

Third National ICTs in Basic Education Congress

10 to 11 September 2008, Waterfront Hotel, Cebu City

The IBM KidSmart Early Learning Program: Towards a Model of Integrating ICT in Early Childhood Education

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ABSTRACT

The IBM KidSmart Early Learning Program is a worldwide initiative that gives pre-school students in disadvantaged areas access to computers and builds on ICT learning in early childhood education.

In the Philippines, IBM's Corporate Citizenship and Corporate Affairs (CC and CA) has been working with The APC Center (then EduQuest, Inc.) for almost ten years in implementing the IBM KidSmart Program. The program has empowered learning institutions and schools in marginalized areas, and has helped bridge the digital divide by tapping the potential of ICT through its implementation in Early Childhood Education.

The IBM KidSmart Early Learning Program is grounded on a clear understanding of the purposes, practices, and social context of early childhood education. It is not simply about donating computers to schools, but it is about promoting the professional development of teacher-implementers in order to engage young minds through the use of developmentally appropriate technologies. The program supports teacher professional practice in order to help them with their roles in preparing children for lifelong learning.

This paper is an attempt to discuss the role and potential of ICT in early childhood education based on the IBM KidSmart model. It will delve into the different processes involved in identifying partner institutions and building the capacities of partner schools and teacher-implementers to use ICT to strengthen many aspects of early childhood education practice. It will also show how ICT has contributed to the transformation of the activities, roles, and relationships experienced by the pre-school pupils and teacher-implementers in early childhood education settings. Lastly, the need for interest and support across the whole education sector for the development and integration of ICT into education policy, curriculum, and practice in the context of early learning will be further emphasized.

PROGRAM OVERVIEW

Background

IBM prides itself with its efforts to help society use Information and Communication Technology (ICT) to improve the quality of life of institutions and people. IBM, through the **IBM Corporate Citizenship and Corporate Affairs (CC and CA)**, has contributed to strategic areas and institutions, leveraging on its expertise in technology. As part of its commitment to schools, it has launched the IBM KidSmart Early Childhood Learning Program to give disadvantaged communities access to computers and build on ICT learning in early childhood education. To date, the program is now being implemented in 60 countries internationally, serving more than 2 million children from remote geographic areas to underprivileged areas of town and cities.

The IBM KidSmart Early Childhood Learning Program is a **Corporate Citizenship and Corporate Affairs (CC and CA)** offering for early childhood education and was introduced in the Philippines in 2000.

IBM Philippines engaged the services of The APC Center (then EduQuest, Inc.) to manage the “IBM KidSmart Early Learning Program,” a project undertaking that sought to enable the recipient schools’ institutional capability to conduct contemporary teaching strategies in early childhood education through teacher training.

Objectives

The IBM KidSmart Early Learning Program aimed to:

1. support early childhood educators who are trying to “reinvent education” through making meaningful use of technology in the classroom;
2. provide children from all economic backgrounds a chance to experience the benefits of technology;
3. assist teachers and, consequently as a result of practice, children to develop a familiarity and increased comfort-level with computer technology; and,
4. develop and promote contemporary methods of stimulating children so that they are eager to learn and enthused about technology.

This paper is an attempt to discuss the role and potential of ICT in early childhood education based on the IBM KidSmart model. It will delve into the different processes involved in identifying partner institutions and building the capacities of partner schools and teacher-implementers to use ICT to strengthen many aspects of early childhood education practice. It will also show how ICT has contributed to the transformation of the activities, roles, and relationships experienced by the pre-school pupils and teacher-implementers in early childhood education settings. Lastly, the need for interest and support across the whole

education sector for the development and integration of ICT into education policy, curriculum, and practice in the context of early learning will be further emphasized.

PROGRAM COMPONENTS

Donation Structure

As this is part of IBM Philippines' Corporate Social Responsibility, only deserving institutions can avail of the IBM KidSmart Early Learning Program donation. Partner-institutions had gone through a stringent application process; to establish part-ownership of the program and become accountable; a counter-part is requested from the partner institution which is very minimal like providing venue for the Training and providing support to the Teachers who will be attending the 3-day Training.

What is significant in the donation is that IBM is helping address the needs of communities and in general, facilitating the uplifting of the quality of education in the countryside thru the use of information technology (or I.T). Improving public schools, in particular, *around the world* continues to be IBM's top social priority. Their efforts are focused on preparing the next generation of leaders and workers, as they also support community priorities and concerns.

ICT-Infrastructure

The centerpiece of IBM KidSmart Early Learning Program is the **Young Explorer Early Learning Center**. IBM Philippines has donated these to Public Elementary Schools and Non-Government Organizations with Early Childhood Programs. This Learning Center consists of computers equipped with educational software from Riverdeep – The Edmark Series, and housed in children's desk furniture manufactured by Little Tikes.

