

Integrating ICT in Pre-Primary Education: The Case of Mauritius

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Abstract

In this paper, we give an overview of how pre-primary education is conducted in different countries and also about the positive impact of ICT on early childhood education. Pre-primary education is gaining up more and more importance as it deals with young learners' future. Brain-based research shows that the period from birth to the age of eight is a critical phase, so quality pre-primary education should be provided to the children for them to perform better in different skills such as mathematics, arts and languages. ICT can be used to enhance the traditional way of teaching and the learning processes. We are of the opinion that the integration of ICT can have long-lasting benefits however a limit should be placed on the amount of time that the young learners will spend in front of a computer screen. We have also made a substantial survey on the requirements of an online tool for pre-primary education in Mauritius. The results obtained are described and explained.

Keywords: Pre-primary education, ICT, Technology, E-learning

1. Introduction

Education, whether as knowledge in basic skills, academics, technical, discipline or citizenship is nowadays the most fundamental issue discussed in all societies throughout the world. Education is not only the accumulation of facts but also the development of logic and reasonable thinking skills which will enable people to use their knowledge in a variety of application problems. Education prepares an individual to become a fully-fledged citizen, aware of his rights and conscious of the right behaviour. The formation of an individual into a complete and respectable citizen is a life-long process which takes its root at home and from personal experiences within the educational system and at work.

Pre-primary education (or Early Childhood Education) refers to the stage of education before primary school for children. It lays an important base for life-long learning and whole person development. It articulates with primary, secondary and tertiary education to complete the education system in almost all countries of the world. The pre-primary stage of education is considered as one of the most important and most vital of all stages in the proper development of a child whether is in the emotional, behavioural or cognitive domain. Pugh and Rohl state that the years between three and ten are crucial as it is of the utmost importance in the child's physical, emotional and intellectual development.

According to Henniger, play is the primary means for learning in the early childhood classroom. Play stimulates imagination, creativity and the willingness to participate. Henniger also emphasized that teachers and parents should work together in order to promote quality education. Learning at this young age takes place primarily through sensory experiences with real world materials (Gungadeen,A).

Computers have pervaded every aspect of our life: mobile phones, ATMs, digital TVs, in cars, washing machines among others. In this modern society the use of ICT (Information and Communication Technologies) is becoming more and more ubiquitous. Their use has been established in primary, secondary and tertiary levels for a number of years and their advantages have been well documented in terms of task management, improved motivation, and subject knowledge among others.

At present, ICT is not widely used in early childhood education practices. Since the role of technology in early childhood education is very controversial, parents and educators are very concern about the benefits or harm that it can have on the young children. Critics state that the use of technology in schools wastes time, money and childhood itself by speeding up the process and cutting down on essential learning experiences (Cordes C, Miller E (Eds) while proponents propose that children should have the possibility to make use of those new technologies (Judy Van Scoter, Debbie Ellis and Jennifer Railsback).

The rest of the paper is organised as follows. In section II, a comprehensive coverage is done for the state of pre-primary education in different countries of the world. Section III discusses the impact of introducing ICT in early childhood education and also describes some interesting websites in this field. The requirements for an online tool are given in Section IV. Section V concludes the paper.

2. Pre-Primary Education around the world

In this section we have consider pre-primary education and the use of ICT in pre-school across different countries. We have taken country from each of the five continents so that we can have a general view of pre-primary education around the world and in Mauritius as well.

2.1 Pre-Primary Education in Mauritius

Pre-primary education in Mauritius plays a very important role in the proper development of the Mauritian child. It is basically for children from 3 to 5 years old. Early childhood care and education is gaining tremendous importance in the country and most of the government run primary schools are opening up sections for pre-primary education although most of the pre-primary schools are private ones. Children in the age group 4 to 5 years old attending a private pre-school receive a monthly capital grant of Rs 200 from the Government and as from January 2011 children of 3 years old will also receive the grant of Rs 200. Out of the Rs 4,208 million (11%) allocated to education sector, Rs 94.1 million (2%) were for the pre-primary education.

The Early Childhood Care and Education (ex Pre-School Trust Fund) was set up in 1984. Its main aim is to give the children (3 to 5 years) all means required for a sustainable education and to provide equal access for all children to quality pre-schooling, including those at risk of delayed development and disabilities, through a child-centered and play-based approach, with the involvement of the parents.

