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A CONNOISSEURSHIP EVALUATION OF THE COMPUTER CURRICULUM, GRADE 0–7 AT SACRED HEART COLLEGE PRIMARY SCHOOL, JOHANNESBURG, SOUTH AFRICA: PRESENT PRACTICES AND FUTURE DIRECTION

Ray Basson
University of Witwatersrand
Johannesburg, South Africa

Abstract: Following three years development of the computer curriculum at Sacred Heart College Primary School, the findings of a descriptive evaluation suggest, unexpectedly, an approach to curriculum resembling a limited form of social reconstructionism presenting opportunities to bridge divides which historically have separated pupils in South Africa. The evidence suggests "ideal" use in this school is linked to creative uses of computers as "tools" rather than linked to "adjunct" use or computer-assisted instruction. In particular, it demonstrates how the development of a formal curriculum may build bridges between pupils of different cultures, languages, race, and gender.

Résumé: À l'issue de trois années de mise au point d'un programme d'études en informatique à l'école primaire Sacred Heart College, les résultats d'une évaluation descriptive suggèrent, contre toute attente, une approche ressemblant à une forme limitée de reconstruction sociale qui a le potentiel de combler les fossés qui séparent depuis toujours les élèves en Afrique du Sud. Il semble que l'utilisation «idéale» dans cette école soit l'usage innovateur des ordinateurs en tant qu' «outils» plutôt que l'utilisation «alliée» ou pour l'enseignement assisté par ordinateur. En particulier, l'étude montre comment un programme d'études structuré peut aider à jeter un pont entre des élèves de cultures, langues, races, et sexes différents.

Naturalistic curriculum development focuses on practical action (Schwab, 1973; Walker, 1971) and thus shifts the emphasis in curriculum development from a preoccupation with ends, perceived as an "epiphenomenon," to what teachers-as-developers "do" as main emphasis in the development process. This conceptual

framework is used to analyse data from a connoisseurship evaluation (Eisner, 1985) of the computer curriculum in an alternative primary school in Johannesburg, South Africa—Sacred Heart College Primary School. It helps bring into focus taken-for-granted issues to better understand the curriculum in its own terms, refinement and further development of the computer curriculum Grade 0–7, and recognition that the principles informing its design link more to principles informing transformation curricula than to ends and outcomes (Basson, 1997).

In connoisseurship evaluation, evaluators such as Barone (1985) identify good practice for evaluation, specifically to "appreciate" and "disclose" it for wider dissemination. To this end and following Eisner (1985), Parlett and Hamilton (1976), Hamilton (1976), Spradley (1979), Wolcott (1988), Chang (1992), and Fetterman (1985; 1989; 1996), a variety of data was gathered to understand the curriculum in its own terms, including observation, interviews, questionnaires, journals, and documents about this curriculum. The qualitative data was rich and varied, was coded to "uncover" trends emanating from the data, and checks were done through triangulation.

The computer curriculum itself has been developed over a three-year period at the primary school as a result of a donation in kind of the Technology Based Learning Centred Environment (TBLCE) by Reach & Teach, the social responsibility programme of IBM South Africa. The programme requires that a suite of five computers be located together in classrooms in such a way that two pupils work on a computer at any one time, in space dedicated for this purpose. Software includes two major programs to self-teach reading and writing, numerous stand-alone suites of programs, and programs added to these by the school as needed. The computer curriculum, in addition, was not infrequently tied to the major innovation of the school, Integrated Studies, which thematically links academic disciplines, resists rote leaning and testing, and promotes ecological sensitivity. A Catholic school, it has been racially integrated since the early seventies in contravention of state policy under apartheid until 1994, which has accorded it status as an alternative school. With this in mind, the discussion now turns to the naturalistic approach, studies of computer curricula, and findings.

CONCEPTUAL FRAMEWORK AND COMPUTER CURRICULA IN SOUTH AFRICAN SCHOOLS

The concepts "platform," "deliberation," and "design" inform a naturalistic approach to curriculum development, emphasizing the practical activities of teachers when developing a curriculum. Following Walker (1971) and Schwab (1973), "platform" refers to the beliefs and world views participants bring to curriculum development, ensuring that the multiple views informing development are represented, and referring to the time it takes for participants to understand the variety of views informing development. "Deliberation" refers to the co-ordinated process whereby pertinent issues, or curriculum bits, are debated in development. This process is co-ordinated by a chairperson charged with the responsibility of ensuring that all views are heard, all contribute to possible decisions about the curriculum, and no one view predominates to the exclusion of another. "Design" refers to decisions shaping the curriculum, usually including decisions about content, pedagogy, implementation, and evaluation. Decisions are made after protracted debate, on the basis of the justifiability of one decision over another and not on the basis of simple majority vote. Concrete manifestations of a curriculum, in this view, are found in decisions that teachers-as-developers make, and not in statements of objectives, ends, or outcomes.

