2002 CITE Research Symposium

The Role of Information Technology Coordinator

in the Implementation of

Information and Communication Technology

in Schools of Hong Kong

by Teddy So (MSc [ITE])   July 6, 2002

Brief History of ICT in Schools of Hong Kong

1982   Computers Studies was introduced in 30 pilot secondary schools

1989   Computer Literacy was introduced in 70 secondary schools

1992   AS level Computer Application and A-level Computer Studies started implementation

1997   Multimedia computers were first introduced to primary schools(ED1 project)

1998   The HKSAR Chief Executive expressed his commitment for a five year plan on IT in education
ITCs were introduced to 20 pilot schools

1999   ITCs were introduced to 120 schools

2000   ITCs were introduced to 130 schools

2002   ITC scheme ends

2003   The five year IT project ends

Purpose of this research

a. what is the expectation of the teachers/schools who need help and support from the IT personnel;

b. if there is any mismatch in human resources when implementing the five years' strategic plan;

c. if there is any mismatch in financial resources when implementing the five years' strategic plan;;

d. if IT expert a crucial element in the integration of ICT in education;

e. how ITC contribute in teacher training

f. how ITC contribute in integrating ICT in teaching and learning

g. how ITC contribute in building up hardware infrastructure

Methodology

a.   Qualitative (on site observation, interview)

b.   Quantitative

            Questionnaire to Teachers (secondary school & Primary school)

                 480 sets sent to 24 schools (11P, 13S), 340 collected

            Questionnaire to ITCs

                 48 sets sent to 24 schools, 29 collected

            Questionnaire to IT graduates

                 50 sets sent, 26 collected

***   ITC discussion forum in the Hong Kong Education City is also observed.

Literature Review

Surprisingly, there is little written about the role of the technology coordinator. Even the Internet has a lot of educational resources, again there are relatively few resources specifically for technology coordinators found in the web.

Since ITC is a new post, the roles and the titles are not standardized around the world -- information technology coordinator, technology coordinator, teacher technologist, teacher-computerist, computer coordinator, electronic janitor, etc.

Literature Review

Supporting Technology in Schools : The Roles of Computer Coordinators

"Support by walking around". It includes any support given by virtue of "being in the right place at the right time, which is the computer coordinator's main method of serving the immediate needs of the faculty, and it is the best avenue for gathering information about technical and policy issues" (Marcovitz, 1998, p. 1).

"the computer coordinator can be technician, trainer, curriculum consultant, curriculum designer, and policy-maker. Support by walking around can facilitate all of these roles by making the computer coordinator aware of technical problems and training needs, providing suggestions for and how computer can support the teachers" (Marcovitz, 1998, p. 4)

Integrating Technology for Meaning Learning

Computer coordinators are frequently the target of jealousy. It relates to the wrong perceptions that they have a great deal of free time, and control a lot of money and resources. (Evans-Andris, 1995; Strudler, 1995-1996)

Literature Review

The Technology Coordinator : Curriculum Leader or Electronic Janitor

The jobs of a technology coordinator is "one person to, teach, design courses, keep up with technology, fix microcomputer, fix LAN network, monitor and fix WANs, be a network administrator, be a WWW administrator, be an internet guru, be a help desk, evaluate software and hardware, find and get grants, and generally do what an academic computing department in a small college would do" (Reilly, 1999, p. 1).

Technology coordinator is not paid what he is worth. "When a person has the technology skills, integrative ideas and experience with implementation, there should be another salary step, because in reality there is a step outside of education that will pay them very well for a lot less work. If we get [a technology coordinator], how do we pay him/her enough to stay in the schools and not move into the commercial market where they can make a whole lot more money ?" (Reilly, 1999, p. 5).

Literature Review

The Role of School-based Technology Coordinators as Change Agent in Elementary School Programs : A Follow-up Study

Strudler (1996) relates the post of technology coordinator with staff development, educational computing and integration of technology. One of the important findings of this paper is the coordinator's plan to work themselves out of their jobs.

In addition to the professional functions served by coordinators in their work with teachers (e.g. staff development, curriculum consultation), there are numerous custodial details that require coordination (e.g. ordering and maintaining hardware and software, scheduling lab., troubleshooting). If the position of a coordinator is phased out, no one can substitute his role and provide those helps to teachers. Schools can survive the elimination of a technology coordinator's position. However, the cost of doing so is considerable. Although the goal of working oneself out of a job is perhaps an ideal worth striving for, school-wide integration of technology will likely suffer unless provisions and plans are made to share the coordinator's tasks to others.

