

Introduction

The necessity of careers education and career guidance for young people choosing their occupation for the first time has been a topic of discussion for some time, and various concrete support measures have already been developed. However, in recent years, the focus has spread from young people alone to include middle-aged and older people who have experience of employment. One of the factors behind this is the fact that the conventional approach to career development, in which a worker obtained a job after completing their school education and then worked at the same workplace until the mandatory retirement age, is becoming less commonplace than before. Furthermore, whereas work as a regular employee used to be the standard way of working, the proportion of workers in non-regular employment – namely part-timers, *arubaito* (casual work) and dispatched workers – is growing and the situation is such that the issues faced when considering their own career development can occur at a number of points throughout their lives. Amid this situation, there has been a re-evaluation of the role of vocational aptitude tests as a tool for obtaining data that can provide people with a more profound understanding of themselves, which is vital in determining the direction of an individual's career development.

For example, Nishimura (2012) refers to the period when young people transition from school to an occupation and establish themselves in that occupation as the initial career period; the period when, after having entered the labor market through finding a job, workers change jobs or occupations as the mid-career period; and the period when people retire from working life due to having reached the mandatory retirement age, or when they consider continuing their working lives, as the late-career period. Nishimura then states that aptitude assessment has certain requirements and a role to play, not only during the early career period, but also

in the mid- and late-career periods.

As well as the General Aptitude Test Battery (GATB), which was introduced from the USA in the 1950s and has conventionally been used for the assessment of vocational ability in Japan, various forms of vocational aptitude test and career guidance tools have been developed and utilized. In the past, there was a period when utilizing the results of aptitude tests to determine career paths and occupations was seen negatively and the use of such tests died down, but today, various types of test have been developed and are used to provide data for gaining a more profound understanding of oneself and determining one's future career path.

The JILPT has conducted studies concerning aptitude tests and career guidance tools, examining the development, maintenance and use of tests from the perspective of a research institute focusing on issues relating to the administration of employment security. More specifically, this Institute has conducted studies concerning the development of aptitude tests and tools that are of use to public employment security offices when providing job placement support to job-seekers and assisting students in choosing a new career path or place of employment after they graduate.

The studies carried out to date by this Institute concerning such tests can be summarized as follows. In the 1950s, soon after the end of the Second World War, the Institute carried out a study aimed at standardizing the use of the USA's GATB in Japan, and completed what came to be known as the Japanese edition of the General Aptitude Test Battery edited by the Ministry of Labor. Subsequently, during the 1970s, the Institute developed the Vocational Readiness Test, which was used to check the development of the vocational awareness of junior and senior high school students, while in the 1980s, it developed the Vocational Preference Inventory (VPI), which standardized the VPI used in the USA to enable it to be utilized in Japan. These tests are all

paper-pencil tests, completed by the respondent on paper using a pencil. Thereafter, from the 1990s to the 2000s, the Institute carried out studies of the Computer Assisted Careers Guidance System (CACGS) and Card Sort Type tools, perfecting these systems as the output of the respective studies. Moreover, the Institute carries out regular revisions of each type of test every 10-15 years, gathering new data and re-examining the scales and standards in order to maintain their reliability and validity as tests. The tests and career guidance tools developed and maintained in this way are widely used by educational institutions including junior and senior high schools and universities, as well as employment placement

organizations and counseling bodies.

This paper focuses on the vocational aptitude tests and career guidance tools that the Institute has developed to date, introducing their content and reporting on the results of studies carried out concerning the use of the various types of test. It also examines the future role of aptitude assessment in career development support and issues relating to this.

1. The Content of Vocational Aptitude Tests and Career Guidance Tools

The various tests developed by this Institute can be broadly classified into three types. The first is paper-

VI-1 Overview of Vocational Aptitude Tests and Career Guidance Tools Developed to Date

Test Name	Characteristics Measured / Information Provided	Subjects	Content	Characteristics & Objectives
General Aptitude Test Battery edited by the Ministry of Health, Labour and Welfare	Abilities	Those aged 13 to under 45 (but there are standards for use with those aged 45 or over)	9 major aptitudes (General Intelligence, Verbal Aptitude, Numerical Aptitude, Clerical Perception, Spatial Aptitude, Form Perception, Motor Co-ordination, Finger Dexterity and Manual Dexterity)	Measures the aptitude level and compares it with occupations based on ability level
Vocational Readiness Test (VRT)	Vocational interest	Junior high school students & above	Test A (vocational interest), Test B (basic orientation), Test C (degree of confidence in carrying out duties)	Understanding the level of development (readiness) of students in regard to selecting an occupation, focusing on junior and senior high school students
Vocational Preference Inventory (VPI)	Vocational interest	University, junior college and vocational college students and adults	Vocational interest (6 types), tendency scale (5)	Administration and scoring takes little time, focusing on understanding personality based on vocational interest
Career In★Sites	Abilities, interests, values, behavioral characteristics	Those aged around 18 to 34	Aptitude assessment, comprehensive assessment, provision of occupational information, career planning	Comprehensive career guidance centered on aptitude assessment using a computer
Career In★Sites MC	Abilities, interests, values, behavioral characteristics	Those aged around 35 to 69	Aptitude assessment, comprehensive assessment, provision of occupational information, career planning	Comprehensive career guidance centered on aptitude assessment using a computer
OHBY Cards	Occupational information/ card sort method	From children to adults	48 cards	Classification according to whether or not the subject would like to do the job, while looking at the pictures and photographs on the card
VRT Cards	Vocational orientation/ card sort method	Junior high school students & above	54 cards, vocational interest (6 realms), degree of confidence in carrying out duties (6 realms)	Classification according to whether or not the subject has interests or confidence in doing the job, while reading the content of the job written on the card

pencil tests, completed by the respondent on paper using a pencil, the second is computer-assisted career guidance systems, in which the subject utilizes a computer to check their own aptitude, and the third is tools using the card sort method, which identifies one's vocational interests according to the classification of cards on which the content of jobs and the names of occupations are written. VI-1 provides a summary of these tests and career guidance tools.

(1) Paper-Pencil Type Psychological Tests

Of the tests shown in VI-1, the paper-pencil tests are the General Aptitude Test Battery edited by the Ministry of Health, Labour and Welfare (hereinafter referred to as the GATB), the Vocational Readiness Test (hereinafter referred to as the VRT), and the Vocational Preference Inventory (hereinafter referred to as the VPI). All of these are psychological tests developed in accordance with standardized procedures, but whereas the GATB is a test that defines and measures nine types of aptitude in relation to vocational aptitude abilities, the VRT and VPI are tests that measure individual characteristics, with a central focus on vocational interests. The VRT was created as a test intended to be of use in providing guidance concerning career paths for students at the school stage, such as junior and senior high school students, while on the other hand, the VPI was developed as a test to be of use in providing university students and those at higher levels with a deeper understanding of themselves. The GATB and VPI were developed as so-called translated versions, based on tests that had been developed and utilized in the USA; items were stipulated that would enable those tests to be used as Japanese versions, with data being gathered in order to compile standards. In contrast, the VRT is a test that was completely new when it was developed by the National Institute of Employment and Vocational Research, which was the predecessor of the JILPT. Accordingly, the following provides an overview of the VRT.

◆ Vocational Readiness Test (VRT) ¹

[Background to Development]

This test was published in 1972 by the National Institute of Employment and Vocational Research (currently the Japan Institute for Labour Policy and Training). At that time, there were many young people who quit their jobs shortly after finding employment upon graduating from junior or senior high school, and the test was developed with a view to providing guidance concerning career paths and occupations, in order to bring about an improvement in this situation. Following publication of the first edition, revisions were made in 1989 and the version currently in use is the third edition, which was revised and issued in 2006. Approximately 270,000 copies are published annually.

[Subjects]

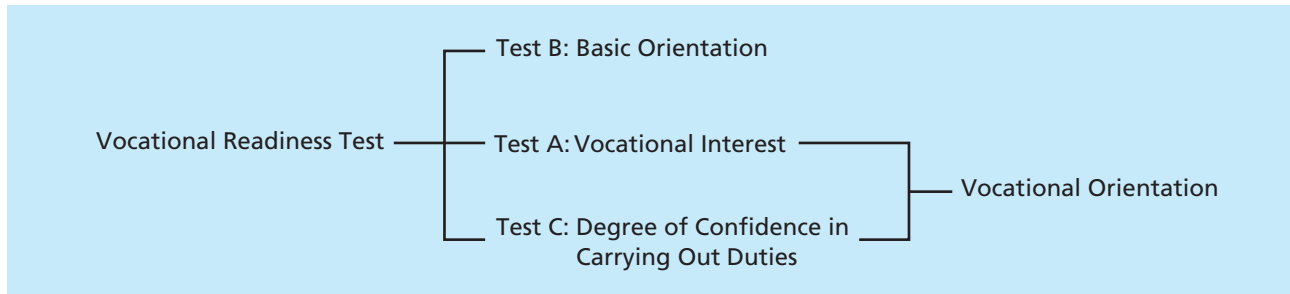
As a general rule, the subjects are junior and senior high school students, but subjects who have graduated from high school and are aged around 20 are permitted to take the test, if it is thought that their vocational awareness and/or self-understanding are inadequate.