Teacher Professional Development

Teacher Training and Development Programs are essential components of the IBM KidSmart Early Learning Program. IBM Philippines engaged the services of The APC Center to manage the "IBM KidSmart Early Learning Program," a project undertaking that sought to enable the recipient schools' institutional capability to conduct contemporary teaching strategies in early childhood education through teacher training.

As part of its services, The APC Center has designed a three-day pre-implementation training program. It aimed to provide the teachers of the recipient schools with the essential knowledge and skills for setting up and managing a technology-integrated learning environment. Specifically, the 3-day training focuses on the following modules:

1. ***Open Source Training***. The most recent addition to the training modules is a basic course on Open Office. This is conducted to equip the teachers with the basic skills on using productivity tools that will eventually facilitate their development and design of instructional materials.
2. ***Integrating Technology in Early Childhood Education Programs***. This module presents the concept of technology-integration to the teachers. It discusses the

advantages and disadvantages of using technology and roles of the teacher as the facilitator of learning.

3. *Adopting developmentally appropriate practices in choosing, evaluating and using software for early childhood education.* This module focuses on developmentally appropriate practices for choosing software and integrating technology in early childhood programs. It presents the collection of Riverdeep software to illustrate how technology can enhance and facilitate learning. Curriculum alignment and techniques on integrating technology in the curriculum are also presented in this module.
4. *The Theory of Multiple Intelligences: From Theory to Practice.* The eight (8) intelligences - how to use it as a guiding principle for determining the learning styles of students, designing and developing appropriate classroom activities and structuring learning experiences are presented in this module. The role of technology in developing students' intelligences is also emphasized.
5. *Classroom Management Strategies for Applying Technology-Integrated Curriculum in Early Childhood Education Programs.* Two approaches are introduced in this module. The first approach – *One Computer Classroom*, is presented as a strategy where the teacher can use the computer as a digital blackboard, assessment tool or a simulation tool. The second approach, the *Center Based Learning Approach (CBL)* is presented as an approach where students are engaged in different meaningful activities to develop mastery of concepts.

The APC Center also conducts the training and monitors teacher competency development. In certain instances, teachers were also observed during actual class conduct; The APC Center's Instruction Specialists give inputs to further improve program implementation.

Actual ICT integration

As part of their commitment to the program, teachers are required to integrate the use of the Young Explorer Early Learning Center in their classes whenever possible.

Accountability Structure

As part of its services, The APC Center regularly monitors and evaluates program implementation. It has also prepared the following program reporting and documentation forms for the partner institutions:

1. *KidSmart Teacher Portfolio.* Teacher-implementers are required to prepare their teacher portfolio as proof of practice. The portfolio is a diversified sample of the teacher-implementer's best works, showcasing the teacher's accomplishments and highlighting his/her competencies. Teacher implementers may also opt to submit a digital Portfolio.
2. *Regular Teacher Assessment.* Teacher-implementers are observed during the actual conduct of the KidSmart class in their school – CBL classroom management or One

Computer Classroom set-up. The APC Center developed an evaluation tool based on set standards. This tool is utilized as the primary performance measurement tool and is accomplished by the following assessors:

- a. *Teacher-implementer* – In this case, the tool is used for self-evaluation
 - b. *School Principal or Department Head*
 - c. *Representative from partner-institution/sponsor* – If the school does not have a partner-institution or sponsor, the Principal will need to invite the District Supervisor to serve as an assessor instead.
 - d. *The APC Center Evaluation Specialist*
 - i. a representative from the Center will be sent to the school upon request; or
 - ii. the school may submit an unedited video showing the teacher-implementer's performance in a classroom setting
 - e. *(Optional) Representative from another school* – The school may opt to invite other schools to observe classes and give feedback to the teacher-implementer being evaluated.
3. ***Submission of Project Status Report/Narrative Report.*** The Principal together with the teacher-implementers of the recipient school are required to submit quarterly reports stating the implementation status of the IBM KidSmart Program. Monitoring logbooks and lesson plans are also submitted with these reports. The monitoring logbook documents the teachers' usage of the Young Explorer unit and management of the technology-integrated learning environment, from lesson development to assessment of student learning.

Orientation on the use of the above forms and tools is part of the pre-implementation training. Teachers are required to report periodically on the progress as well as problems encountered during program integration

PROGRAM OUTCOME

The IBM KidSmart Early Learning Program has some considerable accomplishments since it was first implemented in 2000. To date, IBM Philippines has donated one hundred fifty-six (156) Young Explorer Learning Centers to one hundred forty (140) schools/day care centers and sixteen (16) institutions/museums nationwide. The APC Center has already trained eight hundred forty-one (841) Public Elementary School Teachers and Administrators across the Philippines. More than twenty-eight thousand (28,000) students has already benefited from this program.