More and more children are enrolling for pre-primary education. The number of children in schools at this age has increased considerably. Due to the fact that now education is becoming very important, parents want their children to gain some basic knowledge at this age. The total enrolment in pre-primary schools numbered 35,974, of whom 18,097 were boys and 17,877 girls. The Gross Enrolment Ratio (pre-primary enrolment as a percentage of the population aged 4 and 5 years) works out to 96% in 2009.

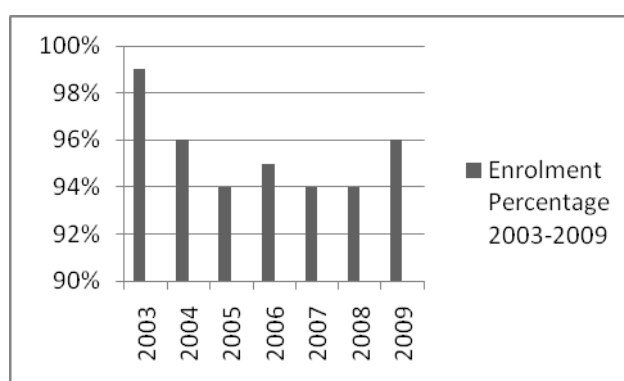


Figure 1. Enrolment trends for Pre-primary education for the Republic of Mauritius

In order to improve the quality of pre-primary education in the country the government is emphasizing on the right kind of training of preschool educators in the programmes that, along with the necessary pedagogical skills will give them better insight into the psychology of the children. The current Teacher's Certificate Course (TCC) run by the MIE (Mauritius

Institute of Education) has been made accessible to all eligible teacher candidates. Those who do not qualify for this TCC course can avail the 2-year proficiency course through the distance education mode.

The Ministry of Education in the island has come up with a National Curriculum for pre-primary education and it highlights six areas that are very important and they are: Personal, Social and Emotional Development; Communication Language and literacy; Expressive, Creative and Aesthetic Development; Health and Physical Development; Body and Environmental Awareness; Mathematical and Logical Thinking. Children learn these areas by playing, doing activities, talking, listening, have movement with their hands and by learning from other children.

All Mauritian primary, secondary schools and universities are equipped with computer laboratories. Till now, no one has put forward the idea of integrating ICT in pre-primary education although a lot is being done at the primary level. It should be introduced at the pre-primary level for children to get a better insight of it at an early age.

2.2 Pre-Primary Education in Nigeria

In the current National Policy on Education in Nigeria, early childhood education is labelled as pre-primary education. It is given to children aged from three to five plus prior to the entering in the primary school. The Policy aims at providing a smooth transition from the home to the school; preparing the child for primary school; inculcating in the child the spirit of creativity through various means like playing with toys; teaching them numbers, letters, colours, shapes and also inculcate social norms in the children. Besides, appropriate measures are taken to make teachers qualified in pre-primary education (Michael U.C.Ejeh).

Nearly all the pre-primary education in Nigeria is provided by the private proprietors. Although the National Policy on Education prescribes that the child in the pre-primary institution should be involved in active learning, the document detailing guidelines on provision and management of pre-primary education is silent on the curriculum contents of such an institution (Federal Ministry of Education, 1987). In the absence of such guiding principle and copies of the curriculum for pre-primary education, proprietors and teachers resort to curricular of their choice (Michael U.C.Ejeh).

Pre-primary education in this country has a long way to go; it is still in the commencement phase. In order for the objectives of pre-primary education to happen, the government there should show more interest in the education of young children by providing appropriate funds and facilities and by making sure that the measures in the policy are implemented. As far as ICT is concerned, they have not yet considered including it in the pre-primary education.

2.3 Pre-Primary Education in Hong Kong

Pre-primary Services in Hong Kong refers to provision of education and care to young children by kindergartens and child care centres. Kindergartens, registered with the Education Bureau, provide services for children from three to six years old. Early childhood education is not part of the universal and compulsory education system in Hong Kong (Andrew

C.S.Poon). Child care centres, on the other hand, are registered with the Social Welfare Department and include nurseries, catering for children aged two to three, and crèches, looking after infants from birth to two. The aim of pre-primary education in Hong Kong is to provide children with a relaxing and pleasurable learning environment to promote a balanced development of different aspects necessary to a child's development such as the physical, intellectual, language, social, emotional and aesthetic aspects.