Literature Review

The Technology Coordinator

"A technology coordinator is to design and help implement the staff development that facilitates appropriate use of computer related technology in schools" (Moursund, 1992, p. 9). He is an educational leader as well as a change agent, playing a significant role in school reform and school restructuring.

One may argue that if there is a need for every school to have a full time technology coordinator. Moursund points out that it is not just the total quantity of computer equipment in a school or district that determines if a technology coordinator is needed. Rather, it is the nature and extent of the use of this equipment. A coordinator is not needed if computer is used just as an electronic typewriter. On the other end of spectrum, technology coordinator is needed for taking care of the computers installed in classrooms equipped with multi-media devices, and a wide range of hardware and software and other instructional learning materials. The networked, multi-media classroom becomes a major challenge to our educational system.

Literature Review

To develop and maintain this environment it requires :

- A good deal of teacher training.
- A great deal of technical support for students and teachers.
- A great deal of curriculum development.
- A substantial increase in budget allocations for technology and support of technology.
- A long transitional period, while both students and teachers learn on the jobs (Moursund, 1992, p. 21).

Primarily a technology coordinator is an administrator. Therefore he should hold an administrator's credential. Hence a district level technology coordinator should be paid on the administrative pay scale.

Eventually school district may want their technology coordinators to have more formal education, such as a doctorate in computer education. Currently there are relatively few people with such credentials. However, people earning a doctorate in computer education are generally taking positions in higher education or in the private sector (Moursund, 1992). "If I had all of those qualifications, I'd leave education and get rich" (Moursund, 1992, p. 59).

Literature Review

Education for an Information Age

Poole describes a teacher-computerist as a person who has sufficiently high level of expertise to act as an advisor and troubleshooter regarding using computer-based educational technology. There should be one or more teacher-computerists in every school. The number depends on the size of the school as well as the school's commitment to educational computing.

As the name reveals, the teacher-computerist suggests that this special personnel should be a teacher. It is because teacher is the ideal person to work with other teachers as he understands their needs. Teacher who is also computerist is suitable to help his fellow colleagues learn about computers because he is trained as a teacher on one hand, and has experience working computing novices on the other. As a result, it is less likely to frighten off other teachers who may be timid about using the technology.

A teacher-computerist should have adequate release time
- to work with other teachers
- to work with vendors

Literature Review

Managing Information Technology in Secondary School

There should be a coordinating group for IT in every school to supervise the IT policy, the implementation plan, and review its actual practice. The coordinating group should include the IT coordinator, the IT manager, and several representatives from different subject departments. The IT coordinator should chair the IT group and be responsible for the all aspects of the use of IT throughout the school, while the subject representatives are responsible for the implementation of the school's IT policy within their departments.

New Technologies for Learning : Contribution of ICT to Innovation in Education

the authors suggest to develop a middle-management in school. In order to integrate ICT into teaching and learning, classroom teachers need technical support. A special division within the school is formed to coordinate the technical support activities. Moreover, this division is responsible for coordinating the cross-curricular teamwork among teachers. A coordinator of such activities can be part of the middle-management staff. Such a person can be a teacher, however this teacher should be relieved from other duties and task.

Research Finding

Question 21, 22 and 23 from Teacher Questionnaire

	Primary		Secondary		Total	
	N	%	N	%	N	%
21. You prefer the IT Coordinator in your school						
is major in any field	18	11.46	24	13.11	42	12.35
is major in Computer/IT	139	88.54	159	86.89	298	87.65
22. You prefer the IT Coordinator in your school						
has received teacher training	120	76.43	110	60.11	230	67.65
has no teacher training	37	23.57	73	39.89	110	32.35
23. You think the post of the IT Coordinator should						
be a permanent post like other teachers	155	98.73	174	95.08	329	96.76
be a temporary post	2	1.27	9	4.92	11	3.24
not exist. His jobs can be shared by other teachers	0	-	0	-	0	-

Results of the Question 25, 26 and 27 from ITC Questionnaire

	Primary			Secondary		Total
	N	%	N	%	N	%
25. You think an IT Coordinator should be						
major in any field	2	22.22	8	40.00	10	34.48
major in Computer/IT	7	77.78	12	60.00	19	65.52
26. You think an IT Coordinator should be						
has received teacher training	6	66.67	12	60.00	18	62.07
has no teacher training	3	33.33	8	40.00	11	37.93
27. You think the post of the IT Coordinator should						
be a permanent post	9	100.00	19	95.00	28	96.55
be a temporary post	0	-	1	5.00	1	3.45
not exist. His jobs can be shared by other teachers	0	-	0	-	0	-

