

コンピュータ & エデュケーション Vol.7

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インタビュアー 赤間 道夫 (編集長 愛媛大学)

中村 宗悦 (編集委員 大東文化大学)

●特集 新教育課程の光と影 —情報教育の未来を考える—

●座談会 新教科「情報」を考える

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東京都立大学 生田 茂

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『思考のためのインターネット——厳選サイト800』	アリアドネ編	愛媛大学 赤間 道夫
『PC-UNIX 日本語環境+アプリケーション 徹底入門』		京都大学 若林 靖永
『四人はなぜ死んだのか』	三好 万季:著 文藝春秋 1999	
『デジタル・メディア社会』	水越 伸:著 岩波書店 1999	
『そして、干潟は残った——インターネットとNPO』	松浦 さと子:編 リベルタ出版	石巻専修大学 綾 皓二郎

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Special Reports on "The New Guidelines for School Curriculum"
—The Future of Information Processing Education—

新免許法に向けた大学における情報教育の試行

新潟大学教育人間科学部 小林 昭三

私達は「情報処理と教育活用」という情報リテラシー教育を1997年から3年程試行してきた。この情報
2000

リテラシー教育を開始した経過と授業の概要・成果・問題点などを報告する。さらに、年実施の新免許法において必須科目となる「情報機器の操作」に向けて、大教室に情報コンセントを設置し、受講生は各自のポータブルパソコンをインターネット接続して実施するという新たな形態の情報教育の実践を開始してきている。こうした新たな情報リテラシー教育の試みを紹介する。

Efforts to Improve Information Education in University Towards the New Teacher Certification Law

Akizo Kobayashi

This paper introduces several attempts to improve information education (IE) in our university since 1997. We report on the preparation process, the contents and effects of the teacher-training course for IE, the result of the questionnaire and the problems that have arisen. We also introduce new attempts at IE using students' own portable computers connected to LAN systems. Rooms wired with LAN sockets were constructed for teacher-training courses for IE after 2000.

大学における情報教育2000年問題

金沢大学教育学部 三好 義昭

大学における情報教育2000年問題を新教育職員免許法施行に伴う「情報機器の操作」をどのような形態で開講するかの中短期的な問題と、新学習指導要領が名実共に実施された場合、大学での一般情報処理教育は如何にあるべきかの中長期的な問題として取り扱った。前者の中短期的な問題に関しては、各大学で既に実施している一般情報処理教育における「計算機リテラシー教育」で対応するのが妥当である。後者の中長期的な問題に関しては、「プログラミング教育」が大学における一般情報処理教育の中心となろう。

The Year 2000 Problem in Information Education in the University — In Case of Kanazawa University —

Yoshiaki Miyoshi

The following two problems are considered to be the year 2000 problems in information education in the university. One is the short-term problem of how to start "the Operation of Information Instruments Course" corresponding to the operation of the new education staff license law. The other is the mid/long-term problem of general information processing education at the university when the new guideline for teaching comes into effect, both in name and reality. It is appropriate to respond to the short-term problem with "computer literacy education" in the general information processing education course, already given in each university. Concerning the mid/long-term problem, "programming education" will probably be the main part of the general information processing education in the university.

高大一貫教育における「情報」教育の模索

早稲田大学本庄高等学院 半田 亨・早稲田大学高等学院 橘 孝博

早稲田大学の付属高校である、高等学院・本庄高等学院では現在それぞれにおいて小規模ながら「情報教育」が実施されている。しかし、最近の大学⇄両学院間の色々な会議において「大学入試のない付属高校の特色ある教育として、一貫教育の良さをもっと打ち出せないか？」という話題が出されており、遅ればせながら「情報教育」もそこでの検討課題とすることになった。ここでは、大学教務部の助成金を受けた「教育のオープン化研究会」活動の一端として、両学院の情報教育の現状と検討課題・今後の方向性を報告する。

An Examination of Information Education in Senior High School Attached to University

Toru Handa, Takahiro Tachibana

Information education is carried out individually at Waseda Gakuinn Senior High School and Waseda Honjo Gakuinn Senior High School, both of which are attached to Waseda University, at the present time. However, it has recently often been discussed in meetings at Waseda University that the merits of the consistency of education between these two schools and the university, which is characteristic of schools attached to universities, should be stressed more and information education has become one of the topics of the discussion. In this report, information education at these two senior high schools is investigated and problems and future prospects are discussed. This project was financially supported by a Grant for Special Research Programs from Academic Affairs Division of Waseda University.