ICT has become an important part of the curriculum in Hong Kong's early childhood settings. Over 70% of the childhood settings are equipped with computer either in the school settings or in the computer centre. Researchers have taken two kindergartens as samples to see how ICT in the establishment will improve the learning process. One of the schools was the New Territories Kindergarten; its classrooms were equipped with LCD projector, and a notebook computer. Teachers there prepared digital teaching and they were satisfied and happy to see the children enjoying watching the large photos on the projector. Equally parents also were very happy; some parents have chosen this school because of the ICT facilities as they do not have computers at home (Christina C.W.Han).

2.4 Pre-Primary Education in United Kingdom

Children in England, Wales, and Scotland may go to, at the parents' choice, different pre-compulsory schools until the age of five. In Ireland, pre-compulsory education is offered through age four. Various, these schools are known as nursery schools or, in England and Wales, reception classes, which are held in primary schools. The government in UK increasingly, has gotten involved in making an effort to improve the quantity and quality of pre-primary schools. Many pre-primary schools are run with no charge in England and Wales. Attendance is almost universal in England, with 94% of all students attending in 1995, according to government data.

There are six areas of learning for the young children. They are Personal, Social and Emotional Development; Communication, Language and Literacy; Mathematical Development; Knowledge and Understanding of the World; Physical Development and finally Creative development. When a young child left the nursery, he/she should be able to master all the six areas of learning.

During current years, teachers in England and Wales have been encouraged to increase the amount of whole class interaction of young children through the use of interactive whiteboard. The aim was to improve basic skills such as numeracy and literacy. Research has shown that the inclusion of interactive whiteboard in classes have a positive impact on the children. The size of interactive whiteboard encourages group collaboration and facilitates active learning as is not just passive reception of information (Steve Kennewell and Alex Morgan).

It is expected that by the end of the foundation stage children will be able to "Find out about and identify the uses of everyday technology and use of information and communication technology and programmable toys to support learning". The foundation stage begins at the age of three and finishes with the reception year.

2.5 Pre-Primary Education in Australia

Pre-school in Australia is not compulsory, but government aims to encourage it. There are different states in Australia and they are New South Wales, Victoria and Queensland. These three states are more aligned to model 2 which means that most pre-schools in these states are non-government. The pre-schools are generally funded by the Commonwealth (through the Child Care Benefit and Child Care Tax Rebate) and by parents' fees, while the other states and territories (Western Australia, South Australia, Tasmania, the Northern Territory, and Australian Capital Territory) are more aligned with Model 1, which is the government model where the vast majority of pre-schools are government owned and run.

The goals of pre-school teachers in Australia are to improve the child literacy and numeracy performance; supervising children's development and learning with a view to recommend their suitability for a school environment; facilitating cognitive, social, mental and physical developmental outcomes through participation in formal / informal learning programs. As far as ICT is concerned, research is being made on how to introduce it in the pre-schools environment.

2.6 Pre-Primary Education in USA

In USA, early childhood education includes kindergarten education. There they have programs for different kinds of children such as programme for normal children, for disabled children, for children at risk of education failure, for children from low income families. The program for early childhood education in USA is about literacy. It helps the children to a sense of identity to the American culture (Spodek, Bernad, "Early Childhood Education in America). The president of America Mr Obama is dedicated to provide the support to the youngest children who need to be prepared to succeed later in school. The President supports a flawless and comprehensive set of services and support for children, from birth through age 5. He is also dedicated to help all children succeed - regardless of where they spend their day - he is urging states to impose high standards across all publicly funded early learning settings, develop new programs to improve opportunities and outcomes, engage parents in their child's early learning and development, and improve the early education workforce.

3. ICT in Pre-Primary Education

Computers are already in homes and classrooms and young children are using them (Judy Van Scoter, Debbie Ellis and Jennifer Railsback). So, the most important factor is how to balanced technology in learning. The use of technology should not replace the traditional way of learning but instead it should supplement the conventional learning strategies by making it become more interesting.

