel front desk clerk	40.76	Sales clerk	38.41
9	Sales manager	35.37	Sales manager	38.99	Barber/hairdresser	36.25
10	Clothing designer	35.08	Sales clerk	38.22	OA equipment operator	35.98

Industrial arts	1995		1999		2004	
Rank	Total number of students	106,935	Total number of students	45,815	Total number of students	69,219
1	Store owner	47.74	Store owner	44.43	Pre-school teacher	42.04
2	Trading company sales staff	37.26	Clothing designer	40.62	Clothing designer	37.07
3	Pre-school teacher	34.40	Interior designer	38.87	Store owner	36.91
4	Hotel front desk clerk	34.30	Pre-school teacher	37.97	Interior designer	36.05
5	Interior designer	33.83	Trading company sales staff	34.76	Machinery assembly line worker	33.55
6	Computer operator	33.23	Sales manager	33.78	Carpenter	29.91
7	OA equipment operator	33.04	Machinery assembly line worker	33.78	Computer operator	29.56
8	Machinery assembly line worker	30.93	Computer operator	33.74	Trading company sales staff	29.23
9	Sales manager	30.81	Barber/hairdresser	33.67	Gardener	28.44
10	Store manager	30.52	Broadcast director	32.86	Broadcast director	27.69

job content corresponded to respective, specific professions. With this in mind, we revised the 54 questions, giving them the names of specific professions, and ranked them in order of scores for high interest. Table 7 provides the top 10 professions that scored high in interest based on data for senior high students by curriculum for 1995, 1999, and 2004. Although the top 10 rankings fluctuate a bit depending on the year and curriculum, generally, the same sorts of professions appear and the popularity of different professions did not change very much. Pre-school teacher, store manager, clothing designer, and interior designer were very popular regardless of course of studies. However, looking at variations between individual professions, pre-school teacher (social scale), clothing designer (Artistic scale), and interior designer (Realistic scale) were on upward trends while store manager (Enterprising scale) declined in rank with each passing year. Additionally, the rankings of trading company sales staff (Enterprising scale) and office equipment operator (Conventional scale), among others, also fell.

To identify the changes in the number of professions pertaining to each interest scale, we classified the top 10 professions by scale and Table 8 provides the number of professions pertaining to each by year. Definitive conclusions cannot be drawn from a small sampling of 10 professions, but as trends noted whichever the curriculum, in contrast to the high concentration of professions related to E, S, and C in 1995, we believe that there was a progressive divergence in interests up to 1999 and even more so up to 2004. For general studies, there were numerous R and A professions, R professions increased among industrial arts classes, and there was also increasing interest in scale A jobs. Themes R, I, and A include many specialized, technical professions whereas themes E, S, and C contain many types of work one ordinarily often sees in everyday life. Seen by averages, it was clear that interest in type E and S professions always ranked high among the six scales,

**Table 8. Interest scale Breakdown for Top 10 Professions**

scale	Curriculum	'95	'99	'04	Curriculum	'95	'99	'04	Curriculum	'95	'99	'04
R	General studies	1	1	3	Business	1	1	1	Industrial arts	2	2	4
I		0	0	0		0	0	0				
A		1	2	4		1	1	2		0	1	1
S		2	3	1		3	4	3		2	2	1
E		4	3	2		3	2	1		4	4	3
C		2	1	0		2	2	3		2	1	1

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whatever the curriculum. Interest in types E and C professions has become relatively lower in recent years and this might conceivably be due to the impact of increasingly broader interest in specialized professions.

## **5. Conclusion and Future Issues**

The preceding describes how we used two sets of data derived from the VRT to study the vocational interests of junior and senior high students. Collating data obtained using the six Holland vocational interest scales as frames of reference, we observed that junior and senior high students alike had an overall high interest in social and enterprising scales and low interest in conventional and investigative scales. However, a comparison over a period of years demonstrated that while the social scale continues to be as popular now as in the past, interest in the enterprising scale has followed a steadily declining trend. Interest in the conventional scale has also tended to decline little by little each year. The artistic scale rose up until 1998, but has subsequently fallen somewhat and the realistic scale is on a rising course. Interest in the investigative scale has not changed to any extent, either in the past or today.

There was little divergence between the interests of junior high and senior high students and their replies showed that their interests were comparatively equal regarding any scale. As with senior high students, a declining tendency was noted in their overall vocational interest with regard to changes over a number of years, but the degree of change was small.

Vocational interests corresponded to curriculum characteristics among senior high students. It was observed that the content of what was studied at school was linked to vocational interest. There was also a possibility that existing vocational interests influenced the choice of school and curriculum. Seen by type of school, there was no significantly noticeable change between 10 years ago and today in the vocational interests of business students. There did not appear to be much difference in the quality of students enrolling in business courses, either, even though matriculation rates have increased in recent years. The disparities between high and low levels of interest among general studies and industrial arts students have gradually diminished.

The overall decline in the scores of senior high students, especially striking in the past one or two years, was a point of concern regarding their overall interests. The decline in the desire to undertake—the interest and curiosity

in—various professions could be interpreted as a diminished enthusiasm for working life. The downturn in interest in enterprising and conventional scales in particular shows that interest in professions characterized by independent, orderly behavior within an organization has become less strong than among students in the past. It is possible that changes in society and industry have been accompanied by an increase in the number of students more interested in and curious about highly specialized professions rather than company sales or office work. However, although a slight rising trend was noted in the realistic scale related to technical professions, none of the other scales exhibited particularly conspicuous upward trends. Developments should be watched closely to see whether the decline in interest and curiosity continues from here on or if new trends will be observed.

We need to note that while we studied the current situation and changes related to junior and senior high students' vocational interests, we were not able to sufficiently investigate background factors such as the types of circumstances that led to the occurrence of the changes. Unearthing the main factors to elucidate some sort of explanation and interpretation for the reasons for the declining interest levels in 2005 data compared to 1991 and the reasons behind the downward trends in enterprising and conventional scales will be a subject for the future.

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