教科「情報」が円滑に導入されるために

八王子高等学校・小山 俊宣

本稿は、新教科「情報」の設置がもたらす問題点を報告するものである。「情報」のような教科は、既存の教科にはない内容と教育実践の可能性を秘める21世紀にふさわしい教科である反面、導入に際し明確なコンセプト議論と予算および人的支援の裏付けがなければ空中分解する可能性すらあると考えられる。

For the Smooth Introduction of Information Education

Yoshinobu Koyama

This paper reports the problems brought up by the introduction of the new curriculum 'information education'. Information education is a subject of the 21st century with its new ideas of learning and possibilities of educational practices. But at the same time the whole project may blow up if the basic concepts are not discussed thoroughly and the financial and human support sufficient.

情報教育2000年問題の考察

八戸工業大学システム情報工学科 奈良 久

新教育課程が小中学校では2002年から、高等学校では2003年から実施される。高等学校では情報A,B,Cが新設され、一科目選択必修となる。小中学校では新教科総合学習の時間で情報教育が行われる。小中高等学校の情報教育振興にまつわる諸問題が「情報教育2000年問題」である。問題は山積し、その解決には時間がかかるだろうが、この度の学習指導要領改定で「情報」が正規のカリキュラムとして認定されたことを評価したい。日本の情報教育の真の振興を願って、新教育課程実施の上で特に気になる問題を論じた。

The Year 2000 Problems in Information Education in Japan

Hisashi Nara

Recently the Monbu-sho revised the Guidelines of School Curricula and the new subjects of "Information A, B and C" are to be taught in all high schools in Japan from the year 2003. Also in the primary and the junior high schools, it is highly expected to promote information education in the new subject of "Synthesized Learning". In order for these new subjects to be taught successfully in respective schools, many problems have to be solved. These are the "Year 2000 Problems in Information Education in Japan". Establishment of new formal subjects concerning information itself is a desirable decision by the Monbu-sho. Wishing the true promotion of information education in Japan, some of the Year 2000 problems are reviewed and discussed.

●論文概要 (Japanese&English)

朝鮮語 - 日本語機械翻訳の評価

東京成徳大学 古閑 恭子

朝鮮語と日本語は、構造的によく似た言語である。そのため、構造的に日本語との違いの大きい英語などの言語に比べ、日本語への機械翻訳にはかなりの精度が期待できそうである。しかしながら、実際に市販の翻訳ソフトを用いて朝・日翻訳を試みると、その性能は決して高くはないことが分かる。本稿では、言語学的に誤訳の種類を①語彙そのもののレベルに関わる誤訳、②語彙の共起関係レベルの誤訳、③文法レベルの誤訳、④テキスト論レベルの誤訳に分類し、数種類のテキストを用いて実験し、その種類別の誤訳の割合を調べてみた。実験の結果、誤訳の過半数は共起関係レベルのものであることが分かった。

Evaluating Korean-Japanese Machine Translation

-----From a Linguistics Point of View-----

Kyoko Koga

Korean and Japanese are very similar in their linguistic structures. Therefore, one may expect quite a high accuracy of Korean-Japanese machine translation compared to translation from Japanese to a language which is such as like English structurally very different from Japanese. However, using one of the K-J machine translation software programs available on the market, the result were far short of expectation. In this paper, linguistic mistranslations are categorized into four groups: mistranslation of words themselves, mistranslation of co-occurrence, grammatical mistranslation and textual mistranslation. By translating several texts using one such software program, we examined the number of the mistranslations in each category. According to the result, more than half of the mistranslations proved to be that of co-occurrence.