3.1 ICT in Curriculum

The use of ICT in the curriculum is based on the needs of the children, the focus of the curriculum, and whether ICT will add to children's educational opportunities and experiences.

The age of the child and his developmental stage must be taken into account when

considering computer use. Children's activities and experiences with computers will evolve over time as they grow and develop. Very young children use computers with help from an adult or other child. So the teacher's role moves from guidance towards monitoring and active facilitation (Judy Van Scoter, Debbie Ellis and Jennifer Railsback). For this age the value of computer is in its open-ended use, not in creating a product (Davidson J and Wright J.L 1994)

Many studies have been made on early childhood education. In some of these studies, different kinds of technologies have been tried and tested. For example, Marco et al analysed the benefits that tabletop technologies can have on young children. They have observed that children had accepted the technology without much difficulty and they were having fun in using it (Marco J, Cerezo E, Baldassari S, Mazzone E, Read C J). Besides, the children were able to manipulate objects on the tabletop and respond to it quickly.

Deidre Crook who had made studies on ICT in UK has seen that young children are able to use paint programs and that they were showing to their peers how to use it. Furthermore, he had identified how ICT can be used for the development of language and literacy by using programs which develop reading and writing skills (Deirdre Cook).

3.2 Impact of ICT in Pre-Primary Education

Children from birth to age of eight learn through play and exploration. Recent studies have shown that technology in the classroom improves learning in number of ways. Computers motivate young children and help to contribute in the cognitive and social development. Besides word-processing software encourage writing and leads to increased motivation and improvement in writing skills (Judy Van Scoter, Debbie Ellis and Jennifer Railsback).

Computer also enhances children self-concept and their attitudes towards learning as they learn in groups and are more attracted with computing hardware. Children show increased levels of spoken communication and cooperation during computer use. Moreover computer play encourages more complex speech and the development of fluency. Children interact more frequently with their peers by engaging in turn taking that is a child will use computer in his/her turn. They will tend to narrate what they are doing as they draw pictures or move objects and characters around the screen (Bredenkamp S and Rosegrant T. 1994).

Young children are active learners, for computer or technology to have a positive impact on them; they should use it for a maximum of 15 minutes as children get bored easily and like to do new activities (Judy Van Scoter, Debbie Ellis and Jennifer Railsback).

3.3 Existing Educational website for pre-primary education

Internet is becoming an increasing vital tool in our modern society. The use of internet as tool for learning is well known as many people opt for distance learning and there are some e-learning tools provided to help students to know their lessons better by giving them online exercises to do and instantaneously getting the answer.

There are many websites that can be used by young learners so as to help them develop well and understand some aspects of their learning skills but most of the websites were developed

by outside developers for their respective countries. These websites are listed below:

3.3.1 Kinderweb Educational Children's Games (<http://kinderwebgames.com>)

This website is a free website and a very interesting one. It provides many different exercises and educational games that young learners can do with the help of an adult. The exercises include letter games, colour games, addition games, subtraction games, comparison games, among others. Besides, teachers or parents can print the section on colouring and then give the children to colour it.

However, the interface of the Kinderweb website can be improved. A coloured background would have been more suitable to get the attention of the young learners. The games can be placed horizontally to reduce the amount of scrolling.

3.3.2 IXL (<http://www.ixl.com/math/grade/pre-k/>)

The IXL website provides a number of exercises for different types of learners and divides the web page in different sections. The website is not a free one. However, a free trial is provided upon registration. The pre-K skills are meant for pre-primary education and it provides them with a lot of activities that are classified in various learning areas. IXL tracks the score when answering the questions. The difficulty level of the questions increase as the young learner scores improves. The website is very lively and knows how to keep young learners interested. The main problem is that it is not free and children will not be able to use it after the trial period has ended.

3.3.3 Internet4Classrooms (<http://www.internet4classrooms.com/month2month.htm>)

The internet4Classrooms website is a free web portal designed to assist anyone who wants to find high-quality, free internet resources for classrooms. The website site is used by teachers, parents and students. It is divided in different sections such as pre-K, Kindergarten and 1st grade skills to 8th grade skills. The pre-K and Kindergarten section has a lot of useful material in the form of videos and sound files.

