

Use of New Technology for School Administrative Work

QEF Project number: 2011/0221

School Background

Tak Sun Secondary School is a DSS school established since 2000. Currently, we have around 1000 students and 100 staff members. We have been using IT in school administration. In order to suit our own needs, we have our own IT department to develop various in-house IT systems, such as the report card system, the discipline system, student admission system, and so on in order to maximize the flexibility. Some systems such as e-mail system, e-learning platforms are out-sourced. Although those systems facilitate teachers' administrative works a lot, some administrative works are still clumsy and labor intensive. Together with some defects in the current out-sourced system or workflow, we start thinking about improving our current IT facilities, especially in school administration, so that apart from enhancing administrative work quality and reducing teachers' time on the administrative issue, our teachers can focus on teaching and coaching our students in order to provide better quality of education to them.

Situation and Needs Analysis

In this part, we do situation and needs analysis in 4 areas:

1) Class Tutor Work Load

Nearly all of our teachers involves in class tutors' works. Every month, they have to spend quite a lot of time in different administrative work including taking students' attendance, distributing, collecting, and chasing school notices and collecting and chasing payment from students for some school administrative fees. These administrative works are rather heavy, especially for junior form class tutors. Instead of using the time for school administrative works, they could have spent it for students' counseling or lesson preparation which is much more beneficial to our students and our stakeholders. Therefore, we urged for having a system that can save the time for these administrative works.

2) School – Parents Communication

We rely on using school notices, school intra-mail and school website for distributing important messages to the parents. However, usually important information cannot

even reach to the parents especially if they do not go to the school web page or if their sons do not pass the school notices to them. We received many comments from parents that it is a good idea to send them SMS messages as a short notification for any information updated. On the other hand, the school also spends quite a lot of time in processing parents' feedback through the replied school notices. Also, the school has to spend quite a number of papers for printing these school notices, which was comparatively not environmentally friendly. Therefore, a SMS system and an e-notice and endorsement system is necessary, with the support of using effective strategies in enhancing this system.

3) Accountability for attendance records

We believe that the current attendance taking procedure is effective, but not accurate enough to take a log of timing information. Sometimes, we will receive appeal of lateness cases from parents. More objective data can be obtained by introducing IT for attendance taking.

Moreover, the school finds difficulties in having an accurate attendance taking for out-school events like athletics meets. With the help of IT system, it is believed that we can have a more effective and accurate attendance taking for both normal school day and out-school events.

4) Problems of the current school intranet system

We rely on the school intranet system heavily for resource booking, internal communication, and e-learning. However, the current intranet system was found compromised by hackers several times in the past two years. Sensitive information would be leaked. Moreover, the current intranet system is not compatible with the new browsers, or with bugs that cannot be fixed by the existing supplier. It is a golden opportunity for us to review and consider changing to a new intranet system to support effective communication and e-learning.

Project Objectives

- (1) To reduce teachers' administrative work loads and pressure by using IT.
- (2) To save more time during the class tutor period for reading or tutoring.
- (3) To provide accurate data in order to make school administration effectively.
- (4) To upgrade the current intranet communication and e-learning platform for better communication and learning for school stake-holders.

Proposed Solution

1) E-notice and SMS system

We would like to formulate a culture of parents to read and endorse school notices through the electronic platform. We also believe that SMS nowadays in Hong Kong is the most effective way to instantly mass communication to parent. Therefore, we could send a SMS message to parent to remind them for new notice, and ask them to endure on the web. With the SMS system, instant and urgent message from the school can be effectively communicate to parents. The following summarize the pros and cons of this solution:

Pros:

- Saving tremendous time of class teachers, which is about 93% of teachers in our school, and office staff in paper distribution, collection and data analysis. More class time can be saved for the morning reading programme, individual student tutoring and remedial teaching and enhancement training.
- More accurate and instant statistics and report about parents' responses can be generated. Timely follow up work can be done.
- With the SMS system, instant and urgent message from the school can be effectively communicate to parents.
- Saving tremendous paper consuming, around 70,000 pieces of paper per year. It is environmentally friendly.
- The cost of SMS will be around the same as the cost of paper and printing.

Cons:

- Resources must be spent in training stake-holder to use the new systems.

2) Using an electronic payment system for collection of small amount of money

We proposed that for money transaction which is less than \$500, an electronic payment system should be used. These include most of the activity expenses or item selling at the office counter. The following summarizes the pros and cons of this solution:

Pro:

- Saving tremendous time of class teachers, which is about 93% of teachers in our school for money collection and counting. The risk of money losing and miscounting can be reduced to ZERO.

- Maintaining good record of students' purchase for auditing.
- It saves time from the office staff to handle money transaction at the office counter.

