Challenges in the teaching of Botswana General Certificate of Secondary Education Art and Design Curriculum

A Research Report Submitted to the School of Education of the University of Witwatersrand in Partial Fulfilment of the Requirements for the Degree of Masters in Education

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CHAPTER 1

INTRODUCTION

1. Background

Botswana’s education system has been undergoing changes since independence in 1966. In 1975 the first National Commission on Education (NCE) was set up to review the education system and the subsequent report helped to form a policy and set priorities for growth (Brennan, 2006). The proposed changes in the curriculum were to meet global educational standards by providing quality education. These changes in their diversified form have been implemented in order to improve the teaching and learning process. Art and Design Education came at a time when two major developments were taking place in Botswana. Firstly, it was at the time of rapid expansion of secondary education, particularly at junior secondary level. Secondly, because of the country’s mineral gains, the economy was thriving and transforming from a predominantly agrarian one to a more industrial economy. The need for technological “know how” became paramount and reforming technical education was one of the ways of achieving the desired results.

Now, in order to provide quality education in Botswana, government policy on curriculum development has focused on the implementation of the recommendations articulated in the following government documents: Revised National Policy on Education (RNPE) Government Paper No. 2 of April 1994, the National Development Plan 8 and 9 (NDP8&9), National Programme of Action for Children, and Vision 2016. It is these key documents that have called for innovation in Botswana’s curriculum. The RNPE demands that the curriculum be diversified, vocational in orientation, have a broad base of practical subjects and emphasize foundation kills applicable to the world of work (RNPE1994, item 7.3). The policy stipulates that the curriculum developed, must relate to the world of work. In this regard the curriculum needs to ensure a stronger interface between education and the world of work. The curriculum is thus required to provide for an increased emphasis on information, communication technology (ICT), prevocational preparation and a greater practical orientation in the general subjects. On the other hand, Vision 2016, an inspirational project outlining what Botswana should have achieved after fifty years of independence, envisages an education system and by extension, a curriculum, whose hallmark is quality, relevance and
adaptability based on the use of ICT and technical education. According to the long term vision for Botswana, (1997):

“The education system will empower citizens to become the best producers of goods and services. It will produce entrepreneurs who will create employment through the establishment of new enterprises. Public education will raise awareness on skills needed for life.”

Vision 2016 views education as a vital mechanism for empowering citizens in economic and social participation. It envisages school products that are knowledgeable, entrepreneurial and can generate economic growth and employment through enhanced productivity and venture creation.

Strong and Schaefer (1975) in their studies of technical education agree that technical training in schools is designed to prepare individuals for gainful employment and semi skilled or skilled workers, as technicians or semi-professionals in recognized occupation or new emerging occupations, or to prepare individuals for enrolment in advanced technical education programmes. This implies that ideally the physical facility to carry out this instruction must be close to that found in the employment world, that is, the curriculum needs must reflect the content of the occupation being prepared for, and that the instructional material must portray the terminology and intended mastery as expected in the occupational area.

Thus, education and training are perceived as pivotal in the generation of earnings, job prospects and improving the general welfare of individuals. It is in this context that the Botswana Department of Curriculum Development and Evaluation continues to interpret policy, and to plan, design and develop new curriculum frameworks and programmes that are meant to prepare learners who can effectively serve as the driving force for transforming Botswana from an agro-based society to a modern, informed industrial society of the twenty first century.
1.2 Secondary Education in Botswana and structure of optional subjects

The objective of secondary schooling is to produce an educated populace capable of both entering further education and or joining the labour force as workers sufficiently qualified as to benefit from further training on the job.

Secondary education follows on from seven years of primary schooling. Following the second National Commission on Education in 1993 and the Government White Paper of 1994 on Revised National Policy on Education (Botswana 1993, 1994), form three was moved to Junior Secondary Schools, and the Senior Schools were able to increase their enrolments. This change eliminated what was perceived as a wasted year of “shopping around” in form three (where learners were allowed to experience a variety of subjects before selecting their course of study for form 4 and 5).

It also reduced the costs per students as junior secondary schools are cheaper to run than senior secondary schools, particularly in the main optional subjects of Agriculture, Art and Design, Home Economics, Design and Technology and Business Studies. The optional subjects are divided “general” subjects where students may select between Moral and Religious Education, Physical Education and Music. At senior secondary practical subjects where the choice is between Businesses studies, Home Economics, Design and Technology, Art and Design, and Physical Education, a student is allowed to choose two of the subjects.

Learners at senior secondary school, having passed their junior secondary examination, are divided into three groups or three streams. This streaming has an impact on whether learners take practical subjects and on their success in those subjects, and how streaming is carried out differs from school to school. Learners are streamed in form 4 according to their preference and their performance in the junior certificate. The best learners are streamed into Pure or Triple Science, the next best into Double Science and the third best group of learners into Single Science. Learners doing Pure Sciences are usually not able to take any optional subject, except when their programme or an “overload” allows it; they usually excel in these subjects (Mater Spei Secondary and St Joseph’s are example of these).

With the introduction of Botswana’ General Certificate in Secondary Education (BGCSE) there has been a major reform of the syllabus across all subjects with the introduction of individual research projects (like Art and Design, Design and Technology, Home Economics
and Business Studies). An example of this is the change in Art to become Art and Design, with a ten hour examination and a different approach to learners’ portfolios, requiring more research and problem solving on the part of each learner. This approach has been refined and introduced into all practical subjects, for example in food and nutrition which is a component of Home Economics. Whereas in the past, continuous assessment within an optional subject counted for approximately 20% of the Cambridge result, under the BGCSE examination it represents half the final mark. For the sake of this study the researcher will look at Art and Design.

The Art and Design curriculum in Botswana is an outcomes-based curriculum. The Ministry of Education and Vocational training in Botswana describes outcomes based Education (OBE) as a teaching and learning process which defines clearly what learners are to learn. The teacher states beforehand what learners are expected to achieve. The teacher acts as a facilitator (RNPE, Government Paper No.2 of 1994). According to RNPE (1994), several features distinguish the OBE curriculum. The primary feature of an OBE curriculum focuses on starting with a statement of outcomes to be achieved at different stages of the learning process. Some subjects have been integrated into “new learning areas.” The learning areas are defined as an organised integrated body of knowledge, skills and values which serve as a basis for learning. For example Art and Design has needlework (craft), technology (use of machines) and computer aided design. The Botswana OBE curriculum has adopted continuous assessment.

This approach, OBE, is a more individualised form of assessment in that learners are assessed in what they are able to do and exhibit in each learning activity rather than assessing them at the end of the year. The Art and Design curriculum promotes awareness of developmentally appropriate art, media and various teaching techniques to promote high levels of understanding and artistic achievements. Learners are expected to demonstrate competency in the manipulation of materials and resources that are in the Art and Design studios. Art learners use knowledge and skills of art media and communication techniques to foster active inquiry, collaboration and supportive interaction in the classroom.

A practical approach to teaching Art and Design has since been adopted in secondary education in Botswana. This curriculum is designed to equip learners with basic skills preparing them for both future training and employment opportunities. The department of
Examination Research and Testing Division (ERTD) took a decision in 2004 to engage a consultant responsible for aligning the Botswana General Certificate of Secondary Education (BGCSE) results with those of international standards. Though Botswana has localized its education examinations system the examinations are still controlled to a large extent by University of Cambridge Local Examination Syndicate (UCLES) in an endeavour to ensure that ERTD maintains the agreed standards. In-service training is hence expected to tally with pre-service training so that traditional transmission methods may be discarded by both novice and experienced teachers in favour of innovative approaches.

The BGCSE teaching syllabus for Art and Design (2000) promotes a learner centred approach. This syllabus emphasizes practical art skills and the teaching methods recommended in BGCSE teaching are Demonstration; Practical work; Project work; Discussions; Field trips. As Burchfield (1994) reports, art programmes should create products based on skills taught in problem-solving techniques. Teaching approaches that are inherently problem solving are deemed essential to increase learners’ inquisitiveness. To transmit this new curriculum it was necessary to train teachers for this new curriculum. Thus in-service training was the way forward.

1.3 In-service Training

In-service training was introduced to meet the demands of the new Art and Design curriculum. There was a critical shortage of teachers who had been trained in the use of the technology, which was infused in the existing Fine Art curriculum. Hence strategies had to be met to alleviate the challenges that were at hand. This resulted in the introduction of in-service training. The new curriculum was organized such that the teaching of subjects would take off with immediate effect. Twenty seven Art teachers across the country were trained on the use of the technology provided. The training was done on a monthly basis throughout the implementation year and the teachers who were given the training were expected, upon return to their schools, to train the other teachers in the Art and Design departments. To execute this, it was the duty of the Teacher Training and Development unit of the Ministry of Education to source out skilled manpower from various places around the country, consisting of varies personnel who have diverse experiences and approaches to the Art and Design subject to give in-service training to some of the teachers.
Within the 27 schools in Botswana one teacher per school is invited to partake in the in-service workshop and once back at school trains other Art and Design teachers. The in-service training is so that the teachers can have a better understanding of the different machineries that are used to teach Art and Design. Furthermore this is to assist the teachers to start from a common ground of understanding of both the curriculum and the recommended teaching methods. Art and Design teachers are encouraged to use demonstrations, project work, field trips and other methods and techniques which they deem necessary for the improvement of learner performance, NDP 7 (1991). The in-service workshops are done when it is deemed necessary. Topics range from photography, use of electric potters wheel, use of printing press, computer aided design and welding machines.

Despite the fact that most in-service training has been done to date, for instance training in use of machinery, in-service training of some of the Art and Design teachers is not running as planned. Eight years later, it is noticeable in schools in the cities where I work and even in the rural schools that machinery is not used to full effect in the teaching of Art and Design. This seems to be true for most schools in Botswana. In my experience some teachers use the manuals that come with the machinery in a cursory way without sufficient knowledge and this could explain the malfunctioning of the machines. Other teachers substitute a manual approach to teaching a topic, for instance like pottery without even using machines.

The Art and Design education is at the centre of government policy and, as such, the level of success of the education system will have far reaching consequences for the nation. Amongst the goals of the education system, in addition to the fundamental goal of creating an informed citizenry, is assistance in achieving the four national principles of democracy, development, self reliance and unity. The education system aims to produce (a) a forum for citizen participation and consultation, (b) a highly employable and employed workforce contributing to development, and (c) localization of the staffing of the education system, which is fundamental to self-reliance and helps to achieve unity. A clear goal of the Art and Design program is to respond to the Government’s concern for making the curriculum relevant to the practical needs of Batswana. In addition to learning the requisite skills, learners also learn about careers in Art and Design related fields, such as graphic design, computer aided design, illustration, pottery, wood carving, silks-screening and etching.

One of the aims of the program is to develop learners’ awareness and an appreciation of the environment and the world around them. The teaching of Art and Design is essential to the
general education of all learners, teaching them problem solving skills, critical thinking, the value of imagination in creative approaches issues, an understanding of the world of nature and artifice around them, and a respect for history and culture.

1.4 Rationale

The development of Art in Botswana dates as far back as 1987. The idea came about with the help of USAID and the American Peace Corps. Art was introduced firstly at Molepolole College of Education, a college which was established to train teachers for a Diploma in Secondary education. After graduation these teachers went on to teach at Junior Community secondary schools (JCSS). At senior secondary level Art was taught by teachers from the USA, UK, Zambia, or Uganda. This was because Batswana teachers did not possess degrees in Art, a necessary requirement for teaching in a Senior Secondary School. Art was not taught at primary school level until 2002 (Botswana Primary Education Curriculum Blueprint, 2002). The teaching of art in the initial stages at senior secondary level was based on the crafts that were available in Botswana. This has been one of the major changes, because of the impact of global technologies on art in Botswana.

In order to meet the need for an industrial society, the Ministry of Education in 2001 infused technology into the existing Fine Art curriculum. The outcome-based curriculum was implemented across 27 schools at classroom level. The teachers of Art and Design were expected to put the curriculum into practice immediately. This government initiative arose out of an earlier enquiry into the Art and Design curriculum in 1993, when a panel of art educators convened to address the major problems confronting the subject of Art and Design (National Commission on Education, 1993). The panel felt the need for a comprehensive art curriculum that would break from the narrow pedagogical understanding of the subject area in order to teach art practicum. This is a move, Barnett (2005) says, that indicates an extent to which institutions perceive a world of change and the extent to which they choose to respond to the changes. As a challenge to improve not only the quantity, but also the quality of education in Botswana (Vision 2016), the panel adopted the following three key areas of focus: 1) Making the curriculum more practical in orientation and improving instructional material; 2) strengthening integration and infusion of emerging issues; and 3) the implication of the curriculum for education in general.
Teachers of Art and Design are relatively new to the Art and Design content and use of technology. This is because Art and Design is a new subject in Botswana and not a lot of teachers are trained to transmit it. Even in the Southern African region, art has only just started being introduced in some of the countries. There is also historically lack of support for arts education, limited availability of curriculum support materials and professional development, and varying qualities of learning support materials. This research study seeks to determine the level of understanding of the curriculum by the teachers, and other challenges which they face in the teaching of Art and Design curriculum. The study also attempts to match what happens in the schools with what is intended in the curriculum. The study is not concerned with design or development of the programme. As Parlett and Hamilton (1976:89) have already stated one of the aims of illuminative evaluation is “to study an innovative project: how it operates; how it is influenced by the various school situations in which it is applied.” More particularly, the study has been undertaken to gauge how well this new curriculum has been taken up in the schools.

The rationale for the study therefore is to evaluate the BGCSE programme. It seeks to reveal how the programme operates, and how well it has been taken up in schools. As suggested above, illuminative evaluation is proposed as a suitable theory to investigate this study because it will uncover matches and mismatches between the instructional system and the actual learning milieu within the schools contexts. It will therefore make it possible to ascertain whether the curriculum is meeting its formulated goals.

The study thus has a potential to offer the following benefits: (1) It may provide baseline data that the teachers will be able to use to set up an internal evaluation and monitoring system that will bring them in line with the BGCSE requirements; (2) The study may provide insights about issues with the BGCSE curriculum, methodologies for investigating and evaluating such learning that may inform further studies in the BGCSE curriculum; (3) The findings may also be compared with the findings of research on other similar components of the education system in Botswana and elsewhere, from which generalisation could then be possibly drawn.

1.5 Research Questions

1.5.1 In what ways are the intentions of the Art and Design programme being realized or not, in terms of the new technology that has been added to the curriculum?
The purpose is to establish whether what was planned in the introduction of new technology is actually happening in schools. In other words to establish if teachers are teaching the curriculum in the manner stipulated in Art and Design curriculum vision, comprising of the syllabus, materials, the infrastructure, machinery and learner portfolio, comprising of support provided on, and also the learning milieu.

1.5.2 *In the perceptions of teachers and principals, what are the significant factors that help or hinder the teaching of Art and Design in schools, especially the use of technology?*

I shall attempt to establish how the teaching within the curriculum reform initiative may be improved. Responses to this research question have used the data and findings to establish how teaching with the curriculum initiative may be improved. Furthermore to establish significant issues that emerge during the analysis and see how the challenges which teachers are facing in the teaching of BGCSE Art and Design may be addressed to improve the teaching of the subject.

1.5.3 *In the perceptions of Principal, what support system is available to teachers in the teaching of BGCSE Art and Design using the technology provided?*

This question seeks to determine the nature of the support provided by principals and whether the teachers have full support from the Principals with materials and instructional techniques in order to transmit effectively and efficiently the BGSCE Art and Design curriculum to the learning milieu. It further seeks to determine if training – in-service or external – is geared at helping the teachers to transmit the curriculum resourcefully. This will establish the matches and mismatches between the learning milieu and the instructional system.

1.6 **Limitations and scope of the study.**

One major constraint during the study was that Art and Design had two major examinations that were being marked at the time. During the month of June most teachers were all over the country moderating projects in different schools. In the month of October most teachers were either being trained to mark the final Art and Design examination or they were standardising
the examination. The second major challenge was during the year most schools undertake projects with their form five learners, so there is minimal teaching during this time. Research work therefore required close liaison with the senior teacher in order to have the right teaching timetable. The research was made possible because the staff in schools co-operated well with the researcher despite the difficulties that were encountered. Nevertheless the research work was completed as required. The research also served as an enquiry into whether there was any connection or continuation of Art and Design study between form 4 and form 5. The researcher would also have liked to show if learners are taught a skill or if they are taught only for examination purposes. For instance, Form 4s are taught introduction to computer aided design (CAD). If they have grasped this they will use this skill at form five. Through questioning the form five teachers the researcher identified gaps in the learners’ knowledge (see Chapter 4). This is because some of the teachers were not trained to teach CAD.

