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Using ICT in the teaching of Visual Arts. A situational analysis at secondary level in Mauritius.

Mrs. Mridula BEEHARRY-KONGLAR
Mauritius Institute of Education, Mauritius
m.beeharry@mieonline.org

Abstract: This paper seeks to report on the use of ICT in secondary Visual Arts classrooms in Mauritius. Using data from questionnaire, focused group discussion and classroom observations, the paper discusses three key issues: ICT tools used in teaching Visual Arts, how ICT tools are used in the teaching of Visual Arts and scope and barriers in using ICT in the teaching of Visual Arts. The participants were 70 secondary Visual Arts teachers. Chief among the findings is that there exists a huge disparity among schools in terms of availability and use of ICT resources in Visual Arts classes. Other barriers in the use of ICT also exist. Findings indicate that the most commonly used tools are the computer and projectors and the most frequently utilized applications are Microsoft Word and PowerPoint. These are used mainly for preparation of lessons and instruction in class. The findings suggest that the creative possibilities of ICT are not fully tapped, often due to teachers' lack of manipulative skills in handling tools and softwares. The study also shows that the use of ICT depends on teachers' attitudes towards its use. While some teachers acknowledge the contribution of ICT in teaching and embrace new technologies, many find dissonance between art and ICT and continue to use ICT in a limited manner. The paper argues strongly for considerations by policy makers for further provision of ICT tools in schools as a possible remedy to the present situation. Moreover, the paper discusses the need for support to teachers in the form of professional development, dialogue among Visual Arts teachers and creation of networks which can also be a potent vehicle for encouraging integration of ICT in Visual Arts classrooms. Finally, the author suggests that a genuine effort to support Visual Arts teachers would also necessitate an acknowledgement and understanding of their beliefs, values and concerns.

Keywords: Visual Arts, Information and Communication Technology, teaching.

1. Introduction & Context for the research

Mauritius has attempted to promote Information and Communication Technology (ICT) in schools since the late 1990s which is reflected in its national policy and in its strategic plans for Education (MoEHR, 2008) which aims at fostering innovation and generating new knowledge for the sustainable development of the nation. A major step forward in the reform of the secondary school curriculum in Mauritius was the 'National Curriculum Framework, Secondary' (MoEHR, 2010). This policy document provides the structure that guides education at secondary level in Mauritius. It considers the emerging needs and emphasizes the integration of computer technology across all mandatory teaching areas at secondary level. One significant recommendation in the NCF is that 'curriculum transactions be increasingly woven around ICT enabling students to understand, use and adapt technologies and ICT tools confidently to meet their needs' (MoEHR, 2010:15) However, preliminary observations in Visual Arts (VA) classrooms suggest that the potential of ICT does not seem to be fully recognized and utilized in the VA rooms. This study was prompted by a profound curiosity to probe further into the situation. In fact, ever since the implementation of the NCF in 2011, little research has been conducted to look at the use of ICT in VA classrooms. The aim of this research is to identify common ICT tools utilized in the teaching of VA; investigate how ICT tools are used in the teaching of VA and consider scope and barriers VA teachers experience in using ICT in the teaching and learning of VA.

2. Literature Review

A range of early as well as recent literature associated with practicing teachers' uptake of ICT have informed this research (Fullan, 1991; Veen ,1993; Dupagne & Krendl, 1992; Mumtaz, 2000; Loveless, 2003; Phelps & Maddison, 2008). These studies discuss how ICT is used in classrooms and also reveal a number of factors that influence teachers' decisions to use ICT in the classroom. Limited resources within schools have been identified as a great impediment to the integration of ICT in teaching. Lack of ICT facilities results in lack of ICT integration, which in turn results in lack of sufficient computer experience for both pupils and teachers (Dupagne & Krendl, 1992, Delacruz, 2004).

These literatures also recognize other common factors influencing the use of ICT in teaching: ease of use, support from school and colleagues, time required to successfully integrate technology into the curriculum, incentives to change and commitment to professional learning. Many authors articulate concerns regarding teachers' resistance to change which they often attribute to a resistance to organizational change and teachers' perceptions and personal and psychological factors. Many argue that this resistance is, to a great extent, based on confusion and an unclear understanding of the change needed and the reasons why these changes should take place (Fullan, 1991; Phelps & Maddison, 2008) Likewise, early as well as recent researches have often pointed that, other than these external factors, internal factors such as teachers' values, beliefs and attitudes are major and significant contributors to teachers' preparedness to use ICT (Veen, 1993; Phelps, Graham & Thornton, 2006). Findings from these studies acknowledge that, in many cases, such internal factors far outweigh external factors and suggest that the actual use of ICT also depends largely on teachers' personal feelings, skills and attitudes to ICT in general.

