

MASTERY LEARNING: A PEDAGOGICAL APPROACH

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Since the introduction of the Computer Science program at André Laurendeau in 1983, the success rate has been only 30 %. In the fall of 1986, two professors, looking for an explanation, did a survey, as well as a statistical analysis of standardized cumulative records. They discovered that there was a very strong correlation between success in the program and the final grade in the « Logic of Programming » course. The teachers believed that this was a « test course » requiring students to apply their logical sense. Since one of us had already experimented successfully with « Mastery Learning » (a pedagogical approach developed by Benjamin Bloom in the United States), the question arose whether applying this pedagogical approach could improve students' logical sense and academic results.

Mastery Learning is a collective teaching method addressed primarily to a traditional class. It is not individualized instruction. In addition, it involves frequent feedback, not just in the form of continuous cumulative evaluation, but also by means of systematic evaluation of students' progress and provision of individual help. The objective is to achieve a very high success rate for the largest possible number of students.

We decided to apply this approach to our first-term « Logic of Programming » course. The project was supported by a DGEC grant under its PAREA program. Four professors of computer science at André-Laurendeau took part in it: Gérald Michaud, Paul Comte, Louis Burret and Nguyen Ngoc Tuan. The grant provided partial release time for the four teachers (1.00 FTE for the group) and money to hire René Hivon, a research consultant on Mastery Learning at the University of Sherbrooke. It also enabled us to purchase several aptitude tests for programmers designed to assess the level of « logical reasoning. »

The results were as follows: There was a marked improvement in students' success rate: 70.4 % of those who took part in all the activities passed the course with a grade of 80 % or over. There was a qualitative improvement in students' performance. The development of students' logical sense could be verified in the case of each student. Students showed an extremely high degree of satisfaction, as measured by the PERPE test.

What now? We are proposing to extend this way of teaching shortly to other computer science courses and to prepare a computerized teacher's guide for those who would like to use this approach in turn.

In discussions with other teachers we find that some of them are reluctant to apply this approach for fear of seeing their teaching load increase to the danger point. Paul Comte is working on creating an intelligent computer environment which should help those teachers who would like to introduce Mastery Learning into their courses. Gérald Michaud, for his part is continuing his research especially in the cognitive styles of adult students.

To obtain the teacher's guide to Mastery Learning, please get in touch with Paul Comte or Gérald Michaud at André-Laurendeau.

SOCIAL INTEGRATION OF PEOPLE WITH PHYSICAL DISABILITIES

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Recently, people with physical and sensory disabilities have been entering the « mainstream » in increasing numbers. The social integration of these individuals has posed many challenges both for those with disabilities as well as for people whose task it is to facilitate the process. Perhaps the most formidable obstacles encountered have been the attitudinal barriers. Able-bodied individuals are often uncomfortable with those who have disabilities and many have negative attitudes; these can lead to problems in interaction and integration. In many cases, discomfort and negative attitudes have denied people with disabilities full access to the social and economic life of the community.

Higher education has enhanced the status and economic opportunities of many minority groups, including

people with disabilities. Ensuring adequate access to postsecondary education is seen by many as an urgent priority and, indeed, as a key component of the integration process. Physical accessibility of institutions of higher education is only the first step. In addition to the academic experience, integration into the college and university milieu involves interacting with professors and socializing with peers. The success of the social aspects of integration could determine whether students finish their program of studies and whether other students with disabilities venture into higher education. Yet, little is known about college students who have disabilities or about effective techniques to change able-bodied students' and professors' dysfunctional attitudes and behaviors toward students with disabilities.

The objective of the series of studies which I and my colleagues and students have conducted since 1982 has been to investigate the nature of attitudes and of cognitive and affective factors which facilitate or hamper interaction between people with and without disabilities. An additional goal has been to design and evaluate interventions to eliminate social barriers to integration.

We have carried out over thirty studies since 1982. For the most part, these have focused on interaction between college students with disabilities and their nondisabled peers and professors, although we have also explored topics such as job interview taking strategies for people with disabilities and the effectiveness of large scale advertising campaigns. We have assessed the thoughts, feelings and behaviors of able-bodied individuals as

well as of people with various physical and sensory impairments in numerous contexts. We have also evaluated a variety of techniques designed to change attitudes and eliminate interaction problems and discrimination.

The findings of our studies have been published in scholarly journals and books and our results have been presented at various conferences. Also, we have prepared numerous non-technical reports of the findings for lay persons, have given talks to concerned community groups, and have compiled and disseminated « tips » manuals for professors and for college and university students with disabilities.

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