Results of the Question 38 from ITC Questionnaire

38. In your opinion, the post of the IT Coordinator

	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
Primary					
is supported by ED greatly	11%	0%	44%	33%	11%
Secondary					
is supported by ED greatly	0%	5%	50%	40%	5%

Question 9 from ITC Questionnaire

9. Subjects taught this academic year

	Primary		Secondary		Total	
	N	%	N	%	N	%
Chinese	4	18.18	-	-	4	8.00
Mathematics	4	18.18	7	25.00	11	22.00
Computer	6	27.27	12	42.86	18	36.00
General Studies	2	9.09	-	-	2	4.00
PTH	1	4.55	-	-	1	2.00
Physical Education	2	9.09	-	-	2	4.00
Physics	0	-	3	10.71	3	6.00
Chemistry	0	-	2	7.14	2	4.00
Integrated Science	0	-	1	3.57	1	2.00
Engineering	0	-	1	3.57	1	2.00
Economics	0	-	1	3.57	1	2.00
Accounting	0	-	1	3.57	1	2.00
None	2	9.09	-	-	2	4.00
Others	1	4.55	-	-	1	2.00
Total	22		28		50	

Question 35 from ITC Questionnaire

The time allocation of your daily works

Primary	**<=25%**	**>25%**	**>50%**	**>75%**
managing resources and providing technical support	67%	22%	11%	0%
teacher training	100%	0%	0%	0%
integrating IT into teaching and learning	89%	11%	0%	0%
others (teaching)	22%	22%	44%	11%

Secondary				
managing resources and providing technical support	100%	0%	0%	0%
teacher training	100%	0%	0%	0%
integrating IT into teaching and learning	100%	0%	0%	0%
others (teaching)	5%	5%	60%	30%

Question 4 from ITC Questionnaire

IT Levels of the ITCs	Primary	Secondary
BIT	22.22%	5%
IIT	-	20%
UIT	33.33%	55%
AIT	33.33%	20%
Exempted	11.11%	-

Question 3 from ITC Questionnaire

3c. Major	Primary	Secondary
Chemistry	-	10%
Chinese	11.11%	-
Computer	33.33%	25%
Economics	-	10%
Education	11.11%	5%
Engineering	-	10%
English	11.11%	-
Mathematics	-	20%
Physical Education	22.22%	-
Physics	-	15%
PTH	11.11%	-
Statistics	-	5%

Question 21 and 22 from ITC Questionnaire

What is the mode of deployment of the IT Coordinator in your school ?

	Primary	Secondary
To deploy an existing teacher	22.22%	20.00%
To appoint a new teacher	22.22%	25.00%
To form an IT coordination team	55.55%	55.00%
Others	-	-

What is your preference of the mode of deployment of the IT Coordinator in your school ?

To deploy an existing teacher	33.33%	20.00%
To appoint a new teacher	11.11%	45.00%
To form an IT coordination team	44.44%	35.00%
Others	11.11%	-

Question 6 from IT Graduate Questionnaire
Are you interested in teaching Computer Studies or other IT related subjects in secondary schools ?

Yes	**46.15%**
because the job is stable	**46.15%**
because the salary is attractive	**46.15%**
because it is my goal	**3.85%**
No	**53.85%**
because the job is boring	**19.23%**
because I cannot apply what I have learnt	**15.38%**
because the salary is not attractive	**3.85%**
because it has no career future	**7.69%**
because it is not my goal	**46.15%**
because it has less chance to get promoted	**3.85%**

Question 7 from IT Graduate Questionnaire

Are you interested in teaching Computer Studies or other IT related subjects in primary schools ?

Yes	**30.77%**
because the job is stable	**30.77%**
because the salary is attractive	**30.77%**
because it is my goal	**0%**
No	**69.23%**
because the job is boring	**19.23%**
because I cannot apply what I have learnt	**19.23%**
because I do not want to deal with children	**11.54%**
because the salary is not attractive	**0%**
because it has no career future	**19.23%**
because it is not my goal	**38.46%**
because it has less chance to get promoted	**3.85%**

Question 8 from IT Graduate Questionnaire
Are you interested to be an ITC in secondary schools ?

