

2012 Entrance Exam for Graduate School
平成24年度 大学院博士(前期)課程入学者選抜学力試験

English 英語
100点

Notices 注意事項

1. Do not open this exam until you are given instructions to begin. 試験開始の合図があるまで、この問題冊子を開かないでください。
2. Answer sheets are separated from the question sheets (Questions are on pages 1-6). Please submit only the answer sheets. 問題冊子(問題は1~6ページにあります)と解答用紙(2枚)は別々になっています。解答冊子のみを提出してください。
3. Do not forget to write your name and your applicant number on all of your answer sheets and cover sheet. 解答冊子の表紙と各解答用紙の所定欄に、忘れずに氏名と受験番号をはっきりと記入してください。
4. The questions are written in English and/or Japanese. Please read the instructions carefully. 問題文は英語か日本語で書かれています。指示を注意深く読んでください。
5. If you find some incomplete printing or collating, please let the supervisor know by raising your hand silently. 問題冊子の印刷不明瞭やページの落丁・乱丁あるいは解答用紙の汚れ等に気がついた場合は、静かに手を上げて監督員に知らせてください。
6. Please take the question sheets with you after finishing the exam. 試験終了後、問題冊子は持ち帰ってください。
7. Scores are indicated for each of the questions. 設問ごとに配点が記されています。
8. You have 90 minutes. 試験時間は90分です。

PART 1: Reading Comprehension (40 points)

Read the article below and answer the following questions.

One goal of most modern societies is to equip citizens with the requisite skills and proficiencies that enable them to participate in the global economy. How well this is achieved depends much upon the educational system a society adopts. Are national yardsticks, or achievement measurements, sufficient indicators for determining whether the goals have been attained? Indeed, national measures are necessary, but some global indicator is also required if countries want to participate in the global economy.

Every three years the Programme for International Student Assessment (PISA) administered by the Organisation for Economic Co-operation and Development (OECD) provides one such indicator. PISA assesses the extent to which school students have acquired the knowledge and skills that are essential for full participation in modern societies. PISA has generally focused on reading, mathematics and science literacy. PISA does not merely assesses whether students can reproduce knowledge, such as for an exam, but also examines how well students can extrapolate from what they have learned and apply it in unfamiliar settings.

In Japan, approximately 3,400 junior high and high school students from 109 schools participated in the PISA 2009 survey. Overall, Japan ranked 7th behind regional neighbors Korea, Hong Kong, Singapore and New Zealand. Japan scored highly (520 points) and ranked seventh with text-based literacy, ranked eighth in mathematics (529 points), and ranked fourth in science (539 points).

Moreover, technological literacy has also become a recognized proficiency for the modern student. PISA also assesses this literacy. Computer use worldwide has been growing at an exponential rate. By mid-2010, it was estimated that almost two billion people, or 29% of the world population, were using the Internet, with percentages ranging from 77% in North America to about 11% in Africa (Miniwatts Marketing Group, 2010). In 2010, amongst the OECD countries, on average around 25% of the population had a fixed-line broadband (OECD Broadband Portal) compared to around 8% of the global population. Mobile broadband connection was estimated at 14% (ITU Statistics).

It was once thought that those people who had been exposed to Information and Communication Technology (ICT) from a young age, so-called “digital natives”, readily

possessed the skills and abilities required to make use of digital devices, compared to older people, the so-called “digital immigrants” (Prensky, 2001). However, there is no evidence to support this hypothesis, as mere exposure to technology is not sufficient for becoming a proficient user.

The results from PISA 2009 highlight this succinctly within the Japanese environment. Japan ranked 4th on digital reading proficiency (See Table VI.A), even though the results for computer-use at home and at school were mediocre. This means that students could read and extrapolate information from a digital text in a similar way as they may when reading a print-based text. Korea was the top performing country, followed by New Zealand and Australia.

Although ICT can support and enhance learning, access to computers and the Internet, and how they are used, are also essential requisites for developing technological literacy. In Denmark, Australia and Norway, more than 70% of students reported that they frequently do homework on a home computer. More than 60% reported that they browse the Internet for schoolwork on their home computer. In contrast, fewer than 10% of students in Japan do either of these tasks frequently. Students in Japan rarely use home computers for schoolwork, and fewer than 5% of Japanese students use computers in their classes at all. Similar results were forthcoming for the ability of students in Japan to use computers for creating a presentation, or using a spreadsheet to plot a graph. Japan was ranked the lowest in the OECD.

