The Automation of Education

Chapter Outline

Introduction
In the beginning
A glimpse of the future
Skinner’s machine
Other devices
Conclusions
The Automation of Education

Activity

It could be argued that, in the past, the advent of popular newspapers made major events such as war and pestilence much more immediate to those in the community, at least to those who were literate. Schools of that time needed to reflect this change in the curriculum they delivered. Identify contemporary equivalent technologies that have forced changes in the curriculum.

Activity

In his experiments on learning, Thorndike confined a hungry cat in what was referred to as a puzzle box. In order to get at food, which had been placed outside the box and in a position where it was clearly visible, the cat had to depress a lever which opened an access gate. Random actions were replaced eventually once the cat learned the correct response. If you were presented with the results from a similar study today that advocated a particular approach to teaching and learning based on the modification of behaviour through reward, would you be willing to adopt them and why? What do you think the difference between attitudes then and now would be?

Activity

Pressey explored the link between technology and education for some considerable time and mused that schoolwork, in what to him was the future, would be:

...marvellously though simply organized, so as to adjust almost automatically to individual differences and the characteristics of the learning process. There will be many labour saving schemes and devices, and even machines – not at all for the mechanizing of education, but for the freeing of teacher and pupil from educational drudgery and incompetence both. (Petrina, 2004, 328)

Do you think that Pressey’s vision of the future has become a reality and what evidence do you base your conclusion on?

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Activity

Despite the fact that his own efforts to market a machine were not very successful, Skinner's ideas generated a revolution in teaching. However, the 1960s saw a vast increase in the number and type of teaching machines used in a range of educational settings in America. By 1962, the Grolier Company had sold 100,000 teaching machines based on his principles at $20 each (Benjamin, 1988: 709). Can you suggest reasons why a slow uptake was followed by wide adoption of these devices and what bearing this has for today?

Activity

In relationship to the use of television in the classroom, Freeman (1967) commented that for generations the . . . quality of instruction in the schools has depended, fundamentally, upon the teacher working alone in his self-contained classroom. Subject to a minimum of supervision, the schoolmaster determined the learning objectives and the learning experiences to which pupils were exposed. Textbooks, curriculum guides, and instructional aids increasingly influenced the nature and quality of instruction, yet the teacher continued to be the master of his own domain, choosing his texts, deviating from curriculum guides, adopting only those aids. (Freeman, 1967: 199)

Do you think that nature of the contemporary teacher’s role has changed because of the increasing use of technology? Does this matter?
The Automation of Education

Big Question

Skinner and his colleagues were convinced that the process of teaching and learning could be made much more effective by the use of technology, developed using sound scientific principles. Teachers were deeply sceptical about this notion, concerned that the real agenda was to find ways of replacing them by the machine. It took many years for the profession to accept some technologies in the classroom, although this was not just because of the spectre of job losses. Is the modern teaching workforce equally as reluctant to accept innovation and how best can this tardiness, if it still exists, be overcome?