Oversold and Underused? A Case Study of ICT Usage in Grade 7 Classes in the Ateneo de Manila

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Abstract: In this paper, we describe findings from an action research study conducted at the Ateneo de Manila Grade School from January to March of 2008. The purpose of the study was to examine the ways in which technology—a computer, a digital projector, and an Internet connection—was being used by the faculty and to gauge the reactions of the students. The study found that, while students liked technology enhancements to the lessons, they were also discriminating of curricular relevance of the various media used. Teaching practice was found to be largely traditional, despite the use of technology. Student-centered, technology-based approaches were still not used. The paper ends with recommendations for teacher training and content development

Keywords: ICT use, pedagogy, Philippines, Ateneo de Manila

Introduction

In his book, *Oversold and Underused: Computers in the Classroom*, Larry Cuban [1] lamented that the overwhelming majority of teachers used information technology (IT) to sustain existing patterns of education, rather than to innovate. He writes that:

> The introduction of information technologies into schools over the past two decades has achieved neither the transformation of teaching and learning nor the productivity gains that a reform coalition…[has] sought….I have concluded that computers in [the] classroom have been oversold by promoters and policymakers and underused by teachers and students (p. 195).

Information and communication technology (ICT) usage in education falls into three broad categories: ICTs as objects under study, ICTs as support tools, and ICTs as catalysts for transformation. When ICTs are the objects under study, these technologies are the subject matter in themselves. The goal of this approach is for students to develop mastery over technology [3].

When ICTs are used as productivity tools or enrichment resources, they support the traditional teacher-led mode of instruction. Teachers show slides using digital projectors and record grades on spreadsheets while students write reports on word processors. Computers become better typewriters, calculators, blackboards, and grade books [2], what Richards [5] describes as “add-on” usage of ICTs.

Transformative applications of ICTs refer to non-traditional emerging uses where exposure to and deployment of ICTs fundamentally change the way education is conceived and delivered to students. ICTs are used to develop broad, generic skills such as problem solving, independent and collaborative learning, and communication [3]. They lead to more individualized instruction, less didactic delivery, and an emphasis on problem-solving and cooperative learning situations [4]. While these three categories are not mutually-exclusive, the most dramatic changes to teaching and learning occur when the third approach is employed.

It is of interest to administrators and education policy makers, to examine how teachers regard and use ICTs. Answers to these questions matter because they give policy makers bases for decisions regarding the distribution of scarce resources as well as inputs for planning of future technology and training investments [6].

This paper asks the question: in the Ateneo de Manila Grade School, how are our teachers and students using ICTs? Are we using these resources in transformative rather than traditional ways? Are our teaching strategies teacher-centered rather than student-centered? If we find that we are still underutilizing our technology investments, how can we move forward in order to maximize these resources?

1. Context

The Ateneo de Manila University is a private, Jesuit, 149-year old educational institution located in Quezon City in the Philippines. It consists of a grade school, a high school, and a college. The Ateneo de Manila's Grade School (AGS) has eight (8) levels of education, from Prep to Grade 7 and has a total population of more than 4,000 students and more than 200 faculty members.

In school year 2007-2008, the AGS embarked on a project to equip grade 7 classrooms with computers and digital projectors. The purpose of this project was to encourage the use of ICTs in the various classes and to expand its use from learning computers to using computers as a tool for learning. Instead of equipping all classrooms at the same time, though, the AGS opted for phased implementation. During the first phase, only four classrooms were equipped. The AGS's administration wanted to ascertain how their teachers would use these new resources in the daily teaching and learning situation and what kind of support it had to provide so that these resources would be maximized.

A committee composed of the authors was formed to observe how teachers and students of the classes made use and responded to these new resources. Among the questions that the committee had to answer were:

- What ICT applications did teachers and students use?
- What types of activities did these applications support?
- Which of these applications or activities were regarded as good or bad?
- Did teachers and students find these technologies helpful or harmful to the teaching and learning process? Why?
- What other skills do teachers and students need in order to maximize the use of ICTs?

2. Data Collection

To gather data from the teachers and students, the committee used variety of instruments and techniques.

Using a **log book**, teachers using the classrooms with ICTs were asked to record what applications they used, what content they showed the class and any comments they might have regarding the experience. The comments could range from class feedback to teaching experiences to technical difficulties.

The students were asked to complete a **survey form** that asked about their experience of ICT use in the classroom, gauged their attitudes towards the technologies, and examine ICT's effects on their work and study habits. They were also asked open-ended questions about ICTs uses they regarded as effective or ineffective.

Finally, both teachers and students were invited to separate **focus group discussions** (FGD). Teachers and students were asked about their best and worst experiences of using ICT in the classroom. Questions were given to the participants of the FGDs and they were asked to write their responses in meta-cards. They were asked to cite advantages and disadvantages of ICT use. Finally, they were asked to make suggestions for improvement.

3. Findings and Discussion

Based on the data gathered, the findings may be categorized into the following:

3.1 Student Interest and Responses

The student survey reflected a strong preference among students for ICT-based delivery of education. They believed lessons were more fun and interesting when teachers used PowerPoint, educational videos or ICT-based drills. They learned more quickly and they were more motivated. They disagreed to statements that asked whether they took down fewer notes, were bored, or were distracted when teachers employed ICTs. They said want teachers to continue using ICTs in their different lessons.

