NTIC
Quelques documents de base[1]
Michel Delord - Septembre 2009

Compléments à   **- Calcul humain, calcul mental et calculettes : questions pédagogiques** (1999)
http://michel.delord.free.fr/txt1999/
- NTIC à l'école : un pas de plus dans l'enseignement taylorisé d'une pensée taylorisée ? (2000)
http://michel.delord.free/ntic2000.html

1978.— Simon Nora, Alain Minc : *L'informatisation de la société, Rapport au président de la République*, Édition du Seuil, juin 1978 (page 117)

> *Dans un premier temps, cette informatisation de l'écrit portera sur les textes les plus pauvres en " signifiants ". Ce ne sera pas une mutation majeure par rapport à un mode d'écriture déjà répétitif et mécanique. Mais au-delà? Où s'arrêtera la communication informatisée, lorsque les ménages commenceront à être équipés en ordinateurs ? La question pourrait apparaître gratuite, s'il n'y avait le précédent des calculatrices électroniques. Nul n'aurait imaginé, Il y a quinze ans, la floraison d'appareils peu onéreux, à la portée de chacun et d'abord des élèves. Aujourd'hui la question n'est plus de savoir si le calcul va reculer, mais quand il va disparaître.*

1994.— Jacques Attali, *L'école d'après-demain : Les nouvelles technologies vont-elles remettre en cause le système éducatif ?*, in *Le Revenu Français Hebdo*, n° 324, 2 décembre 1994.

> *Un jour viendra où l'enseignement, loin d'être un coût pour la société, sera une source de profit pour les industries du savoir, qui fabriqueront les vidéodisques, les CD-Rom, les logiciels éducatifs et les sites Internet dont se serviront nos enfants. Toutes les fonctions sociales ont commencé par être, comme l'éducation, une dimension d'un rituel religieux, avant de devenir un instrument du pouvoir politique, puis un service collectif, puis marchand, et, enfin, dans certains cas, un objet produit en série …[la solution] est de transformer le processus éducatif, comme ce fut le cas d'autres fonctions, en mettant les potentialités technologiques nouvelles au service de sa mission. Lorsqu'un service a pu être remplacé, ou complété, par un objet produit en série (le concert par le disque, le clocher par la montre, la diligence par l'automobile, le lavoir par la machine à laver, voire, un jour, le soin par la prothèse), la dépense est devenue une recette, la charge un profit, le problème une solution.*

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[1] http://michel.delord.free.fr/ntic-docs.pdf

I) En guise d'introduction

L'utilisation de l'ordinateur à l'école n'est pas nouvelle. Ainsi dès la fin des années soixante-dix, l'utilisation du plus simple des *computers*[1], la calculette, a été massivement introduite dans les programmes officiels, affectant d'abord l'enseignement des mathématiques et de la physique.

C'est à partir de cette première expérience que l'on a réfléchi sur la nature et les effets pédagogiques de ces pratiques, aussi bien sur les contenus enseignés que sur la qualité du travail du maître ou sur la formation intellectuelle des élèves.

Pour avoir une première intuition de l'ampleur du problème posé, on peut proposer les images suivantes : « *Apprend-on à marcher avec une voiture, cependant beaucoup plus performante que la marche à pied en terme de vitesse ?* » ou bien « *Une chose est d'appuyer le doigt sur un interrupteur, autre chose est de comprendre la nature de la fée électricité.* »

Ces deux images autorisent à poser la question suivante : « *Quel rapport existe-t-il entre l'intelligence humaine et l'intelligence* artificielle *de l'ordinateur ?* », question que l'on peut poser sous une forme simplifiée : « *Quel rapport existe-t-il entre savoir faire la multiplication de 728 par 43 à la main ou avec un boulier et savoir la faire faire par la calculatrice ?* ».

En 1999, dans « *Calcul humain, calcul mental et calculettes : questions pédagogiques* [2] », on a abordé la question de l'utilisation de l'ordinateur à l'école en se concentrant sur les effets de l'utilisation de la calculette sur l'apprentissage des bases du calcul à l'école primaire.

Ces premières réflexions ont été complétées et précisées en 2000, dans « *NTIC à l'école : un pas de plus dans l'enseignement taylorisé d'une pensée taylorisée ?* [3] ». De manière certes sommaire, on y expose notamment[4] la transformation des contenus lorsqu'on prétend les enseigner par la médiation d'ordinateurs : ils sont limités à ce qui est *computable*, ce qui réduit le contenu de l'enseignement à sa partie la plus mécanique.