The PISA 2009 results highlight that Japan is adequately providing an educational system that enables students to acquire the traditional literacies (reading, math and science). However, questions need to be levied against the system’s shortcomings in equipping students with digital literacy, an essential component if the youth are to take advantage of the opportunities provided in the globalized economy. Whether the youth choose to use technologies in their future is irrelevant: if they cannot, they are already hindered and will forever be playing catch-up.

■ Table VI.A ■

AN OVERVIEW OF PERFORMANCE IN DIGITAL READING, NAVIGATION AND COMPUTER USE

	Higher quality or equity than OECD average
	At OECD average (no statistically significant difference)
	Lower quality or equity than OECD average

	Digital reading performance	Gender difference in digital reading scores between boys and girls	Index of number of relevant pages visited (navigation skills)	Computer use at home			Computer use at school		
				Percentage of students who use a computer at home	Percentage difference between top and bottom quarters of the PISA index of economic, social and cultural status	Difference in digital reading scores between those students who use and those who do not use a computer at home	Percentage of students who use a computer at school	Percentage difference between top and bottom quarters of the PISA index of economic, social and cultural status	Difference in digital reading scores between those students who use and those who do not use a computer at school
				Mean score	Score dif.	Mean index	%	% dif.	Score dif.
OECD average	499	-24	46.3	92.3	16.0	80	74.2	0.3	9
OECD									
Korea	568	-18	52.8	87.5	19.5	49	62.7	3.5	2.1
New Zealand	537	-40	49.7	92.5	20.2	90	83.4	6.4	20
Australia	537	-28	49.6	96.7	7.8	84	91.6	5.6	42
Japan	519	-23	50.1	75.9	38.6	48	59.3	2.6	14
Iceland	512	-30	47.5	99.1	1.2	74	79.5	5.1	22
Sweden	510	-26	47.8	97.7	4.7	105	89.1	4.7	28
Ireland	509	-31	47.4	93.2	10.9	60	62.9	0.4	-3
Belgium	507	-24	47.7	96.9	9	102	62.8	-1.1	9
Norway	500	-35	46.9	98.7	2.7	77	93.0	2.5	25
France	494	-20	46.1	m	m	m	m	m	m
Denmark	489	-6	47.2	98.8	2.8	79	93.0	1.8	6
Spain	475	-19	44.2	92.6	14.4	78	65.5	-4.0	11
Hungary	468	-21	41.6	91.8	23.6	102	69.3	-8.9	-27
Poland	464	-29	42.0	92.1	22.9	84	60.6	-9.1	-8
Austria	459	-22	43.3	98.2	3.7	94	84.1	-3.2	-6
Chile	435	-19	37.7	73.2	60.3	69	56.8	-2.0	2
Partners									
Hong Kong-China	515	-8	48.1	96.4	5.2	33	82.6	0.2	3
Macao-China	492	-12	46.5	96.4	5.2	61	80.1	-1.0	4
Colombia	368	-3	31.5	m	m	m	m	m	m

Table VI.A: An Overview of Performance in Digital Reading, Navigation and Computer Use.

References

Miniwatts Marketing Group (2010). Internet World Stats: Usage and Population Statistics. Retrieved September 21, 2010, from <http://www.internetworldstats.com/stats.htm>

OECD (2011). OECD Broadband Portal. Retrieved January 26, 2012, from <http://www.oecd.org/sti/ict/broadband>

International Telecommunications Union (2011). World Telecommunication/ICT Indicators Database. Retrieved January 26, 2012, from <http://www.itu.int/ict/statistics>

OECD Programme for International Student Assessment (n.d.). PISA 2009 results. Retrieved December 22, 2011, from <http://oecd.org/edu/pisa/2009>

Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*, Vol. 9, No. 5. Retrieved January 27, 2011, from <http://www.marcprensky.com>

Reading Comprehension Questions

記事に書かれている内容にもとづいて、以下の各問いに答えなさい。

Based on the information provided in the above article, answer the following questions.

1. Based on the text, mark either True () or False (×) for the following statements. (25 points)

- (ア) National tests are important assessment measures.
- (イ) Japan's literacy ranking in mathematics was higher than science but lower than text-based literacy.
- (ウ) People exposed to technology from a young age are more proficient users of digital devices than those who are not exposed early in life.
- (エ) Japanese students are able to read digital texts well compared to most other OECD countries.
- (オ) The Japanese educational system adequately provides all the literacy skills needed to use the opportunities available in the global economy.