Aside from those quantifiable outcomes, the IBM KidSmart Early Learning Program has produced the following results.

Learning Environment Outcome. ICT offered new opportunities to strengthen many aspects of early childhood education practice. ICT transformed the activities, roles, and relationships experienced by pupils and teachers in early childhood education settings. The following are lifted verbatim from the narrative report submitted to The APC Center:

“It is very hard for an adult to grasp a concept if it is not concrete or just an idea alone much more for a six year old pupil. This is the case were KidSmart helped me a lot last school year.

As what have been said, a concept will be much accepted and retained if it is learned when a pupil had fun while learning it because the process by which the idea was conceptualized is aided by a tool that gave the pupil the opportunity to manipulate, operate and explore. By this way, the child was able to have a much more meaningful and profound experience which will be remembered and retained.

A concrete example is when I used the following in the course of my teaching:

Alphabet – Bailey’s Book House

Size of Objects – Millie’s Math House

Adjectives – Thinking Things Collection I

Prepositions – Bailey’s Book House

With the use of KidSmart I have grown personally and professionally. I used to teach using pencil and paper, chalk and chalkboard, colors and manila papers and other recycled materials in my community. But with the coming of KidSmart into my life my lessons became more diverse and meaningful to my pupils. I became more creative, imaginative, resourceful and innovative in the course of my teaching. Aside from that, I became a better facilitator because I let my pupils become engaged and map their way rather than spoon-feeding them with our daily lessons thus I became a more efficient and effective teacher.”

Glessie Bondad-Reonal (pre-elementary)

Roselle Marie A. Glorioso (Grade 1)

Madel E. Abril (Grade 2)

Ambray Elementary School

San Pablo City

Student Outcome. When used appropriately, ICT can be a useful tool for supporting young children’s learning and development. KidSmart has made a significant difference to the children’s digital literacy, improved the children’s behavior. Through the Young Explorer Learning Center, children engaged in self-directed exploration as the software focuses on students’ individual learning/subject needs. Students look forward to go to school; it was observed that students are more excited to participate in their classes. The role that ICT has played in the cognitive, social and emotional development of young children has been apparent in the IBM KidSmart experience. The following are excerpts, lifted verbatim, from the teachers’ insights posted on <http://ibmkidsmart.blogspot.com/>

“...During the summer training with the pupils, we have an informal training. There were students who can manipulate the computer and those who cannot, so we grouped them. For those who do not know how to use the computer, it was easier for them to answer the activities/exercises due to their prior knowledge when they were in kinder. They were very eager to answer the exercises presented. Every child was given 5 minutes to use the computer and after everybody was done, a new lesson was started. Millie's Math House and Bailey's Book House were our lessons during summer. You won't see the computer vacant because they all wanted to learn new lessons. Minsan nga nauuna pa sa teacher pagpasok at paghawak ng mouse. Ayaw nang bitawan. As it goes on the pupils learned to listen and follow instruction given....“The

children enjoyed having these lesson especially handling on the computer. "Hindi pa nga lumalabas ng room eh tinatanong na ulit kung kailan daw babalik para magcomputer."

"...They utilized computer as tools for the development of learning. It provides opportunities for students to work individually, in pair, in small groups and as a class. Although CBL was not really given emphasis, the contents and activities are merely the same with that. Using this CBL encouraged pupils to explore and discover concepts and ideas. Active involvement and participation developed among them. As a whole we can say that it made teaching easier, faster, and more effective."

*Marialyn S. Poblete
KidSmart Coordinator
Naic Elementary School*

"...The teachers used various softwares in teaching different concepts. Our pupils especially Grade 1 were more active and eager to learn through the use of computer based learning. Our enrollment in Grade 1 last year was 48 and it increased to 60 after parents learned that were using CBL. We heard parents remarked, "D'yan n'yo na enroll mga anak n'yo meron na d'yang computer!" Also, this year our non readers and non numerates were decreased. Our intermediate classes were more musically inclined, creative and critical through the use of Thinking Things Collection. The HEKASI class became more interesting to them through the use of Trudy's Time and Play house. Our Science and Health class became more concrete through the use of Sammy Science. Teachers had no problem in motivation and presentation of the different concepts. Our Math and English classes became more enjoyable through CBL. They can create their own story through journal writing. Also, their vocabulary increased...Our pupils through using software in Math grasped the learning competencies faster as compared to the traditional way of teaching Mathematical concepts. Also, our problem with the scarcity of books was compensated through CBL. Our pupils were not 'technophobic.' Based on our experience upon using CBL, we are committed to continue using it for our pupil's development..."