Pour le dire autrement, on assiste à la disparition de *l'enseignement des connaissances* au profit d'une *transmission des compétences*. Cette transformation est basée sur une double opposition ; d'une part, celle portant sur les contenus (connaissances / compétences) ; d'autre part, celle portant sur le mode de diffusion des contenus. En effet, l'enseignement suppose un va-et-vient constant entre le professeur et l'élève. Le premier s'avance toujours en partant de l'intuition du second ; la transmission n'y oblige jamais[5]. On peut affirmer que, dans son principe, elle interdit ce régime d'enseignement. Dans une telle perspective, que reste-t-il de la notion de progression ?

A mesure que l'on transforme l'enseignement en contrôle continu et bachotage permanent – et socialement en contrôle permanent et bachotage continu –, on pousse à l'appauvrissement et au changement de la nature des contenus.

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[1] Si la calculatrice a été le premier *computer* introduit dans l'enseignement, les premiers *computers* tels le *Colossus* et l'*ENIAC* étaient également nommés *calculators*.

[2] http://michel.delord.free.fr/txt1999/calc-index.html

[3] La deuxième version de ce texte, datant de 2001, est disponible à http://www.sauv.net/nticd.htm

[4] Je ne reviens pas ici sur la *mercantilisation* de l'enseignement ni, par exemple, sur l'analyse de Jacques Attali : « *Lorsqu'un service a pu être remplacé, ou complété, par un objet produit en série […], la dépense est devenue une recette, la charge un profit, le problème une solution* ».

[5] On dira bien qu'un ordinateur *transmet* des données à un autre ordinateur mais personne ne dira - pour le moment ! – que le premier *enseigne* au second. Et, pour prendre l'exemple d'une activité humaine, on ne dit pas que l'adjudant *enseigne* des ordres à la troupe mais qu'il les *transmet*.

Et, *a contrario*, la réduction des enseignements à ce qui est le plus mécanique et traitable par machine favorise le *pilotage par les évaluations*. Ainsi on obtient une heureuse synthèse de l'abrutissement *programmé* : il faut que les élèves soient transformés en logiciels[6] pour que les ordinateurs puissent les évaluer et qu'ils puissent réussir ces évaluations.

Ceci permet donc de conclure que l'affirmation selon laquelle « *Les professeurs ne peuvent être remplacés par des ordinateurs* » n'est vraie, condition nécessaire mais non suffisante, que lorsque les professeurs enseignent des connaissances et s'appuient sur l'intuition des élèves, opérations qu'un ordinateur est absolument incapable de réaliser. L'introduction de ces machines dans l'enseignement contribue à transformer la fonction entière du professeur ; il n'est plus un passeur mais un contrôleur, lui-même soumis au contrôle des machines…. [7]

Vous trouverez ici rassemblés un certain nombre de documents qui, soit figuraient comme références ou annexes aux deux textes de 1999 et 2000[8] mais étaient devenus indisponibles, soit quelques nouveaux documents publiés entre 2002 et 2004.

Cette bibliographie a été communiquée en temps utile à tous les cabinets ministériels de l'éducation nationale depuis Claude Allègre… avec les effets que l'on peut constater.

Enfin, dans la mesure où la question des tests n'est pas indépendante de « l'informatisation de l'école », vous trouverez en premier lieu deux textes de référence de Jacques Barzun et Banesh Hoffman qui sont parmi les premiers, dès les années soixante, à poser un regard critique sur ce sujet.

Cabanac, le 20 juin 2009
Michel Delord

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[6] Voir ce qu'en dit Rudolf Bkouche :

En fait, les adeptes de l'informatique pédagogique réduisent l'activité mathématique à une suite de gestes sans poser la question de la signification de ces gestes et l'on retrouve ici la conception de l'activité scientifique de Bruno Latour. Dans ce cadre étroit, activité humaine et activité machinale se confondent et l'enseignement se réduit à la fabrication du logiciel élève, ce que l'on peut appeler la conception logicialiste de l'enseignement.
in Rudolf Bkouche, *Pseudosciences*, Les Nouvelles d'Archimède, revue de l'USTL-Culture, janvier-mars 2008.
Consultable à http://michel.delord.free.fr/rb/rb-pseudosciences.pdf