Students believed that ICTs were effective when used for presentation, drills, games, simulations and other interactive program. They said ICTs supported their summarization and note-taking skills as well as their research work.

Despite generally positive attitudes towards ICTs, students did recognize some poor uses of ICTs. These included the use of ICTs for presentations that were not related to the lesson or were boring or inappropriate. Students also acknowledged that ICTs can be overused. They were wary of overdependence on or abuse of ICTs. In such cases, ICTs can lead to distraction, boredom, and passivity.

3.2 Teacher Concerns, Training and Curriculum

The teachers lent insight into issues of pedagogy. They were concerned that ICTs could be overused, leading to student passivity, a reluctance to take notes or read books, and hampering interaction between teachers and students.

They also asked for more training in the use and proper care of the ICTs. Most importantly, they clamored for a deeper articulation of appropriate insertion points of ICTs in the academic budget, the development of modules for these lessons, and the sourcing of more interactive materials. They said that the AGS should identify resources students may use that can be found in either the Educational Media Center or the AGS Computer Center.

Teachers' lack of knowledge in ICT use or technical problems related to the equipment also dampened student interest. They also expressed difficulty of having not having enough time to look for other resources that may be used in the classroom.

3.3 Physical Setup and Computer Enhancement

During their FGD, the teachers articulated many of the same opinions as the students. They recognized the value of ICT use and indeed clamored for enhancement of facilities.

Teachers also said that the time of the year the ICTs were installed in their rooms was the busiest time. However, teachers realized the potential of having ICT in the classroom.

Teachers pointed out that the additional equipment ate up board space. The need to stay close to the computer prevented them from moving around the classroom while they spoke Teachers underscored the value of the traditional blackboard as well as traditional methods of instruction to provide students with an entire thought process.

Teachers asked for a rethinking of the layout of the classrooms, given the new equipment.

3.4 Teacher-Centered ICT

From the logs, it was observed that the use of the ICTs tended to be teacher-centered. The ICTs were used for PowerPoint presentations or for showing films and in some instances, for class drills. Different subject areas used ICTs differently. Some teachers used it to show videos and presentation related to the lesson. Other used it to have drills. Science teachers however, were able to utilize the ICTs differently. A lesson included presenting the students' project to class. Science teachers allowed their students to make their own PowerPoint presentations. Students were allowed to use the internet to research and consequently present this investigatory project to class using ICT.

There were little to no examples of interactive applications, possibly because Internet access came late in the observation period.

The findings point to an enthusiasm among the faculty and more so the students to teach and learn with ICTs. Both groups recognize ICTs potential to motivate, illustrate, and facilitate content delivery. At this point, though, the Ateneo Grade School's use of ICTs still tends to be teacher-centered. These approaches can lead to technology-fatigue on the both sides. Furthermore, these approaches do not make maximal use of the capabilities of the equipment and its potential to engage students with their education.

In this regard, the Ateneo teachers and students are discriminating groups. Neither is satisfied with ICT use for entertainment only. Both groups seek active meaningful and relevant engagement with the subject matter. Hence, both want to infuse their teaching and learning with a variety of well-produced, appropriate materials that support varying presentation and interaction strategies.

4. Recommendations

Based on the findings, the committee made short-term and long-term recommendations on a variety of areas.

4.1 Equipment and equipment layouts

Both teachers and students clamored for more ICTs. All other classrooms not equipped should be equipped with at least one computer, a digital projector and Internet connectivity, possibly wireless. Equipment should be up-to-date and compact to minimize obstruction.

4.2 Teacher training

The committee's findings should be relayed to the teachers to make them aware that students are very discerning and particular about the use of ICTs in their classes. Teachers should have a leveling off of ICT skills. This will help determine what other kinds of training teachers will require. Also during the in-service training, teachers should be exposed to best practices in the selection, design, and use of ICT-based materials as well as to alternative, more student-centered uses of ICTs.

4.3 Curricula and materials development

The teachers who took part in the study recognized that they still had to learn to make appropriate choices of media and materials. Teachers in each subject area should design identify lesson plans in each quarter where ICT may be used appropriately. It would be worthwhile to benchmark ICT use in the Ateneo with ICT use in other schools in the Philippines and in Singapore. Singapore was identified specifically because of existing relationships between the Ateneo and Singaporean schools. These will also provide the motivation to develop more ICT-based course materials, when appropriate.

5. Conclusions and further study

The Ateneo has already taken several steps in ensuring that its resources are available and are appropriately used. To move forward, the Ateneo will have to plan the details of its ICT use. These plans should include specific, measurable educational goals. Insertion points in the curriculum will have to be identified. Teachers may be trained for appropriate strategies to consider in using ICT. The Ateneo will also have to identify which education philosophy (e.g. student-centered learning) it wants to follow as well the teaching strategies it wants to employ. The Ateneo may have to make additional technology investments to reach these goals, to include the development or acquisition of appropriate teaching/learning materials. The Ateneo will have to map out a training plan for teachers that will bring them up to a targeted level of technology use. Finally, another study should be planned to track the effects of ICTs on student motivation and achievement.

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