In summary, the study may assist in researching a similar paradigm on curriculum evaluation and deduce the matches and mismatches to resolve the challenges that may hinder the teaching and learning process. It is hoped that members of Curriculum Development Unit and Teacher Training and Development will analyze the outcomes of the study and find some insights that will assist them in their practice.
CHAPTER 2
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2. Introduction

In this chapter, I shall review the development of Art and Design education in Botswana and attempt to clarify the reasons for the change from an objectives-based Fine Art curriculum to an Art and Design curriculum, one which encompasses outcomes based education. I have drawn literature pertaining to my theoretical framework from Parlett and Hamilton (1976) on illuminative evaluation. This will be reviewed in order to evaluate the challenges faced by the teachers of Art and Design, and to determine whether they have knowledge of the use of the technology that has been infused in the existing Art and Design curriculum. International experiences and challenges facing learning in different Organisations will also be reviewed as this will propose how the composition of an organization might be arranged to allow valuable teaching for the BGCSE Art and Design curriculum. Questions for this study centers on fundamentals that supports or deters learning in the schools that teach Art and Design.

2.1 The Shift of Art and Design Education in Botswana.

Art education in Botswana is a field that is ever evolving due to the dynamics of the curriculum. Art education has evolved from being a craft subject to one that has technology infused into it. In Botswana the Art curriculum has involved constant exchange and dialogues with other countries, due to its employment of teachers, teacher trainers and university lecturers from a variety of European, Asian and Africa countries. This was brought about so that the Batswana teachers could be trained, so that they come back with new ideas and other influences on art.

Botswana still holds to their ethos, in terms of the development of local crafts for a global market and the inter-cultural exchange in the visual art. Places like Phuthadikubo museum, rock paintings, Kuru art festivals, to name but a few, are all outside the canonised knowledge of art and craft I Botswana. These art initiatives thrive through non-governmental funding organisations, and have become a tourist attraction contributing to the economy as they are produce unique ‘primitive’ art, (Geraldine Brennan, 2006)
Part of the reason to educate learners on art is so as to keep their culture and ethos as well as introduce the art to other nations. Art is distinct to a certain country or continent, but it also has a universal language that can be understood by any human being (Grant and Grant 1995). The same applies to other countries. For instance, according to Mokgometse wa Matseka in his study on evaluating technology in schools in Soweto South Africa states that art education has evolved through the years to be incorporated into mainstream education as a subject that will equip students with skills so that they are employable.

The shift of art in Botswana schools started in 1989. The idea was sponsored by the USA under its Peace Corps programme, and was initially piloted at Junior Secondary Schools by American volunteers. Art, like home economics and design and technology, as they were initially called, focused on teaching Batswana learners about their culture, values and the artefacts that were found amongst the different ethnic groups in Botswana. The subjects concentrated a lot on training learners to produce an artefact that would be examinable at the end of 3 years of study at junior secondary, and 2 years at senior secondary level. Thus Fine Art was more of a traditional craft subject. There were excessive overlaps in the nature of content across subjects without any deliberate effort to integrate such content. By its design and balance, the curriculum for these subjects was examination-oriented with the greatest stress on cognitive skills rather than on social and practical skills. The initial Fine Art curriculum had problems such as overload, topic duplication and redundancy both within and across subjects. The Fine Art curriculum was also examinations oriented.

As already stated in Chapter 1, the reasons for the need of change were that Botswana was immersed in a traditional curriculum framework. Education in this framework is most often seen as a technical exercise. Objectives are set, a plan is drawn up then applied, and the outcomes measured. This heavy dependence on setting behavioural objectives leads to viewing a curriculum essentially as a set of documents for implementation. However, curriculum should not be seen as a physical thing; rather, it must be viewed as the interaction of teachers, learners and knowledge. In other words, curriculum is what actually happens in the classroom and what people do to prepare and evaluate.

The Botswana Fine Art curriculum would be viewed by traditionalists thus: curriculum being content, and education as transmission; “curriculum may be viewed as product and education as instrumental; or, curriculum may be viewed as a process and education as development”
(Kelly, 2004:46). The traditionalists’ conception of curriculum sees the selection of content into curriculum as based on the absolutist epistemology. Thus traditionalists view knowledge as “God given” and independent of the knower (Kelly, 2004:47). This means that knowledge carries the intrinsic value within which it resides in itself independent of the manner in which the learner may approach and view it. Learners may not attempt to construct knowledge, but learn and produce what they have learnt. Curriculum according to this model is therefore planned with no consideration of what impact it may have on its recipients neither is justification of its content to be found in its effect, but within itself.

Several additional criteria should be considered when conducting a subjective evaluation such as the orientation of the Art and Design teacher, the trend of Art and Design education at a given time and the mentality of the learners. In addition, the development of programs that go beyond traditional goals need to be accompanied by different approaches to evaluation. Formal evaluations have many different purposes such as to aid decision making, to facilitate remediation, to determine if certain goals have been reached. For evaluation to be useful, the evaluator should be selective about the issues attended to.

Knowledge is abstract and may not be integrated with the simplicity of every day life. The traditionalists’ way of thinking about curriculum finds importance in what knowledge we present via our curriculum. It therefore distinguishes education from different pedagogical training, instruction, conditioning and so on. This formed part of the reasons for the change in curriculum development in Botswana.

The traditional objectives of Art curriculum can better be described by differentiating it with Outcomes Based Education and its effects on Art. Art rational-technical curriculum, particularly curriculum that is based on traditional objectives, has been critiqued by many a scholar in the field of curriculum evaluation. Eisner (1972) describes it as a “…poverty-stricken image of teaching that denies the complexity inherent in teaching, especially teaching in the arts” (p.2). Similarly, critiques have also come from curriculum evaluators like Stake (1981) and Hamilton (1976) who used the subject of the visual arts to show the difficulty of using behaviour objectives. “…In extreme cases this difficulty becomes an absurd impossibility. What, for example, would the pre-specified behavioural criteria be for a course that aimed to stimulate originality?” (p.23). These issues become challenges when teaching has to occur. They have to be addressed at implementation stage. Stenhouse (1975)
defines curriculum tentatively as “... an attempt to communicate the essential principal features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice” (p.4). He suggests that a curriculum is rather like a recipe in cookery. It can be criticised on “nutritional grounds and the grounds of practicality.” Similarly, a curriculum should be grounded in practice.

Eisner (1985) presented two alternatives to the behavioural objectives that he claims are more appropriate for the visual arts. The first is the problem solving objective which describes the criteria of the problem to be solved and allows varied responses to it. The second is the expressive objective which describes the creative activity in which the learner engages, but not the solution. He developed the idea of the expressive objectives to take into account the unforeseen outcomes that may arise out of creative solutions to an artistic problem or task. Of course educators vary in their suggested methodologies of evaluating the effectiveness of a visual arts program. The method of evaluation chosen depends on a multiplicity of factors, such as the information needs of the client, the uniqueness of local programmes, and the values held by those concerned. Curriculum evaluation refers to a process in which judgement is made about the worth or merit of, or its appropriateness for an individual, a group, the organisation offering it, or even the society within which it operates. This judgement depends on the value system of the judges.

2.1.1 The Outcomes Based Art and Design curriculum in Botswana (OBE)
Therefore, in 1994 the Botswana Ministry of Education through the Curriculum Development Unit embarked on national curriculum and assessment reform. According to the Ministry of Education, curriculum reform was also initiated to address problems encountered in the education system (RNPE, 1994). The nation’s needs for the education system were obtained through the needs assessment process indicated that the content based curriculum was not benefiting the majority in terms of acquisition of skills, values and desirable attitudes. As a solution to the problems encountered in school education, the Ministry of Education with the Curriculum Development Unit decided to adopt the Outcomes Based Education curriculum as the right model to take care of the education system (Ratsatsi, 2005). OBE was postulated by William Spady, an American sociologist turned educator, in 1967 when he started lecturing at Harvard University.
Around 1986, Spady started to think about outcomes and student success in ways that were distinctly different from the ways in which his colleagues were conceptualising them. Rather than thinking of student success in terms of improved test scores, Spady started to advocate the idea that success should be measured in terms of outcomes – that is, what learners could demonstrate after their educational experiences were over (after they had finished school), rather than by an accumulation of things that could be demonstrated during their educational experiences. This future-focused, complex life-performance approach became the defining feature of Spady’s approach to what he called “transformational outcome-based education”.

Transformational OBE was based on four principles which, according to Spady, if “applied consistently, systematically, creatively and simultaneously” (Spady, 1996:1) would ensure that all learners were equipped with the knowledge, competence and qualities necessary for successful fulfilment of their various life roles. These principles became known as (Spady, 1996:1): clarity of focus, designing down, high expectations, and expanded opportunity. The child learns the skill, in a hands-on way rather than an instructive performance-oriented way. This allows movement from simple to difficult in the child’s learning.

Spady sees clarity of focus to mean that educators must establish a clear picture of the learning objectives they want learners to be able to demonstrate; make this their top priority in planning, teaching and assessment; share this outcome with learners; and maintain alignment between outcomes, teaching and assessment. Designing down is to establish significant broad outcomes first, and then derive from them the enabling outcomes that will provide the foundation for achievement of the broader outcomes from general to specific.

The principle of “high expectations” according to Spady has two components: raising the level of performance of learners that is considered acceptable and giving all learners access to challenging, high-level learning. The concept of “expanded opportunity and support for learning success” implies an idea that time (hours of instruction, timetables, and the school calendar) should be used to organise and co-ordinate learning opportunities, but they should not define and limit the learning. It also emphasises the importance of teachers using different methods of instruction to accommodate learners’ different modalities of learning.
When these principles are followed, Outcome-based education means clearly focusing and organizing everything in an educational system around what is essential for all learners to be able to do successfully at the end of their learning experiences. This means starting with a clear picture of what is important for all learners to be able to do, then organizing curriculum, instruction, and assessment to make sure this learning ultimately happened.

In contrast to the content based objectives curriculum, OBE curriculum is described as a teaching and learning process which defines clearly what learners are to learn (Botswana Ministry of education, 2000). The teacher states beforehand what learners are expected to achieve. The teacher acts as a facilitator (RNPE, 1994).

The learning areas are defined as an organised integrated body of knowledge, skills and values, which serve as a basis for learning. Thirdly, the OBE curriculum has adopted continuous assessment. This is a more individualised form of assessment in which learners are assessed in what they are able to do and display in each learning activity rather than assessing them at the end of a school term or a year of study. Technology in Art and Design has elements of knowledge, skills, competencies, attitudes, and values are coherent with this curriculum as it is particularly amenable to expression in terms of outcomes. The methodology for technology education coincides with that of the outcomes based approach. The teaching and learning principles central to outcomes based education, namely facilitation of learning, learner-centredness, active and participative learning, creative and critical thinking and problem solving. All appear to be consonant with the approaches considered appropriate for effective learning and instruction in technology education.

The Botswana Art and Design curriculum as an OBE curriculum is an approach to education in which decisions about the curriculum are driven by the outcomes that the learners should display by the end of the course or topic (Harden et al, 1999). It is a performance based approach to curriculum development. The importance is on the outcomes of a learning process, what the learner will become, rather than the educational process. In OBE the educational outcomes are clearly and explicitly specified. These establish the curriculum content and its organisation, the teaching methods and strategies the course offered, the assessment processes, the educational environment and the curriculum time table. Also provided is a framework for curriculum evaluation.
As we see above, essential to an OBE curriculum are the four guiding key principles. These principles form the basis of a learner-centred approach to teaching, which refers to actions and efforts of teaching and learning geared towards using a scaffolding approach would provide temporary for learners to significantly construct their own knowledge. Factors of mediation include learners’ existing knowledge or concepts, their language, attitude, values and other people they socialize with.

This would assist learners to learn at their own pace and focus on skills as well as content. Learner centred approach is often equated with activity based learning. But activity based learning need not be learner centred because it may involve topics that learners distinguish as totally obscure. Some important aspects to be measured for a learner-centred approach are: the curriculum and the teachers should have respect for learner’s beliefs, interests and learning strategies; learners should take part in the alternative of content, contexts and approaches to learning; authors of the learning support materials should understand learners’ thinking, purpose, beliefs, interests so as to have collective consciousness (Malcolm, 1997). Meditation and scaffolding becomes the new roles that teachers should practice as they use learner-centred approach in Art and Design curriculum.

Inevitably, this shift has had implications for the Botswana Government specialists who have had to develop policy. The Botswana government policy on curriculum development is focused on the implementation of the recommendations articulated in the Revised National Policy on Education Government Paper No 2 of April 1994, the National development Plan 8 and 9 (NDP8&9), National Programme of Action for Children, and Vision 2016 in order to provide quality education. It is these key documents that have called for innovations in Botswana’s curriculum. The RNPE demands that the curriculum be diversified, vocational in orientation, have a broad base of practical subjects and emphasize foundation skills applicable to the world of work (RNPE 1994, item7.3). What is important is that the policy stipulates that the curriculum needs to ensure a stronger interface between education and the world of work.

The curriculum is thus required to provide for an increased emphasis on information and communication technology (ICT), prevocational preparation and a greater practical orientation in the general subjects. A curriculum in any country has to be reviewed after
every five or ten years because of the ever emerging issues such as health (HIV and AIDS), the economic and global technical issues. The change to OBE curriculum was so that Botswana stays in tune with curriculum reforms within the Southern African Development Community (SADC) region and globally. As content curriculum was overloaded with subject discipline (RNPE, 1994), it was decided that some subjects should be integrated with other subject disciplines to form one subject and this approach was similar to the South African OBE curriculum.

Collin Marsh, as a principal design scholar, states that the strength of this OBE approach is its emphasis upon learners (Marsh, 1997). They are the ultimate consumers and it is important to focus on what is anticipated they will achieve. The role of the teacher in the outcomes based curriculum is that of a facilitator, who guides the learners to achieve the outcomes. These outcomes should be stated in words that have a universal meaning. They must be articulated in a way that is specific, measurable and unambiguous (Stenhouse, 1976). The outcomes are to be sequenced from simple to complex and from concrete to abstract using Bloom’s taxonomy of levels of cognitive development and Piaget’ stages of child cognitive development. The new Art and Design OBE curriculum in Botswana had to be implemented and implementation comes with challenges for continued delivery.

2.1.2 The effectiveness of a curriculum innovation.

However, the learner-centred approach in OBE presents some serious challenges to teachers who implement a new innovation. This is because it is a paradigm shift from content based curriculum practice, where the teacher was the centre of knowledge transmitted to learners. Within the content based curriculum the learners were expected to acquire the transmitted knowledge that had essential rules and facts without reasons. Learning or understanding was believed to have happened when learners recalled what they had learnt. Mastery of what was learnt was thought to be adequate. Rote teaching and learning formed the basis of the “old traditional curriculum (Spady and Schlebush, 1999) and this is classified as “instrumental understanding” (Skemp, 1976). This implies that it relates to behaviourist theory of learning which assumes that the learners learn what they are taught, or at least part of what they are taught. The “old traditional curriculum” used teachers as sources of knowledge to learners. However, this is not the case with the OBE curriculum in the official documents.
The implementation of the Art and Design curriculum looked further ahead as it was crucial to see if it would match what the Botswana Curriculum Blue Print had anticipated. There are factors that often influence a change in innovation. In the context of this study, factor is defined as influence that existed prior to the change, which influenced the difficulty teachers encountered in implementing the curriculum. Richardson (1994) argues that the effectiveness of an innovation can only be determined when it is negotiated at classroom level. He continues to argue that the principal curriculum innovation determiner is the teacher. The teacher can make the curriculum succeed or fail. Teachers implement only those aspects of the curriculum that fit well with their beliefs. If it does not fit into their beliefs it is quickly dropped and drastically transformed. Similarly, Jansen (1998) finds that teachers understand and implement OBE in different ways. Jansen found out that teachers, amongst whom he carried out research, were doing what they felt comfortable with and what was familiar to them from years of experience.