[Objective]

The VRT was created with the objective of gaining an understanding of the “vocational readiness” – or, to put it another way, the level of psychological preparedness for selecting an occupation – of students, for use in career path and vocational guidance at junior and senior high schools. Accordingly, as well as measuring interest in an occupation, the VRT identifies the student's degree of confidence in carrying out the duties involved in that occupation, thereby comprehensively measuring and interpreting the student's awareness of occupations. Moreover, in the case of students who have not yet formed an adequate mental image of occupations, the test provides an insight into their interests and behavior using criteria that ask about their actions and ways of thinking in situations in day-to-day life, and makes it possible to associate these with occupations.

1 Muroyama (2012a) provides details of the content of the Vocational Readiness Test. Moreover, see Muroyama & Matsumoto (2006) for more information about measuring the interest of junior and senior high school students using the Vocational Readiness Test.

VI-2 Composition of the Vocational Readiness Test



[Test Method]

There is a question sheet and an answer sheet, and the subject of the test reads each question and writes their response on the answer sheet. There is no time limit for responses and it is basically carried out at the preferred pace of the subject. On average, it takes around 40-45 minutes to complete, so it is possible to take the test within a single junior or senior high school lesson period. In addition, the VRT can be scored by the subject. If using the self-score method, another school lesson period is required in order to score their answers and complete the tasks using the worksheet (“How to Understand and Use the Results”).

[Composition and Content]

The VRT consists of three tests: A, B and C (VI-2). Tests A and C are criteria that measure “vocational orientation”, which relates to interest in an occupation and degree of confidence in carrying it out, while Test B is a scale measuring “basic orientation” in relation to behavioral and attitudinal tendencies in daily life.

In Test A, vocational interest is measured, with those taking the test answering questions covering 54 items relating to the content of occupations and jobs, and assigning one of three ratings concerning whether or not they would like to do them: “Would like to do”, “No preference” or “Would not like to do”. In Test B, those taking the test answer either “Applies” or “Doesn't apply” in regard to 64 items concerning their behavior and attitudes in daily life. In Test C, the same 54 items as in Test A are used to measure respondents' degree of confidence in carrying out the relevant duties, with those taking the test answering either “Confident”, “No opinion” or “Not confident” in relation to whether or not they

have confidence that they would be able to carry out those duties well in the future.

[Framework for Compiling the Measurement Results]

The concept of the six types of vocational interest propounded by the US researcher Holland (Holland, 1985) are used as the framework for gaining an insight into vocational interest in Test A and degree of confidence in carrying out duties in Test C. The characteristics measured in Test B as the basic orientation are expressed as a level of tendency in three directions (D: orientation toward data; P: orientation toward people; and T: orientation toward things) In the VRT, each orientation is composed of multiple subscales (VI-3), so it is possible to examine the content of each DPT orientation in detail.

[Interpreting Results Using the Worksheets]

A worksheet has been prepared for the VRT, in order to enable the person taking the test to interpret their own results in detail. Four tasks have been prepared for the worksheet, so as well as compiling a profile of their interests and basic orientation, the respondent can ascertain the degree of differentiation in their interests, interpret the level of consistency, and identify the occupations that correspond to the characteristics of their interests. VI-4 shows the interest scale and confidence profile, while VI-5 and VI-6 show the DPT and subscale profiles.

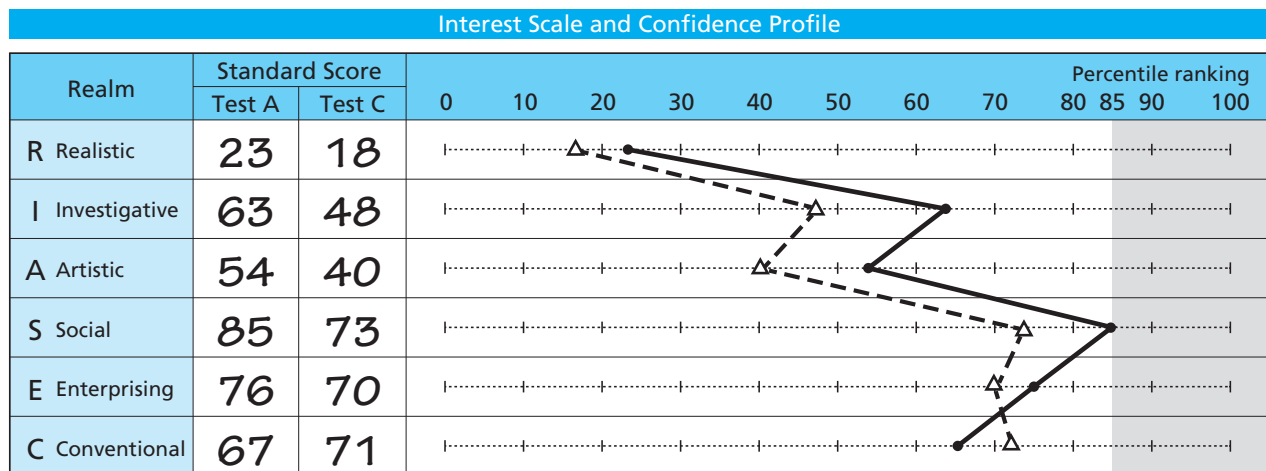
[Usage Method]

Schools wishing to administer the VRT can obtain the forms free of charge from a public employment security office, so as well as enabling them to be used in career path guidance in junior and senior high schools, they can be used in the careers education lessons that have begun to be carried out in recent

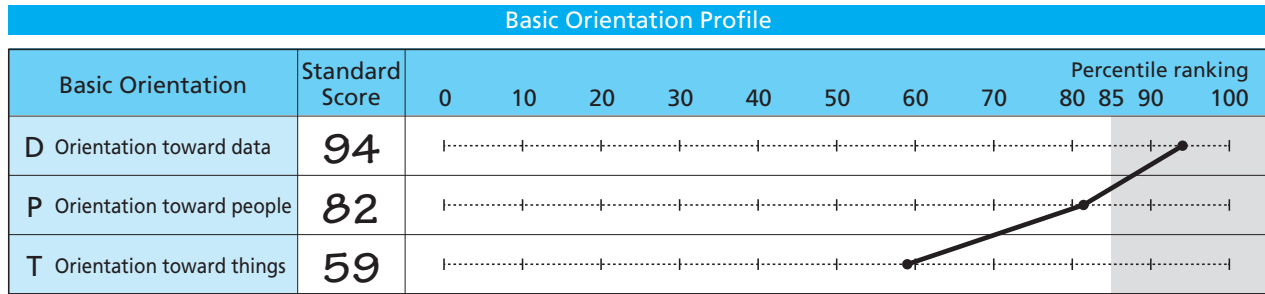
VI-3 Names and Content of Subscales Included in the DPT Basic Orientation

Basic Orientation	Subscale	Content
D: Orientation toward data	D1: Gathering data	Indicates that the respondent has a strong desire to gather a great deal of data.
	D2: Satisfying curiosity	Indicates that the respondent has strong curiosity about mechanisms in society and the world around them and a strong desire to find out more about them.
	D3: Using data	Indicates that the respondent has a strong desire to properly organize the data that they have collected, manage it in an orderly fashion, and use it logically.
P: Orientation toward people	P1: Expressing oneself	Indicates that the respondent has a strong desire to express their opinions properly in front of other people and to express themselves.
	P2: Acting with others	Indicates that the respondent has a strong desire to act with many other people, rather than spending time alone.
	P3: Helping others	Indicates that the respondent is sensitive to people's feelings and has a strong desire to help others.
T: Orientation toward things	T1: Making things	Indicates that the respondent has a strong preference for making things using tools or machinery.
	T2: Familiarity with nature	Indicates that the respondent has a strong preference for observing animals and plants in the natural environment and for physical activity.

VI-4 Interest Scale and Confidence Profile (Solid Line Represents Interests, Dotted Line Represents Confidence)



VI-5 Basic Orientation Profile



VI-6 Basic Orientation Subscale Profile

Basic Orientation Subscale Profile				
Basic Orientation(DPT)		Number of responses in category	Fill in on the graph the number of boxes that corresponds to the number of responses in the category.	Commentary
D Orientation toward data	D1 Gathering data	7		Indicates that the respondent has a strong desire to gather a great deal of data.
	D2 Satisfying curiosity	5		Indicates that the respondent has strong curiosity about mechanisms in society and the world around them and a strong desire to find out more about them.
	D3 Using data	6		Indicates that the respondent has a strong desire to properly organize the data that they have collected, manage it in an orderly fashion, and use it logically.
P Orientation toward people	P1 Expressing oneself	4		Indicates that the respondent has a strong desire to express their opinions properly in front of other people and to express themselves.
	P2 Acting with others	7		Indicates that the respondent has a strong desire to act with many other people, rather than spending time alone.
	P3 Helping others	7		Indicates that the respondent is sensitive to people's feelings and has a strong desire to help others.
T Orientation toward things	T1 Making things	3		Indicates that the respondent has a strong preference for making things using tools or machinery.
	T2 Familiarity with nature	5		Indicates that the respondent has a strong preference for observing animals and plants in the natural environment and for physical activity.