A number of studies discuss the potential of ICT in the VA classroom in supporting creativity, maintaining student engagement and providing inspiration (Brown, 2002; Wood, 2004). ICT resources such as scanners, printers, drawing and painting softwares, digital still and video cameras, and the Internet can support students' artistic expression (Brown, 2002; Neylon, 1996) and help them in exploring solutions to design problems (Matthews, 1997). ICT also provides new scope for learning where students' engagement can be maintained through the use of inspiring, up-to-date and user-friendly tools (Wood, 2004). Studies reveal that collaborative students affect positively the use of ICT in teaching as the digital natives are far more technologically savvy than the institutions where they study (Desai, Hart, Richard & Thomas, 2008) and hence assist teachers when required. Authors also argue that ICT helps to prepare students for career opportunities as students who are comfortable with digital art can find jobs in commercial visual arts contexts, such as advertising, animation and other computer graphic industries (Matthews, 1997). Moreover, ICT allows students who are not very good at manipulating traditional media to shift the focus from the execution of the art work to the message to be communicated, thus enhancing self expression (Wood, 2004).

Research studies over the past thirty years provide evidence as to the concerns surrounding VA teachers' willingness to integrate ICT in their teaching (Duncan, 1997; Matthew, 1997; Phelps & Maddison, 2008) and the findings reveal that concerns about its use are quite similar to that experienced by teachers more broadly: lack of resources, poor training opportunities, lack of support, lack of time and teacher's perceptions and beliefs as being inhibitors to the use of ICT in teaching (Delacruz, 2004; Henning, 2000). However, there are also some issues specific to VA teachers. In fact, a significant obstacle to the use of ICT in teaching of VA is the incompatibility that teachers perceive between technology and art (Hicks, 1993; Wood, 2004). Many VA teachers hold to their traditional ideologies concerning the framework of aesthetics and do not appreciate the use of new technology in their classrooms.

Based on the literature reviewed, a conceptual framework for the study was developed (Figure 1). The framework describes the interlocking relationship between three main stakeholders (policy makers, teachers and the school) which can stimulate change for a better use of ICT in the teaching of VA.