[7] Nous avons jusqu'à maintenant, pour des raisons *pédagogiques* de simplification, fait semblant de croire que l'école avait pour but l'instruction mais qu'elle réalisait mal cet objectif. En fait il semble bien que l'instruction en soit au mieux un prétexte : la société *pilote* depuis de longues années l'école comme si son rôle principal était le contrôle social et la mise en ordre de la jeunesse, processus qui peut s'appuyer sur deux formes concurrentes mais non antagoniques de l'*enseignement*
 - celle qui consiste à réduire la difficulté des contenus enseignés par crainte que l'échec ne provoque le désordre
 - celle qui pense que le meilleur moyen d'obtenir l'ordre est de *siffler la fin de la récréation* et *liquider l'héritage de mai 68*, conception dans laquelle l'appel à l'instruction n'est au mieux qu'un moyen.

[8] Ils avaient également été présentés en 2003 sur le site du *Grand débat sur l'éducation* : http://michel.delord.free.fr/debat.pdf

II) De-test Schools ?

1) **Jacques Barzun**[9], *Reasons to De-test the Schools,* Original Text Excerpted for Op-Ed Article in the New York Times, October 11, 1988[10]
Deuxième partie de http://michel.delord.free.fr/barzun_test.pdf

2) **Banesh Hoffmann**[11], *The Tyranny of Testing*[12], Crowell-Collier, New York, 1962. Préface de Jacques Barzun.

 La préface de Jacques Barzun

For the past thirty months magazines and newspapers have carried a running debate on the theory and practice of testing. By far the greater part of the discussion has consisted of attacks on so-called objective tests, in direct consequence of Mr. Banesh Hoffmann articles in Harper's and The American Scholar. Since then academic writers in professional journals have variously said: "I told you so." Doubts and protests long pent up have at last come forth because one man was courageous enough to attack an entrenched position. It is therefore clear that the time is ripe for the full, documented, and reasoned account which Mr. Hoffmann gives in this book of the inadequacies and dangers of mechanical testing.

The vogue of this type of test began after the first world war, during which it had been used by the Army in the hope of rating intelligence and sorting out capacities. Schools and colleges in the 1920's began to give similar tests to their applicants, who, once admitted, were subjected to true-false quizzes instead of the regular essay examinations. Of their own accord, students took whole "batteries" of commercially produced tests to help themselves decide on a career. By the second world war, testing by check-mark was established practice everywhere in American life -- in the school system, in business, in the professions, in the administration of law and in the work of hospitals and institutions for the mentally deranged. The production and administration of tests was an industry employing many hard-working and dedicated people.

Half way through this period, in the forties, it was manifestly useless to raise even a question about the value and effect of these tests. When I devoted a short chapter to doing so in Teacher in America, describing with precision enough how mechanical tests raised mediocrity above talent, my remarks were ignored or contemptuously dis missed. I was an obscurantist who lacked the scientific spirit. The most charitable view of my madness was that I was the product of a foreign school system well known to be backward and resistant to modern methods.

Now the tide has turned. As the present book shows, it is the testers who are on the defensive, fighting a rear- guard action against the irresistible force of the argument which says that their questions are in practice often bad and in theory very dangerous. Given the widespread use of tests built on these shaky foundations, their evils affect every literate person, directly or through his children. More abstractly but no less truly, the fate of the nation is affected by what tests do, first, to the powers of those who are learning, and, second, to the selection the tests make among the potential leaders of thought and discoverers of new knowledge. Read Mr. Hoffmann's remarks on the National Merit Scholarship program.

But while American public opinion is recovering from its infatuation with fallacious "methods" in several realms -- not only in the giving of tests but also in the teaching of reading, in the training of teachers, in the defining of school subjects, and in the handling of discipline at home -- the formerly backward and resistant countries of Europe are zestfully adopting most of our mistakes. England, Germany, France are frolicking with child-centered schools, the permissive system, and the batteries of tests. A recent report from France shows that a long tradition of sobriety is no protection against an attractive error. In the midst of its grave political preoccupations France has been agitated by the discovery, based on tests, of an untutored "genius," a "future Kepler or Galileo" among the eleven children of a modest family in a village near Lyons. The only skeptics about this discovery are the teenage genius

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[9] Pour plus de renseignements sur ce Français parti aux USA : Jacques Barzun. American scholar, cultural historian, teacher and educator and prolific author : http://www.the-rathouse.com/JacquesBarzun.html

[10] in Jacques Barzun, *Begin here : The Forgotten Conditions of Teaching and Learning*, The University of Chicago Press, 1991.