Cons:

- Staff training is needed. Efforts from the office staff cannot be saved, since we need to pre-setup the system each time for mass money collection by the office staff.
- Extra expenses will be spent for the electronic payment hardware maintenance fee and corresponding transaction fee. (Note: the transaction fee, probably 1.3% depending on the supplier, could be covered by difference between the cost and the selling price which was approved by the Incorporated Management Committee of the School.)
- For various considerations, such as students' discipline and security, we still recommended cheques will still be used for large amount transaction

3) Using a smart card system for daily attendance taking

By using a smart card system for attendance taking, the accuracy and accountability of the attendance record is highly improved. It is because the arrival or leaving time information can be logged accurately. Also, smart cards are easily assessable.

Pro:

- The lateness record is more objective. It reduces much of the investigating time from the discipline team for students complaining wrong record.
- The office will have attendance records promptly so that necessary actions can be proceeded earlier.

Cons:

- It will not save any time for teacher supervision or interaction if some students forgot to bring their smart cards or helping others take the attendance by using the others' smart cards. Extra supervision is necessary.

4) Using the smart card system for attendance taking in Athletics Meet & other ECA events

With the help of the mobile attendance taking system provided by the electronic payment system, we can take attendance during the athletics meet of other similar

events.

Pro:

- It saves much of the time in attendance taking in out-door environment.
- It is more accurate.
- The attendance summary can be generated quickly. It reduces much of the time of office staff in attendance record handling during the sports day.

5) Fixing the current loopholes and problems of the current intranet system for effective communication.

The current intranet system is found being hacked two times last year, and the intranet web mail now cannot be supported by new browsers. We have asked the current supplier to provide remedial supports for 2 years but no solution was provided. The proposed solution is to change our intranet system to another intranet system, which is commonly used among many schools with better support in browsers and security.

Pro:

- I-mail can be read by all teachers by different browsers, which will increase the effectiveness of communication among teachers.
- The chance of system being shut down for solving the security problem will become lower.
- The new intranet system should have a better interface (calendar view) to support resource booking, which facilitates both teachers and office staff to book their venues more effectively.
- The new intranet system should have a better interface for e-learning. This facilitates more teachers to share teaching and learning materials, or doing on-line discussion, which benefits students' learning.

6) Stakeholders' Training

The success in implementing a new IT system and culture relies on the stakeholder training and implementation strategy. It includes the training of teachers, students, and parents. We will also divide the implementation into different phases to give enough time to stakeholder to adapt. Hence, an additional manpower is necessary for provide training to our stakeholders.

Outcome

- (1) Time saved for all teachers so that teachers can focus on teaching
- (2) Effective teaching and learning through e-platform for all teachers and students
- (3) Workshop for stake-holders including teachers, students and parents
- (4) Sharing sessions to other schools or organizations

Implementation Plan

- (1) Implementation period: September 2012 to August 2013
- (2) Task Force: A 8-people group to study work flow and supervise implementation:

Member Position	Responsibility
Principal	Project Supervisor
Director of Administration Council (ADC)	Project Coordination & Administration Work Flow
Technology Manager (TM)	
Discipline Master (DM)	Administration Work Flow
Accounting Officer (AC)	Administration Work Flow
IT Officer (ITO)	IT Support
Office Staff	Administration Work Flow
Trainer (TR)	Teachers & Parents Training

- (3) Timeline:

Implementation Date	Items	Related Members
2012 Mar	Preliminary study from the suppliers.	Suppliers
2012 Early Apr	Submit QEF Proposal	Principal
2012 Jul	Fund Approval from QEF	QEF
2012 Aug	Workflow & Logistic Meeting (Planning)	ADC, TM, DM, AC
2012 Aug	Tendering, Quotation, and Contract	Principal, TM
2012 Sep	Hardware and Software Setup	TM, TR, IT Support
2012 Sep (Early)	Workflow & Logistic Meeting (Confirmation)	ALL
2012 Sep (Mid)	F1 Student and Parent Training	TM, ITO, TR
2012 Sep (Late)	Teacher & Staff Workshop and Training	TM, ITO, TR
2012 Sep-Nov	Student Data Registration to the system	ITO, Supplier
2012 Sep-Nov	F2 – F6 Student and Parent Training	TM, ITO, TR
2012 Oct	Staff Development Day	TM, TR

2012 Oct-Nov	Implementation Phase 1: Attendance & E-notice	ADC, TM, ITO, DM, TR
2012 Oct-Nov	Electronic Fee Collection System Trial Run	TM, ITO, ADC, AC
2012 Dec	Evaluation Meeting 1	ALL
2012 Dec	Implementation Phase 2: Electronic Fee Collection Full Run	TM, ITO, ADC, AC, TR
2013 Feb-Mar	Evaluation Meeting 2	ALL
2013 Mar	Staff Development Day	TM, TR
2013 Apr	Preparation of Report for auditing	TM, AC, TR
2013 Jun – Aug	Report writing	TM, TR