According to Fullan (1992), individual teachers will implement a new programme in ways that are dependable with their own beliefs and practices. He points out that implementation of a new curriculum often requires teachers to change attitudes and roles. This requires teachers to change their traditional roles and to give up practices in which they feel secure and exhibit high levels of competence. Teachers are expected to assume new practices in which they feel apprehensive and incompetent in. This will make them resist the innovation. The innovators need to view resistance positively and have measures in place to kerb such. (Roshelle, J, et al 2000:52) state “A school’s capacity to change can increase when technology training is embedded in overall reform effort.”

The consent of teachers to an innovation does not necessarily signify that they comprehend the change or innovation. Pratt (1980) argues that teachers who are evidently implementing a new curriculum sometimes do not even understand its main features. As Givens (2000:74) states, “innovation cannot succeed unless the majority of staff are neutral but it is clearly important to have the majority positively inclined to the curriculum change.” The greatest complexity is likely to be met when teachers are required to change their educational approaches. Hence in-service training, a supportive environment and orientation to the new curriculum is critical to the curriculum success. Technology standards should be integrated with professional development at country, district level, and local school sites. Visual literacy skills should be modelled for preserves teachers so they learn to decode and encode images.
for selecting, designing, and evaluating digital resources, and to model and teach these skills to their own students.

Chisholm (2003) asserts that in the first portion of the South African OBE curriculum there was overwhelming support for the spirit of the NCS and its OBE. But the implementation was difficult due to curriculum design and structure, misalignment between assessment and curriculum, inadequate learning support materials, poor teacher preparedness, policy overload, lack of pedagogical skill and inadequate recognition of curriculum as the core business of education departments. It is clear that curriculum implementation actually means the curriculum making an impact on the learners. Implementation entails teachers being effective in using the curriculum. A teacher will only be effective in his/her teaching if the factors which might affect the effectiveness of the teacher in putting the curriculum innovation into effect are minimal. The findings reviewed as discussed above could equally apply to Botswana schools.

It could well be that the outcomes of the new curriculum might be a hindrance for teachers as it requires a paradigm shift in curriculum practice. Content based curriculum might encroach in the new OBE curriculum during lessons, which will have a negative impact in teachers achieving the desired outcomes of the Art and Design curriculum.

### 2.2 Evaluation of a Curriculum in Education

In education, evaluation of a curriculum can be explained through many different lenses, but what the lenses have in common is adjudication. Evaluation describe the process by which a project or programme is judged in relation to its stated objectives in order to remain effective, efficient and economic. It may be used to adjudicate the following: performance of learners, curriculum and systems of teaching and their effect on learning groups. Foundations of curriculum evaluation are embedded in a statistical framework.

Parlett and Hamilton (1972:37) describe it: “Learners, rather like plant crops, are given pre-tests (the seedlings are weighed and measured) and then submitted to different experiences (treatment conditions). Subsequently, after a period of time, their attainment (growth or yield) is measured to indicate the relative efficiency of the methods (fertilizers) used.”
This means that in “the agriculture botany approach” described above, the concentration was on product rather than process, that is, the process variable was isolated and measuring instruments to assess the product outcome in terms of behavioural change were refined (Dachs, 1982:34). The aim was to be as scientific as possible, that is, formal, objective and propositional; results were thus largely quantitative and “tidy,” that is, they were valid, both internally and externally, replicable and generalisable. While such evaluations produce accurate results, dissatisfaction arose out of the limitations of this approach and a need for alternative approaches was perceived. Objective techniques relied on constructs “that we can be objective about” (Stake, 1981:17). However, according to Stake (1981) these agricultural botany simplifiers help us by reducing the phenomena to something within our power of comprehension but they mislead us by saying that education is much less than it really is.

This approach further underpinned and undergirded by classical scientific research principles where measurement and prediction is paramount to this approach. (Parlett and Hamilton 1976:88) It measures the effectiveness of an innovation by assessing whether the innovation has reach required standards on pre-specified criteria. Every variable is controlled for and only that which is being evaluated is investigated. The emphasis is on large sample sizes, randomization of sample subjects, numerical validity and reliability of the data, numerical confidence in the data and the rigor with which these measurements ascribe to in order argue for objectivity in the study. It is this that tell the story, and one compares “like” and never “like” to “different” (for instance comparing apples to apples and never apples to pears). There is no “human face” with this type of approach, and no other data (other than that which is being tested) is collected or eligible for consideration (Parlett and Hamilton, 1976:88). The classical or traditional approach seeks to arrive at generalised findings and does not take into account the extraneous influences that characterise educational situations.

On the other hand, educational evaluation can be defined as “a systematic description of educational objects and or an assessment of their merit or worth” (Nevo, 1983:124). While this may be a useful conceptualisation at a general level, it hides fundamental epistemological differences that lie behind the development of educational evaluation. In other words, this approach attempts to attribute sufficient importance to the subjective influences upon perception and tries to humanise and personalise knowledge.
The traditional model of evaluation, one which, according to Stake (1981), is still the dominant one, is founded in the psycho-statistical paradigm. In this paradigm, knowledge is conceived by accepting the constraints of sense perception and by viewing the individual as a receiver of stimuli from an external and objective world. This position has led to a development of objective evaluation techniques which may be described as either input/output or agricultural botanical in orientation. The agricultural botany approach is famed for, and is based on, its extensive reliance on extrapolation of data findings from large experimental samples.

Thus evaluation traditionally aims to answer agreed questions and to make judgement against specific criteria. For good evaluation to take place data must be collected and analysed systematically and its interpretation considered carefully. Evaluation analyses the value or worth of a programme, and then takes action. The results of an evaluation are intended to be used. Evaluation helps us to assess how well a programme is doing or why it is failing in order for the programme to be corrected. It is about asking what is and what is not working. There are many different types of evaluation depending on the object being evaluated and the purpose of the evaluation. These include Tyler’s (1960) objective’s model. Tyler’s model has also been referred to as ‘agriculture botany’. Agricultural botany is quantitative and objective in nature. The emphasis of this approach is on getting information which would be deemed objective. The concept led to the development of objective evaluation technique which may be described as agricultural botany in orientation. Tyler’s definition of evaluation (Tyler, 1950:69) as the process of determining to what extent educational objectives are actually being realized, typifies the agricultural botany approach.

The 1960s marked the beginning of a shift from the agricultural botany evaluation approach. The years after 1960 saw an emergence of ethnographic approaches to evaluation. These are complementary approaches to agricultural botany approaches to evaluation. These complementary approaches are mainly qualitative in nature. They are naturalistic forms of evaluation emphasizing the value of human interpretation of the observation made, unlike the agricultural botany approach which is quantitative and technical in nature, emphasizing the use of experiments to generate knowledge about a programme. The knowledge generated is usually deemed as objective by the investigator or observer.
Commonly used ethnographic approaches are empowerment evaluation, connoisseurship, utilization focused, and illuminative evaluation. The section which follows will briefly review the ethnographic approaches which preceded illuminative evaluation. Illuminative evaluation will be reviewed in detail as a conceptual frame work of this study.

2.2.1 **Empowerment evaluation (EE):** which basically allows involved communities to empower themselves through self-evaluation, by being the “driving force” of the evaluation in order to improve their lot, with the resultant that issues relevant to their situations are discussed and addressed. This approach is not prescribed by outside bodies which are not cognizant of the studied community’s needs (Fetterman, 2005:8,10). It has the effect of putting back in the driving seat those who know a programme best. Fetterman (1976) states that those who are being evaluated are given “empowerment” stake where they are involved in driving the process, and having voice impact on the evaluation findings in order to foster improvement.

2.2.2. Similarly, **utilization focused evaluation (UFE):** Patton (1997:23) defines UFE as “evaluation done for and with specific, intended primary users for specific, intended uses.” With UFE, utility and use of evaluation findings is made explicit before the start the study. Users are identified at the very beginning and are involved at every stage of the evaluation in the process and the decision making.

2.2.3 **Connoisseurship evaluation (CE):** on the other hand is said to work off adjudication of the good (Eisner, 1998:63) where a case is already made before the adjudication is done. This is very different from other approaches whereby the evaluation is prompted by failure. CE as the name implies requires the evaluator to be expert and have certain qualities; refined sensibility, ability to see the uncommon, subtle and significant differences beyond the normal and disclose the good (the art of criticism) which will enable the evaluator to add their own distinctive and connoisseur insights to the adjudication. The adjudication needs to capture the ineffable and the potential to re-educate the popular imagination in the process (SAIDE Report: 7; Eisner 1985:340)

Consequently, the evaluations defined above, which may be termed illuminative, democratic or holistic, have two major characteristics:
1) They are rooted in the real situation of a curriculum in action and not in contrived experiments using control groups.

2) They attempt to do justice to the complexity of this reality by revealing not only consensus and intended outcomes, but also diversity of opinions, typical unintended consequences, processes all well as produce.

2.2.4. Illuminative evaluation approach

The approach chosen for this study was put forward by Parlett and Hamilton (1972). Parlett and Hamilton describe this approach as: “an evaluation that takes account of wider contexts in which educational innovations function. Its primary concern is with description and interpretation rather than measurement and prediction. The aims of illuminative evaluation are to study the innovatory project. It seeks to address and illuminate a complex array of questions. The evaluator “…observes, inquires further and then seeks to explain…” (Parlett and Hamilton, 1976:89, 92). Illuminative approach is an attempt to take into account the wider context of education, and its primary concerns are those of observation, description and interpretation, rather than the analytic ones of manipulation, measurement and prediction.

Parlett and Hamilton (1976:92-96) outline the procedural stages of illuminative approach as follows:

*Observation* includes observing and documenting daily activities in the project under study as well as a variety of other events such as meetings and informal conversations. *Interviews* are more useful at this stage and may be augmented with classical research tools such as theoretical sampling of those to be interviewed as it may not be possible to engage with all participants. *Documents* may provide useful insights, for example background of the programme, and may uncover specific areas for inquiry.

Illuminative evaluation as a qualitative approach brings in the emic perspective to curriculum evaluation and is not overly dependent on reference to measurement and assumptions underpinning scientific research (agricultural botany evaluation approach). In illuminative evaluation, a programme is evaluated on its own terms. This is done by gaining an in-depth understanding of the programme’s “instructional system”, the “formalised plans” and statements which relate to particular teaching arrangements” (Parlett and Hamilton, 1976:89),
and then of its “learning milieu”, the “social-psychological and material environment in which learners and teachers work together” (Parlett and Hamilton 1976:60).

In their resource pack developed for schools in the United Kingdom, Harris et. al (1981:4) describe the illuminative style of evaluation as a process of focusing on elements in a progressive way where:

- The evaluator enters the situation with as few prior assumptions and expectations as possible.
- Attention is directed at the learning situation in its entirety, embracing both intended and unintended outcomes, for it is considered that several factors interact and cannot be studied in isolation.
- The views and interpretations of those involved are explored and portrayed.
- While remaining aware of the entire situation, in the light of experience, special attention is paid to those factors and issues which appear to warrant it.
- It is accepted that the picture constructed in this manner will be complex, acknowledging that learning is a complex process, with multiple realities.

The above is instrumental in leading evaluators to a better understanding of a programme or innovation in its own context. This will be important to my study as I shall observe classroom activities and record what actually happens in the classroom or the learning milieu, and taking into account the context in which this curriculum innovation occurs in light of an instructional system such as curriculum documents, learning sheets, educational catalogues, reports, and schemes of work, note books and lesson plans. This gives an idea of what happens in the classroom and any matches and mismatches between the intended curriculum and the actual curriculum are exposed. Therefore documentation of the reality ensures this and adds to the volume of work documenting practices, resulting in a better understanding of a particular programme. Additionally, it is said to add understanding of the programme by the people being evaluated. Illuminative evaluation opens possibilities to what may not have been considered. For example, the case study DUSSPRO mentioned in Nonyongo (1997) shows lack of uptake of the face tutorial opportunities as a way of decreasing “transactional distance”.

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2.2.2.4 Learning Milieu and Instructional System

Pertinent to illuminative evaluation is an understanding of the two concepts: the instructional system and the learning milieu. The instructional system is described as “educational catalogues, prospectus and reports that contain formalized plans and statements which relate to particular teaching arrangements. “This also includes pedagogical assumptions, new syllabi and details of techniques and equipment” (Parlett and Hamilton, 1976:89). The instructional system is subject to different interpretations by teachers, administrators and learners for their particular setting. Thus in practice programme objectives end up being re-ordered, redefined, abandoned or forgotten.

It is for this reason that illuminative evaluation also considers the learning milieu. Parlett and Hamilton (1976:90) define the learning milieu as “the social-psychological and material environment in which teachers, administrators and learners work together.” It represents a network of cultural, social institutional and psychological variables that interact differently in each class or course to produce a unique pattern of circumstances in which teaching and learning will occur. The factors and variables in the learning milieu include constraints like legal, administrative, occupational and financial constraints; operating assumptions held by staff on subject arrangement, curricular, teaching methods and learners evaluation; individual teacher’s characteristics like teaching style, experience and professional orientation, as well as learners’ perspectives. In illuminative evaluation, “innovatory projects...cannot sensibly be separated from the learning milieu of which they become part of.” (Parlett, 1976:90).

There is generally little need for comprehensivity wherein all issues are investigated equally, within illuminative evaluations. Instead there is argument to “focus” on specifics, especially the emergent issues, which leads to progressive focusing as opposed to comprehensivity, perhaps. Parlett and Hamilton (1976) argue for focus. Furthermore, illuminative evaluations do not lend themselves to “generalisations” that the agricultural-botany approach is famed for and based on due to its extensive reliance on extrapolation of data findings from large experimental samples. With illuminative evaluation one is specific with data interpretation as innovations are particularly vulnerable to manifold extraneous influences which may not be generalized to the whole study/innovation (Parlett and Hamilton, 1976:88).

Illuminative evaluation assists in exposing the realities of what happens when innovations are implemented. They ask the question: “Did what was planned happen?” Teachers thus have
the ability to extensively modify the classroom setting as they are critical mediators between the pupil on one hand and the institution context and the instructional system on the other (Hamilton, 1976:204).

Illuminative evaluation aims to study the innovatory project: how it operates; how it is influenced by the various school situations in which it is applied; what those directly concerned regard as its advantages and its disadvantages; and how learners’ intellectual tasks and academic experiences are most affected. It aims to discover and document what it is like to participate in the scheme, whether as a teacher or pupil; and in addition, to discern and discuss the innovations’ most significant features, concomitants, and critical processes….it seeks to address and illuminate a complex array of questions. Research on innovations serves an enlightening process by identifying “…those procedures, those elements in the educational effort, which seem to have had desirable results.” (Parlett and Hamilton, 1976:89).

Using illuminative evaluation, this study will adjudicate teaching of Art and Design in Botswana General Certificate in Secondary Education by finding matches and mismatches between the intended teaching in the instructional system and the teaching in the classroom (learning milieu). When selecting an appropriate model for any program evaluation, there are questions to be asked, what is the purpose of the evaluation? What it the best model for the purpose? Is the model explicit and appropriate? Is adequate programme description provided? What is the evaluation process and how reliable is it? What is the data base and is it reliable? Are discrepancies clearly noted?

2.3 Other studies using illuminative evaluation: Local and International.

It would be valuable to look at experiences in some countries on the challenges facing the teaching of an innovation, especially those that used illuminative evaluation. This is aimed at adapting some of the methodologies used in the studies for use in my study. The studies I have captured match the plan and the research study I have to do to arrive at determining whether the programme used is effective. In the course of reviewing the study I shall make an attempt to show how these studies link to the approaches I will be using in my study. I shall determine if the studies in the Botswana experiences on the challenges facing the teaching of Art and Design Education are isolated or if they are similar to experiences in other education
systems. Hence a review of examples of illuminative evaluation has been given below these are those that used Parlett and Hamilton (1972) frame work to ground their theory.