[11] *Banesh Hoffman* est probablement le mathématicien le plus proche d'Albert Einstein dont il a écrit une biographie traduite en français : *Albert Einstein, créateur et rebelle,* Points-Sciences, Le Seuil (1975). Pour plus de renseignements sur Banesh Hoffman , consulter http://unjobs.org/authors/banesh-hoffman et http://en.wikipedia.org/wiki/Banesh_Hoffmann

[12] http://www.questia.com/library/book/the-tyranny-of-testing-by-jacques-barzun-banesh-hoffmann.jsp

himself, his mother, and his sister. "All that people say about me is nonsense," said Jean Ferne to his interviewer, and he followed up this perceptive remark with a description of what he had done to be ranked with the great minds of the past:

> "I took the Army tests and did better than average. That gave me a chance for officer training. I took more tests. The seventeenth test was on reading comprehension. They give you a sentence to read, and on one side four others to match, of which two are nearly alike. You put a cross in the right box. I got 17 out of 20. The colonel who gave me the test asked me if I had been guessing. I said my answers seemed to me the most sensible, so he asked me to try again.
> "On another test?"
> "No, the same. I made the same answers and this time I got 19 out of 20. I wonder why, because I didn't do anything different. The colonel seemed terribly surprised." -- (L'Express, March 22, 1962, p. 18)

The colonel is only at the beginning of his own education in these matters. We in the country which originated the game should take care not to be "terribly surprised" at the ease with which self-deception can occur on a national scale. After years of faith in the so-called experiments that proved the validity of the look-and-say method of teaching children how to read, it turns out that the tests (here too) were bad and the results naturally worth less. It is high time to ask what this would-be experimenting in education amounts to. It has long been known in industry that a mere change in the surroundings of production will improve output -- temporarily. It is likely that mere change has the same effect in school, and all that the experiments prove is that children respond to novelty in the normal way of increased interest.

With this in mind, the carefully documented recital Mr. Hoffmann gives of the way in which the manufacturers of tests defend their product takes on a new importance. For it shows that in contemporary societies the trappings of science are readily used, in good faith, to produce disastrously false results. These results become the stock-in- trade of vested interests. When doubts are uttered, money and prestige are threatened, and indeed all of society is shaken, at least in its easy assumptions. As Mr. William Whyte showed in The Organization Man, testing in personnel work does something very different from what was generally thought; and as Mr. Hoffmann shows in the book before us, testing in school and college does the very opposite of what was hoped. In the one case the method represses individuality; in the other it misreads performance.

Every citizen and parent should remember the links in this characteristic chain, which begins with method and ends with gadgetry, whenever proposals come before boards of education to set up large and expensive systems, whether of tests, television courses broadcast from airplanes, or teaching machines. The acts of learning and teaching are more subtle, delicate, elusive, than any method so far found. The desire to teach great numbers does raise difficulties correspondingly great. But it is no solution to do something next door to what is wanted simply because that something is easier to do. If there was not enough milk for growing children would we distribute tap water? Or give them free vaccination against smallpox? Though this is not precisely the analogue of what we have done in the matter of examining the young learner's knowledge, it is precisely true of the arguments used in support of mechan ical testing: it is easier and cheaper than the method of confronting mind with mind through the written word.

The further argument that essay examinations cannot be graded uniformly, even by the same reader, only shows again the character of mind itself: it is not an object to be weighed or sampled by volume like a peck of potatoes or a cord of wood. Variations in performance and estimate will always subsist. Hence an objective test of mind is a contradiction in terms, though a fair test, a searching examination, a just estimate, are not. Among the tests that are unfair, certainly, are those which penalize the finer mind -- as Mr. Hoffmann proves -- and those which, through the forceful presence of wrong answers, may divert that mind from the accurate knowledge it possessed a moment before. Anyone who has suddenly doubted the spelling of a word which he was about to write correctly will recognize how easily doubt can work distraction upon thought.