One problem with this website is that there are too much information in one whole page which can be very confusing for all types of users. There are too many steps to be done before accessing the exercises. This might not a good approach for young learners. Furthermore, many of the resources are actually found on different websites. The website can be improved by reducing the number of advertising space. The ads will confuse many innocent readers. The navigation can also be improved and new websites should open in new tabs so that users can easily revert back.

3.3.4 Starfall (<http://www.starfall.com/>)

This website is a very interesting and attractive one. It is a free website which will enable anyone whether teachers, parents and young learners to use it without much difficulty. It provides curriculum guidelines for teachers. The website contains a lot of easy-to-follow animations. The font size, which is very important, has been well chosen. Starfall.com provides activities for learning ABC and for reading. It does not cater for mathematical

skills and/or, arts skills. It has a section for educators and another for parents. Navigation is also very fluid. This website receives more than 100,000 visitors on a daily basis.

3.3.5 e-Learning for kids (www.e-learningforkids.org)

This website is for a private non-profit institution based in the United States. It provides free interactive tools for kids in different learning areas namely Maths, Languages, Arts, Science, Computer Skills, Environmental skills, Health courses, life skills and English language. Most of the courses are available in English and some in Dutch, Spanish, French, Portuguese and Thai (Christina C.W.Han). Good combinations of colours are used in the site to make it more attractive and easy for the kids to follow. Sunhaloo et al demonstrated how this website can be adapted in the Mauritian context for pre-primary education as well as primary education. The website receives about 30,000 visitors on a monthly basis.

4. Requirements for an online tool for pre-primary education in Mauritius

An online tool for pre-primary education can be very beneficial for both young Mauritian learners and teachers. Children can practice mathematical and language skills at home with the help of the parents. Parents can have an idea of what is being taught to their children through a forum or a messaging service. Teachers will also be able to communicate with other teachers from other schools in order to share their knowledge and experiences which could be very useful to improve their teaching and the way they deal with young learners. Thus, a survey was carried out in Mauritius in order to obtain information on how pre-primary education is being conducted in both governmental and private schools. The survey also allowed us to know about what teachers are expecting from an online tool for pre-primary education.

4.1 Methodology

A detailed questionnaire was prepared so as to get a better insight of how pre-primary education is being done across the island and what problems people in this field are facing. It is important for us to know how the teaching is being done and what the students are learning everyday at school. Students were also questioned about their computer knowledge and skills and whether they had one at home. One of the most important aspects in pre-primary education is the interaction between parents and teachers. Parents want to know about the development of their child and whether they can help their child at home in acquiring knowledge. Ten copies of the questionnaire were sent to various schools all around the island.

4.2 Results

Responses from people surveyed took about 3 weeks to reach us. Out of 100 questionnaires sent, we received only 63 back. Out of these, only about 70% answered the whole of it. Nevertheless, information obtained from those who answered was very valuable. From the results obtained, we found that all teachers from pre-primary education (whether governmental, private or non-governmental organisations) were qualified and/or very experienced teachers. There are three types of teachers: Teacher Grade A are those teaches

who have their Higher School Certificate as well as the Teacher's Certificate & Proficiency in Early-Childhood; Teacher Grade B are those teachers who have only a School Certificate and a minimum of 5 years of service and finally Teacher Grade C are those teachers who have at least 25 years of experience.

In governmental schools, there are two pre-primary classes each comprising of 25 to 30 young learners. One class is for students aged from three to three and a half years old and the other one is for students aged from four to four and a half years old. However, private institutions have more than three classes and the number of students cannot exceed twenty per classroom. Moreover, we found out that in order to ensure that work is being done according to the norms in the pre-schools, the Ministry of Education send supervisors or inspectors every two months to the schools to inspect if everything is going well. During school visits, inspectors observe teaching and learning processes. They also assess the methodology, preparation of work, state of equipment and materials used in order to ensure that these suit the learning needs of the young children. Then the inspectors need to send a report back to the Ministry.