* VI-4-VI-6 are reproduced from the Japan Institute for Labour Policy and Training (2011). Training Materials for Labor Administration Staff Vocational Ability and Aptitude, and the Assessment and Measurement Thereof (FY2011).

years. They are used as a material for promoting self-understanding among the students themselves, with a view to selecting their career path or occupation.

(2) Computer Assisted Careers Guidance System (CACGS)

Next, of the tools listed in VI-1, let us introduce Career In★Sites and Career In★Sites MC, which are computer assisted career guidance systems. Career In★Sites was developed for subjects aged 18-34, focusing on young people seeking a job for the first time and those in younger age brackets who have

been in the workforce for a comparatively short time. On the other hand, Career In★Sites MC targets those with experience of work who are in the 35-69 age range (the mid-career age bracket). Both systems were developed as integrated with aptitude assessment, occupational information provision, aptitude and occupation matching, and career planning functions. The following outlines the Career In★Sites system used for young people.

◆ Career In★Sites²

[Background to Development]

Computer Assisted Careers Guidance Systems (CACGS), which enable subjects themselves to utilize computers to experience the whole range of processes involved in selecting an occupation, namely aptitude assessment, comparing aptitude with occupations, searching for information about occupations, and formulating a career plan, have been developed and used in the West since the 1960s. In Japan, research and development concerning CACGS lagged behind, but as a result of the increasingly information-oriented nature of society and growing prevalence of computers in recent years, the need has grown for the development of CACGS that can be used in vocational guidance provided by employment placement organizations and educational institutions. Accordingly, in 2001, Japan's first CACGS, called In★Sites2000 (Instructive Navigator: Self Identification & Trait Evaluation System) was created, aimed at young job-seekers. Subsequently, having been used at various institutions, In★Sites2000 was revised and the updated version was released in 2004 as Career In★Sites.

[Objective]

Career In★Sites was developed in order to make it simple for young people who wish to find out about their own aptitude and young people who are uncertain about the directions in which their options for an occupation or career path lie to carry out a number of the basic steps required in order to select an occupation, such as aptitude assessment and searching for information about occupations. At the same time, the aim was to make counseling sessions by staff at vocational counseling organizations more efficient by reducing the time and effort required to administer and score aptitude tests, thereby increasing the time available for direct dialogue with the subject.

[Test Method]

Career In★Sites is supplied on a CD-ROM and the system is used after being installed on a computer. The aptitude tests are included in the

functions, so the format does not involve using the internet.

Career In★Sites has basically been designed and developed to enable the subject to utilize the various functions without any assistance from anyone else. The subject can select the functions that they wish to use from those on the menu displayed on the screen, enabling them to carry out an aptitude assessment or search for information about occupations. Around an hour and a half to two hours are required to use all of the Career In★Sites functions, but it takes less than this if only certain functions are selected. Usually, it takes 30-40 minutes to complete the four aptitude tests on Career In★Sites.

[Composition and Content]

1) Structure

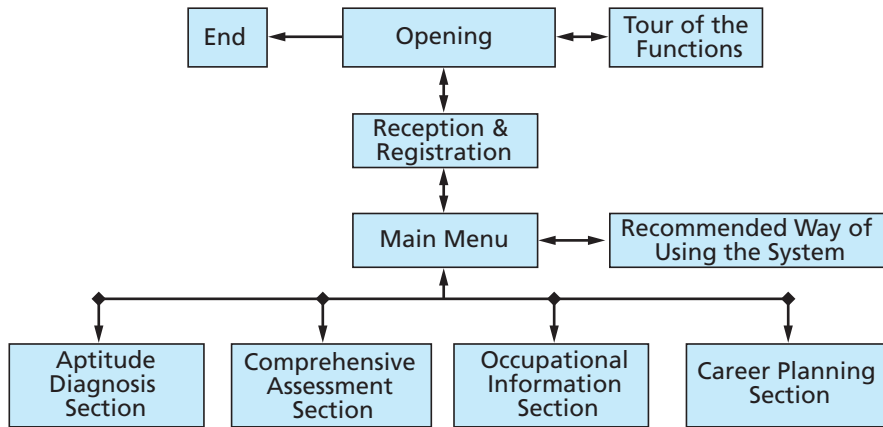
The structure of Career In★Sites is shown in VI-7. The system consists of four main functions: the aptitude diagnosis section, the comprehensive assessment section, the occupational information section, and the career planning section.

2) Functions

- (i) **Main Menu:** At the Opening screen (VI-8), click on the Start button to display the Reception & Registration screen. Once the subject's details are registered here, the Main Menu (VI-9) is displayed. The Main Menu displays all of the system's functions and the subject selects which function they wish to use from this screen.
- (ii) **Aptitude Diagnosis Section:** The Aptitude Diagnosis Section is the core function of Career In★Sites. It incorporates four aptitude assessments: abilities, vocational interest, values and behavioral characteristics. In carrying out each test, the self-rating method is used to assign a score as soon as the answers to the questions displayed are selected, with the subject's profile being displayed, along with comments on this (VI-10). A list of suitable occupations is created that corresponds to

2 For details of the content of Career In★Sites and Career In★Sites MC, see Muroyama (2012a), while for more on the development of Career In★Sites, see Muroyama (2004).

VI-7 System Structure



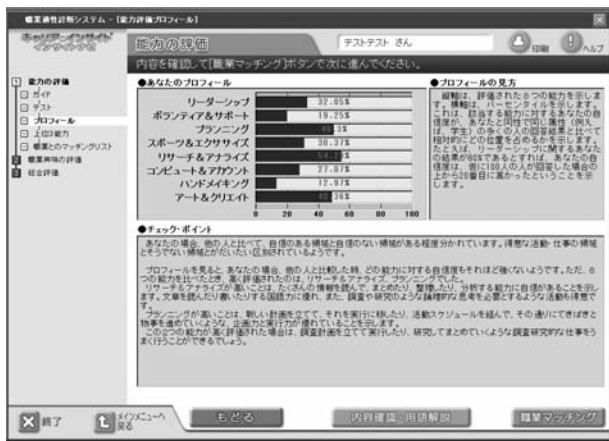
VI-8 Career In★Sites Opening Screen



VI-9 Main Menu



VI-10 Ability Assessment Profile Screen



VI-11 Creating a List of Suitable Occupations Using the Ability Assessment



VI-12 Results Using Both Abilities and Interests

職種	興味レベル	必要とされる能力	能力レベル	適合度
職業的（ものづくり）【R】	5	スポーツとエクササイズ【AT】	2	○ 興味はあがる、自律は低い
		パンフメイキング【TH】	1	○ 興味も自律も低い
研究的（研究・開発）【I】	2	リーダーシップ【VO】	3	○ 興味も自律も低い
		パンフメイキング【TH】	1	× 興味も自律も低い
芸術的（読書の活動）【A】	4	リーダーシップ【VO】	3	○ 興味はあがる、自律は平均
		アートのクリエイティブ【CR】	3	○ 興味はあがる、自律は平均
社会的（人と接する）【S】	4	リーダーシップ【VO】	2	○ 興味はあがる、自律は低い
		ボランティア活動【SO】	1	○ 興味も自律も平均
職業的（企画・管理）【C】	3	リーダーシップ【VO】	2	○ 興味も自律も平均
		ボランティア活動【SO】	1	○ 興味はあがる、自律は低い
創造的（事業の発展）【O】	5	コンピュータとアカウント【DA】	2	○ 興味も自律も平均

the respective characteristics for abilities and interests (VI-11).

- (iii) **Comprehensive Assessment Section:** The Comprehensive Assessment Section uses the results of the two aptitude assessments, focused on abilities and interests, which were carried out in the Aptitude Diagnosis Section, in order to match the overall characteristics of the individual with occupations in the database.

The basic data used by Career In★Sites when an individual takes the tests of ability and interest is information about which areas on each of the scales have a strong correlation. In the comprehensive assessment, a table is created that shows the assessment level in regard to the two abilities with a particularly strong correlation to each of the types relating to interests, and the characteristics of the individual are described from the perspectives of both interests and abilities (VI-12). Based on these results, a list of suitable occupations is created that takes into account the overall picture concerning both interests and abilities (VI-13).

- (iv) **Occupational Information Section:** The database in the Occupational Information Section contains information about 417 occupations. In Career In★Sites, there is a

VI-13 Matching with Occupations Based on Both Abilities and Interests

large proportion of specialist and technical occupations, with 236 of the 417 occupations falling into this category.

The occupational information can be searched using any of five categories: occupation name, field of work, related abilities, related interests, and qualifications. Information about the content of the job (up to a maximum of 300 characters), related abilities and interests, and qualifications, etc. is provided for each occupation. The screen for each occupation is divided into general information and detailed information. The general information section shows the name of the occupation, the field of work, and the content of the job. The detailed information section shows information about related abilities and interests, and qualifications, etc. (VI-14). The subject can switch between the two information screens as required.