Again, the frequent observation that nowadays the ablest students are the least well prepared (the foolishly called "under-achievers") may well have its source in the neglect of effort which mechanical testing entails. A pupil does not really know what he has learned till he has organized and explained it to someone else. The mere recognition of what is right in someone else's wording is only the beginning of the awareness of truth. As for the writing of essays -- and the art of correcting them -- excellence can of course not be achieved without steady practice, which, once again, the fatal ease of mechanical testing tends to discourage. But if the tendency of such tests is to denature or misrepresent knowledge, to discourage the right habits of the true student, and to discriminate against the original

in favor of the routine mind, of what use are such tests to a nation that has from its beginnings set a high value on instruction and the search for truth? There is no ready answer that is not invidious to the makers of tests. But they too are in good faith, which is why it is urgent and important to study their claims as does Mr. Hoffmann, and decide for oneself on which side objectivity does in fact lie.

June 30, 1962
JACQUES BARZUN

II) Ordinateurs et enseignement

1976.— Joseph Weizenbaum, *Computer Power and Human Reason : From Judgment To Calculation* (San Francisco: W. H. Freeman, 1976)

* Un recensement du livre par Amy Stout :

> Joseph Weizenbaum[13], a professor of computer science at MIT, has participated in the development of Artificial Intelligence since its conception in the late 1950's. His most famous accomplishments are SLIP, a list-processing language, and ELIZA, a natural-language processing system. *Computer Power and Human Reason* is a collection of essays discussing the technical roots of computer systems, and addressing some philosophical questions inspired by mankind's entrance into the world of machines.
>
> Perhaps the most curious thing about Mr. Weizenbaum's book is its candid ambivalence towards computer technology. From a man who pioneered the use of the computer chip as a fabulously powerful tool, it is strange to hear doubt and questioning about the purposes of his research, and the validity of its results. Mr. Weizenbaum says his book is an explanation of a philosophical problem that presented itself when he created ELIZA, the natural-language processing system that imitated a Rogerian psychologist and communicated in a way that practically sounded human. He compares his philosophical crisis to a problem encountered by Michael Polanyi, professor of physical chemistry at the Victoria University of Manchester. Polanyi was thrown into an intellectual muddle after Nicolai Bukharin, theoretician of the Russian Communist Party, asserted that socialism would eliminate the need for pure science, and only practical matters would be addressed by the enlightened communist scientists of the future. To Polanyi, disregarding pure science would enslave man to the need to create only for the sake of production and efficiency, and would destroy any opportunity for free thought. Polanyi feared that Bukharin's prediction would inspire a solely mechanistic view of man. Weizenbaum had a similar experience shortly after offering ELIZA to the scientific community.
>
> Computer Power and Human Reason is Weizenbaum's exploration of his own misgivings about technology and Artificial Intelligence. It is more philosophical than technical, but offers a few detailed chapters that provide a foundation for the person who is not a computer scientist.
> Suite à : http://www.gslis.utexas.edu/~palmquis/courses/reviews/amy.htm

* Un extrait du livre à http://www.smeed.org/1735

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1983 — Edsger W. Dijkstra, *Computers and General Education,*
http://www.cs.utexas.edu/users/EWD/ewd08xx/EWD868.PDF

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1986 — Larry Cuban, *Teachers and Machines: The Classroom Use of Technology Since 1920* , Teachers College Press, ©1986.

> Voir *infra* Todd Oppenheimer, *The Computer Delusion,*, 1997.

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1995. — Jean-Louis Gassée, ancien n° 2 d'Apple, *Ordinateurs à l'école, la grande illusion*

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[13] Joseph Weizenbaum, *A rebel at work* :   http://www.ilmarefilm.org/W_E_2.htm

L'espoir est tenace. Malgré les mécomptes, l'ordinateur continue d'apparaître comme la panacée éducative. Je le comprends, mais je le regrette. Comment ne pas voir les raisons de l'espoir ? Année après année, nos machines favorites gagnent sur tous les tableaux. Outils de simulation, de stockage, de communication, agréables et omniprésents, comment ne pas imaginer qu'ils rendraient dans l'enseignement les mêmes services qu'au travail ?

Malheureusement, le niveau scolaire continue de se dégrader dans tous les pays occidentaux. La télévision, le magnétoscope et, depuis une dizaine d'années, l'ordinateur, n'ont rien fait pour enrayer cette baisse. Certains y voient plus qu'une coïncidence ...

<div align="right">Libération, vendredi 23 juin 1995</div>

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1996 — Steve Job, le patron d'Apple, qui parle es-qualité, *Could technology help by improving education ?*

I used to think that technology could help education. I've probably spearheaded giving away more computer equipment to schools than anybody else on the planet.But I've had to come to the inevitable conclusion that the problem is not one that technology can hope to solve. What's wrong with education cannot be fixed with technology. No amount of technology will make a dent.....You're not going to solve the problems by putting all knowledge onto CD-ROMs... Lincoln did not have a Web site at the log cabin where his parents home-schooled him, and he turned out pretty interesting.