コンピュータ・ネットワークを利用した課外英語自習プログラム

広島市立大学 渡辺 智恵

大学の英語教育は効果を上げていないという批判があるが、効果が上がらない原因のひとつは学習時間の不足である。このような学習時間の不足を補うものとして、コンピュータ・ネットワークを利用した課外での英語自習プログラムを実施した。本稿では、その実施方法、実施結果、問題点について報告する。

Computer-Assisted Extracurricular English Training Program

Tomoe Watanabe

English teaching at Japanese universities has been criticized for its ineffectiveness. One of the reasons of the slow improvement in students' English proficiency is the lack of teaching/learning hours in university curriculum. For the purpose of increasing students' learning hours, a computer-assisted English training program was carried out outside the curriculum. This paper describes the procedures for implementing the program, its effects on students' English proficiency and problems encountered through the program.

インターネットを利用した書籍ライブラリーの構築

— 経営系大学院教育の一環として —

岡本哲弥 足達教暁 許淑女亭 田中陽一郎 若林靖永

マーケティングを専攻する大学院生が、インターネットを通じて、個人で所有する書籍の情報をデータベースに共有化し、貸し借りを行なうことを目的として"**Internet Library**"システムを構築した。本稿では、このシステムの内容について紹介した上で、システムに対する評価を行なっている。評価結果としては、機能性や移行性は必ずしも良くないものの、有用性や保守性は高い。さらに、大学院教育の側面から、今回のシステム構築に向けたプロジェクト活動を振り返ると、多くの教育的成果が認められた。

Developing a Book Library System on the Internet

----As a Part of Graduate School Education in Business Administration Course-----

Tetsuya Okamoto, Noriaki Adachi, Shu-ting Hsu, Yoichiro Tanaka Yasunaga Wakabayashi

Graduate students majoring in marketing have developed an "Internet Library" system in order to share information about their private books on a database and promote lending and borrowing of those books on the website. This report describes what an "Internet Library" is and shows that although this system does not necessarily have good functionality and portability, it has high usability and maintainability. Furthermore, through reviewing the process of building up this system from the point of graduate school education, we confirmed that there were many educational effects.

プログラミングを通じた英文法教育

弘前大学 内海 淳

この論文では、コンピュータ・プログラミングを利用することにより、英語教育においても、「実験の授業」を行うことが可能であることを示す。このアプローチでは、学生に簡単な機械翻訳プログラムを作成させる。この作成の過程を通して、英語の基本的な文法規則を明確に理解させることがこのアプローチの目標である。

Teaching English Grammar through Computer Programming

Jun Utsumi

In this paper, we would like to show that "teaching through experiment" is possible in English education through the use of computer programming. The students are encouraged to make a simple machine translation program. Through the process of making a program, the students come to understand the basic rules of English grammar.

WWW(World Wide Web)を用いた 仮想実験支援環境の構築

室蘭工業大学 鈴木 好夫 北海製罐株式会社 大原 礼四郎

実際の実験で発生する現象を実験前に把握させるために、実際の実験環境に近づけた仮想的な実験環境の実装を考えた。電気電子工学科（3年次）の学生実験に対する仮想実験システムをJava言語を用いて構築し、WWW(world Wide Web)で提供した。すべての学生は、パソコンを持って いればいつでもこの教材を使用できる。

Virtual Experiment Environment on WWW(World Wide Web) for Student Laboratory Work

Yoshio Suzuki, Reishiro Ohara

We created a virtual experiment environment that closely resembles the actual experiment environment so that the students can experience in advance the phenomena that may occur in the actual experiment. This virtual experiment environment was developed using Java programming for the laboratory experiments of the junior students majoring in electrical and electronics engineering and was provided on WWW. The student can use these teaching materials at any time on their computer.