Zolkov’s (1996) study done in schools in Namibia had some important features characteristic of illuminative evaluation. As he states, “the data collected was used to monitor the implementation process as a check that the computer assisted program was used as intended”. The teachers believed only data from comparative evaluation efforts are useful in “weighing an innovation in relation to another comparable programme and lead to decisions about which better programme for implementation” (Zolkov, 1996:5). With the use of supposed rigorous comparative evaluation, Zolkov “was unable to provide definitive findings from which to make categorical adjudications about the success/failure” of the computer-assisted teaching program (Zolkov, 1996:6). The descriptive data concurred with the comparative data on the major finding that there is no significant difference between both programmes. However, the descriptive data went beyond the findings and provided reasons for such performance in the computer-assisted teaching programme. The descriptive approach illuminated (from observations and teacher interviews and student questionnaires) emerging issues such as: “Teachers indicated that rhythm dictation paradoxically structured student learning in such a way that the activity of touching-the-screen to notate a rhythm, rendered student learning a passive activity…. [and that] invoked in learners a reaction more usually associated with poor examples of a lecturing pedagogical style” (Zolkov, 1996:11). In other words the teachers were teaching using computers in a way directly opposite to what was intended, which suggests that they did not know how to use the computers. There were therefore matches and mismatches that arose in the way they used the computers. This is important for this study as the researcher will be evaluating the use of computers, and will hope to extract from the observations, teachers’ interviews and documents, emerging issues that teachers of BGCSE Art and Design come across during their teaching of Logo Design.

The concept adopted here was modelled along Moore’s concept which suggests that “responsiveness should not be thought of as a given, or likened to a fixed commodity, instead, responsiveness should be seen as a function of structure, dialogue and autonomy” (Nonyongo, 1997:5). Within the structure context the study exposed a mismatch regarding operational responsiveness in terms of library services, where one South African Committee for Higher Education (SACHED) sector’s decision affected Distance University Student Support Project (DUSSPRO), another section of SACHED. The library decided to reposition
itself from an internal provider. This decision was taken without consultation with DUSSPRO, which had structured its program with the library being an internal service provider to it. This decision further affected program delivery and led to conflict between DUSSPRO staff and students with the library section. Such a mismatch between the actual provision and ideal may lead to difficulty in retention of credibility between staff and students. However as an emergent issue during the evaluation, it lent itself to further investigation and focusing during the actual evaluation period ad remediation was effected resulting in effective management of potential conflict. Exposure of such an emergent issue also revealed that DUSSPRO’s aims were moving towards reflecting a pure correspondence programme. Such a situation was timely exposed and rectified through the evaluation approach adopted.

Another local study is that done by van Nierkerk (2002) who used illuminative evaluation to look at the provision of Adult Basic Education and Training (ABET) in South Africa. The issue that emerged using this tool show that the local state provision of ABET was inadequate with “few support structures and a poor management information system” (2002:155). The teaching of adults through the ABET system was better serviced in the corporate sector with many opportunities for providers to fulfil contracts, and also through the Education, Training and Development Practitioner (ETDP), one of the most notable being the University of South Africa (UNISA). Pertinent factors influencing provision of ABET has been shown to be training and resources.

Likewise, Miles (1981) employed the illuminative approach to adjudicate a school project in the United States in which learners’ learning styles were matched with mathematics teacher’s “teaching styles.” This study was both qualitative and quantitative, e.g. interviews with stakeholders (learners, teachers, parents) and observations, and pre- and post-tests of learners achievement. The study revealed many profits of the programme, and interviews in particular yielded a great amount of constructive information that would not have been achieved by tests alone (Miles 1981:487). Downs (1992), too, used illuminative evaluation to investigate experiential learning within a curriculum in the form of simulations of courtroom processes in a legal course. While also not formulating “precise questions” for inquiry in advance, Downs argues that it is nevertheless possible, in advance, “to identify matters for evaluation and aspects of the theory of experiential learning that raise questions of importance for consideration.” (1992:79). Downs combined quantitative methods –
questionnaires, interviews and observation – with qualitative methods and pre- and post-tests of the learners’ knowledge. In his scrutiny of the data and documents Downs indentified emergent issue, which pinpointed some of the underlying process. He concludes by identifying both strengths and shortcomings of the experiential learning in the course (1992: 282-294). During observation of lessons and interviews, I will be scrutinizing emerging issues that occur during the process of data collection and refocusing on those emerging issues to uncover some more challenges “hidden” in the process of implementation of the programme.

Dewar and Walker (1999) in their study in Australia used illuminative evaluation in six case studies to evaluate work based learning in a nursing degree programme. Dewar and Walker’s evaluation included document analysis, participant and non-participant observation of teaching sessions and of meetings between the supervisors and supervisees, interviews and focus groups. To begin with, key themes were identified through interviews and focus groups. The themes were the key focus of successive data collection and analysis. Hence the notion of “progressive focusing” was functional, that is, by a process of elimination the researcher sifts through the data and eliminates what is not needed until a focal point is reached and that supplies an answer to the study question (1999:1461). The study was to examine potential benefits of work-based learning and how it impacted on learners practice, the investigation process uncovered that there was a considerable “gap” between the educational philosophy of the instructional system and the way the system was transmitted within the educational context (1999:1463). Based on the results, the evaluators anticipated a set of recommendations to improve the practice (1999:1465). This is a useful process for this study as progressive focusing will be applied to arrive at findings that the researcher may come across from the key themes, which will have been identified through probing interviews. It is the researcher’s assumption is that she will come across “gaps” between plan and transmission of the BGCSE Art and Design teaching.

A study performed by Banning and Cortazzi (2004) on an illuminative evaluation of a programme to train “nurse prescribers”, a group of nurses who are authorised to recommend certain medications in the United Kingdom. Banning and Cortazzi used focus group interviews, and participants were chosen using purposive sampling to embrace only learners
who “were functioning at an advanced level of nursing practice” (p.437). The study outcome was in a number of tangible advocated, for instance, that learners need a degree of planned teaching, and not entirely self directed learning (Banning and Cortazzi, 2004:442) Like in the BGCSE Art an Design curriculum learners need facilitation to achieve the curriculum outcomes.

Another study conducted by Sloan and Watson (2001) discusses an approach similar to an illuminative one to scrutinize educational procedure relating to the interpersonal interaction between supervisors and supervisees during clinical supervision in a nursing situation. The study’s aim was to establish “which supervisor interventions assist and confine the supervisee’s use of individual clinical supervision’ (2001:664). In other words, Sloan and Watson wanted to ascertain what actions of the supervisor assists those being supervised to access their supervision. The study combined an approach similar to an illuminative evaluation and case study approach, and used interviews, critical incident journals, session documents and recordings of supervision as inquiry instruments (2001:664). Like the study done by Sloan and Watson the researcher’s study on the BGCSE Art and Design curriculum will use documents, interviews, lesson observation to triangulate the findings and come up with results this is termed progressive focusing using data and interviews to sift through and come out with findings.

Macfarlane et al (2004) study as well provides greater insights which reveal pertinent answers to questions being asked, relating to the success factor of this programme, whereby an illuminative study of the “quality Team Development Programme” of the Royal College of General Practitioners in the UK, a programme to improve the quality of service provided by general medical practitioners, and an evaluation of an e-mail network service for UK healthcare practitioners. In the researcher’s study, it is assumed that probing questions and observation will lead to insights that will reveal answers to pertinent questions.

Finally, Alcroft (2002) accounts on an evaluation of a course to instruct design fundamentals in university based design school. Critical trialling and illuminative evaluation was joined with action research method to provide a basic framework for analysing a programme which was used to gather, analyse, synthesis and document data. The illuminative methodology
used included observations, interviews, conversations, questionnaires, learner tests and document analysis. Fundamental problems were uncovered in the methodology, for the learning milieu that had not been exposed by preceding studies which had looked only at the consequence of learning problems and not their genuine course “which was revealed to be the essential attitudes of the learners: they had a “her genius view” of the designer and as a result did not believe that design could really be taught and took little attention in the course content. Having revealed this attitudinal concern, the adjudication revealed why learners performance had not advanced by simply adapting the course materials, an approach that had been attempted earlier and had failed.

The above studies have uncovered the approaches to evaluating a programme by use of illumination and how to determine the effectiveness of a programme. The major issues to be uncovered in this study are: (i) the need for an illuminative evaluation to study the ideal or the plan of a programme to establish what the implementers are expected to do in implementing the programme; (ii) the need for the evaluator to have a naturalistic observation of what implementers do in implementing the programme; (iii) the need for the evaluator to focus on emerging issues which crop up in the course of evaluation. These emerging issues require critical attention of the evaluator. In addition, to uncover other hidden challenges facing the implementation of the programme, the approaches aforementioned will be adapted in my study to determine the effectiveness of the BGCSE Art and Design curriculum.
CHAPTER 3
RESEARCH DESIGN

3. Introduction

The study was aimed at adjudicating the worth of a curriculum in six senior secondary schools in Botswana. The aim of this evaluation was to assess the effectiveness of the Art and Design programme and how it operates, and if it is functioning well in schools. The study is not about a design and development which focuses on planning and implementation, but is about having an in-depth understanding of the curriculum through the views of participants as “insiders” who experience the programme, and to look out for “matches and mismatches” between what actually happens and the intended. The main focus of the study is to adjudicate the learning area of Art and Design to see if it is taught as intended in the Botswana Curriculum Blue Print, or if it remains as before as a subject discipline which does not infuse technology.

3.1 Research paradigm

This study used a qualitative and minor quantitative methods were used to gather data. Kuhn (1961:62) states that a “large amount of qualitative work has usually been pre-requisite to fruitful quantification in the physical sciences.” Qualitative research is often used to gain a general sense of phenomena and to form theories that can be tested using further quantitative research. For instance, in the social sciences qualitative research methods are often used to gain better understanding of such things as intentionality and motivation from the speech responses of the interviewee (Kuhn, 1961:62). Qualitative research involves in-depth understanding of human behaviour and the reasons that govern human behaviour, for instance, beliefs, attitude and behaviours. Quantitative research relies exclusively on the analysis of numerical or quantifiable data.

As already discussed in the previous chapter, illuminative evaluation as a qualitative mode of inquiry was chosen as an appropriate method to adjudicate the Art and Design programme. The aim of illuminative evaluation is to inquire and ultimately produce an adjudication of a phenomenon by using “description and interpretation rather than measurement and prediction” (Parlett and Hamilton1976:88). In the study, convenient sampling of two schools
per district was chosen. Within this phenomenon issues are allowed to emerge as the inquiry proceeds. Those that are uncovered as significant are then pursued.

Illuminative evaluation distinguishes between two fundamental concepts, the “instructional system” and ‘learning milieu.” The instructional system is the “formalised plans and statements which relate to a particular teaching arrangement. It includes a set of pedagogic assumptions, a new syllabus, and details of techniques and equipment” However, it is essentially abstract and needs to be interpreted for a particular setting (Parlett and Hamilton, 1976:89). This interpretation is manifested in the learning milieu, the social-psychological and material environment in which learners and teachers work together and a network of “cultural, social, institutional and psychological variables” that “interact in complex ways to produce a unique pattern of circumstances” (Parlett and Hamilton, 1976:90). In illuminative evaluation, both the instructional system and the learning milieu are investigated, and also the connections or lack thereof between the matches and mismatches.

3.2 Sampling

In Botswana there are 27 senior secondary schools that teach BGCSE Art and Design. All these schools have laboratories that are equipped with machinery to teach the Art and Design curriculum. These schools are situated in the north, south, west and east districts. All the teachers at the schools possess degree qualifications in either fine art or industrial art. A convenient sampling whereby the participants were selected based on location was used in selecting the participants to the study (Cohen and Manion, 1994:76).

3.2.1 District sample

Three districts were chosen and two schools per district participated in the study. The districts that were chosen were conveniently situated. The study was conducted in Northern, Southern and Western districts of Botswana. This was so as to obtain a clear scope of how the curriculum was implemented across the country. Two schools, per district were studied, one in an urban setting and another in a rural setting. Altogether six schools were used to carry out this research. Six school principals were interviewed, one per school. In each school two teachers were interviewed and finally twelve lessons altogether were observed.
3.2.2 School sample

Six government schools were sampled, namely, Thipe, Roto and Lebobola. These are fictitious names given to schools in the rural area. Legapu, Lerotse and Lekgomane are fictitious names of schools sampled in the urban areas. Two schools per district were sampled to participate in the study. The six schools that participated in the research were divided into those in the rural setting and those in an urban setting. These schools differed in terms of socio-economic status and resources.

3.2.3 Teacher sample

In all, 12 teachers were used in the research, two Art and Design teachers were interviewed per school. In each school, one of the chosen Art and Design teachers taught form 5 pupils. Schools which were located in an urban setting, one Art and Design teacher for 4 pupils and another one for form 5 pupils were used. The six teachers represented the senior phase of the secondary school. The sampling procedures used for the rural school applied to sampling of teachers in urban schools. There was a mixture of male and female teachers, all of whom were degree holders and had done a three year Diploma in secondary education, specialising in Fine Art and a few who had done industrial art. The teachers had teaching experiences ranging between 10 to 20 years.

3.2.4 Principal sample

Each Principal from the sampled schools participated in the study and responded to the interview. The interview schedule used semi-structured interviews as a strategy to elicit information from the principals.

3.2.5 Research instruments

In this research different data collection tools were utilized to support the findings. This data was obtained by:

(i) observations of lessons
(ii) semi-structured interviews
(iii) Interrogation of documents

It is the attention to the three-stage framework of observation, further inquiry and explanation that builds the argument, through triangulation of data, and exposes the matches and mismatches between the instructional system and the learning milieu. The triangulation of data facilitates the cross-checking of otherwise tentative findings (Webb et al, 1966 cited in Parlett and Hamilton, 1976:92). The use of documents such as survey-type questionnaires may help to sustain or qualify earlier tentative findings (Parlett and Hamilton 1976:95) and help strengthen the argument. Due to the concern regarding the “subjectivity” of the data obtained it was advisable to utilize different testing tools in order to “objectify” the interpretation of the data. One way of achieving this, as proposed by Parlett and Hamilton (1976; 96) is “during the investigation, different techniques can be used to cross-check the most important findings; open ended material can be coded and checked…..”

As with any form of enquiry, careful planning and staging of the process is necessary. The initial stage is basically exploratory where the evaluator observes, inquires further and then seeks to explain (Parlett and Hamilton, 1976;92). On site observation and interpretation of such data helps add information that may otherwise not be available through, for example, formal interviews. The next stage then involves “focusing” intensively on the emerging issues from the first stage. By then the evaluator has worked towards gaining more trust and confidence from the community being evaluated and is thus hopefully able to conduct the study in a more relaxed way and the inquiry can be more directed, systematic and selective (Parlett and Hamilton, 1976:92). Discursive, unstructured interviews are very useful at this stage and may be augmented with classical tools such as “theoretical” sampling of those to be interviewed as it may not be possible to engage with all participants (Glaser and Strauss, 1967, cited in Parlett and Hamilton, 1976:94), in essence involving more stakeholders who will be adding to the voices so that a collective voice is the resultant. Additionally, the learning milieu is matched to the instructional system to look for matches and mismatches in order to check for correspondence between what is actually happening and that which has been planned. The final stage necessitates weighing of alternative interpretations in light of the information given. (Parlett and Hamilton, 1967:92). Due to the emic perspective that is brought to bear, the evaluator is also the research instrument.
3.3 Types of interview

Interviews were selected as an appropriate method for collecting data as they provide description and they allow for exploration. According to Black and Champion (1976), these characteristics of interviews allow for researchers to better understand the discursive nature of social reality and to gain insights into the explored dimension of the topic under discussion. Indeed, Minichiello et al (1990:10) have stated that “interviewing when used in social sciences research gives access to knowledge – knowledge of meanings and interpretations that individuals give to their lives and events.” An interview as stated by Cohen and Manion (1980) is a conversation amongst two people brought forward by the interviewer to obtain specific information, interviews may be posed in the form of structured, semi-structured and unstructured. Structured interviews employ pre-specified questions, and they are asked in a preset order using a standard approach of delivery.

Researchers using interviews endeavour to be objective, unbiased and disconnected so as to lessen personal relations. Semi-structured interviews are perhaps best thought of as lithe. Any interview begins with a specific questioning strategy, but assumes an informal “chat” that allows for questions to be answered. The use of unstructured interviews allows for indistinguishable initiative of the questions to be asked, hence the interviewee has the liberty to say whatever comes to mind (O’Leary, 2005). Semi-structured interviews were used as a primary procedure for data collection. Semi-structured interviews are time intensive, and thus the interviewer should acknowledge that fact in order to take full advantage of their potential for gathering data; semi-structured interviews were selected as one of the most appropriate instrument for the study.