- (v) **Career Planning Section:** This section offers two menus – Short-term Career Plan, for considering the issue of finding a job in the near future, and Long-term Career Plan, for considering how the subject wishes to position their occupation during their lifetime.

The Short-term Career Plan offers the Compatibility Diagnosis for Desired

VI-14 Occupational Information (Detailed Information)



Occupation function, which shows the degree to which the results of the aptitude test correspond to the subject's aptitude for their current desired occupation, and the Job Search Readiness Checklist, which enables the subject to check their level of readiness in relation to such aspects as self-understanding, vocational awareness and decision-making.

The Long-term Career Plan is aimed at getting young people to look at their career plans over the long term, from their late teens through to their 60s, rather than focusing on the immediate issues. Through the selection of major goals for each age and various events that could occur in relation to the subject's working life, family life and personal life, the system helps the subject to formulate a long-term career plan (VI-15).

[Usage Method]

As well as public employment security offices, Career In★Sites is used at counseling organizations for young people and educational institutions such as universities, junior colleges and vocational colleges. The subject can utilize the aptitude assessments in Career In★Sites and obtain their results on their own, without the presence of a counselor, so it appears that in most cases subjects take the aptitude

VI-15 Long-term Career Plan



assessments, etc. on a computer at the facility in question and then undergo a counseling session based on a printout of the results.


(3) Guidance Tools Using the Card Sort Method³

Next, let us look at OHBY cards and VRT cards as Card Sort Type guidance tools. OHBY cards consist of 48 cards with photographs and illustrations depicting occupations. Those taking the test decide whether or not they have any interest in the occupation in question while looking at the photograph and illustration on each card (VI-16 and VI-17). More specifically, the subject lines up classification cards marked “Would choose”, “Would think about” and “Would not choose”, and then looks at the photographs and pictures on each occupation card before assigning that card to one of the three classification cards. The OHBY cards are a tool developed on the basis of occupational information and importance is attached to their ultimate goal of giving the subject a deeper understanding of occupations.

On the other hand, VRT cards consist of 54 cards containing descriptions of the content of duties. The person taking the test reads the descriptions of duties concerning the jobs on each card and categorizes them according to whether or not they are interested in them, or whether or not they could do those duties

³ Details of the OHBY cards and VRT cards are provided in Shimomura and Muroyama (2012).

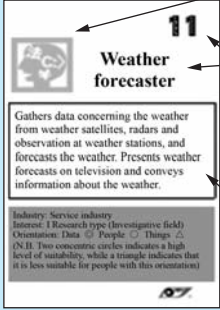
VI-16 The Front of an OHBY Card



Picture: Shows a picture that depicts particularly well the content of the occupation from the OHBY occupation handbook

Photograph: Shows a photograph that depicts particularly well the content of the occupation from OHBY

VI-17 The Back of an OHBY Card



Occupation field (occupational panorama) symbol: Shows the symbol used in the OHBY occupational panorama

Occupation name: Shows the name of the occupation

Card number: Shows the number assigned to the occupation name in order of the Japanese syllabary (this is a number assigned for the sake of convenience, to organize the cards, and does not indicate an order of importance for the occupations concerned)

Occupational information: A brief summary of the content of the occupation in 70-80 characters

well. The VRT cards were developed as a tool to enable the Vocational Readiness Test, which is a paper-pencil type test, to be carried out using the card sort method; at the development stage, they were confirmed to be highly reliable as a test of interest and very convenient to administer. The following provides an explanation of the VRT cards.

◆ VRT Cards

[Background to Development]

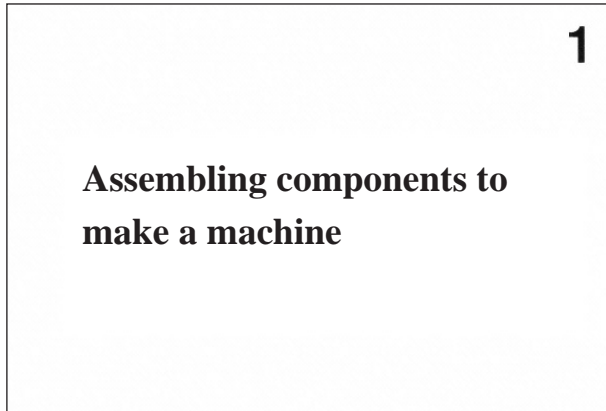
The VRT (Vocational Readiness Test) referred to above in the section on paper-pencil tests is an excellent test for comprehensively and precisely measuring the development of vocational awareness, such as vocational interest and degree of confidence in carrying out duties. However, in counseling sessions under conditions in which it is difficult to secure the time or place required to conduct a psychological test, such as the consultation counter of a public employment security office, it is difficult to use a tool that involves a paper-pencil test and takes

time to score. Accordingly, this test was developed by replacing the Vocational Readiness Test items with the card sort method and adapting it, with the objective of creating a tool that was easy to use and which guaranteed a certain degree of reliability as a test.

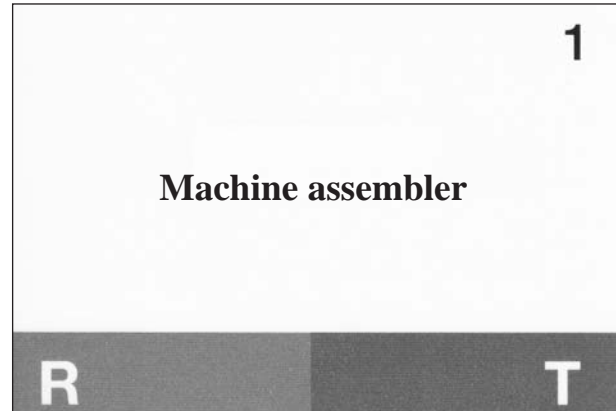
[Subjects]

The VRT cards were created as a card version of the Vocational Readiness Test, but unlike that test, which is primarily aimed at junior and senior high school students, the VRT cards do not involve the formulation of a profile based on comparison with reference values. Accordingly, it is basically possible to administer the test to anyone, as long as they can understand what is written on the cards and can categorize them. In trials carried out during the development process, it was verified that the test could be used by everyone from junior high school students to elderly people in their 70s, as well as by some people with disabilities.

VI-18 Front of the Card



VI-19 Back of the Card



[Objective]

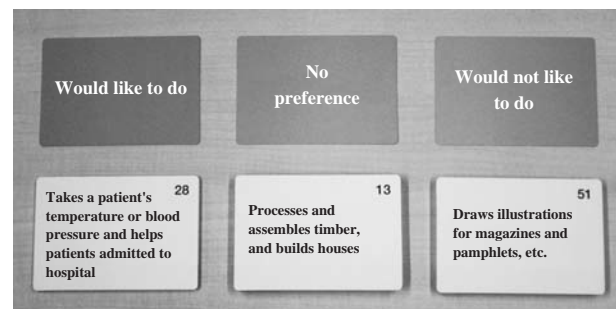
The VRT cards are a tool for checking the subject's interest in occupations and degree of confidence in carrying out duties, but rather than aiming for exact measurements, the primary objective of the test is to gain an understanding of the characteristics of the subject's vocational interests and confidence in a short period of time using a simple method. Moreover, it provides material for specific discussions between the subject and the tester, concerning what kind of work the subject would like to do and the common characteristics of the types of work he/she would prefer to do. Furthermore, in educational settings, such as schools, as well as deepening students' self-understanding, another objective of the test is to make use of its characteristic as a test that is fun, unlike the usual strict tests and examinations in schools, in order to promote communication between the students themselves.

[Composition and Content]

A set of VRT cards consists of the VRT cards themselves (explanation manual, 54 occupation cards and 6 classification cards), a Results Record Sheet, and a Results Summary Sheet.