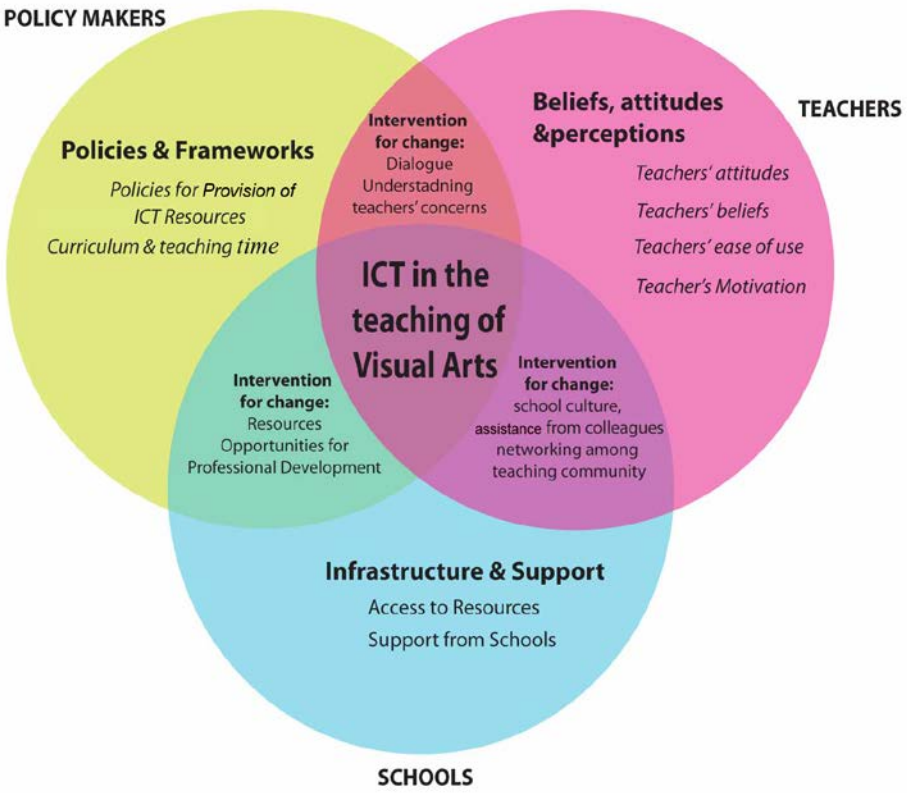

Figure 1: Conceptual Framework underpinning the study

3. Methodology

To document the situation both in depth and breadth and for the purpose of triangulation, a mixed method was employed whereby the use of questionnaire has been balanced with a focus group discussion (FGD) and classroom observations. The conceptual framework guided the choice of the data collection tools as well as the items in the questionnaire and FGD.

3.1 Sampling process

The secondary schools (both private and public schools) in Mauritius are divided into four educational zones and both public and private schools are guided by the same curriculum. The educational zones, the type of school (private and public) and teachers' age were factors considered in the sampling process. Gender and teaching experience were also considered during the sampling exercise. A total of 70 in-service VA teachers participated in the survey. Notably, all teachers were computer literate. In the context of this study, a 'computer literate' teacher is one who possesses the basic knowledge and ability to utilize computers for elementary use in schools.

3.2 Research tools

A questionnaire consisting of both closed and open ended questions was administered to the 70 participants. It was divided into two parts: Part A aimed at collecting data on the personal profile and background of the teacher and Part B was meant at gathering information on the teacher's use of ICT in teaching. Teachers were sent the questionnaire through dispatch and the dully filled forms were returned to the researcher within a month.

After a first analysis of the data collected from the questionnaire, 40 classroom observations were carried out using an observation checklist in both lower and upper secondary VA classes. The observed teachers were representative of the sample. These observations enabled an inquiry into both

teaching practices and teachers' attitudes towards the use of ICT in their classes. The participation of learners was also observed though this was not the main focus of the research.

A FGD was also held with 15 VA teachers, representative of the sample, to probe further and clarify findings obtained from the questionnaire and classroom observations, especially regarding teachers' beliefs and attitudes. The FGD was of one hour duration and was conducted at a neutral venue to avoid any conflict of interest that might bias the data.

4. Discussion of Findings

Findings suggest that much disparity exists among public and private schools regarding the ICT tools available in VA rooms. Since the disbursement of the private schools' grants depends on the VA rooms' resources and infrastructure, most VA rooms in private schools are equipped with the basic ICT tools. In the absence of such mandatory instructions by the MoEHR, VA rooms in public schools hardly have any ICT equipment. The basic ICT equipment in VA rooms in most private schools are computers, projectors and screens. Graphic softwares and equipment like scanners and printers are not commonly present as these are optional requirements. Findings from school observations revealed that ICT is used more frequently with upper secondary students aged between 15 to 19 years due to smaller class sizes and its use range from a minimal to an extended use. While only 12% use ICT on a daily basis, 37% use it weekly and 33% once a month.

However, although there is evidence that many VA teachers are using ICT, they are merely using it for preparation of lessons and instruction in class. Participants use Microsoft Word to create, record, store, distribute, access and retrieve their own information (Desai et al., 2008) while Microsoft PowerPoint enables teachers to display images, downloaded video clips and notes sequentially and efficiently during explanation and demonstration. This provides opportunities for transforming VA teaching as teachers have new tools to organise and present information, hence enriching lessons through multimedia (Bridwell & Mc Coy, 1991) Internet is also used to gather information in order to enhance the quality of teaching materials and lessons. Internet allows access to up-to-date and unfamiliar information, for example, international artists and ebooks which are often unavailable in local libraries. Wikipedia is the most popular web link among VA teachers and the most commonly used media site is YouTube.

The tools and applications commonly used in VA classrooms are not necessarily those designed to support creativity (Delacruz, 2004). ICT equipment like scanners and printers and graphic softwares are rarely used for hands on activities or to engage students in group work and experimentation. This is often due to unavailability of resources or teachers' lack of technical expertise and familiarity in handling these equipment and softwares. Only 25% of participants use ICT for hands on activities with upper secondary students consisting of research on the Internet, experimentation and image modifications using graphic softwares and scanners. ICT is seldom used with younger students as most of their classes are run in normal classroom set ups where no ICT equipment is available and taking them to the ICT labs require advance planning and negotiation with colleagues which is often a tiresome and discouraging exercise. It seems that in the Mauritian VA classrooms, it is not yet a common practice for ICT to be used for hands on activities which can support creativity, students' artistic expression or self-expression as suggested by many authors in the reviewed literature (Brown, 2002; Wood, 2004; Neylon, 1996). The few participants who use graphic softwares either learnt it during their course of study or through self-directed exploration and support from friends. Findings from FGD also suggest that teachers with long years of experience in using the traditional approach seemed quite unwilling to adapt and innovate their practice through the use of ICT tools such as graphic softwares. Few participants also say that they were unaware of how ICT could be integrated in the teaching of VA.