Since the late 1980s computers have been introduced into schools in this country on the initiative of educational providers rather than by provincial or state authorities. Oldert and Barras-Baker (1992), in their review of computers in schools, make the case for the use of low-cost, not state-of-the-art computers in schools to make computers as widely accessible as possible in the short term. Zolkov (1985) makes the case for stand-alone PCs in schools, Dasoo (1999) for computer laboratories particularly in state schools, and McCauley (1999) for the use of laptop computers, computer laboratory, and media centre PCs in private schools. Evaluators have focussed in the main on questions relating to the effectiveness of computers as pedagogy (Dasoo, 1999; Zolkov, 1985) and have left open questions about how computer curricula are conceptualized. In this respect, implementing computers at Sacred Heart was no different from other schools.

The evaluation thus aimed to establish use, workability, and broadly, the form the computer curriculum took in the school, from the perspective of what teachers do with computers in lessons. This clearly

contrasts with other approaches to evaluation, such as process evaluation, which attempts to see if computers were implemented as intended, or comparative evaluation, which adjudicates between two pedagogies for enliterating pupils.

FINDINGS

1. The findings established that central to development of the computer curriculum at Sacred Heart was weekly, time-tabled time in which teachers by grade level met specifically to decide ways of using TBLCE and software packages in lessons, to develop the curriculum. This decision is both as extraordinary as it is visionary. Timetables in South African schools are usually "packed" and highly contested, seldom, if ever, allocating time for curriculum development. This, perhaps, was a spin-off from ten years of in-house development of Integrated Studies as a major innovation in the primary school.

Putting this in Walker's (1971) terms, time for teachers to understand the views of others, to deliberate and make decisions—rather than ends or objectives—was central to the development of the computer curriculum at the primary school. Time-tabled weekly meetings provided both the time to understand different views informing the process, to deliberate and make decisions, and to ensure that the process was co-ordinated for all to participate in decision making and that justifiable decisions were made.

2. In two respects, the findings of the evaluation confirmed the expected. One was that the computer curriculum be developed in its entirety so that it was without "gaps" at any one grade level from Grade 0 to 7. The second was that curricula by each grade level be refined and further developed to sequence the curriculum by grade level and ensure that pupils entering Grade 7 had the requisite hardware and software skills to use computers as a "tool."

The data in response to the question "What do teachers do with computers in classrooms?" can be summarized as follows:

a. Decisions suggest that all teachers, in the first instance, aspire to using computers creatively as a tool, and not, in the first instance, as a useful "adjunct"—or stand-alone but complementary tool (Zolkov, 1985)—for teaching;

b. Decisions suggest that while teachers also use computers to reinforce learning with pre-programmed drill routines, they use these programs in the lowest grades for drill purposes only and, at the same time, seek ways to use computers as a tool; and

c. Decisions suggest that the ideal aspired to be designed and developed in Grade 7. Here hardware and software skills are assumed, with pupils completing a project as a real-life simulation of professional work, and seen, for example, in creating a piece of journalism. Here the curriculum is pupil-driven under supervision, and time-tabled in a 16 week block, 6 periods per week.

The data in response to the question "What worked in computer lessons?" can be summarized as follows:

a. Decisions suggest that what worked worked because of positive and realistic attitudes of teachers and pupils towards the use of computers in lessons; and

b. Decisions suggest clear categories of lessons by time, varying from short 10-minute bursts, through longer 30- and 60-minute lessons, to block usage.

Of the first, more time is spent logging-in and -out than on reinforcement of content learnt through drill routines; no substantial increase in academic work seems to accompany doubling the length of time on computers in the second and third category of lesson, and the fourth category of lesson seems to engender in pupils multiple skills in managing people besides refining hardware and software skills and a notable sense of accomplishment on the completion of the project. Pupil interest in hands-on computer use in all lessons is notable, too.

3. However, in terms of the principles informing the design of the computer curriculum Grade 0 to 7 at Sacred Heart, the findings were unexpected. Decisions relating to the third question "What form does the computer curriculum take at the school?" suggest a design underpinned by:

a. a strong social commitment;

b. helping pupils to see the connections and relations between themselves and the world around them; and

c. aiming to bring into society students who feel a deep sense of responsibility to their ecological and social environment.

Miller and Sellars (1985) refer to these design principles, in their developed form, as a transformation curriculum, one not dissimilar to what Dukacz and Babin (n.d.) call a curriculum of social reconstruction. This contrasts with the expected design, informed by structure, statements for learning and sequenced by grade level, such as found in Micro Guido (PLATO), a suite of learning programs for teaching the mechanical aspects of music across grade levels (Zolkov, 1995), and Pascal accounting (Dasoo, 1999).

Teacher decisions thus suggest grounds for considering the design of this curriculum to be informed more by principles underpinning a curriculum of transformation than by ends and outcomes and in embryonic form, a limited design of this kind.

Observations of computer lessons at Sacred Heart particularly lend support to this understanding of the design of the computer curriculum. Patterns emerging from the data indicate that about as much time is spent by pairs of pupils of difference working together on a computer negotiating who will use the keyboard as time spent on task. An English lesson provides an example. Pupils spent almost as much time negotiating who used the keyboard as they did describing a "Monster." Foregrounding this data suggests that pupils may learn as much about difference and how to deal co-operatively with difference when working on computer tasks as they learn about the academic task in hand.