There are 54 occupation cards, with the front of each card showing one of the items used in Test A (vocational interest) and Test C (degree of confidence in carrying out duties) of the Vocational Readiness Test. The front of each card also carries a number and a description of the content of duties (VI-18). The

VI-20 Example of the Classification of Cards by Interest



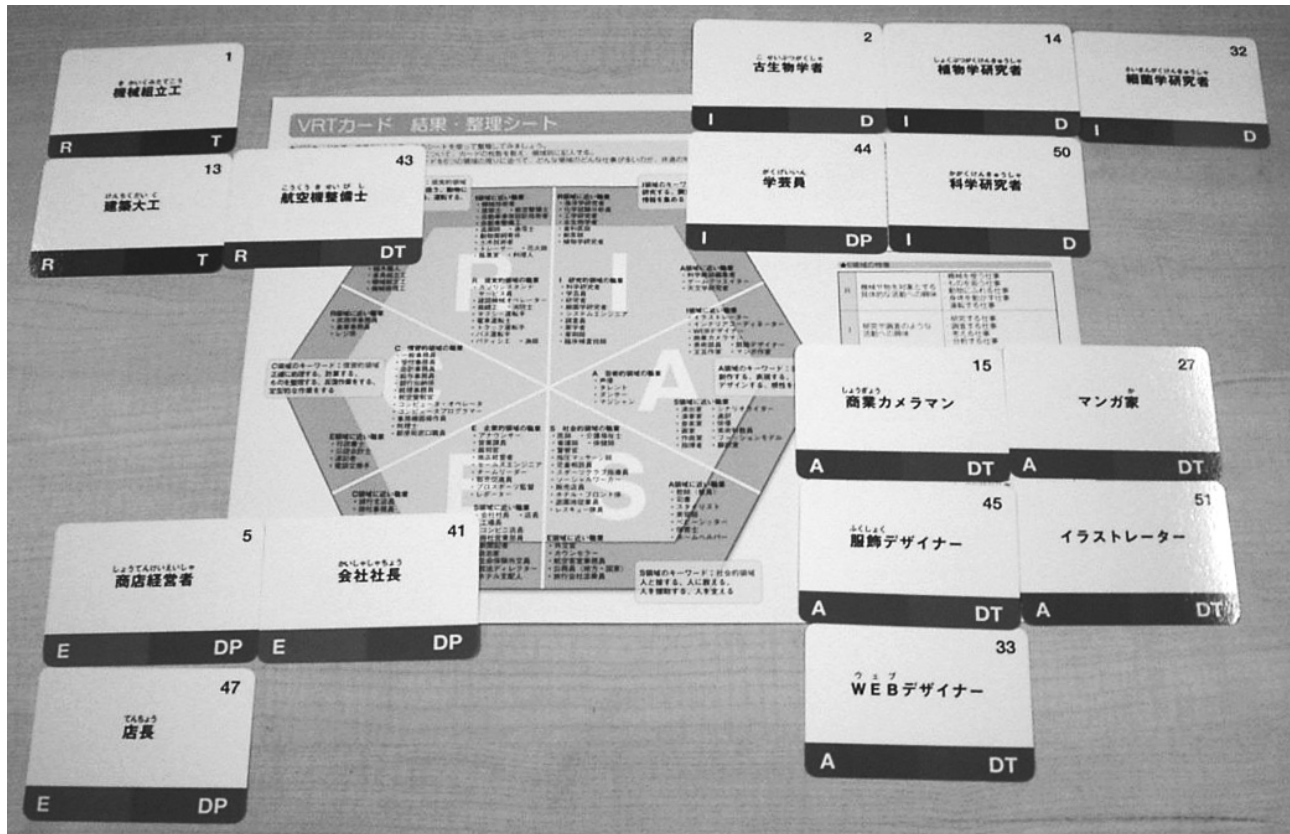
back of each card shows the number, the name of the occupation corresponding to the duties shown on the front of the card, the relevant one of the six types of interest to which that occupation corresponds, and the DPT code (combination of the three codes relating to orientation toward data, people and things to which that occupation corresponds) (VI-19).

Six classification cards are used to categorize the occupation cards. In relation to interests, the three cards used are "Would like to do", "No preference", and "Would not like to do", while in relation to confidence, the three cards used are "Confident", "No opinion", and "Not confident".

[Test Method]

The basic method used in individual counseling sessions involves the person administering the test reading out the descriptions of duties written on the front of the card and having the subject classify them

VI-21 Interpretation Using the Results Summary Sheet



into “Would like to do”, “No preference”, or “Would not like to do” (or “Confident”, “No opinion”, or “Not confident”) (VI-20). After classifying them all, the results are collated and, if necessary, a record is made and the results are interpreted.

There is no time limit for responses and the subject can basically answer at their own pace. They can be used both in one-to-one counseling sessions between the subject and the person administering the test, and in group situations, such as where all the students in a class take the test during a lesson at school.

The average amount of time required to classify all 54 cards is approximately ten minutes if the tester reads them out, and about three minutes if the subject of the test reads them silently and then classifies them.

There is a Results Record Sheet for recording the classification results, but it is not essential to use it. There is also a Results Summary Sheet, which is used to interpret the results after the cards have been

classified.

[Interpretation of Results]

After classification of the VRT cards has been completed, each pile of cards is turned over and collated. The six types of interest approach developed by Holland (Holland, 1985) is used to collate the results. For example, if looking at interests, the subject would count how many cards were in each of the six types of interest in each of the piles for “Would like to do”, “No preference”, and “Would not like to do”.

After having counted the number of cards, the Results Summary Sheet is placed in front of the subject and the classified cards are placed around each type with the back (showing the name of the occupation) facing upward; the subject and the person administering the test then interpret the results while discussing which type has the most cards assigned to it and what the common characteristics of the cards classified into a particular type are (VI-21). The classified cards can be confirmed visually, so it is

possible to elicit not simply the type in which the subject has the largest number of “Would like to do” responses, but also such matters as the subject's impressions concerning each and every occupation, as well as their reasons for choosing the responses.

[Usage Method]

The VRT cards are used in individual counseling sessions at public employment security offices and vocational counseling organizations, when finding out the characteristics of the job-seeker's interests. Moreover, they are also used as a teaching material in careers education classes at junior and senior high schools and universities, in order to promote self-understanding. The exercise is carried out as in groups when the cards are used in lessons, with two students forming one pair and taking turns to be the subject and the person administering the test. As the person administering the test and the subject cooperate enjoyably in conducting the test, they can interpret and discuss the results that have been obtained, so it is a meaningful method of utilization in which one can receive comments from someone else, rather than just seeing one's own results.

2. Studies Concerning the Use of Tools

Vocational aptitude tests and career guidance tools cannot be said to be fulfilling their primary role if they are not actually used in career counseling or education after being developed. Accordingly, this Institute revises the scales regularly and conducts ongoing research, such as surveys of usage methods, in order to ensure that the tests and tools can continue to be used as effective tools in real-life situations. The following section provides an introduction to the outcomes of studies carried out by the JILPT in order to facilitate the use of tests and career guidance tools.

(1) Study Concerning the Use of the General Aptitude Test Battery (GATB) Edited by the Ministry of Health, Labour and Welfare with Middle-aged and Older People ⁴

The GATB is an aptitude test that was developed in the USA during the First World War in order to

measure vocational ability. It measures vocational ability in terms of nine aptitudes: General Intelligence, Verbal Aptitude, Numerical Aptitude, Clerical Perception, Spatial Aptitude, Form Perception, Motor Co-ordination, Finger Dexterity and Manual Dexterity. Following the test, the aptitude level of the subject is compared to the ability levels required for various occupations and occupations that are suitable for the subject are considered. The test, which was originally developed in the USA, was introduced to Japan after the Second World War, and what was then the Ministry of Labor of Japan standardized it so as to be used in Japan and published it. Since then, it has continued to be used through to the present day as a test for measuring vocational ability, undergoing a number of revisions over the years.

The GATB used in Japan can be broadly classified into two types. One is the GATB for use in career path and vocational guidance, which is used at schools and vocational counseling organizations, while the other is the version for business, which is used by business establishments in their personnel hiring and deployment processes.

Naganawa (2012) looks at the test for use in career path and vocational guidance, which was created based on the criterion that it was aimed at job-seekers ranging from second-year junior high school students to those aged under 45, and examines its applicability to middle-aged and older people over the age of 45, as well as the conditions for its use if it were applicable. The results obtained were compiled into the GATB Guide for Use with Middle-aged and Older People (Japan Institute for Labour Policy and Training, 2010). The following provides an overview of the content of this publication.

(i) Study Objectives

At public employment security offices, the version for use in career path and vocational guidance is used in order to measure the vocational ability of ordinary job-seekers, but many of the job-seekers are aged 45 or older, and it is necessary for the individual to gain an understanding of their own abilities when

⁴ Naganawa (2012) provides a summary of the use of the GATB with middle-aged and older people.

they apply for a job that does not have an age limit, or when considering a career change or planning to undergo vocational training. In order to provide for such situations, this study examined matters such as changes in the aptitude scoring based on more advanced age by administering the GATB to middle-aged and older people aged 45 or over.

(ii) Method

[Implementation Method]

Test subjects who would take the GATB were recruited from among middle-aged and older people and each group of around ten people took the GATB (version for use in career path and vocational guidance) paper-pencil test and equipment test in accordance with the procedures.

[Subjects]

The data was gathered from a total of 141 subjects: 33 in their 40s, 70 in their 50s, and 38 in their 60s. The subjects included some who had been in managerial posts (a total of 82: 29 in their 40s and 53 in their 50s) and others who were ordinary middle-aged or older job-seekers (a total of 59 men

and women: 4 in their 40s, 17 in their 50s, and 38 in their 60s). The equipment test was administered only to the middle-aged or older job-seekers.

(iii) Results

In the results, the GATB aptitude scores are used to show the mean values and standard deviations for aptitude scores in each age group. In the study, data was also tabulated to show the specific groups, i.e. those who had been in managerial posts and those who were ordinary middle-aged or older job-seekers, but here the two groups have been combined and the results for the mean values and standard deviations for aptitude scores in each age group are shown in VI-22. Furthermore, the results of verifying the difference in mean values by age are shown in VI-23.