個別化教授システム(PSI)の大学授業への適用

富山大学 向後千春

大学の「情報処理」や「統計学」といった基礎的な科目で、個別化教授システム(PSI, Personalized System of Instruction)を実践している。この授業実践の特色は、Web化された教材の利用、受講生10人にひとりの割合でつくプロクター（指導者）、自己ペースによる進捗、単元ごとの通過テストによる完全学習といった点にある。この報告では、授業実施にあたってのポイントを整理し、考察する。

An Application of Personalized System of Instruction (PSI) to University Course

Chiharu Kogo

This paper describes the application of Personalized System of Instruction (PSI) to university courses of statistics and computer literacy. These courses are characterized by

(1) use of web-based learning materials, (2) proctors who assist the learners when needed, and (3) self-paced mastery learning. The conditions of applying PSI are listed and discussed.

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Efforts to Improve Information Education in University Towards the New Teacher Certification Law

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This paper introduces several attempts to improve information education (IE) in our university since 1997. We report on the preparation process, the contents and effects of the teacher-training course for IE, the result of the questionnaire and the problems that have arisen. We also introduce new attempts at IE using students' own portable computers connected to LAN systems. Rooms wired with LAN sockets were constructed for teacher-training courses for IE after 2000.

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The following two problems are considered to be the year 2000 problems in information education in the university. One is the short-term problem of how to start "the Operation of Information Instruments Course" corresponding to the operation of the new education staff license law. The other is the mid/long-term problem of general information processing education at the university when the new guideline for teaching comes into effect, both in name and reality. It is appropriate to respond to the short-term problem with "computer literacy education" in the general information processing education course, already given in each university. Concerning the mid/long-term problem, "programming education" will probably be the main part of the general information processing education in the university.

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●Articles

Evaluating Korean-Japanese Machine Translation -----From a Linguistics Point of View-----

Kyoko Koga

Korean and Japanese are very similar in their linguistic structures. Therefore, one may expect quite a high accuracy of Korean-Japanese machine translation compared to translation from Japanese to a language which is such as like English structurally very different from Japanese. However, using one of the K-J machine translation software programs available on the market, the result were far short of expectation. In this paper, linguistic mistranslations are categorized into four groups: mistranslation of words themselves, mistranslation of co-occurrence, grammatical mistranslation and textual mistranslation. By translating several texts using one such software program, we examined the number of the mistranslations in each category. According to the result, more

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Developing a Book Library System on the Internet ----As a Part of Graduate School Education in Business Administration Course-----

Tetsuya Okamoto, Noriaki Adachi, Shu-ting Hsu, Yoichiro Tanaka Yasunaga Wakabayashi

Graduate students majoring in marketing have developed an "Internet Library" system in order to share information about their private books on a database and promote lending and borrowing of those books on the website. This report describes what an "Internet Library" is and shows that although this system does not necessarily have good functionality and portability, it has high usability and maintainability. Furthermore, through reviewing the process of building up this system from the point of graduate school education, we confirmed that there were many educational effects.

Teaching English Grammar through Computer Programming

Jun Utsumi

In this paper, we would like to show that "teaching through experiment" is possible in English education through the use of computer programming. The students are encouraged to make a simple machine translation program. Through the process of making a program, the students come to understand the basic rules of English grammar.

Virtual Experiment Environment on WWW(World Wide Web) for Student Laboratory Work

Yoshio Suzuki, Reishiro Ohara

We created a virtual experiment environment that closely resembles the actual experiment environment so that the students can experience in advance the phenomena that may occur in the actual experiment. This virtual experiment environment was developed using Java programming for the laboratory experiments of the junior students majoring in electrical and electronics engineering and was provided on WWW. The student can use these teaching materials at any time on their computer.

An Application of Personalized System of Instruction (PSI) to University Course

Chiharu Kogo

This paper describes the application of Personalized System of Instruction (PSI) to university courses of statistics and computer literacy. These courses are characterized by (1) use of web-based learning materials, (2) proctors who assist the learners when needed, and (3) self-paced mastery learning. The conditions of applying PSI are listed and discussed.