<div align="right">*School Choice*, quoted from *Wired Magazine* interview - February 1996.</div>

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1997. — Todd Oppenheimer   *The Computer Delusion,* Atlantic Monthly , July 1997

In 1922 Thomas Edison predicted that "the motion picture is destined to revolutionize our educational system and ... in a few years it will supplant largely, if not entirely, the use of textbooks." Twenty-three years later, in 1945, William Levenson, the director of the Cleveland public schools' radio station, claimed that "the time may come when a portable radio receiver will be as common in the classroom as is the blackboard." Forty years after that the noted psychologist B. F. Skinner, referring to the first days of his "teaching machines," in the late 1950s and early 1960s, wrote, "I was soon saying that, with the help of teaching machines and programmed instruction, students could learn twice as much in the same time and with the same effort as in a standard classroom." Ten years after Skinner's recollections were published, President Bill Clinton campaigned for "a bridge to the twenty-first century ... where computers are as much a part of the classroom as blackboards." Clinton was not alone in his enthusiasm for a program estimated to cost somewhere between $40 billion and $100 billion over the next five years. Speaker of the House Newt Gingrich, talking about computers to the Republican National Committee early this year, said, "We could do so much to make education available twenty-four hours a day, seven days a week, that people could literally have a whole different attitude toward learning."

If history really is repeating itself, the schools are in serious trouble. In *Teachers and Machines: The Classroom Use of Technology Since 1920* (1986), Larry Cuban, a professor of education at Stanford University and a former school superintendent, observed that as successive rounds of new technology failed their promoters' expectations, a pattern emerged. The cycle began with big promises backed by the technology developers' research. In the classroom, however, teachers never really embraced the new tools, and no significant academic improvement occurred. This provoked consistent responses: the problem was money, spokespeople argued, or teacher resistance, or the paralyzing school bureaucracy. Meanwhile, few people questioned the technology advocates' claims. As results continued to lag, the blame was finally laid on the machines. Soon schools were sold on the next generation of technology, and the lucrative cycle started all over again...

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2002. — Joshua Angrist (MIT and NBER) **et Victor Lavy** (Hebrew University) , *New Evidence on Classroom Computers and Pupil Learning**, July 1999
Abstract :

The question of how technology affects learning has been at the center of recent debates over educational inputs. In 1994, the Israeli State Lottery sponsored the installation of computers in many elementary and middle schools. This program provides an opportunity to estimate the impact of computerization on both the instructional use of computers and on pupils' test scores. Results from a survey of Israeli school-teachers show that the influx of new computers increased teachers' use of computer-aided instruction (CAI) in the 4th grade, with a smaller effect on CAI in 8th grade. CAI does not appear to have had educational benefits that translated into higher test scores. Results for 4th graders show sharply lower Math scores in the group that was awarded computers, with smaller (insignificant) negative effects on verbal scores. Results for 8th graders' test sores are very imprecise, probably reflecting the much weaker first-stage relationship between program funding and the use of CAI in 8th grade. The estimates for 8th grade Math scores are also negative, however.

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2002. — Julie Landry, *Is our children learning?*

Each year more than $5 billion is spent on computers in the classroom. But it's the tech companies that benefit.

In a well-appointed classroom in New York City, a pair of sixth graders at Mott Hall School are doing what corporate executives the world over are doing-creating PowerPoint presentations. For the students, the purpose is to learn about the human liver. They are copying and pasting information from medical Web sites and selecting the right background colors and clip art. But after spending 20 minutes just designing the introduction page, the students still can't answer the most basic question: What does the liver do? "I don't know; we were supposed to do the gallbladder," answers a shy Latino girl with pigtails. They are learning how to use PowerPoint, but they have no idea what the content means.