In the case of those in their 40s and 50s, significant differences are seen in Spatial Aptitude (S), Form Perception (P) and Motor Co-ordination (K), with lower mean values being seen among those in their 50s than among those in their 40s. There were no significant differences among any of the other abilities. Comparing those in their 40s with those in

VI-22 Mean Values and Standard Deviations for Aptitude Scores by Age Group

Age Group Number of subjects		40s 33 (F, M 4*)	50s 70 (F, M 17*)	60s 38
G General	Mean	108.73	104.13	93.79
	SD	18.91	23.29	19.62
V Verbal	Mean	107.21	104.64	93.18
	SD	22.57	19.04	17.58
N Numerical	Mean	103.15	107.73	102.05
	SD	17.41	18.06	25.49
Q Clerical	Mean	107.73	99.14	90.50
	SD	24.49	22.63	21.01
S Spatial	Mean	97.27	84.20	77.95
	SD	19.80	21.23	20.07
P Form	Mean	95.00	76.51	66.03
	SD	25.87	16.89	18.90
K Co-ordination	Mean	88.30	77.41	71.61
	SD	21.05	16.95	23.15
F Finger	Mean	81.25	75.41	55.87
	SD	10.66	20.13	17.60
M Manual	Mean	82.25	80.12	68.74
	SD	8.10	18.67	18.10

Note: Cited from Naganawa (2012)

* Number of persons implemented the equipment test (F, M)

VI-23 Verification of Difference in Mean Values for Aptitude Scores by Age Group

	40s & 50s	40s & 60s	50s & 60s
G General Intelligence	0.99	3.26 ***	2.32 *
V Verbal Aptitude	0.60	2.94 ***	3.14 ***
N Numerical Aptitude	-1.23	0.21	1.34
Q Clerical Perception	1.70	3.19 ***	1.99 *
S Spatial Aptitude	3.05 ***	4.08 ***	1.52
P Form Perception	4.34 ***	5.44 ***	2.86 ***
K Motor Co-ordination	2.81 ***	3.18 ***	1.49
F Finger Dexterity	0.55	2.81 ***	3.46 ***
M Manual Dexterity	0.22	1.47	2.11 *

Note: ***Significant at the 5% level, ****Significant at the 0.1% level
* Cited from Naganawa (2012)

their 60s, there was a larger number of abilities in which significant differences could be seen. In addition to the aptitudes where differences were seen between those in their 40s and those in their 50s, there were also significant differences in regard to General Intelligence (G), Verbal Aptitude (V), Clerical Perception (Q), and Finger Dexterity (F), with those in their 60s achieving lower mean values than those in their 40s.

Thus, one can see that the mean values differ according to age group, so aptitude is affected by advancing age. However, as shown in VI-22, the degree differs according to the ability. The four aptitudes of General Intelligence, Verbal Aptitude, Numerical Aptitude and Clerical Perception hardly change at all until people reach their 50s, when they maintain the same mean level – or even exceed it – as that seen among those in their 40s. On the other hand, scores for the five aptitudes of Spatial Aptitude, Form Perception, Motor Co-ordination, Finger Dexterity and Manual Dexterity decline with age.

(iv) Knowledge Gained from the Results

It is known that the GATB aptitudes can be broadly classified into three factor structures: cognitive skills, perceptual skills and psychomotor skills. General Intelligence, Verbal Aptitude, Numerical Aptitude and Clerical Perception correspond to the cognitive skills, Spatial Aptitude

and Form Perception to the perceptual skills, and Motor Co-ordination, Finger Dexterity and Manual Dexterity to the psychomotor skills (Ministry of Health, Labour and Welfare, 1995).

Based on the data obtained, Naganawa (2012) asserts that the results of conducting GATB among those aged in their 40s to 60s show that there is either no change or an increase in cognitive skills up to around one's 50s, but that perceptual skills and psychomotor skills decline. In addition, with regard to the question of the impact on suitability for an occupation resulting from such changes in aptitude due to aging, he states that, "Up to a certain age, there is no impediment to the accomplishment of tasks that require cognitive skills, but the performance of tasks requiring perceptual skills and psychomotor skills becomes more difficult as people age. Consequently, people who originally had a high level of cognitive skills and who have been engaged in specialist or technical occupations or clerical posts can continue working until their early 60s, but it is anticipated that it will become increasingly difficult for those who have been involved in occupations requiring perceptual or psychomotor skills to continue their jobs." In addition, when looking at the results for individuals, it is pointed out that whether or not an individual conforms to the aptitude criteria for the occupational groups for each aptitude does not depend on age, and that there are differences between

individuals in terms of the impact of aging.

Many middle-aged and older job-seekers tend to focus on their occupational experience to date when deciding on a place to seek reemployment. Accordingly, it would seem that the necessity of taking the opportunity to find out once more the characteristics of one's own skills by means of a test of ability like the GATB has not been acknowledged. However, with the advent of a society facing the aging of the population coupled with a declining birthrate, and the transformation of Japan into a society in which it will be necessary to continue working in the long term, the significance of objectively measuring one's own ability level even as one grows older, in order to ascertain one's suitability for new jobs and the direction one should take in skills development, seems likely to increase.

(2) Study Concerning the Development of the Integrated Edition of Career In★Sites⁵

The functions and content of Career In★Sites and Career In★Sites MC have already been introduced, but there is another Career In★Sites system, called the data collection system (hereinafter referred to as the "D-version"). In terms of its structure and content, this system is the same as the version of Career In★Sites for young people, but the method used to store data differs. More specifically, when a user stores their usage record in Career In★Sites, the record is saved on the computer on which the system has been installed, but with the D-version, the record is uploaded via the internet and stored on a server managed by the JILPT. Accordingly, as long as the user is using a computer on which the D-version has been installed, they can call up their own record from their previous session, no matter which computer they might be using. Moreover, it enables the system developers to gather a large volume of data on an ongoing basis, so they can gain an understanding of the situation concerning the use of the system, and it can also assist them in grasping the need for the revision of the scales and identifying the characteristics of users through analysis of the measured values in the aptitude assessment

(Muroyama, 2010).

Thus, at present, there are three systems – Career In★Sites, Career In★Sites D-version, and Career In★Sites MC, but studies focused on integrating these three systems have been underway for a few years. Fukamachi (2012) reviews the trends in the studies of CACGS development carried out to date before introducing the approach to the integration of these systems.

(i) Approach Aimed at Development of the Integrated Edition

There are two factors driving the development of the integrated edition, which is currently underway.

Firstly, Career In★Sites is a system that was developed in 2004 and the time has come when a revision is required, including rethinking the scales from the perspective of verifying their reliability. Career In★Sites contains four tests and it is necessary to gather data regularly and confirm the reliability of the scales, in order to maintain the dependability of the tests.

Secondly, there is the question of technical maintenance (making it compatible with new operating systems) and rationalizing the number of times maintenance will be required in the future. Unlike paper-pencil tests, tools developed as computer systems are developed to function on the operating systems of the computers prevalent at the time. Consequently, as computers that have been installed with new operating systems become prevalent, it becomes impossible to use the system developed to run on the old operating systems. The Career In★Sites series that is used at present was developed to run on the operating systems that were common around 2004-2006, so in recent years, the Institute has been forced to develop a separate installer in order to enable the system to be used on computers on which new operating systems have been installed. Accordingly, in revising the edition for young people, the aim is to integrate the other systems into a single system, thereby rationalizing the number of times such maintenance work is required.

5 Fukamachi (2012) provides a summary of the development of the integrated edition of Career In★Sites.

However, although it is described as an integrated edition, it is not advisable to replace it with a completely new system, due to the need to consider those who have used it until now. As such, the functions of the version for young people and the MC version will remain separate, as has been the case hitherto, and a strategy will be adopted of developing the integrated edition in such a way as to permit the user to select which system to use when they register their details.

(ii) Revision of Content

There are three key points to consider in regard to revisions when developing the integrated edition.

Firstly, revisions must be made, primarily focusing on the Career In★Sites system for use by young people. Eight years have passed since the system for use by young people was developed, so it is necessary to revise the standard data used for aptitude assessment. Furthermore, new scales concerning interests and behavioral characteristics will be added, in order to enable some of the scales incorporated into Career In★Sites MC, which was developed in 2007, to be used with young people as well.

The second point relating to revisions is the addition of the functions of the D-version to the integrated edition. Hitherto, the D-version, which consolidates data concerning the usage records via the internet, has been used as a system for young people, but in the integrated edition, this function will be included as standard and those responsible for the system at the facilities introducing it will be able to choose whether to use the stand-alone version or the D-version. Moreover, the possibility of designing the system so that customized servers that record the data can be set up at the facility using the system will be considered.

The third point relates to deliberations concerning the revision of the content of occupational information and the method used to display it. One of the strengths of CACGS is that it is possible to make use of the computer's functions and immediately refer to the database of occupations in order to check the names of occupations that correspond to the conditions relating to the aptitude of the individual.