3.3.1 Individual interviews

Individual interviews were preferred to group interviews because it is better to perform individual interviews without the apprehension of loss of quality. This is because academic research uses in general the individual’s in-depth interview while the business sector prefers group interviews. (Bauer and Gaskell, 2003, 44). They allow the interviewer to manage the course of action and the interviewee has the independence to express her or his opinion (O’Leary, 2005:164). Another important aspect is that the interview can be programmed at a place and time suitable to the interviewee (Bauer and Gaskell, 2003:43). Furthermore, more
details about personal experiences and conclusions can be elicited, with follow up probing questions on motivation in the context of detailed information about an existing situation of a person.

3.3.2 Semi-structured interviews

For this study, the researcher used semi-structured questions to extract in-depth feelings and analytic thinking. Opie et al (2005:118) contend to the fact that semi-structured interviews are a more supple adaptation of the structured interviews which will consent for a depth of feeling to be ascertained on condition that opportunities to apparent misunderstandings are cleared.

3.3.3 Disadvantage of semi-structured interviews

The major disadvantage of semi-structured interviews is its reliability and validity and this is brought about by the subjectivity involved in the interpretation of data. There is also the probability of bias between the respondent and the interviewer. (Opie et al, 2005:118). Though the semi-structured interviews provide for greater flexibility and freedom, and produce a wealth of valuable data, it requires a great deal of time to analyse data. It also requires a great deal of experience in controlling the interview (Manion, 1994). As a novice researcher, management of time and elements inherent in the interview process can pose a serious problem. Kane (1991) states that semi-structured interviews need a lot of skill, particularly in asking questions.

The interviewer has to be able to manage time properly and encourage the respondents to talk freely. The researcher tried as much as possible to evade partiality while interpreting the data by remaining non-aligned. This stance was also taken during the interview.

3.3.4 Follow up interviews.

Immediately after completing lesson observations follow up interviews were conducted. Educators were interviewed to probe further what they had done in the lesson, elicited what was intended in the text. Some of the lessons did not have the probing follow up interviews because of time limitation – the teachers had other classes to teach and other administrative duties that required their immediate attention.
3.4 Data collection

Data for the research was collected during the month of October 2008, from lesson observations of teachers teaching Art and Design. The interview schedule for the teachers used semi-structured questions as a strategy to elicit information from the teachers. This method helped in encouraging free and spontaneous expression of teachers’ thoughts. As part of a qualitative research paradigm, interviews were used to get deeper understanding of the teachers’ practices in the teaching of Art and Design, and to establish the challenges they face in teaching the subject. The interviews were done after observing two lessons from each teacher. Each teacher participated in the study for a maximum period of 80 minutes.

The researcher jotted down notes the teachers’ activities in the lessons against time as the lessons were progressing. Lesson follow-up teacher interviews were conducted for the teacher to clarify what was observed in the Art and Design lesson. Principals of the schools in which the research was conducted were also interviewed to collect data on the support provided at school level to teachers of Art and Design to ensure effective teaching of the subject. Curriculum documents, that is, curriculum blueprint, syllabus, lesson plans and scheme books were analysed to establish what was planned to be taught in Art and Design lessons in October 2008, and how the content was expected to be taught. The actual contents used in collecting data for the research are provided in Appendices 1.

3.5 Observations of Art and Design lessons.

Two lessons of 80 minutes each were observed for each of the six teachers in the two schools. The 80 minutes duration means that the lessons were actually double periods of 40 minutes each. The lessons were observed over two days, one lesson per day, and in between each observation an interview took place. Lesson observations are particularly important in illuminative evaluation as the observation is “naturalistic”, which means that it is observed in its natural setting by a researcher who becomes the “research instrument” attending not only to events, but also to the socio-cultural context of these events (Wolcott, 1988:190-193). Observations of this nature use functional methods of gathering data on what actually occurs in the learning milieu.
3.6 Document Analysis

The Botswana Curriculum Blueprint document provides, among other things, the sequence or order in which syllabus objectives should be taught. It also provides more detailed information about the curriculum than the syllabus information that guides curriculum developers. A curriculum blueprint is primarily a curriculum planning and design tool for curriculum development officers and their teams. It is also used in schools to guide teachers on individual syllabi. The Curriculum Blueprint provides precise direction and guidance as to the content, sequencing and development of materials. Therefore, it is a far more detailed document than the syllabus document. (Curriculum Development Procedures Manual, 1987)

The Curriculum Blueprint helps in the development and documentation of syllabus construction of a given subject. Some of the decisions to be made in the process include deciding what content will be taught in each year of study, what teaching and learning activities to employ, and what form the materials will take, for instance textbooks, teachers’ guide, and student workbooks. There are three main stages in developing the Curriculum Blueprint. These are: planning, segmenting and sequencing objectives and preparing an instructional strategy. Apart from these, the document has mission and vision set out by government to envisage change in the learner so that they are suitably trained for national and economic development.

The Curriculum Blue print is designed to make learners aware of today’s ever developing world of technology, whilst maintaining an appreciation of Botswana’s culture. The document encourages learners to explore ideas, materials, skills and responses required to address environmental, social, political and cultural issues in their daily lives. The Art and Design curricular and co-curricular activities are developed to provide learners with an awareness and understanding of the world of work and appreciation of the values and attitudes towards all types of work. (Curriculum Blueprint, 2002). This includes knowledge about the economy, the processes and organisation of production, and the demands of working life. Co-curricular activities will incorporate structured visits to business entities for the Art and Design learners to experience work. The Curriculum Blue Print which is the official “instructional system” of the BGCSE Art and Design curriculum will be examined. This document will be analysed for intentions, aims, structure content and context, the technique for studying these documents will follow Macmillan and Schumacher’s qualitative content investigation, (2001:451) which state “Documents are tangible manifestation that
describe people’s experiences, knowledge, actions and values.” Hence a model of appropriate texts will be chosen to evaluate the outcome of the BGCSE Art and Design study.

3.7 The reliability and validity of the study.
The challenge to Illuminative Evaluation’s validity is to investigate the issues in-depth and present an in depth penetration/description where the strength of the argument is explicit in the rigor with which the argument is presented and is not dependent on the numbers. This is achieved through a variety of techniques including the utilization of all research tools, ethnographic and scientific research tools/techniques, triangulation of the data obtained, interpretation of such data based on sound understanding of education theory, methodology and principles.

3.7.1 Triangulation approach
“Triangulation” is a concept applied in education research as a means of countering the selective bias of a single view. It involves the use of multiple methods to cross-check, and to support methods which do not provide adequate data. Indeed, the use of triangulation or multiple methods adds depth to the analysis and can potentially increase the validity of the study and strengthen confidence in the results or findings. According to O’Donoghue and Punch (2003:78), triangulation is “a method of cross-checking data from multiple sources to search for irregularities in the research data.” The triangulation of data is said to facilitate the cross-checking of otherwise tentative findings… (Webb et al, cited in Parlett and Hamilton, 1976:92). The use of documents such as interviews may help to sustain or qualify earlier tentative findings (Parlett and Hamilton, 1996:95) and help strengthen the argument. Due to the concern regarding the “subjectivity” of the data obtained it is advisable to utilise different testing tools in order to “objectify” the interpretation of the data.

3.7.2 Validity and Reliability
Triangulation, according to Yin (1984) is central to achieving credibility. It is central to achieving validity and reliability of a piece of evidence which will be assessed by comparing it with other kinds of evidence on the same point. Triangulation ascertains the validity and reliability of the source of evidence which will be evaluated by collecting other kinds of evidence about the source. As a researcher and the only data collector and analyser, there could be a possibility of bias. In anticipation of this, and my responsibility as a researcher to represent views of respondents accurately and fairly, as with any form of enquiry carefully
planning and staging of the process is necessary. The initial stage is basically exploratory where the evaluator observes, inquires further and then seeks to explain (Parlett and Hamilton, 1996:92). I shall use a variety of techniques to validate the data. This will be within illuminative evaluation and by triangulating instructional system, leaning milieu and what actually happens in the classroom.

3.7.3 Limitations
The study took a small sample of schools located in different districts due to monetary constraints; this however gave a scope of occurrences in schools doing Art and Design in Botswana.

3.7.4 Coding
During my analyses of data I used a coding process to generate themes or categories. I eliminated pre-conceived categories and followed up emergent categories that needed further refinement and identity patterns, connections within and between categories. Some categories had to be combined to show relative importance and relationships. After all these stages I presented the themes bringing it all together; answering the questions of what it all meant. According to McMillan and Schumacher (2001:461), coding “is the process of dividing data into parts by classification system, segmenting the data into topics or using predetermined categories to break into smaller sub-categories.” McMillan and Schumacher (2001) also talk about emerging patterns whereby the researcher reads through the data and unearth patterns, and trends from that an understanding develops about what is happening.

3.8 Ethical consideration
The participants in the school were informed about the purpose of the study and were given an opportunity to take part or decline. Names were not used so as to protect the participants’ identities. These principles were adhered to in order to protect and maintain the rights of the organization involved, their staff and clients (Babbie and Mouton 2001). The researcher used pseudo names to identify teachers and principals and schools respectively. Before collecting data, letters seeking consent for participation in the study were written to individual respondents, explaining in detail the purpose of study, what was required, how much time would be required and how interviews would be conducted. As McMillan and Schumacher (1993:399) have indicated, informing research participants should be done “in a manner to encourage free choice of participation.”
This study was the first of its kind to be carried out on illuminative evaluation of BGCSE Art and Design curriculum in Botswana. Triangulation was done with observation, interviews and post interviews. This enabled verification of the validity of data. The insights enabled the researcher to hear the emic voices of the respondents of the study, and this became useful in the analysis and recommendation based on the results of the study.
CHAPTER 4

FINDINGS AND DISCUSSIONS OF RESULTS.

4. Introduction

This chapter provides presentation and analysis of data from which the findings of the research are drawn using the tool of illuminative evaluation. Illuminative evaluation mainly uses the following methods: the evaluator examines the blueprint or formalised plans of the instructional system (teaching arrangements such as pedagogical assumptions or teaching methods and details of equipment) found in the new syllabus or curriculum documents in order to extract the innovation’s goals, objectives or desired outcomes; the evaluator makes observations at classroom level and interviews participating instructors to establish if the innovation works in accordance with the innovation’s goals, objectives or desired outcomes. As the researcher has already emphasised, Parlett and Hamilton (1976:92) summarise the three stages of illuminative evaluation as “investigators observe, inquire further and then seek to explain”. Of importance is the attainment of the significant competencies as set out in the curriculum. A learner must gain a portion of the knowledge, and then demonstrate the ability to show good use of the knowledge in terms of their learning. The learner should be actively involved in the learning process whilst the teacher takes the role of facilitator. The learner takes an initiative in the learning and practices, the learning activities are hands-on whereby learning is more by doing than by diffusion of information.

In this chapter the researcher will respond to the research question:

In what ways are the intentions of the Art and Design programme being realised or not in terms of the new technology that has been added to the curriculum?

In so doing the two sub-questions will be addressed first, that is,

In the perception of the teachers and school heads what are factors that help or hinder the teaching of Art and Design in schools especially the use of technology?

In the perception of the school head what support system is available to teachers in teaching BGCSE Art and Design using the technology?
Thus the discussion will take place in three major sections as follows:
Perceptions of teachers and principals on how Art and Design is taught
Perceptions of teachers and principals on the support provided.
Are the intentions being realised?

The chapter will start by looking at the demographic details of the teachers and principals of the research sample. It will then discuss the BGCSE Art and Design, documents, the Curriculum Blueprint, syllabus, scheme books, support for teachers, students’ portfolios, and supplied art materials and resources. A discussion follows on the ‘learning milieu’ in which the BGCSE Art and Design curriculum is situated and will focus on the perceptions of how Art and Design with the infusion of technology is taught in the schools, drawing on data from both observations and interviews. A final discussion will focus on the matches and mismatches between the instructional system and the learning milieu of the six schools.

Demographic details
Six teachers were interviewed consisting of four males and two females. The teachers responding to these questions were given names using alphabets from A to F to identify them.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>34</td>
<td>43</td>
<td>29</td>
<td>44</td>
<td>43</td>
<td>36</td>
</tr>
<tr>
<td>Years teaching BGCSE Art and Design</td>
<td>12</td>
<td>16</td>
<td>4</td>
<td>16</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Where trained and qualification</td>
<td>Australia, BA in industrial art</td>
<td>England, B Ed visual art</td>
<td>South Africa B Ed in Art and Design</td>
<td>Uganda MA in fine Art</td>
<td>England Bed in visual art.</td>
<td>Australia BA in industrial art</td>
</tr>
</tbody>
</table>

Table 1: Art and Design teachers’ qualification and place of study.

All the Art and Design teachers interviewed had an Art degree although they studied in different countries and had different degrees. Six school Principals were interviewed, and their qualifications and length of time as Principals sought. The Principals were named using the following alphabets G, H, I, J, L, M.
Table 2: Qualifications and length of time as principals

<table>
<thead>
<tr>
<th>Name of Principal</th>
<th>Qualification</th>
<th>Number of years as a Principal</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>BA(Hons), DSE</td>
<td>20</td>
</tr>
<tr>
<td>H</td>
<td>BEd (Hons)</td>
<td>3</td>
</tr>
<tr>
<td>I</td>
<td>MEd, BA, PGDE</td>
<td>9</td>
</tr>
<tr>
<td>J</td>
<td>BSc</td>
<td>5</td>
</tr>
<tr>
<td>K</td>
<td>BSc (Hons) PGDE</td>
<td>6 months</td>
</tr>
<tr>
<td>L</td>
<td>Masters in Education</td>
<td>5</td>
</tr>
</tbody>
</table>

4.1 Perceptions of teachers and principals on how Art and Design is taught

In this section of the chapter the researcher looks at the perception of teachers and how they think Art and Design is being taught in the respective schools. This will entail looking at the documents that are used to teach Art and Design, perception on the infusion of technology in the Art and Design curriculum, teachers’ perception and principals’ perceptions. Furthermore support in using technology, perception of the teachers and perception of the principal.

4.1.1 What happens with the documents?

A discussion on an outcomes-based framework for a curriculum intervention has already been given earlier (see chapter 2), and the researcher expected to find in the reading of the BGCSE curriculum plan a basic OBE framework for teachers. The interrogation of the documents showed that there were specific guidelines to what should be taught, how it should be taught, and the outcomes to be achieved, all within the outcomes-based approach. The syllabus advocates for the use of a learner-centred approach whereby learners must demonstrate the specified skills and knowledge in order to achieve success. Emphasis is on practical skills involving the process designing and making projects. This is done through a teacher demonstration of the given topic and the practice done by the student.

The researcher found that all the policy documents, that is, the overall Curriculum Blueprint, the syllabus document, the scheme book and art reference books were available in the schools. The document comes to the schools via the Curriculum Development Unit, a Ministry of Education department, and goes straight to the deputy principal’s office and he/she is responsible for distributing them to the relevant Head of Department (HOD).
It is the responsibility of the deputy principal to call a meeting of all HODs to hand over and discuss the documents. In each school visited, however, the deputy principal despatches the documents to the HODs, but without any discussion on them. The teachers interviewed accessed the documents through their senior teacher (teacher level grade 1) in Art and Design. Each Art and Design teacher gets their own copy of the Curriculum Blueprint for perusal before it is discussed by their particular department as a whole. The department comes together to discuss and plan the syllabus for the term. It is at this point that any needs for in-service training are identified and communicated to the Teacher Training and Development Ministerial section of the Botswana National Education Department. At Thipe Senior Secondary School the syllabus was pinned to the notice board to be scrutinised by all who needed to view it. There was a copy in the library and one in the Art and Design document files for reference. Roto, one of the schools, had its syllabus in the administration block far away from where it was needed.