Budget Plan

Facilities / Service Charges			
	Unit Price	Quantity	Amount (\$)
Smart Card Basic System	40,500	1	40,500
Attendance Card Reader	7,000	2	14,000
Mobile Attendance Card Reader	4,500	2	9,000
Fee Collection Reader (Monitor)	5,500	2	11,000
Receipt Printer	3,500	2	7,000
Network Server for the new Electronic Payment System	44,500	1	44,500
Software License for the new Electronic Payment System	9,000	1	9,000
Service Charge	5,000	1	5,000
Intranet System	56,000	1	56,000
Server for Intranet system	30,000	1	30,000
External Email Forward	15,000	1	15,000
e-booking & Calendar	10,000	1	10,000
Library System for the new intranet	17,000	1	17,000
		Sub-Total	268,000
Man Power Expenses: Position: <u>Part-Time Teacher & Trainer</u>			
Per Hour <u>\$50</u> × <u>4 Hours</u> × <u>175 Days</u> + MPF \$0			35,000
		Sub-Total	35,000
General Expenses			
	Unit Price	Quantity	Amount (\$)
Audit Fee	5,000	1	5,000

Expense Sharing		
	<i>By School</i>	<i>By QEF</i>
Facilities / Services	\$198,000	\$70,000
Manpower Expense	---	\$35,000
General Expenses	---	\$5,000
	<i>Total amount by School</i>	<i>Total amount by QEF</i>
	<i>\$198,000</i>	<i>\$110,000</i>

Assets Usage Plan

Category (in alphabetical order)	Item / Description	No. of Units	Total Cost	Proposed Plan for Deployment (<i>Note</i>)
computer hardware	Attendance Card Reader	2	14,000	Upon project completion, all the assets will be kept and maintained in the school. The school will use them in discharging daily school administrative work.
	Mobile Attendance Card Reader	2	9,000	
	Fee Collection Reader (Monitor)	2	11,000	
	Receipt Printer	2	7,000	
	Network Server for the new Electronic Payment System	1	44,500	
	Server for Intranet system	1	30,000	
computer software	Smart Card Basic System	1	40,500	
	Intranet System	1	56,000	
	External Email Forward	1	15,000	
	e-booking & Calendar	1	10,000	
	Library System for the new intranet	1	17,000	

Note: for use by school / organization / in other projects (please provide details of the department / centre to which the asset will be deployed and the planned usage of the asset in activities upon project completion).

Evaluation

- (1) Performance Indicator (School Administration):
- (a) Teacher time of handling notice and fee reduced to 30 minutes per month outside class tutor period and 15 minutes per month inside class tutor period.
 - (b) No security or compatibility complains from teachers.
 - (c) Around 70,000 pieces of paper can be saved
 - (d) Time for preparing auditing can be reduced by 10%
- (2) Performance Indicator (Student Performance & Learning):
- (a) By closer monitoring, student lateness records will be reduced around 10% comparing to past year.
 - (b) With better support of E-learning platform, more e-classroom will be created and used in the intranet system comparing to past year.
- (3) Performance Indicator (Parents):
- (a) Parents will be informed effectively by using SMS about school notice and special events.
 - (b) Parents will receive SMS message for their sons' lateness, hence closer monitoring can by parents can be achieved. (Preventive Measure)
- (4) Assessment Methods:
- (a) Teachers and Parents survey for the effectiveness of using IT in administration.
 - (b) Evaluation meeting for process fine-tuning.

Extra Regular maintenance cost and other cost

The maintenance fee for both hardware and software will become the regular expense in the school budget plan. Comparing to the regular maintenance fee, the following are the extra fee imposed to the school in each year:

Extra- Maintenance Fee for intranet system:	\$3300
Extra- Maintenance Fee for electronic payment system:	\$8800
Extra-Maintenance Fee for Server:	\$4000
Other Extra-cost (cost of SMS – cost of paper and printing):	\$4000

Conclusion

We sincerely hope that the Quality Education Fund can provide us support to enhance the school's administration so that our educators can focus on their work on the students' whole-person development.

Report Submission Schedule

My school commits to submit proper reports in strict accordance with the following schedule:

Project Management		Financial Management	
Type of Report and covering period	Report due day	Type of Report and covering period	Report due day
Final Report 1/9/2012 - 31/8/2013	30/11/2013	Final Financial Report 1/9/2012 - 31/8/2013	30/11/2013