On the other hand, some counselors, as well as some users themselves, have expressed opinions concerning the appropriateness of the lists displayed, with reports being received that some of the names of occupations displayed do not suit the user's employment history to date or require some form of specialist education before applying for them. Moreover, regular revisions of the content of occupational information are required and in some cases, the information must be updated within a short period of time. Accordingly, it has been stated that, in developing the integrated edition, as well as revising the names of the occupations contained in the database of occupational information to date and the content about them that is displayed, the development team will also adjust the display method.

This, then, is the direction in which the development of the integrated edition of Career In★Sites has been progressing; the integrated edition system has now been completed and trial operations are beginning at some public employment security offices in August 2012. The development team plans in due course to conduct interviews with the facilities running the system, to see how the integrated edition is used in real-life career counseling, and to gather materials aimed at its specific utilization, in order to provide system users with information about how to use it effectively.

(3) Study Concerning the Use of the Card Sort Method in Schools and Vocational Counseling Organizations

The occupation card sort method was devised by Tyler (1961), since when it has become a career guidance technique widely used in the West, primarily in the USA. In Japan, research and development and the use of the card sort method lagged behind, but this Institute developed the aforementioned OHBY cards and VRT cards, and is promoting their popularization in educational and career counseling settings. The following provides an introduction to a case study of the use of OHBY cards in schools and a case study of the use of VRT cards in career counseling settings.

(i) Use of OHBY Cards in Schools⁶

Shimomura (2012) reports cases in which OHBY cards are used in careers education at a junior high school and career guidance at a high school and a university. The following provides an overview of each case studied.

[Use in Careers Education at a Junior High School]

OHBY cards were actually used in a class by the teacher in charge of careers education at a public junior high school in Akita Prefecture. The test was carried out in a classroom setting among a single class of third-year students. The major characteristic of the method employed was the fact that there was a shift from use by the individual to group work, distributing one set of OHBY cards to each student. The lesson plan stated the content of the seven activities, from introduction to summing up, as well as prescribing the materials to be distributed and the support (evaluation) by the teacher, so the content of the careers education was extremely well-devised. The seven activities can be summarized as follows.

- Confirming the students' own interests via the Vocational Readiness Test carried out beforehand
- A “guess the occupation” quiz in which illustrations and photographs from the OHBY cards were displayed on slides
- Explaining the objectives of the OHBY card exercise and confirming the task to be completed
- Explaining how to use the OHBY cards and carrying out the classification
- Using the cards classified under “Would like to do” to think about each student's top three occupations that they would like to do
- Using the backs of the cards classified under “Would like to do” to summarize the types in which each student is interested and then discussing these as a group
- Completing the comment sheets concerning the exercise and then giving a presentation

[Use in Career Guidance at a High School]

The study introduces a case in which OHBY cards were used in a job-seeking seminar for second-year students at a general high school in Tokyo. The

participants were four second-year high school students (one boy and three girls), with a job support worker dispatched from Hello Work serving as the facilitator for the group exercise. The course of the group exercise was as follows.

- Writing the objectives of participation on a blank sheet of paper (what they expect from the seminar and what they would like to find out, etc.)
- Writing on another blank sheet of paper what they are most anxious about right now and what they worry about
- Ice-breaker exercise
- Explanation of the group exercise and guidance concerning job-seeking
- OHBY card exercise
- Group exercise using the OHBY cards
- Review of the task

The notes made by the four participating high school students during the group exercise are presented in the study as the results of the exercise. From the notes they made, it was confirmed that all four participants had fun during the group exercise and that appropriate interaction between the group participants resulted in their having gained some kind of self-understanding. Based on these results, Shimomura (2012) summed up the key points in using OHBY cards in group exercises as follows.

- Attention should be paid to creating an environment in which the members of the group can communicate with each other. The role of the facilitator is crucial to this.
- Basically, the process of talking to the other participants and listening to what they have to say should be emphasized. The participants should actively explain to each other the reasons for their choices in regard to the occupations they classified as “Would like to do” or “Would not like to do”.
- As the conclusion of the exercise, participants should explain to the other members of the group what their preferred occupation is and what the reasons for this are.

[Use in Career Guidance at a University]

In this case, the results of a trial to examine the effects of OHBY cards in careers education at a

⁶ Details of the use of OHBY cards in schools are provided in Shimomura (2012).

VI-24 Effects Following the Use of the Occupation Card Sort Method

Sample 1: 3rd- and 4th-year female university students majoring in the arts

	Before the test	Immediately after the test	1 week after the test	sig.
Number of career path options I am currently considering	3.59 (1.56)	3.69 (1.33)	3.22 (1.68)	
Career Path Undecided 1	47.21 (11.67)	46.69 (12.24)	45.34 (12.41)	
Career Path Undecided 2 (insufficient information)	17.55 (5.14)	15.84 (5.40)	15.87 (5.30)	*
(Value conflict)	18.55 (3.84)	17.39 (2.85)	17.16 (3.48)	*
(Unpredictable)	17.20 (3.55)	16.40 (4.01)	15.80 (4.08)	+
Career Path Self-efficacy	101.61 (13.88)	102.58 (17.88)	105.65 (15.92)	

Sample 2: Primarily 1st-year male university students majoring in sciences

	Before the test	Immediately after the test	1 week after the test	sig.
Number of career path options I am currently considering	2.83 (1.83)	3.00 (1.29)	2.47 (1.44)	
Career Path Undecided 1	55.45 (10.69)	51.39 (12.35)	52.00 (10.44)	**
Career Path Undecided 2 (insufficient information)	21.36 (5.47)	18.36 (4.86)	18.72 (4.74)	**
(Value conflict)	19.00 (3.94)	19.08 (3.68)	18.47 (3.43)	
(Unpredictable)	19.57 (3.59)	18.23 (3.43)	17.43 (2.90)	**
Career Path Self-efficacy	94.37 (18.86)	98.11 (14.62)	98.57 (13.18)	*

Note: **p<.01 *p<.05+p<.10

• Cited from Shimomura (2012)

• The "Number of career path options I am currently considering" item indicates the total number of options that respondents reported they were considering.

• Career Path Undecided 1 is a Japanese translation of a scale created by Osipow, Carney & Barak (1976), while Career Path Undecided 2 is a Japanese translation of a scale created by Germeijs & De Boeck (2003), and Career Path Self-efficacy is a value measured on a scale created by Urakami (1995).

university are reported. The basic design of the experiment involved measuring the basic psychological variable relating to career path awareness a week before using the cards, and then conducting a career guidance session using the cards during a lesson the following week. The same variable measured a week earlier was measured once again immediately after the cards were used, to check whether there had been a positive effect. Furthermore, a week after that, the same variable was measured again, to see whether or not that effect had been maintained. The experiment observed what kind of change in awareness had taken place among the university students as a result of measurements using the same question topics for three weeks in succession. The subjects were 37 university students

majoring in the arts (Sample 1) and 40 first-year university students majoring in sciences (Sample 2). The results obtained are shown in VI-24, but to provide a general summary, one can say that the occupation card sort method using OHBY cards was broadly effective in the cases of both Sample 1 and Sample 2, and that the effects were not only evident immediately after the test, but also lasted until a week later.

(ii) Use of VRT Cards in Career Counseling Situations ⁷

At the development stage of VRT cards, the development team had the cards used in various settings, including individual counseling sessions at vocational counseling organizations, as well as in

⁷ Details of the use of VRT cards in career counseling situations are provided in Muroyama (2012b).

individual counseling sessions and group settings at educational institutions such as junior and senior high schools and universities, and then examined the potential for their use. Of the data gathered in this way, Muroyama (2012b) summarizes the results obtained from responses to a simple questionnaire carried out among users after the cards were used on a trial basis at public employment security offices. The following provides an outline of the content.

[Subjects]

Job-seekers who came to public employment security offices (2 offices) in Kanagawa Prefecture and Miyagi Prefecture underwent a counseling session using VRT cards and the data from those who completed a questionnaire after undergoing the test was analyzed. There were 32 subjects: 6 men and 7 women in their late teens, 7 men and 6 women in their 20s, 2 men and 1 woman in their 30s, 1 woman in her 40s, and 1 man whose age was unclear. Both the men and women aged under 30 were all students.

[Implementation Method]

The cards were used in individual counseling sessions at public employment security offices, by counselors providing job-seekers with employment support. The procedure involved using the VRT cards with job-seekers after completing the intake procedures, and conducting a classification session based either on each job-seeker's interests or confidence. Depending on the situation, there were cases in which only the subject's interests were the focus and cases in which both their interests and confidence were tested, but the judgment concerning which test to administer was left up to the counselors. After completing the classification, the counselors made a record of the classification results and explained them to the job-seekers, while considering the overall trends in their interests, and then provided career counseling.

The counselors also recorded the time required to administer the test and the number of cards in the classification of each type of interest and confidence. Furthermore, notes were made that provided an overview of the content of the counseling sessions with the job-seekers and how the counselors interpreted the results.