*Lerma G. Cruz
Liza B. Arida
Joseph Bryan E. Binas-
Gilda V. Cortez
Gemma D. Flores
San Lorenzo Elementary School
San Lorenzo, San Pablo City*

"Thank you for choosing Nagbayan Elem School as your recipient for the kidsmart learning center your pgram made our children to be aware on the use of pc our primary grades were considered as computer literate by our ict supervisor and most of all the academic performance or mps of sch children increased."

*Mary Andrea Y. Ancheta (09282036487)
Grade 2 Teacher / School Project Coordinator
Nagbayan Elementary School
Castillejos, Zambales*

Teacher Outcome. Aside from developing ICT skills and learning new instructional approaches as a result of the training, IBM KidSmart has also affected teachers in other ways. Teachers were “inspired” to use computers; most of the trainees were first-time users. Because of the program, ICT became a tool to improve the teaching-learning process. Teachers find it easier to present lessons especially those which are abstract. As a result of the program, teachers became more conscious of the kinds of learning interactions they would like to occur in the context of ICT use, and adopt pedagogical strategies to further support these. The following are excerpts of teachers’ insights lifted verbatim from the narrative reports.

“...we discovered that by using the KidSmart program our pupils became more interested in our lessons, they are eager to handle computer so to see the different activities it will offer. Pupils are very fond of the visual and audio effects. They also love to solve puzzle and answer exercises from easy to difficult level.

The KidSmart program helps teachers in many ways. It helps us fight absenteeism, encourage the timid or isolated pupil to join in different activities. And the most important is, it increases the level of learning of each pupil. Last Feb. 22, 2008, by using the Bailey’s Book House, one of our Grade 1 pupils won in the Battle of the Pens contest in District and in Division level. In the name of Dave Nathaniel De Vera won First Place in the contest...We also won in the Spelling Bee contest last March 17, 2008 at San Pablo Central School. Queen Trisha Marie Alcantara also a Grade 1 pupil won first place in District level and fourth place in Division level...We used the Sammy’s Science House, Millie’s Math House, Bailey’s Book House and Thinking Things as her reviewer...”

*Rosalie D. Villanueva
Rona L. Benitez
Ma. Realyn A. Macatangger
Bagong Bayan Central School
San Pablo City*

“Through the IBM KidSmart Program I realized that we need to adopt some series of changes to make learning process easier. It's not bad to use technology as long as we take into considerations the pro's and con's of it, and we know how to utilize it in the right way. By now my mind is already set that we are the chosen instruments, so that we can make this program really works, so good luck to us and thank you very much to you!”

*Mrs. Nanet Kapitbahay
OAS North Central School
OAS, Albay*

LESSONS LEARNED

Value of Teacher Professional Development. The IBM KidSmart experience has shown that teacher training and ongoing professional development is vital to the successful implementation of ICT in Early Learning settings. Effective training depends on providing opportunities for collaborative reflection and for sharing best classroom practices. It is also essential that training goes beyond helping teachers to develop their ICT skills and focuses

on how new technologies impact on pedagogical processes, the curriculum and work with parents.

Essence of shared accountability. Based on program implementation data, donations with partner institution CSR units of companies of local companies or Local Government Unit (LGU) have sustainable implementation. Regular monitoring and evaluation of program implementation is part of the program process. School administrators, teachers and community partners are required to document program activities and submit these project reports to IBM.

NEXT STEPS

The IBM KidSmart Early Learning Program promotes ICT as a tool for enriching the teaching and learning environment in early childhood education. As learned from this experience, relationships between the academe, industry, government and the non-profit sectors should be established to further develop early childhood education in the Philippines.

Since ICT development should be consistent with the purposes, practice, and social context of early childhood education, decisions about how to tap ICT as a tool should be consistent with the principles, strands, and goals outlined by the Department of Education (DepEd). It would be useful for DepEd to consider whether issues of ICT access need to be addressed, and if so, how; DepEd should serve as catalyst in formulating guidelines and policies for effective ICT integration. Government, with the help of the private sector, should make ICT resources generally available to the early education sector and fully integrated into pre-school curricula to deliver the established benefits for early childhood development.

As this program presented a single case of ICT-integration in education in early childhood education, government and educational institutions should start conducting research on ICT use, especially in preschools. Case studies, action researches and comparative studies can be conducted to understand the facilitating and limiting factors that enable ICT-integration in early childhood education settings.

Teachers need to understand and make good use of ICT to support student learning. Collaboration with others may be helpful. Effective initial teacher education and ongoing teacher professional development programs should be considered as key tools for supporting the development of teachers' understanding of ICT integration in early childhood education settings.