Moreover, we also learned that the Ministry of Education and the Early Childhood Care and Education Authority has come up with a National Curriculum Framework for pre-primary education. All schools around the island follow this curriculum. There are six learning areas describe in the curriculum, they are: Personal, Social and Emotional Development; Communication Language and Literacy; Expressive, Creative and Aesthetic Development; Health and Physical Development; Body and Environmental Awareness and Mathematical and Logical Thinking. Children learn these areas by playing, doing activities, talking, listening, making gestures and by learning from other children. For a child to learn well, the environment should be very attractive and child-centered, for example posters are put all around the classroom to make it more lively and appealing to them.

Teachers and headmasters said that they need more space for the children to practice their daily activities and that they want to be equipped with a kitchen so as to heat the food given to children.

Furthermore, as far as ICT is concerned, there is an acute lack of resources. In some schools whether private or governmental, most of the computers are out of use. These computers were helping the teacher to prepare work for the children. Sometimes, they were used to teach children how to use Microsoft Paint so that they can develop some computer skills. They also suggested that a dedicated ICT teacher would be a better choice to teach computer skills to the children.

The responses obtained about the question on what teachers are expected from an interactive website for pre-primary were very interesting. Most of the schools around the island want to have an online tool to help them in assisting their traditional way of teaching and learning processes and also to help the parents at home in knowing what their children are learning at school. The teachers also said that with the aid of such a tool, parents will be able to make their children do additional work at home. However, teachers knew that not all of the learning areas can be implemented. Some of them suggested a forum to be implemented so they can

use it to interact with other teachers in other schools and with parents as well.

Mathematics helps children to make sense of their world and to develop logical and rational thinking. Mathematics at pre-primary level comprises activities and play. For the Mathematical and Logical thinking area, the teachers want to have song as well as exercises on identifying the correct number and counting objects. They also want exercises to differentiate between different shapes like triangles, squares, rectangles and circles and to be able to differentiate between objects which are of different sizes. They further suggested that the use of sounds in these exercises. The teachers also suggested that the exercises should be repeated as this will allow the children to memorise them. Online correction of exercises was also mentioned.

As for the Language and Literacy learning area, the teachers recommended that this part to be done in both the English and French languages. They want videos for learning the alphabets and exercises for differentiating between the alphabets. In addition, they want to have exercises on days of the week, on fruits and on animals.

The Body and Environmental area is an area of learning where children are taught about their body, the five senses, living things and non-living things around them. For this area, the teachers want to have images of the five senses and all parts of the body. They also suggested to have images to distinguish between the different living and non-living things and recommended to put the sound made by different animals.

The teachers also suggested having a part where there are nursery songs with their videos so as to entertain the children. They also want to have a section where they can upload materials on the learning areas and thus download materials uploaded by their colleagues. Keeping all these requirements in mind and adding some of our own ideas, an online platform for pre-primary education was developed.

5. Conclusion

In every country early childhood education is gaining great importance. Each country has its own curriculum but most would agree that technology can be used to enhance the traditional way of teaching. Government around the world is taking action to ensure that the best resources are provided to young learners in order for them to learn effectively in a good environment. Technology is a tool that can provide alternative ways for children to learn and make sense of their world but it should never replace the use of concrete materials and manipulative. Children must be allowed to use book, draw on paper using pencils and crayons together will all the traditional experiences that a kindergarten provides. Over the past few years many studies have signified that there are actual and quantifiable benefits in using IT with young children. These benefits cover content in many curriculum areas as well as personal development. Thus, the results from the surveys clearly show that it is high time for Mauritius to consider the integration of ICT at pre-primary level as well.

References

Andrew C.S.Poon. (2006). The Development of Pre-primary Services in Hong Kong: Quality

Review as a Lever of Continuous School Improvement. [Online] Available: <http://www.edb.gov.hk/index.aspx?nodeID=916&langno=1> (August 26, 2010)

Bredenkamp S and Rosegrant T (1994). *Learning and teaching with technology*. In J.L Wright & D.D. Shade (Eds.), *Young children: Active learners in a technological age*.

Christina C.W.Han. Challenges of Using ICT in Hong Kong Early Childhood Settings.

Cordes C, Miller E (Eds). *A Critical look at computers in childhood*.

Davidson J and Wright J.L. (1994). The potential of the micro-computer in the early childhood classroom.

Deirdre Cook. The Question is No Longer 'If', but 'How Best', ICT can be Used in Early Years Practice.

