平成21年度実施（下期）
東北大学大学院情報科学研究科
博士課程前期2年の課程・後期3年の課程入学試験問題

専門試験科目
第６群（心理・哲学群）

注意

○専門科目試験問題は、全部で１２問あります。
○前期２年の課程の受験者は、４問を選んでそれぞれ答案用紙に解答しなさい。
○前期２年の課程外国人留学生受験者は、２問を選んでそれぞれ答案用紙に解答しなさい。
○後期３年の課程の受験者は、２問を選んでそれぞれ答案用紙に解答し、さらに学習心理情報学または認知心理情報学（人間社会科学専攻）及び認知情報学（応用情報科学専攻）に配属を希望する者は小論文を作成しなさい。
○各答案用紙上の 問題番号 の空欄に、解答する問題番号を、
さらに、 受験番号： には受験番号を、それぞれ記入しなさい。
○試験時間： 10:00 - 13:00

専門科目試験問題　第６群　（心理・哲学群）

1．認知心理学における視覚イメージ研究の変遷と現状について論述しなさい。ただし、心的回転、イメージ論争、視覚バッファの３つの用語を必ず文章中に用いること。
2．メタ認知の機能とその重要性について論述しなさい。
3．検定力分析(power analysis)について説明しなさい。
4．適性処遇交互作用について説明しなさい。
5．内発的動機付けと外的報酬の関係について論じなさい。
6．判断を行う際に生ずる認知バイアスについて具体的に述べなさい。
7．デカルトの「われ思う、ゆえにわれ在り」について説明しなさい。
8．カントの「コペルニクス的転回」について説明しなさい。
9．デュルケームの「集合意識」について説明しなさい。
10．ベルグソンの「直観」について説明しなさい。
11．フロイトの「重層的決定」について説明しなさい。
12．クザーヌスの「反対の一致」について説明しなさい。

平成21年度実施(下期)

東北大学大学院情報科学研究科

博士課程前期2年の課程・後期3年の課程入学試験問題

外国語（英語）

第6群（心理・哲学群）

注意

○解答は答案用紙に書きなさい。

○試験時間：　14:30 － 15:30

1. 本文中のBlank Slateとはどのような内容を意味しているかを、本文に即して答えなさい。
2. 下線部の文章１・２を日本語に訳しなさい。

The most obvious arena in which we confront native ways of thinking is the schoolhouse. Any theory of education must be based on a theory of human nature, and in the twentieth century that theory was often the Blank Slate or the Noble Savage.

Traditional education is based in large part on the Blank Slate: children come to school empty and have knowledge deposited in them, to be reproduced later on tests. (Critics of traditional education call this the "savings and loan" model.) The Blank Slate also underlies the common philosophy that the early school-age years are an opportunity zone in which social values are shaped for life. Many schools today use the early grades to instill desirable attitudes toward the environment, gender, sexuality, and ethnic diversity.

Progressive educational practice, for its part, is based on the Noble Savage. As A. S. Neill wrote in his influential book *Summerhill*, "A child is innately wise and realistic. If left to himself without adult suggestion of any kind, he will develop as far as he is capable of developing." Neill and other progressive theorists of the 1960s and 1970s argued that schools should do away with examinations, grades, curricula, and even books. Though few schools went that far, the movement left a mark on educational practice. In the method of reading instruction known as Whole Language, children are not taught which letter goes with which sound but are immersed in a book-rich environment where reading skills are expected to blossom spontaneously. In the philosophy of mathematics instruction known as constructivism, children are not thrilled with arithmetic tables but are enjoined[注] to rediscover mathematical truths themselves by solving problems in groups. Both methods fare badly when students' learning is assessed objectively, but advocates of the methods tend to disdain standardized testing.[1]

An understanding of the mind as a complex system shaped by evolution runs against these philosophies. The alternative has emerged from the work of cognitive scientists such as Susan Carey, Howard Gardner, and David Geary. Education is neither writing on a blank slate nor allowing the child's nobility to come into flower. Rather, education is a technology that tries to make up for what the human mind is innately bad at. Children don't have to go to school to learn to walk, talk, recognize objects, or remember the personalities of their friends, even though these tasks are much harder than reading, adding, or remembering dates in history. They do have to go to school to learn written language, arithmetic, and science, because those bodies of knowledge and skill were invented too recently for any species-wide knack[注] for them to have evolved.[2]

Far from being empty receptacles or universal learners, then, children are equipped with a toolbox of implements for reasoning and learning in particular ways, and those implements must be

cleverly recruited to master problems for which they were not designed. That requires not just inserting new facts and skills in children's minds but debugging and disabling old ones. Students cannot learn Newtonian physics until they unlearn their intuitive impetus[注] based physics. They cannot learn modern biology until they unlearn their intuitive biology, which thinks in terms of vital essences. And they cannot learn evolution until they unlearn their intuitive engineering, which attributes design to the intentions of a designer.

注　enjoin：申しつける、命令する、knack：要領、こつ　impetus：勢い、衝動