Curriculum Blueprint

The Curriculum Blueprint is the overall document used to guide the teacher to plan topics to be taught and it consists of the school syllabi for all the subjects taught in the schools, including the schools that were observed. All the teachers stated in interviews that they meet together as a department and plan their scheme of work from guidelines in the syllabus and the Curriculum Blueprint. Teachers are aware that a learner-centred approach to learning is to be used whereby the learner actively participates in the learning process. Learning activities should be of a hands-on approach where learners learn more by doing than through the teaching method of mere transmission of information by the teacher. As already mentioned teachers should use a variety of methods to assist learners in Art and Design syllabus, such as demonstration, practical work, project work, discussions field trips, and computer aided design (CAD), visual aids and illustration. In all the schools visited the syllabus document is being used by the HODs to monitor and evaluate whether learning is going on and whether learners are attending classes and doing the project that they are given. This is done by checking the Art and Design documents, through monthly reports to the HODs.

Syllabus Document

Data was collected in October 2008, the only time in which schools had a break from examinations and when teaching was taking place. The topic “logo design” was to be taught as stipulated in the syllabus, that is, the instructional system lists the topic “logo design” as
the topic for October (see Appendix A). At the end of the topic it is expected that learners should be able to identify, analyse and understand design problems and be able to work to an appropriate solution. The topic takes an outcomes-based transmission to learning whereby the expected skills, knowledge, and attitudes must be demonstrated by the learner in order for the learner to achieve success as specified. The importance is on attainment of the relevant competencies set out in the Curriculum Blueprint. The learner must master a considerable portion of the knowledge being taught and grasp the skill so that they are able to demonstrate and apply the knowledge elsewhere. For instance, the sketches done in the laboratory on logo design should finally be moved to a CAD.

The planned learning activities for the topic on logo design are: learners identifying things found in their environment, objects and places that show 2D-design in particular logos; brainstorm unique sketches that are designed by themselves using available materials given in class; and finally, coming up with a final design that will be produced using the computer aided design. The teaching methodology for the logo design topic is: demonstration, discussions, questions and answers, brainstorming, group work, teacher observation and presentation.

The planned teaching and learning resources that are used to give ideas to the learners as they design their logo are: past student work (with clear instruction that the work should not be copied); pencils, colouring pencils, pens, glue, manila paper, scissors, magazines, with 2D-design, researched work. The continuous assessment methods are: portfolio, self assessment and peer assessment. The syllabus provides guide lines for the teacher to follow in planning Art and Design lessons and execute these lessons (see Appendix A). The lesson plans for the month of October are expected to indicate the lesson topic, lesson outcomes, learning activities, teaching and learning resources, equipment, teaching and continuous assessment methodologies (see Appendix A). The teacher is expected to guide the learners through the planned learning activities using the syllabus. The syllabus also stipulates that an Art and Design OBE lesson should be taught to the pre-specified outcomes outlined in the outcomes column in (Appendix A). The learners should be given assignments and homework to extend their time of learning.
Scheme Book

The Schemes of work are used to record up to date, all the topics that have to be covered as per the syllabus and Curriculum Blueprint. The HOD endorses his/her signature as proof of work done on back of the scheme of work where there are marks shown for tests that have been covered by the learners. Also in the scheme book are lists of art reference books that are used to assist learning. There was no consistency in record keeping across the six schools. In one of the schools observed the scheme book was partially recorded possibly for the researcher’s visit. During the term when the data was collected the HOD had not signed the scheme book. It seemed the teacher used past scheme books as a reference for planning for the next term. At another school the scheme book was covered neatly and had all the information recorded fortnightly as per the scheme of work. All the marks were recorded in the scheme book and were signed by the HOD.

Support for Art and Design

The section on planned support for the teaching of Art and Design as stipulated in the BGCSE Curriculum Blue Print is not detailed and acts as a guideline for expected support from the school (Appendix B). It provides precise direction and guidance regarding the content, sequencing and development of materials. There should also be regular sustained support provided by the principal, regular evaluation of the classroom performance of teachers, parents, and community support to the teacher in terms of helping the learners with practical homework and assignment. The community support is given by local artisans in the community, for instance a local computer technician. The research found differing perceptions on the support provided in the schools visited, as will be seen in the discussion below on teachers and principals perceptions.

Assessment Policy

After the observation of the two lessons the researcher conducted a post-lesson interview whereby the teacher had to submit instructional documents and in particular scheme books, learners’ portfolios and continuous assessment marks. Formatively assessed work was recorded in the scheme book as a symbol, from A to E, depending on the mark that the learner received and a lot of feedback is given to the student verbally before giving the grade. The grade is not used as a final mark in reports, but as the teacher’s reference to judge the learners progress. Summative assessment was given a percentage mark. Assessment marks are part of the term examination and take up fifty percent of the mark.
The portfolio is also used as a continuous assessment mark for the end of year mark. All three topics for the term, apart from the October one on logo design, had been done and should have been placed learners’ portfolio, that is, a large manila pouch produced by teachers to store learners’ term projects. All learners’ portfolios were perused by the researcher and most of the projects relating to the third term were in place. Not all the teachers, however, had marked and recorded the assessment mark of the third term projects in the scheme book. For instance, Teachers A and F had all learners’ portfolios in the Art and Design storeroom with each student’s work in term 3 of the portfolios, but some of the other teachers, particularly teacher D had not included all of the learners portfolios were missing, and the teacher explained that the learners had been given the projects recently, so that they could finish the works that were outstanding. The researcher felt at the time that this was probably done for the researcher’s benefit only. This is a concern as the marks are part of the continuous assessment for the term. The lack of assessment procedure was most obvious in the records and learners portfolios of Teacher E’s group. Learners’ projects were piled on the shelves and none of them had been placed in an individual portfolio, and only some had been given a mark. The portfolio is necessary to keep a record of the learners work for a period of time and to look at consistency of the child’s skill and as reference to whether the student has done the work through out the year.

Art & Design Teaching Aids
The Art and Design Curriculum Blueprint does not have teacher’s guides, instead there are books on art that are reviewed by the Curriculum Development Unit for Art and Design and these are used to aid the teaching of Art and Design in schools. There is a ‘vote’ that is used for these books, that is, money is made available from the Ministry of Education to all schools for the purchase of materials. Any extra money can be used to purchase more Art magazines and books that are not sets. Half of the teachers interviewed complained that the books that were compulsory to be bought were not suited for the lessons that they taught. Principals were aware that there were no teacher’s guides in their schools and that their teachers were using substitute resources. In the absence of suitable teacher’s guides or art reference books, teachers interviewed use previous samples of work from excellent learners as an aid to their teaching. Three of the teachers that were researched had a sample of the past learners work so that they can be used as reference for form five students who are doing projects.
During the lesson the teachers would bring out the sample and show the students steps to making a logo and what the end product looks like, with strict instructions that they were not to copy the reference work, but have their own unique work.

In summary, from the scrutiny of the documents, observations and interviews with teachers it is apparent that the Curriculum Blueprint documents are in place in the six schools, but the provision and use was inconsistent in four of the schools Roto, Lebobola, Legapo and Lerotse, and in the other two Thipe and Lekgomane were accessible and discussed and the recording of how they use the documents were clear and according to what is envisaged in the Curriculum Blueprint.

4.2 Perceptions on the infusion of technology

The perceptions of teachers and principals are taken from the observations of the generic lesson and the interviews and post-lesson interviews with the teachers and the interviews with the principals. This data is ‘first hand information’ and in the observations was gleaned by observing the teachers in terms of how they transmit the instructional system, which is the “formalised plans and statements which relate to particular teaching arrangements” (Merriam, 1998:94). It is important to know the generic lesson that teachers used to plan lessons. The generic lesson, or guideline of a lesson set out in the in the BGCSE Art and Design programme for teachers to base their lesson on in the month of October, is a guide for the teachers to format a lesson plan. Although the generic lesson is stipulated in the Curriculum Blue Print to be used as a guide for the teachers, it may have some additional information added to it according to the needs of a given school (see Appendix C).

Each lesson taught in October of any year should include:

Subject Area: Logo Design
Form level: Form 5
Date: 8 October 2008.
General goals: Learners work on their Logo Design which has to be completed in four weeks.
Specific outcomes: Learners’ work and performance is measured by achieving each lesson’s outcome.
Learning outcomes: At the end of the lesson student should be able to:
1) Use the given media and materials appropriately.
2) Design a logo unique to each individual student in the class.
3) Use a computer aided design programme to design a logo.
*Materials and resources:* Learners will work with computers to produce their finished product.

In Table 3 below the numbers of learners in each class are reflected and the six classes are numbered A to F according to their teacher’s names.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Males</th>
<th>Number of Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>B</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>C</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>D</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>E</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>F</td>
<td>17</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 3: Numbers of learners and gender distribution in each class

Also reflected is the gender distribution across all the six Art and Design classes of the teachers taking part in the research. According to the Blueprint document, the maximum number of learners in a class is twenty-five, and as noted in Table 3 classes D, E and F exceed the maximum. This has an impact on the use of technology and materials.

*Teachers’ perceptions*

The technology in Art and Design, that is, a printing press, electric potter’s wheels, kilns, computers, pug mills, digital cameras, electronic designing saw (see Appendix G) come with manuals that are stored with each bit of equipment for consultation by users. For this study carried out in October when “Logo Design” was the stipulated topic, the technology to be used is only computers. Although no other technology will be referred to the researcher noticed that the six schools visited were provisioned with all the technology and were in the art labs visited. Some of the equipment was not functional because of maintenance reasons and this is a factor that inhibits the use of technology generally. For instance, Teacher B reported how on one occasion when doing pottery she could not use the kiln because it was not functioning and so she made a hole in the ground outside and fired the pots using dry cow dung and sawdust. Several computers were not functioning, noted so because they were covered over with a cloth and not to be used (see Appendix G).
The community does help occasionally. For instance, there is a school in the rural area Lebobola which had a part time technician who would be called in to assist if there was a problem with a machine.

The interview schedule for teachers focused firstly on the methods used in teaching Art and Design with the infused technology, the problems encountered, support and supervision provided, and then went on to ask about experience and training and job satisfaction (see Appendix for interview schedule).

![Figure 2](image)

**Figure 1:** Problems encountered by teachers in teaching Art & Design using technology

Reflected in figure 1 are the challenges facing teachers in incorporating technology into Art and Design lessons. All teachers felt that there was a time constraint in completing art projects. Impacting on the time allocation was a lack of resources, four of the teachers pointing out that although it is expected of them to teach technology using the resources there are no instructional materials. The only available literature is on how to assemble the machines, and not on how to use them. The teachers therefore felt that a lot of instructional materials were needed as there was no core text to guide teachers and learners. In addition to this, two-thirds of teachers interviewed indicated that there is an acute shortage of teaching and learning resources due to budgetary constraints. There has been a gradual reduction over time of Art and Design teaching and learning resources in schools.
It is clear that although the teachers of Art and Design teach the subject following some of the methods which were planned in the syllabus, some of the teachers have a challenge in employing a range of teaching methods as stipulated in the Curriculum Blueprint. This was ascertained through the post-lesson interview by the teachers as given in Appendix F. Similar to a study by Macfarlane et al (2004) on a programme to improve the quality of service provided by general practitioners in the UK, a programme to improve the quality of service provided by general practitioners and evaluation of email network services and why they were not working, probing questions helped provide insight into the reasons behind lack of effective pedagogy. There is also a challenge between how the teachers use the resources to teach Art and Design as planned in the instructional system. Although some teachers used some of the resources suggested in the instructional system, one of the methods listed as being a vital skill in the Curriculum Blueprint, that is CAD, was not used by teachers B,C,D,E due to lack of knowledge or proper training for that skill. These teachers acknowledged a fear of the unknown, for instance on how to use these machines, and so they resort to substituting other methods for CAD in these lessons.

“I substituted the lesson because I have a problem using CAD.” (Teacher E, Appendix G)

All teachers stated that the manuals were not user-friendly, as one pointed out

“This is not a Nokia, it is not user-friendly. They are also difficult to maintain; you can see that our school has two kilns. This is because we could not get any one who understood how to maintain it, so we bought a new one.” (Teacher D, Appendix G and H)

One of the reasons they gave for this was that the manuals were made in China and teachers perceived that the translation into English was often inadequate. Teachers A and F were the only ones trained to use the computers and hardly referred to a manual.

The ever increasing numbers of learner intake also impact on the already inadequate resources. For question (c) 5 teachers answered negatively, citing major challenges with content. They feel that Art and Design, being a subject of continuity, naturally demands that individual assignments be given to learners. Now the teachers face a major challenge if assignments cannot be done because there is not enough resources for all the learners to take and use at home. By design, the assignments are necessary for lesson continuity.
A lot of the teachers rely on each other, especially those who have specialist training as they understand certain content. When a teacher with special training is not available to assist, the one that requires assistance often substitutes the given topic if he/she does not have in-depth knowledge about the topic. In addition, the syllabus has so much content that it is not always possible to complete the syllabus in the given time.

One teacher responded that only the gifted, dedicated and self motivated learners have a positive attitude to doing the subject. Another teacher felt that although learners enjoyed the subject they are overwhelmed by the demands to complete the projects. One teacher’s response was that initially when the learners are confronted with some of the machinery they become apprehensive and can play truant. However, once they master the machinery confidence is built and they learn to enjoy it.

Figure 2: Teaching methods used by teachers to teach with technology

Figure 2 shows that all the six teachers use different methods to approach the topics depending on the situation with materials and resources. Teacher A uses discussion, demonstration, learner centred method such as individual work, constructive criticism from both learners and teachers, group work and lecture method; B uses learner centred method, with some limitation because of resources; C uses group methods due to lack of resources; D uses group work only due to lack of resources; E uses demonstration and learners’ individual work approach; F uses a combination of some techniques depending on circumstances. Learner centred method is generally preferred however, and occasionally they are given an opportunity to teach each other some aspects of graphic design. Two-thirds of the respondents indicated that the most difficult method of teaching with technology is giving
freedom and time to the learners to experiment with the equipment. This was due to the limited set time for lessons and the shortage of machines, and for four teachers, the lack of confidence in using the technology. It is noteworthy that none of these particular teachers were trained to teach using technology and they felt that the in-service training was not enough.

**Gratification in teaching Art and Design**

Despite the lack of resources and time, one of the teachers interviewed enjoyed teaching the subject. Five teachers declared that Art and Design, although enjoyable and gives one an opportunity to learn creativity and acquire skill, can only be done with the right material. As teacher F stated:

“For instance you can’t teach painting using charcoal.” (Teacher F, Appendix G)

Art and Design is a gyratory curriculum so it changes a lot and continuous training of teachers is necessary in order to be in constant touch with the changing curriculum.

**Principals’ perceptions**

In response to a question put to principals on the availability on Art and Design teaching resources in their schools, principals had mixed views. Three principals K, J, L did not have a ready answer and felt that they should consult with the Art and Design senior teacher grade 1 before they could answer. Principal I stated that there was “some machinery” in the labs. Principal J from Legapo school seemed to be aware of the presence of technology in the school and was able to say that a lot of it was non-functional, and that he knew this because learners projects based on use of technology were not handed in on time. One of the issues pointed out by principal L was that large classes inhibited the use of technology.

The government has introduced ‘double-shift’ in schools, meaning that the 1.6 (1,600) learners per school has now doubled and yet schools have been given half the vote. (Principal G, Appendix G)

Principal G remembered that the only machinery he knew of was from last term’s report and the machinery available were kiln, power tools and computers and nine of them were not in working condition.
Principals felt that there was not much that hindered teaching technology as all the teachers that teach BGCSE Art and Design curriculum are trained and have degrees. The labs are fully equipped with machineries that are there to teach technology. There is a monetary vote for Art and Design which helps the Art and Design department so that they can buy extra materials necessary for the teaching of Art and Design as per the support in the Curriculum Blueprint. The principal added that there are times when the department may require more money to buy or repair machinery and that can sometimes be difficult to do.

4.3 Support in using technology
In this section the researcher looked at the teachers’ interviews and post lesson interviews to come up with findings which were grouped under, perception of teachers, training, developmental support, general support and perceived learners benefits.

Perceptions of teachers in the use of technology
Teachers felt that some form of support was there from the administration in the form of money for buying necessary material and an occasional visitation by the administration to observe teaching especially when it is time for appraising the teachers. The principal corroborates the teachers’ view that the programme is basically in place. The data indicates that the programme is being managed in the school.