2. In order of rank achieved for each literacy (text-based literacy, science literacy and mathematics literacy) which of the below is the correct order for Japan? (5 points)

- (ア) text-based literacy, science literacy, mathematics literacy
- (イ) text-based literacy, mathematics literacy, science literacy
- (ウ) science literacy, text-based literacy, mathematics literacy
- (エ) science literacy, mathematics literacy, text-based literacy
- (オ) cannot determine from the data provided in the text

3. What was the average global fixed line broadband connection percentage in 2010? (5 points)

- (ア) 77%
- (イ) 14%
- (ウ) 11%
- (エ) 8%
- (オ) not stated

4. With reference to Table VI.A, what is the percentage point difference between the OECD average and Japan for the students who use a computer at school? (5 points)

- (ア) 15.3%
- (イ) 14.9%
- (ウ) 16.4%
- (エ) 20.0%
- (オ) unable to determine from the data given in the table

PART 2: Academic Skills

(60 points)

Using Figure VI.5.30 and based on the data in the essay above, analyze the technological proficiency of students in Japan and explain its significance for Japan's futures. Write around 200 words. (60 points)

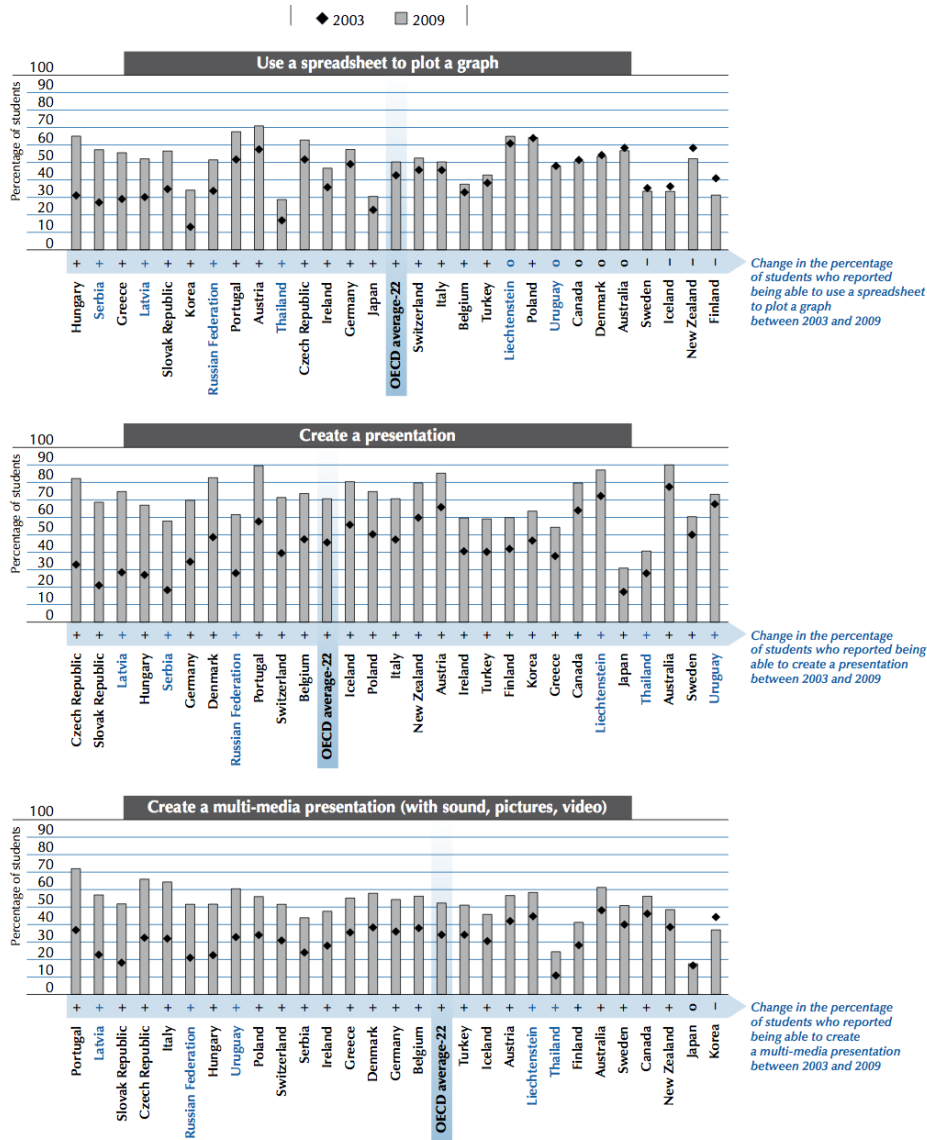


Figure VI.5.30: Percentage of students who reported being able to do the following tasks very well by themselves or with the help from someone, in 2003 and 2009.