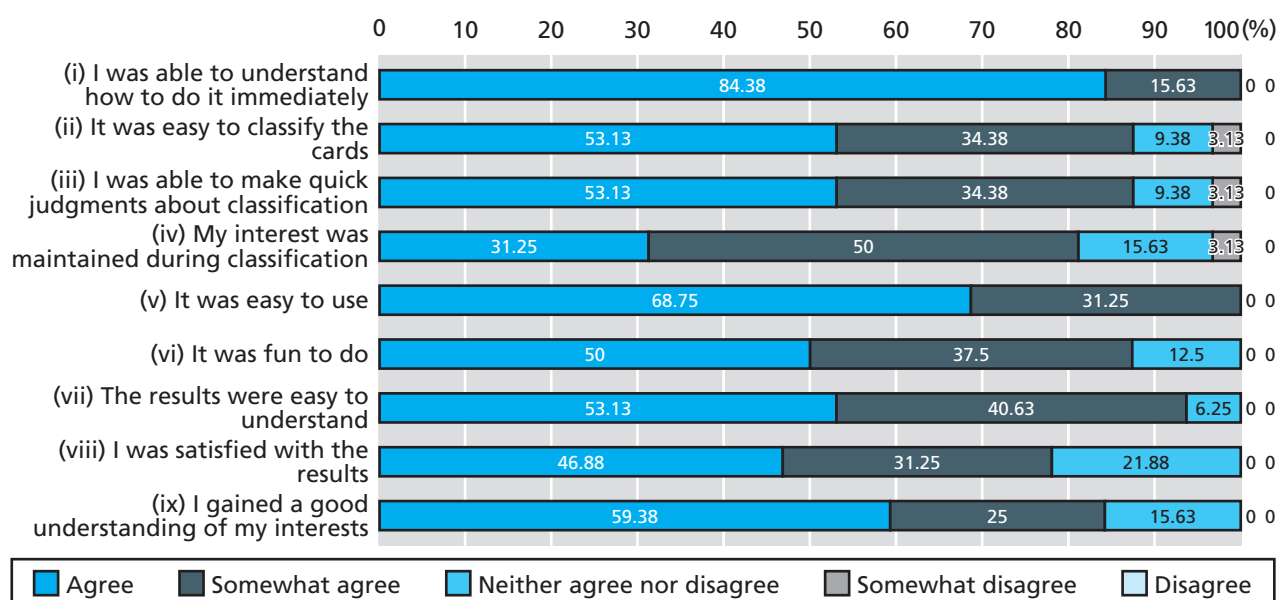
At the same time, after being administered the

test, the job-seekers completed a questionnaire (1 sheet of A4) that asked about their impressions of their experience of the VRT cards. The questionnaire asked them to evaluate nine statements (on a five-level scale ranging from "Agree" to "Disagree"): (i) I was able to understand how to do it immediately; (ii) It was easy to classify the cards; (iii) I was able to make quick judgments about classification; (iv) My interest was maintained during classification; (v) It was easy to use; (vi) It was fun to do; (vii) The results were easy to understand; (viii) I was satisfied with the results; and (ix) I gained a good understanding of my interests. In addition, at the end, a space was provided in which the respondents were asked "Please write any other comments you might have regarding your impressions or things that you noticed while classifying the cards, and any new insights you gained".

[Results]

The results of the responses to the questionnaire from users are shown in VI-25. The largest number gave the most positive response of "Agree" in regard to the statements relating to the usage method: (i) I was able to understand how to do it immediately (84.38%) and (v) It was easy to use (68.75%). If these responses are combined with those responding "Somewhat agree", they add up to 100%. The card sort method simply involves dividing up the cards according to the way one feels, so it is not very difficult at all. Next, when the positive responses "Agree" and "Somewhat agree" are combined, the statements receiving the largest shares of positive responses are as follows, in descending order: (vii) The results were easy to understand (93.76%); (ii) It was easy to classify the cards (87.51%); (iii) I was able to make quick judgments about classification (87.51%); (vi) It was fun to do (87.50%); (ix) I gained a good understanding of my interests (84.38%); (iv) My interest was maintained during classification (81.25%); and (viii) I was satisfied with the results (78.13%). In addition, if one looks solely at the "Agree" responses, the smallest number of responses was received for the statement (iv) My interest was maintained during classification (31.25%), which suggests the possibility that there are people who lose interest in the simple act of

VI-25 Proportion of Respondents Who Selected Each Option for Each Statement on the Questionnaire (n=32)



repetition involved in the process of classifying all 54 cards.

The content of the remarks made in the space left for the respondents to write freely about their impressions was then classified into five categories: remarks concerning their impressions of the results or the analysis thereof, remarks concerning the effects of the card sort method, remarks concerning the appropriateness of the implementation of the test, remarks concerning the reliability of the card sort method, and remarks concerning the characteristics of the card sort method.

Of these remarks, the largest number fell into the “impressions of the results or the analysis thereof” category, and one could see comments relating to self-analysis, focusing on the types in which the respondents' interests lay or the relationship between their interests and confidence. Moreover, in regard to the “effects of the card sort method” category, the responses all focused on the fact that the respondents were happy to have understood their own interests and confidence. The fact that the counselors employed an appropriate method of use would seem to be one factor behind the positive impressions received in this regard.

With regard to the comments concerning the “appropriateness of the implementation of the test”, one can see that the counselors who administered the test at the public employment security offices carefully carried out the task together with the job-seekers, ensuring that it was easy for them to understand. In terms of reliability, there were comments such as “I believe it holds true” and “I mostly obtained the same results as in the aptitude test I took at school”, which verified that the respondents were satisfied with the results, even though a simple method had been used.

3. The Potential for Using Vocational Aptitude Tests in Career Development Support

As stated at the outset, with career development – including the selection of an occupation – becoming an issue that is relevant not only to young people, research into approaches to specific forms of support aimed at enabling individuals to choose jobs and ways of life that enable them to demonstrate their interests and abilities is an important theme that must be worked on in the future. This paper has examined

methods that use vocational aptitude tests and career guidance tools as one approach to providing such support, introducing the content of the major tests that have been utilized in career counseling in Japan, as well as the methods of using them. To conclude, let us examine future approaches to aptitude assessment and issues relating to these.

(1) Changes in the Roles Required of Aptitude Tests

Conventionally, aptitude assessment focused on the use of paper-pencil-type psychological tests, but in recent years, various types of test have been developed, such as CACGS and the card sort method. The variety that has emerged in such tests is related to the diversification of the objectives of aptitude assessment, and this tendency is likely to grow further in the future. More specifically, the main objectives of aptitude assessments hitherto have been the measurement of an individual's interests and abilities, and matching them with occupations that have characteristics that correspond to those interests and abilities. However, today, one can see cases in which aptitude tests are used not simply with the aim of matching an individual with an occupation, but also for the purpose of obtaining material to promote self-understanding or for counselors to understand job-seekers, or as material for careers education in schools. Moreover, the range of subjects is expanding to include not only young people who are trying to find an occupation, but also middle-aged and older people with employment experience. Thus, one can say that aptitude tests are shifting from a role as tests measuring aptitude to fulfilling a role as a career guidance tool aimed at a wide range of age brackets, which provides a range of material for individual career development.

(2) Consideration of Appropriate Methods of Using Tests and Career Guidance Tools

Based on the conditions of the expansion of subjects and the diversification of the settings in which they are used, there are two issues that should be borne in mind in regard to the utilization of aptitude tests and career guidance tools in the future.

The first is the appropriate selection of tests suited

to the situation, such as the subject and their needs, the objective of the test and the setting in which it will be administered. Various tests and tools have been developed to date, but they each have their own characteristics in terms of their implementation methods and the results presented. Accordingly, it is necessary for the person administering the test or tool to consider the various conditions in which it will be administered before selecting the appropriate test or tool and thinking about better ways of using it.

The second is the appropriate development of skills and awareness among those using each tool. Guidance systems that use computers and card sort type tools do not have such strict administration conditions as psychological tests. Consequently, there is a tendency to think that they can be used easily, but depending on the situations, the interpretation of the results can be more difficult than in psychological tests, where a precise profile can be compiled mechanically. Accordingly, no matter what test or tool might be used, it is essential to increase the skills and awareness of those administering the tests or tools, in order to prepare them to ensure that they have a good understanding of the characteristics of that tool in advance, and can interpret the results adequately.

This Institute has developed various tests and tools to date, based on the accumulation of knowledge from many studies carried out over a long period. Each individual test or tool has been created based on repeated scrutiny of its effectiveness as a tool assisting in aptitude assessment or counseling. If aptitude tests and guidance tools are used properly, they are an excellent tool for efficiently gaining an understanding of an individual's characteristics, and can be of use in promoting mutual understanding between the subjects of the tests and those administering them. However, no matter how outstanding a tool might be, it is difficult for them to be utilized effectively if the user does not understand the appropriate method of use. Accordingly, what is required of researchers involved in aptitude assessment is to continue to strive to provide material that is useful to the career development of job-seekers and young people, by conducting ongoing studies aimed at the effective use of aptitude tests and

various guidance tools into the future.

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