Figure 4 shows the breakdown of teacher opinion on what could be done to improve their course. In terms of specializing 33% of the teachers felt that Art and Design would be better taught as a specialist subject whereby each teacher is trained to do a particular skill, for instance they would all be trained for fine art and then as an addition have CAD skill or carving using electrical carving machines in order to be able to facilitate topics that needed teaching on these.
One suggestion for improving the teaching and learning of Art and Design was given by two of the teachers (C and D) who felt that Art and Design should be a specialist subject. Three teachers (C, D and F) felt that more resources should be made available and more funds allocated to the subject. One respondent (A) said that as it is a practical subject more machinery is needed, and should be bought so that learners will have equal opportunity to use machines. The teacher felt that teachers should be given more training on the subject. The teachers’ response is represented in the chart below. It clearly shows that resources are more important to the teachers.

Figure 4 reflects the results of questioning the teachers about how they would improve the teaching and learning of Art and Design. The need for an increase in resources and availability of resources was most important for the teachers. One teacher (B) felt strongly about more resources being made available, such as sewing machines for students who were not too conversant with fine art, but were brilliant at doing crafts. This would give them an opportunity to learn to use technology in the craft of sewing, instead of just using a needle to sew. 17% of the teachers felt that they needed more training on the subject especially on use of machinery as it was an addition to what they had already been trained for. The fact that the teachers felt that availability and increase of resources was most important for the improvement of their Art and Design teaching, had nothing to do with their lack of technical knowledge.
This was because they knew that they could find others to assist in using the technology. So it does not address the real need, which is their training, but is a temporary solution to help them provide learning of skills for their learners.

**Training**

Four of the teachers (B,C,D and E) answered no they were not oriented into the use of technology and they stated that when they arrived from other countries or further studies they just had to learn from the teachers in the schools they were joining, with help from the instructional system they were given. Two of the teachers had their training at Molepolole College of Education. Prior to studying for their degree, the rest had been given a scholarship to study for the degrees without going through the Diploma in Secondary Education. In-service training was done for a week for each given topic to orientate the teachers on use of machines. Most teachers felt that in-service training was not enough to gain a needed skill.

Four of the teachers (B,C,D,E) were negative about their initial and in-service training and felt that they were not trained well for the use of the resources. They felt that they received what would be classified as an introduction to the teaching of Art and Design technology, and not how to teach the given Art and Design topics on technology. Two of them (B,E) stated that in-service training was done occasionally and not enough time was given to grasp everything. These two teachers felt that the Principal Education Officer (PEO) in the Ministry of Education, who is responsible for teacher training and in-service training of teachers, hardly organised training workshops. If there are any, they would be organized during the school term when most teachers that could attend are busy teaching and if it is during the holidays most teachers want to rest from their heavy workload. Due to this the training workshops result in poor attendance.

Needless to say, teachers A and F, the only two teachers with adequate training, were both confident that their initial training had equipped them for their teaching of Art and Design, and felt that the in-service training was good but occurred infrequently. The in-service training provided is facilitated by various teachers throughout Botswana according to their speciality and their available time. If teachers are not trained for the task they will deviate from the scheduled plan as noted by Ratsatsi (2005:162) who quotes Richardson (1994), “…teachers will implement only those aspects of the curriculum that fit their beliefs”. In other words they will implement only what they are comfortable with.
For an innovation to be effective it can only be determined when it is negotiated at classroom level and ultimately the teacher determines whether the curriculum will fail or not.

<table>
<thead>
<tr>
<th>Teacher’s Names</th>
<th>Teacher’s response</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>In-service training helps the teachers to share ideas and skills.</td>
</tr>
<tr>
<td>B</td>
<td>Felt that they did not gain much because they were not frequent enough.</td>
</tr>
<tr>
<td>C</td>
<td>They are not helpful because they are lots of teachers and limited resources.</td>
</tr>
<tr>
<td>D</td>
<td>They help us in learning to use the machinery and imparting it to the learners.</td>
</tr>
<tr>
<td>E</td>
<td>They are topical issues that are related, but are not properly coordinated. It takes a long time for one to follow. It needs to be continuous. We are taken away from the classroom when we should be teaching.</td>
</tr>
<tr>
<td>F</td>
<td>They act as refresher courses and put teachers in line with the revolving changes.</td>
</tr>
</tbody>
</table>

Table 4: Responses from teachers about the relevance of in-service training

Teachers were asked about the value and relevance of in-service training (Table 4). All six teachers stated that they do go for the occasional in-service training, and felt strongly that there is need for them to go for regular in-service training, but it does not happen often enough. According to their response, the reason for the lack of in-service training is because of logistical challenges and inadequate resources. They felt that it was relevant to have in-service training, but they needed it to be more specific and have it for longer periods so that they practise more and learn a skill, which can be imparted to their learners.

**Developmental support**

In responding to a question on what developmental support is available, all six respondents indicated that they do not get supervised by the principal. This is not unusual as the support in any innovation usually comes from the immediate supervisor. Therefore supervision is given by their senior teacher grade 1 mostly, and on rare occasions do they get the HOD to come to the department. According to teachers the HOD gets involved when there were good final results or when there is a challenging issue. Once a term the senior teacher grade 1 will assess how they are teaching, late coming, whether schemes, syllabus are up to standard, this
is so that at the end of the year one gets a monetary notch to their salary or not. Fullan (1992) argues that individual teachers will implement an innovation in ways that are consistent with their own believes and practices. Hence the senior teacher needs to not only assess for monetary reasons, but to make sure that the teaching goes on as intended in the Curriculum Blueprint. Substituting of topics is not part of what is defined in the Curriculum Blueprint. The six interviewed teachers stated that Teacher Training Officers reside at the Ministry of Education, and communication with them has to go through the bureaucratic line which is from teacher, to senior teacher grade 1, to HOD, to deputy principal, finally to the principal who will agree or resolve the issue internally. Likewise all six teachers stated that there is a bureaucratic line that has to be followed in communication with this officer and so the officers do not supervise teachers directly.

Table 5 shows the number of times each teacher is supervised.

<table>
<thead>
<tr>
<th>Teacher’s Names</th>
<th>Teacher’s response</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Once a term</td>
</tr>
<tr>
<td>B</td>
<td>Rarely</td>
</tr>
<tr>
<td>C</td>
<td>Twice a term</td>
</tr>
<tr>
<td>D</td>
<td>Once a year</td>
</tr>
<tr>
<td>E</td>
<td>Randomly it is prearranged</td>
</tr>
<tr>
<td>F</td>
<td>Twice a term</td>
</tr>
</tbody>
</table>

Table 5: Regularity of supervision of teachers by HODs

All the six teachers are supervised differently according to each school’s particular schedule. Senior teachers do observe lessons, check scheme books to ascertain that the syllabus is followed, and then report to HODs. The recommendation in the Curriculum Blueprint is that supervision should be given thrice in a term, and clearly this is not happening. This lack of supervision will mean that teachers take challenges in the own hands and resolve them as they see fit. Jansen’s (1998) study (see chapter 2) revealed that teachers understand and implement OBE in very different ways. Teachers that Jansen researched suggested that most teachers were doing what they felt comfortable with, what was familiar to them from years of practice. Hence supervision should be done regularly. All six teachers stated that supervision of Art and Design teachers is left for each school to deal with.
General Support

The researcher wanted to establish what general support in the teaching of Art and Design is provided in the school. As already noted the main communication for teachers to receive support is with the HOD. All six teachers stated that the only help they get from the principal is financial assistance in the running of the department. Teachers have a say when meeting with the senior teacher about the department budget. Rarely is the principal seen at meetings, and only visits when there is something positive to report. As one teacher stated,

“His presence is also motivational during times when he visits to see which equipment needs to be purchased.” (Teacher F, Appendix G)

Thus the principal does not have much direct contact with teachers in terms of their teaching experience. This slows down feedback and it can cause the teacher who is usually awaiting feedback to make a decision on his/her own.

The major support comes from other teachers, as was stated by all six teachers. In this way Art and Design teachers share resources, skills, and ideas. They also share across departments.

“We team teach with Design and Technology Department (D and T) if there is equipment that the Art and Design teachers are not competent to use.” (Teacher C, Appendix E)

Where visitation of education officers were concerned five teachers responded that they only come for inspections. The sixth teacher stated she does not get any visits at all. The officers only come when there is a need from the Ministry of Education to visit the school. Five teachers replied that members of the community come to their schools as workshop facilitators. Teacher C stated that it was difficult to get someone from the community to come and impart their skills because of people’s “hectic life”.

Perceived benefits for learners.

The majority of the teachers (80%) were concerned that learners were not acquiring the necessary skills in technology through the Art and Design lessons. Skills such as graphic design, print making and Computer Aided Design (CAD) were being achieved by learners in
the lessons of the two teachers A and F, who as has been discussed, received training for Australia.

Learners in the classes of A and F using CAD are so skilled that they can follow through with their final project using computers with very little assistance from the teacher. They always do well in the final examinations nationally. On the other hand, teachers who are inadequately trained in the use of technology (B C D E) felt that learners knowledge and experience of technological skills are limited, especially computer aided design, printing, and the use of the printing press in particular. The learners going through these four classrooms are not learning the technology skills but would be competent in fine art, as indicated by teachers:

“Most teachers are skilled in fine art and learners will acquire skills in fine art, and this is evidenced by the exhibitions at Thapong Arts Gallery.” (Teacher C, Appendix E)

“The learners’ strength is in fine art and not in the technological aspects because most teachers are not skilled in technology.” (Teacher D, Appendix E)

The learners may leave with some knowledge of technology in the classrooms of these four teachers, but as pointed out by two teachers (E and F) the learners’ basic idea on how to use machinery would come from other subjects like Design and Technology. For those who see the machinery for the first time in the Art and Design lab very few know how to use them.

4.4 Perceptions of principals in the use of technology
This section of the chapter will deal with the interviews of the principals looking at the general support, developmental support, perceived benefits to learners and perceived needs.

Developmental support
In addressing the issue of other developmental activities available at the school to support the teaching of Art and Design, principals felt that the in-service training provided helped teachers understand the new Art and Design curriculum, especially with regards to the use of technology. The principals felt that Art and Design teachers need to meet frequently in order to address their challenges. However all six principals were convinced that, because the training measures are in place, they are therefore happening. On the other hand, the teachers have a different view as stated above. Reports from senior teachers in the Art and Design
department given to principals provide the information to principals that extra training is needed, and they state that this happens annually. They particularly recommend teachers to attend cluster workshops.

“Cluster workshops should help the teachers with the use of machinery.” (Principal J, in response to question 10, see Appendix D)

“Teachers need in-service training to improve their teaching.” (Principal L, in response to question 10, Appendix D).

Other support that was needed in relation to Art and Design, according to the principals, included more funding (principals H, L, J), training in assessment and moderation (principal K) and more frequent provision of in-house training programmes (principal I). One technician is allocated per school but not dedicated to Art and Design and therefore used by other departments such as Information Computer Technology. One principal suggested an increase in the number of technicians (principal G).

**General support**

The support given by the schools to Art and Design teachers as perceived by principals, centres on teaching, training, budgets, resources, links with community and trouble shooting. The general attitude of principals is that all the support needed by teachers is provided. One principal in particular stated that everything was in place for Art and Design teachers

“All the measures are in place.” (Principal J, in response to question 14, Appendix D)

However in the perception of the teachers in this school principal J have a different view and this will be discussed in the final section.

Principal I stated that during the final examination in which national projects are submitted, more visitations to the Art and Design department are made by principals and brief discussions on challenges faced by the department are discussed and addressed accordingly. In other words, he is saying that there is a lot of direct support from the principal. However, teachers feel that the principal visits only at crucial times such as national examinations.
“The support given is purely in monitoring Art and Design projects, for the National examinations”
(Principal L, in response to question 14, Appendix D)

Principal K affirmed that there is lack of consistency between schools in the way learners are trained for the various topics because of lack of teacher training and the available resources. Principal J confirmed that a lot of the machinery in the Art and Design lab is broken down and there is no means of repair and maintenance. On rare occasions where repair and maintenance of machines can be arranged, they have to be taken to the Ministry of Education for this purpose. As the process is time consuming, teachers end up substituting learning topics. Principal L affirmed that the large number of learners enrolled in Art and Design result in shortage of space and the funds available for Art and Design are not sufficient.

The only principal who stated concern for under-achievers affirmed that:

“I visited classes and met individual under-achievers, or those learners slow to complete projects and had been given extra time to complete their work during study.” (Principal K, in response to question 12, Appendix D)

Principal k is passionate about learners’ achievement and gives adequate support when needed. From teachers’ comments, this has improved the school results, and especially where slow learners are concerned the principal is said to be supportive.

Some support from the community, such as artisans, is encouraged by two principals (G and L) who also engage at times private tutors to assist in a topic for which the Art and Design teachers are not trained. They bring in artisans on the basis of what is reported by the senior teacher. For instance, if the school technician is overloaded then a local artisan is brought in to assist. Principals expect that there is ongoing training but do not check especially which teachers are not coping. They are happy to bring in resources as needed to meet the immediate demands.

Some principals stated that they do not have any community help. It transpires that if teachers do not ask for experienced personnel like local artisans, then principals are not aware of the problem, as in the case of principals J, H and K who stated that they do not get support of any form from the community. There is in this instance not much communication between
teachers and principals, and obviously the communication lines generally are not functioning as they should, because the senior teacher should be the one to report any needs to the principal.

Some support is also provided for the Ministry of Education Teacher Training and Development Unit, and in this regard principals G, J, K and L felt that some in-service training is sometimes arranged, but it is not frequent enough. Principals H and I confirmed that they arrange and run workshops and in-house training programmes on different skills depending on the need of the school.

\textit{Perceived benefits to learners}

Principals state that learners are benefitting from the Art and Design programme as former Art and Design learners are now independent artists, teachers or designers. Principal G said that former pupils need bursaries in order to go for further studies. Principal H affirmed that some learners do not like cultural activities like carving so they prefer to use technology. Unfortunately they cannot afford it after they leave school. Principal K felt that some of the former learners do try to make a living by asking for funding from Government funding agencies like Citizen Entrepreneur Development Agency (CEDA) which funds businesses owned by citizens.

Principal L acknowledged this by adding that former learners use their skills to start small businesses like making batiks and selling them. Principal J disagreed but also added that former learners are more interested in white collar jobs than in making artefacts.

\textit{Perceived needs}

Principals felt that the schools they were in were well equipped and had resources and the programme was timetabled to give enough time for all the topics to be done. There is a specific vote which assists in buying materials. The principals stated that there is support provided although the teachers do not come directly to him they report all that is needed to the HOD. There is a vote that assists with monetary issues. Books are available to help in the transmission of the curriculum. Interviews with principals reveal that there are disparities in the availability of the support given by the principals to the Art and Design teachers. The principals’ interviews reveal that they consider adequate support is given because they have
handed the documents to the senior teacher grade1 for the teaching of Art and Design, but this is contrary to the teachers view.

The teachers in the six schools state in the post-lesson interviews that the only support they get from the principals is monetary, mainly for the purchase of consumables such as pencils, paper, cloth and glue. These materials are needed on a daily basis for the teaching and learning process. Principal I recommended that funds be increased to offset price inflation of Art and Design materials and employ teachers who are dedicated, as well as allow learners to choose an optional subject they are keen on. Principal G felt that provision of sufficient furniture and computers would assist in the teaching. Principal K confirmed that financial resources are not enough; teachers are not trained for the correct syllabus. Principal L felt that provision of more trained teachers of Art and Design, increased financing and budget allocation to the subject, are all crucial for the successful implementation of the Art and Design curriculum. Some of the brighter Art and Design learners cannot further their education in Art and Design after passing it because college enrolment guidelines insist on at least five passes in other subjects.