Dr Andrew Dowling, Ms Kate O'Malley. (2009). *Preschool Education in AUSTRALIA*. [Online] Available: http://www.acer.edu.au/documents/PolicyBriefs_Dowling09.pdf (August 28, 2010)

Gungadeen, A. (2010). *The Talking Book* [Online] Available: http://wikieducator.org/images/f/f1/PID_596.pdf (August 17, 2010)

International Bureau of Education. [Online] Available: <http://www.ibe.unesco.org/> (August 18, 2010)

Judy Van Scoter, Debbie Ellis and Jennifer Railsback. *TECHNOLOGY IN EARLY CHILDHOOD EDUCATION: Finding the Balance*, Northwest Regional Educational Laboratory.

M.S.Sunhaloo, J.Narsoo, and A.Gopaul, 9. (2009). *An Interactive E-learning Tools for Kids in Mauritius, Issues in Informing Science and Information Technology vol. 6*

Marco J, Cerezo E, Baldassari S, Mazzone E, Read C J. *Bringing Tabletop Technologies to Kidnergarten Children*.

Michael U.C.Ejeh. (2010). *Pre-Primary Education in Nigeria: Policy Implementation and Problems*. [Online] Available: <http://ilkogretim-online.org.tr/vol5say1/v5s1m6.PDF> (August 26, 2010)

Spodek, Bernad. *Early Childhood Education in America: Consistencies and Contradictions*. [Online] Available: <http://www.eric.ed.gov/PDFS/ED313101.pdf> (August 28, 2010)

Steve Kennewell and Alex Morgan. *Student Teachers' Experiences and Attitudes towards Using Interactive Whiteboards in the Teaching and Learning of Young Children*.

United Kingdom - Pre-primary & Primary Education. [Online] Available: <http://education.stateuniversity.com/pages/1619/United-Kingdom-PREPRIMARY-PRIMARY-EDUCATION.html> (August 26, 2010)

U.S Department of Education. *PREPARE MY CHILD FOR SCHOOL, Early Childhood*

Education ARCHIVED INFORMATION. [Online] Available:
<http://www.ed.gov/parents/earlychild/ready/resources.html#ec> (August 29, 2010)

Appendix

Appendix 1. Survey Question for an overall view of how pre-primary education in school

School Name : _____

Your name (optional) : _____

Occupation : _____

Please check the box that is appropriate below:

1. How many years of experience do you have?

- ☐ Just Started
- ☐ Less than a year
- ☐ Less than 3 years
- ☐ Less than 5 years
- ☐ Less than 10 years
- ☐ Above 10 years

2. Are you a qualified person for this job? ☐ Yes ☐ No

If yes, what qualifications do you have?

3. What do you need to know in order for you to teach pre-primary student? And what other skills do you feel is important to do this job well?

4. How many classes are there in the school?

☐ 1 ☐ 2 ☐ More

5. How many students are there per class?

☐ Below 20 ☐ 20 ☐ 25 ☐ 30 ☐ 35 ☐ Higher than 35

6. What is the age group of the students? _____

Do you categorise students in different groups according to their age?

7. What are the materials available for teaching? Do you use the Internet to look for materials? Do you know any website which is specialised for pre-primary education whether nationally or internationally?

8. Does the environment play a great role for teaching the students? ☐ Yes ☐ No

9. How should the environment be?

10. Which language(s) do you use in order to teach the children?

11. What do the students need to know?

12. What do the students do in the school time?

13. Are they assessed? ☐ Yes ☐ No

Please elaborate on your answer?

14. Are there any problems being encountered in this institution regarding the children and teaching? ☐ Yes ☐ No

If yes can you tell us some of the problems?

15. Do you feel that teaching through a computer might actually improve the learning process?

16. Is there any health problem if students of age 3-5 use computers?

17. Do you have computers at school? ☐ Yes ☐ No

If yes

i. How many? _____

ii. Who uses them and for what purpose?

18. Do parents and teachers interact and what is the main concern of the parents?

19. Do you think an interactive website for the pre-primary student will be helpful?

☐ Yes ☐ No

If yes, can you tell us what your expectations from the website are?

20. Any suggestions? ☐ Yes ☐ No

If yes, please suggest it?

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