4. Finally, the data suggest the need for teachers to shift their understanding of curriculum development to recognize and value *their* role in it. They also need to recognize the significance of a slot in the timetable for development. Both are critical if the computer curriculum is to be developed at all, let alone as transformation curriculum.

DISCUSSION

The unexpected finding of this evaluation is clearly very tentative; however, it points to the design of a curriculum that may, through

the formal curriculum, build bridges between pupils of difference, by culture, language, race, and gender. In this way, it may do formally what we as a nation attempt informally in daily life, to bridge differences and free ourselves of racial stereotypes inherited from apartheid. "Uncovered" in embryonic form, this curriculum now needs further research to establish whether the design holds good as a transformation curriculum and, if so, to develop it. As Miller and Sellars remind us, these seem little documented in the literature.

While the evaluation report is lengthy and detailed, it nevertheless provides a resource with two possibilities for development. It appraises teachers that principles of a transformation curriculum are immanent within their decisions, and it orients teachers to design principles they already work with so these do not have to be sought elsewhere.

Two challenges arise from this design for computer curricula in other schools. First, it challenges the assumption that computer curricula are designed following the organizing principle of means-ends thinking only. Second, this design challenges the widely held assumption that computers in schools need to be state-of-the-art Pentiums. Rather, it supports Oldert and Barras-Baker's assertion that low-cost, not state-of-the-art computers may be used in schools, because pupils working in pairs on a computer, regardless of its currency, may lead to building bridges between pupils of difference.

CONCLUSION

As one Canadian pointed out about the possibilities for a computer curriculum informed by principles of a transformation curriculum, nationals in cosmopolitan North America including Canada, like South Africans, are separated by difference. Such a curriculum might thus have wider applicability than initially recognized, and it behooves teachers at Sacred Heart College Primary School to follow through on its development (Nikoloyuk, 1998).

REFERENCES

Barone, T. (1985). Things of use and things of beauty: The story of Swain County High School arts programme. In E. Eisner, *The educational Imagination* (pp. 275–295). New York: MacMillan.

Basson, R.B. (1997). *Evaluation of the computer curriculum*. Sacred Heart Research and Development Programme, Observatory, Johannesburg, South Africa.

Chang, H. (1992). *Adolescent life and ethos in a US high school* (pp. 11-24). London: Falmer.

Dasoo, N. (1999). *The effects of computer assisted instruction on academic achievement in accounting at high school*. Master of Education Research Report (in progress), University of the Witwatersrand, Johannesburg, South Africa.

Dukacz, A.Z., & Babin, P. (n.d.). *Perspectives on curriculum* (pp. 13-22). University of Oregon at Eugene.

Eisner, E.W. (1985). *The educational imagination* (pp. 216–253). New York: MacMillan.

Fetterman, D.M. (1985). Doing ethnographic educational evaluation. In D. Fetterman, *Ethnography on educational evaluation* (pp. 13–21). Beverly Hills, CA: Sage.

Fetterman, D.M. (1989). A wilderness guide: Methods and techniques. In D. Fetterman, *Ethnography step by step* (pp. 41–72). Newbury Park, CA: Sage.

Fetterman, D.M. (1996). Empowerment evaluation: An introduction to theory and practice. In D. Fetterman, S.J. Kaftarian, & A. Wandersman (Eds.), *Empowerment evaluation: Knowledge and tools for self-assessment and accountability* (pp. 3–48). Thousand Oaks, CA: Sage.

Hamilton, D. (1976). *Curriculum evaluation*. London: Open Books.

McCauley, R. (1999). *A study of the integration of information and communications technology into classroom teaching through a programme of ongoing action research*. Master of Education Dissertation (in progress), University of the Witwatersrand, Johannesburg, South Africa.

Miller, J.P., & Sellars, W. (1985). Curriculum components. In *Curriculum perspectives and practice* (pp. 175–202). New York: Longmans.

Nikoloyuk, G. (1998, June). Comment on a paper entitled, A descriptive evaluation of the computer curriculum at Sacred Heart College Primary School, Johannesburg, South Africa: Present practices and future direction, presented by R.B. Basson. Canadian Evaluation Society Conference, St Johns, Newfoundland.

Oldert, N., & Barras-Baker, S. (1992). Computers in education. In R. McGregor & A. McGregor (Eds.), *Education alternatives* (pp. 413–434). Johannesburg, South Africa: Juta.

Parlett, M., & Hamilton, D. (1976). Evaluation as illumination. In D. Tawney (Ed.), *Curriculum evaluation today: Trends and implications*. London.

Schwab, J. (1973, August). The practical: Translation into curriculum. *School Review*, 501–522.

Spradley, J.P. (1979). *The ethnographic interview*. New York: Holt, Rinehart and Winston.

Walker, D.F. (1971, November). A naturalistic model for curriculum development. *School Review*, 51–65.

Wolcott, H.F. (1988). Ethnographic research in education. In R.M. Jaeger (Ed.), *Complementary methods* (pp. 185–250). Washington: AERA.

Zolkov, A. (1985). *The use of computers in music education in South West Africa*. Master of Arts Dissertation, University of the Witwatersrand, Johannesburg, South Africa.