However, the survey sheds light on an interesting use of social networks by VA teachers. 66% of participants use social communication tools to communicate and assist their students. The most common social site used is Facebook where students post images of their artworks on their walls and receive feedbacks from teachers and peers. Such social interaction positively affects the teacher-student relationship. Moreover, such endeavors create communities of practice (Lave, 1991; Wenger, 1998) as students communicate with their peers and teachers and learn collaboratively (Neylon, 1996). However, only 17% of participants use these social sites to support collaborative use and exchange of

learning resources among colleagues or the teaching community at large. Instead, most participants used these sites for personal social interaction and communication.

The research findings also highlight the obstacles that VA teachers face in the use of ICT in teaching. Resource constraint and a lack of ease of use of ICT tools is the main barrier to the use of ICT in VA classes while other barriers highlighted in the literature were equally present among the findings of the study. A lack of support from school, parents and colleagues and time constraints were other barriers that emerged from the findings. However, though many authors suggest that a lack of interest in professional development was a factor hindering the use of ICT, such a barrier did not emerge from the study. Instead, many participants said that there was a dearth of opportunities for professional development provided by the school, the MOEHR or other local institutions. Most participants said that they would welcome professional development programs that could equip them better to use ICT in their teaching.

Findings from FGD is in line with the literature which suggests that teachers' values and attitudes and their resistance to change are also significant factors influencing teachers' preparedness to embrace ICT (Phelps et al., 2006). In fact, most of the 7% participants who never use ICT claim that they found that there was an incompatibility between technology and art (Hicks, 1993; Wood, 2004). According to them, the organic nature of art should be recognized and valued. What can be produced by engaging in the artmaking process, using one's hands, by feeling the material and its textures, could never be replaced by ICT. Participants also convey reservations, if not fear, that the use of Internet could stifle student creativity and originality as they often copy directly from downloaded images. Concerns regarding the 'overuse' and 'misuse' of ICT were expressed by participants particularly ardently as they believe that students' over reliance on graphic softwares could hinder the development of technical competencies in the use of traditional techniques and media and make students not want to draw. ICT reluctant participants were also often those with long years of teaching experience who do not feel a need to change as they are content with their tried and tested teaching styles. (Fullan, 1991; Phelps, 2008)

4. Implications & Conclusion

The NCF mentions that the technological era was providing such a rich assortment of sophisticated gadgets that schools needed to take cognizance of this contextual reality and re-invent themselves (MOEHR, 2010). However, the study indicates that the appropriate support structure needs to be strengthened in Mauritius to facilitate similarly a re-invention of teaching. The impetus to embrace ICT in VA classrooms does not stem only from curriculum directives but should also be sustained through appropriate support to teachers. The present situation suggests that there is an urgent need to address the three interlocking frameworks for change: policy makers, the school and the teacher. The situation calls for school systems and policy makers to look into the provision of fundamental infrastructure and appropriate tools for a smooth integration of technology in pedagogy. Opportunities for professional development in ways which take account of teachers' values, attitudes, beliefs, motivations, and concerns should also be provided. Research show that the teachers who have a high value for ICT and perceive it to be useful are often the ones who use it to transform their teaching (Cox, M., Preston, C. & Cox, K. 1999). Workshops could be a good platform for introducing new ideas about the relationship between technology and creativity and could motivate and influence VA teachers to learn with and from their colleagues (Phelps et al., 2006), hence building networks to share experiences and address issues and concerns regarding use of ICT in teaching of VA. Willis (1996) rightly pointed out that the integration of ICT in teaching and learning is a complex process that involves personal, group, organisational, institutional and even cultural change. The embedding of ICT in pedagogy in the Mauritian context necessitates a wide analytic frame that takes into account regulatory frameworks and policies of national education systems to tackle the problem of resource constraints while also considering more complex factors like teachers' professional development and teachers' perception and attitudes, hence preparing the conducive environment where ICT as a teaching and learning tool could flourish and grow.

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