Similar situations are playing out in private and public schools across the United States. Students are learning not just PowerPoint, but Excel and a host of other applications. They are doing so on the latest and greatest PCs and the sleekest laptops. One private Catholic school in New York City even has wireless connections throughout its classrooms and hallways. Yet, after hundreds of exhaustive studies, there remains no conclusive proof that technology in the classroom actually helps to teach students. In fact, in some cases it hinders learning. And even if there is a benefit, the amount of money and resources being expended to put technology into the classroom does not match the current or expected benefit…

Suite : http://www.ibiglobal.com/News/PressReleases/RedHerringMag_Is_Our_Children_Learning.htm [14]

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2002. — Andrew Trotter, *Internet Access Has No Impact On Test Scores, Study Says*, Education Week [American Education's Newspaper of Record], Wednesday, September 4, 2002, Volume 22, Number 01, p. 10.
Description (on MSPnet : http://hub.mspnet.org/index.cfm/9393)
This controversial article questions the assumption that Internet access has a measurable impact on student achievement. The researchers specifically looked at the impact of the federal Education (E)-rate program, a program designed to help schools acquire telecommunications services. Though the results do not indicate that Internet investment has made an impact, critics of the study suggest that not only is it too early to make this kind of assessment, but that Internet connections alone are not likely to improve student test-

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[14] Source : Red Herring Magazine, Education & Technology, August 21, 2002 (source CH from www.redherring.com),

scores. Nevertheless, the study serves as a "first crack" at trying to determine if this link between Internet connections and student achievement can be made and it provides some interesting conclusions.

L'article complet est à
http://www.edweek.org/ew/newstory.cfm?slug=01internet.h22

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2002. — **Hiawatha Bray,** Globe Staff**,** *Questions arise over laptops' use as learning tool maine plugs them in; research casts doubt,* The Boston Sunday Globe September 22, 2002
THIRD EDITION SECTION: EDUCATION; Pg. B7

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2004. — **Thomas Fuchs & Ludger Woessmann**, Royal Economic Society
Computers and Student Learning: Bivariate and Multivariate Evidence on the Availability and Use of Computers at Home
http://www.cesifo-group.de/DocCIDL/cesifo1_wp1321.pdf

1) Abstract (http://ideas.repec.org/p/ces/ceswps/_1321.html) :

We estimate the relationship between students' educational achievement and the availability and use of computers at home and at school in the international student-level PISA database. Bivariate analyses show a positive correlation between student achievement and the availability of computers both at home and at schools. However, once we control extensively for family background and school characteristics, the relationship gets negative for home computers and insignificant for school computers. Thus, the mere availability of computers at home seems to distract students from effective learning. But measures of computer use for education and communication at home show a positive conditional relationship with student achievement. The conditional relationship between student achievement and computer and internet use at school has an inverted U-shape, which may reflect either ability bias combined with negative effects of computerized instruction or a low optimal level of computerized instruction.

2) Présentation : *Pupils make more progress in 3Rs "without aid of computer"*, Daily *Telegraph* du 21-03-05

Moins les élèves utilisent les ordinateurs à l'école et à la maison, mieux ils réussissent les tests internationaux de lecture, rédaction et mathématiques, indique aujourd'hui la plus grande étude réalisée sur ce sujet. Celle-ci soulève des interrogations quant à la décision du gouvernement, annoncée par Gordon Brown la semaine dernière, de dépenser encore £1.5 milliards pour des ordinateurs dans les écoles, en plus des £ 2.5 milliards déjà dépensés. M. Brown a dit : "*L'enseignement et la révolution éducative ne peuvent se faire avec des tableaux noirs et de la craie, mais avec des ordinateurs et des cartables électroniques.*" Cependant, l'étude éditée par la Société Royale d'Économie indique : "*En dépit des nombreuses réclamations de politiciens et de fournisseurs de logiciels, l'utilisation d'ordinateurs dans les écoles n'aide à l'évidence aucunement les élèves à acquérir les qualifications de base en mathématiques, en lecture ou en rédaction*". Au contraire, plus les élèves utilisent l'ordinateur, plus leurs performances dans ces domaines sont mauvaises, ont indiqué *Thomas Fuchs* et *Ludger Wossmann*, de l'université de Munich. Les chercheurs ont analysé les comportements à l'école et à la maison de 100.000 adolescents de 15 ans dans 31 pays participant à l'étude Pisa. L'étude montre que plus les élèves ont accès à des ordinateurs à la maison, plus leurs résultats sont bas. De même, les élèves font moins bien dans les écoles généreusement équipées d'ordinateurs, où l'instruction automatisée a remplacé des formes plus efficaces d'enseignement.
        Traduction *par Le Mammouth Déchaîné* http://le-mammouth-dechaine.fr/Ndj/files/archive-aug-2007.html

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