Yes	**50.00%**
because the job is stable	**38.46%**
because the salary is attractive	**30.77%**
because it is my goal	**3.85%**
No	**50.00%**
because the job is boring	**11.54%**
because I cannot apply what I have learnt	**15.38%**
because it is a temporary job without job security	**11.54%**
because the salary is not attractive	**3.85%**
because it has no career future	**19.23%**
because its workload is heavy	**0%**
because it is not my goal	**26.92%**
because it has less chance to get promoted	**7.69%**
because the entrance requirement is not fair	**0%**

Question 9 from IT Graduate Questionnaire
<u>Are you interested to be an ITC in primary schools ?</u>

Yes	**42.31%**
because the job is stable	**30.77%**
because the salary is attractive	**26.92%**
because it is my goal	**0%**
No	**57.69%**
because the job is boring	**11.54%**
because I cannot apply what I have learnt	**11.54%**
because it is a temporary job without job security	**7.69%**
because the salary is not attractive	**0%**
because it has no career future	**15.38%**
because its workload is heavy	**0%**
because it is not my goal	**34.62%**
because it has less chance to get promoted	**3.85%**
because the entrance requirement is not fair	**3.85%**

The Human Resources Survey on Computer Teacher in Secondary School

Subject	Major	Minor
Computer Science	12.3%	30.5%
Mathematics/Science	60.3%	30.7%
Chemistry/Biology	8.9%	3.3%
Engineering	5.3%	1.0%
Social Science	5.3%	3.6%
Business	1.0%	1.3%
Art	1.7%	0.7%
Others	0.3%	0.3%
Not indicated	5.0%	28.4%

(the Hong Kong Association for Computer Education 1991)

Comparison between two Computer Teachers Human Resources
Surveys

Qualification	Year 1988 by E. D.	Year 1991 by HKACE
A. Institute Attended		
University of Hong Kong	31.2%	30.8%
Chinese University	34.3%	37.1%
Overseas	28.8%	26.7%
B. Major		
Computer Science	12.4%	12.3%
Science	71.4%	69.2%
Others	16.2%	18.5%
C. Minor		
Computer Science	31.4%	30.5%
Science	32.7%	34.0%
Others	36.0%	35.4%

10. Experiences in managing the following equipment

	N	%
File server	12	46.15
e-mail server	4	15.38
DNS server	3	11.54
Fire wall	8	30.77
Novell server	1	3.85
VOD server	0	-
Web server	13	50.00
Proxy server	12	46.15
FTP server	16	61.54
Intranet server	5	19.23
Linux server	5	19.23
Macintosh computer	0	-

Recommendation

The target group of personnel to fill the ITC posts should be clearly defined.

Respect the post of ITC as a profession.

A permanent post should be set up for recruiting IT related personnel, preferably IT graduate

The current salary pay scale should be reviewed

ITC should be released from other teaching duties

Consider recognizing teacher qualifications other than Dip. / Cert. of Education

They should be provided proper on job training

Clearly define the roles of the ITC and the TSS in schools

Training should be provided to principals too

The mode and contents of the teacher training provided by E. D. should be reviewed

學校IT統籌員 恐淪為「代課教師」

【本報訊】教育署自上月宣布由今年9月起，變相削減「資訊科技統籌員」的資助後，多家中、小學連日來要求該職位的教員大幅削薪，否則不獲續約。

教協會長、立法會議員張文光昨日炮轟港府，四年內四度改動該職位的性質，最終令統籌員變成「代課老師」，完全背離計劃的原意。

教協籲勿全面減薪

張文光憂慮，由於前路茫茫，新資助計劃只會迫使質優教員離職，阻慢學校的IT進程，教協建議不要一刀切把統籌員全面減薪。

據一名受影響的人士透露，自上月新資助方案出爐後，部分統籌員發動成立工會捍衛權益，但有教署高級官員隨即多番要求教協，不要把事件擴大，並說：「我哋真的無錢，不過萬事有商量。」

據資料顯示，目前本港學校共有433名資訊科技統籌員，扮演協助學校統籌資訊器材、政策的角色，薪酬由2萬至3萬元不等，但絕大部分均以兩年合約形式聘用。

自1998年9月推行以來，該職位已由最初單純扮演統籌角色，經歷四次改動，現在已演變成分擔教學工作的「半代課老師」。

教署已發削津通知

直到上月中，教署向全港1,300多間中、小學發出通知，指今年9月起，只會每月向各學校發放為期兩年的17,955元月薪津貼，聘請該職位的教員起薪點，相當於公務員薪級表第12點，亦無設晉升制度。

記者昨日與10名統籌員接觸後，得悉沒有一間學校願意動用彈性撥款，為他們填補薪酬差異，換句話說，他們不是減薪，便要離職。

較幸運者，則可改以「教師」身份擔任統籌員，但校方變相少了一名教師名額。

月薪2.8萬 減至1.8萬

去年9月入職的葉先生，當日以資訊統籌員身份獲聘，但現時每周教授高達29節課，同時要兼任小部分IT工作。

不過，在新學年，原本月入2.8萬元的他，將要大幅削薪至約1.8萬元。

Finally

THE END

Thank you