Principal J and L both said that Art and Design requires monetary support from the Ministry of Education, and also a review of how far into the education system Art and Design is available as a subject. Currently, as stated already in the introduction to this study, the exit level for all learners doing Art and Design as a subject is form 5 level. In other words, these principals wanted Art and Design to progress more towards a career. The only option open to learners who want to go on with Art and Design is to become teachers. The two principals also felt they needed more support from the Ministry of Education in terms of resources and teacher training programmes. Principal K said that the commercial subject of Art and Design needs to be incorporated in the teaching syllabus by a way of training the teachers for it, and adding to this principal H stated that training should be monitored so that those who go for training take courses that are relevant to what they teach. For instance, someone may have been trained for masters in curriculum evaluation, but when they graduate they get sent back to teach Art and Design and this has no relevance to what they will have been qualified in. Principal H stated that Art and Design can only improve if useful skills could be emphasized in the teaching of technology topics.
All six principals suggested that pre-selection of learners for Art and Design should be done by the Guidance and Counselling Department with the help of the learner’s Junior Certificate result. The principals maintain that a careful selection of learners would ensure that learners’ aptitudes and skill match the course being offered. In addition, the principals felt that teachers’ applications for training should be in line with the Art and Design curriculum. The principals also argued that Art and Design is not relevant to the workplace situation and this should be taken into consideration by employing learners periodically in related jobs, to raise a generation that is technologically and scientifically literate.

Principal G felt that teacher student ratio is high and they cannot handle the learners well in the labs, although there is a Ministry of Education directive that stipulates that the maximum number of learners in the lab should be twenty-five at any one time. However, this is not always achievable due to the high intake of the school at large. Principal I stated that funds available for maintaining Art and Design equipment and buying materials are not enough. Principal H declared that change in their belief from traditional method to the new methods would make the teaching of Art and Design better.

Thus what has emerged is that there are gaps in terms of what is intended for the support of the teaching of Art and Design, and what is happening, and this will be discussed in the next and final section of this chapter.

4.5 Are the intentions being realised?

The question in this section relates back to the research question of this study, and the researcher wants to conclude this chapter by discussing what are the matches and mismatches that have emerged in this study between the instructional system of the Curriculum Blueprint of the BGCSE and the learning milieu, the learning environment of the six schools visited.

The OBE intentions

An observation schedule that was used focused on whether the teachers were teaching according to OBE strategies. Matches and mismatches therefore are discussed with regard to the practice of teachers in terms of OBE, the degree to which they adhere to the prescriptions or guidelines of the Blueprint and the use of resources. Contrasts emerge where the documents are concerned. From a scrutiny of the Blueprint, the syllabus and the Scheme Book in terms of what was required for a lesson, and what was actually observed in the
teaching of the subject by four of the teachers (B, C, D, E) a mismatch became evident. The description of the lesson plan (Appendix C) and the observed practices of each of the six teachers in teaching Art and Design (Appendix F) shows that they taught their lessons to pre-specified outcomes that are indicated in the instructional system. But a mismatch was evident in what teachers taught and what was stipulated to be taught. This was done primarily due to shortage of teaching materials, contrary to what was specified in the section support for Art and design within the Curriculum Blueprint. According to Marsh (1997) the strength of the OBE approach emphasises upon learners. They are the ultimate consumers and it is important to focus upon their anticipated achievement. It does not help the learners if teachers were substituting the topic in the syllabus.

In particular, the observed lessons did not match with the generic lesson plans in the Curriculum Blueprint. It is also evident from the principals’ interviews that there are areas where learners and teacher support and the provision as defined in the BGCSE Art and Design Curriculum Blueprint, mismatch with what actually happens in the classrooms. From the observations, it is apparent that there is a shortage of teacher/learner support in the schools. Whereas the Curriculum Blueprint states that the resources and materials listed (Appendix B) will always be available in schools, the reality of this provision varied in the chosen schools.

A match was seen in the generic lesson which shows that all the six teachers used the first five minutes of the lesson to settle the learners in, greet them and introduce the outcomes of the given topic “Logo Design.” A typical scaffolding approach was seen in the lesson of teachers A, C and F and this would be a match with the intention of the document as an OBE document. The lesson added in as a scaffold an activity on “Calligraphy” and “Lettering.” The teachers then find out from the learners the significance of having learnt Calligraphy and how it is to be used in designing a logo. The learners from these three schools were clear about the reason for the lettering that teachers B, D and E had left out and that teacher E substituted her lesson with a different topic.

Teachers A and F displayed an advanced knowledge and understanding of the Curriculum Blueprint. Both played the role of a facilitator in their lessons which were mostly activity based as is expected of a teacher who teaches Art and Design curriculum. They introduced learners to new knowledge based on what they already knew by first revising what they
already knew and demonstrated aspects of learning that needed to be demonstrated to the students. The learners were left to design the logo manually on their own as is expected in the OBE curriculum. Their methods of teaching varied as the students sat in groups and were able to critique each other, they spent time moving around and checking each child’s work and leaving them to decide on their own their choice of the design for the logo. In two of the lessons that were observed teachers A and F assigned a group leader in each group who were in charge of all materials used, and this was done quickly and efficiently. Teachers A and F also consolidated in a plenary, the tasks which learners were assigned to do in order to ensure that the learners had to achieve the pre-specified outcomes of the lesson for that day.

From the observed lessons it is clear that both these teachers (A and F) were trained to teach the BGCSE Art and Design logo lesson. Teacher C showed an average knowledge of the Curriculum Blueprint in terms of facilitation and pedagogical strategy. Teachers A and F were trained in Australia and teacher C was trained in England the only problem was that teacher C could not cope with use of machinery. Evaluation was given at the end of the lesson to make them understand what would occur immediately the next lesson began. This clearly shows that the teachers followed OBE strategy which includes “clarity of focus”, meaning that the teacher must establish a clear picture of the learning objectives they want learners to be able to demonstrate (Spady, 1996:1). This is evidenced by the fact that they taught according to the Curriculum Blueprint and ended the topic using CAD (Appendix J). The end of the lessons was evaluated by the students allowing them to see the mistakes they make by having them critique their works. Thus the teachers allowed positive critique, both peer and individual, and therefore learner autonomy.

In contrast to this, a mismatch was noted where teachers B, C, D, and E attempted to teach to the generic lesson plan, but struggled with controlling learners in groups, although teacher C achieved better results than the others. They failed to offer appropriate critique to enable learners to progress and therefore learners’ autonomy was also compromised. None of the learners in these four classes learned the skill of producing a logo through CAD. From the interview schedule it became clear that the teachers are trained in different countries.

There is also a mismatch between the methods of assessment in the plan stipulated in the Curriculum Blueprint documents and the assessment practices of the teachers. The Curriculum Blueprint states that the teachers should assess and record learner’s performance using a variety of assessment methods during the teaching and learning process. In practice,
the teachers were observed not to be assessing the learners as stipulated in the Art and Design OBE curriculum. In his study, Jansen’s (1988) findings were that teachers understand and implement OBE in different ways. This is due again to what was discussed at the beginning of this chapter, that is, on the importance of teachers understanding of the curriculum plan. This could also be because of teachers’ fear of the unknown. In this study, it appeared that continuous assessment poses a challenge to four of the teachers. This is because continuous assessment is viewed by teachers as an extra workload and different from the term ‘assessment’ which they perceive to be an easier term. Mahlangu (2001) argues that some teachers might not be willing to take the extra work. Indeed this was the case with teacher E who did a different topic.

Support provided to teachers
Another mismatch emerged where the support for material that is stipulated in the Curriculum Blueprint was matched to the materials in class. There was an acute shortage of materials and the machines were not maintained. As in Van Niekerk’s (2002) study, mismatches were found between support and resources in the schools.

The lesson plan for the observed teachers as reflected in Appendix C matches against some of the contents of a lesson plan as stipulated in the curriculum document in Appendix A, this was observed from the lesson plans that were used during observation only one teacher decided to change the topic.

However, some mismatches were also found in the teachers’ outcomes, in terms of adherence to the Curriculum Blueprint and the resources. For instance, the data also records a mismatch between the variety of methods suggested in the Art and Design section of the Curriculum Blueprint and those that teachers of Art and Design used. This was observed in lessons of individual teachers. As shown in Appendix A, the syllabus recommended a variety of methods such as group work, research on given topics, presentation and computer aided design which the teachers were expected to use in the teaching of the lesson topic ‘logo’ design. Four of the teachers only used three methods: group critique, question and answer, and teacher evaluation. Concurrent to the challenges of the teachers not using a variety of teaching methods in their lesson in general, one of the teachers was observed not to teach the subject to integrate various methods as per the instructional system and Curriculum Blueprint. Two of the teachers did not give assignments to the learners as expected because
the assignment was correlated to the class work they were to do. Assignments also help in teaching the learners how to research for a given topic, as per the instruction in the instructional system (Appendix A). However, the assignment allocated learners did not have the necessary accompanying resources needed to complete them in the learners given time.

The research shows a mismatch between plans for supporting the effective teaching of Art and Design as stipulated and the support available in schools. Interviews with principals reveal that there are disparities in the availability the support given by the principals to the Art and Design teachers. Four of the principals’ interviewed reveal that they consider adequate support is given, and this usually means they have handed the documents to the senior teacher1 for the teaching of Art and Design, but this is contrary to the teachers view. The teachers in the six schools state in the post-lesson interviews that the only support they get from the principals is monetary, mainly for the purchase of consumables such as pencils, paper, cloth and glue. These materials are needed on a daily basis for the teaching and learning process. Generally, the teachers felt that their welfare and continued development – whether long term or in-service training – is neglected. The teachers stated that they pass their grievances through the HOD, but if they are lucky to get feedback it is often slow. This means that support is a challenge to the researched Art and Design teachers in the teaching of the subject.

The lack of support by the principals may be a contributing factor to some of the challenges faced by the teachers in teaching Art and Design. This particular challenge may be addressed better by the principals appointing a responsible HOD to monitor the Art and Design teachers and give appropriate feedback and suggest ways to improve the transmission of Art and Design. In this way, the head teachers would have a better appreciation of the challenges faced by the teachers, and would hopefully work with the teachers and help them address the challenges they encounter in the teaching of Art and Design. Sloan and Watson (2001) adopted an illuminative approach in their study. This study, like Sloan and Watson’s, shows the need for strong supervision and coordinated support of the teaching and learning process for the successful implementation of the curriculum.

Mismatch was found as to how the teachers felt about the support given. Teachers regard the work load as too heavy, and as they have to find ways to make curriculum work, they end up using their discretion to teach to the curriculum plans. Some of the topics are not taught
because of lack of capacity from the teacher. The teachers also felt that they needed more prescribed books that made it easy to understand technology. Teachers felt that during implementation all the schools were allocated a lot of materials, but as the years progressed materials have been depleted and it is difficult to maintain their initial teaching level. The machinery in most of the researched schools is broken and getting it fixed is a task as many of the technicians, who are private, are not familiar with the specialist machinery. The machines are thus left as white elephants (Appendix H) and the educator has to substitute the topic to be taught by using a manual alternative. For instance, one of the teachers used a photocopier to get the effect of a CAD.

Use of technology
Like Zolkov’s (1996) study this research showed that teachers had a challenge with the use of computers. Of the six teachers interviewed, four (B, C, D and E) were not qualified to teach using the machinery in the Art and Design labs. Some of the machinery was delivered in 2000 and is still brand new and unwrapped, because teachers are not trained to use them. (Appendix H). One teacher actually substituted the topic with another to avoid doing CAD. Some of the labs had machines that were not in use, and financial costs of maintaining the equipment are borne by the school, and this means that the Art and Design department has to work on a very tight budget if they are to restore the machinery.

Matches were found in the training of the teachers as all the Art and Design teachers interviewed had an Art degree although they studied in different countries and had different degrees. The observed classes showed some form of assessment is in place in the BGCSE Art and Design class that is guided by the Curriculum Blueprint. Some of the teachers impart a skill to the learners. For instance teachers A and F actually come up with a way to have the learners derive some skill from what they are taught. Contrary to this, teachers that were trained in England did not have a CAD skill, but they were left to teach around this.

All the researched schools were supplied with machinery that was necessary to teach a technology topic, and these machines were supplied by the Ministry of Education. There were very few of the researched teachers who were able to use these machines. Teachers (A and F) were able to use the machinery supplied, from interviews and demographic data provided an emergent issue came about that the computer literate teachers studied in Australia.
There was a match in the promoting of technology skill for students, and this was observed in teaching of computer aided design. Two of the teachers (A and F) who taught CAD showed a competency based approach whereby the students were able to demonstrate the specific skills and knowledge in order to achieve the outcome. It was also interesting to observe the learners actually doing what they were taught to do, using computers.

The research also shows that there is a mismatch between the provision of the resources needed for the teaching of Art and Design as planned in the syllabus, and the actual resources available in the schools for teaching Art and Design. This is revealed by the post-lesson teachers’ interviews that there is not enough art material and sharing is the order of the day in class. The resources were not only outdated but were also not easily available. For instance the “Corel Draw” software was outdated and needed to be renewed. This impacted negatively on the teaching of technology for Art and Design. Some of the machines needed to be repaired and this was difficult because of lack of specialists who could do the job as needed in order for teaching to continue. Only one school, the school in the rural area, had a reliable electrician. The machines that were not fixed were therefore left in the laboratories as white elephants (see Appendices H). The documents contain a clear expectation of teachers to use machinery in their lessons.

A match and a mismatch were seen in teaching for continuous assessment. In teacher A and F’s classes all the learners continues assessment work was done and recorded in the scheme books. However, a mismatch was found in the way teachers B, C, D, E assessed their learners. The Curriculum Blueprint stipulates that the teachers should assess and record learners finished works. In these classes continuous assessment is not being done as planned in the Curriculum Blueprint. The challenge from interviewing the teachers is that they are not skilled to teach some of the topics and at times students are slow to finish their works, this is an extra work load for them. Fullan (1992) points out that implementation involves new behaviour and beliefs in relation to learning and development of the teachers, and if this development is a sine qua non (unavailable), teachers will be non productive. This is why professional development and orientation to the new curriculum is critical for success in the classroom.
It is clear in this chapter on findings that the teachers are trying to follow the documents in order to teach, and some resources are available, but there is considerable lack in terms of training and support for teachers to fulfil the criteria of the Blueprint. Although matches between the instructional system and the learning milieu are found, there are more mismatches found and these could continue to hinder the teaching and learning in Art and Design. The final chapter reflects on the findings and makes some recommendations.
CHAPTER 5
Reflections, Recommendation and Conclusions

5. Introduction
The study focused on the challenges faced by teachers in the teaching of the BGCSE Art and Design curriculum to establish whether the intentions of the Art and Design programme are being realised or not, in terms of new technology that has been added to the curriculum. In using illuminative evaluation the tool in which the instructional system and the learning milieu obviously play a major rule, matches and mismatches were identified within the instructional systems and learning milieu of the BGCSE Art and Design curriculum. As already noted by Parlett and Hamilton (1976:92), illuminative evaluation seeks to assess the effectiveness of an innovation by examining whether or not it has reached required standards or pre-specified criteria.

5.1 Reflection on major findings of the study
Other studies have been looked at in terms of the chosen curriculum evaluation method and they have been used to influence this study. What they found will be discussed briefly before the reflection on the findings of this study.

5.1.1 What others found
The illuminative evaluation approach to the study was chosen because the researcher felt that it specifically addressed the needs of the research intention to find out whether the new curriculum in Botswana, the BGCSE, was achieving what was intended in the classroom in terms of Art and Design teaching and learning. Illuminative evaluation helps researchers to see the contextualizing or not of educational innovations - it leads to a better understanding and increased knowledge of a programme or innovation on its own terms and context. By recording, describing and interpreting what actually happens in the classrooms (the learning milieu) and taking into account the contexts in which the innovation occurs, given the instructional system (curriculum documents, syllabus, support for teaching, portfolio and scheme books), the illumination is unearthed and matches and mismatches are exposed between the intended and the actuality. What is characteristic of the illuminative evaluation approach is the notion that the of data researcher can be specific about what areas to evaluate. Essentials as indicated by the data can be focused on and evaluated for further investigation leading to progressive focusing on emergent issues that would otherwise not be investigated.
in other evaluation approaches. Illuminative evaluation is said to aspire to better understand the curriculum through description mirroring practice to contribute to decisions about curriculum. As a qualitative approach, it brings in the emic perspective to curriculum evaluation and is not overly dependent on reference to measurement and assumptions underpinning scientific research.

Several authors site this as a benefit of illuminative evaluation. As has been noted in a study done by Zolkov, (1996) in Namibia, the descriptive approach illuminated emerging issues - whereby it was shown that teachers who were to teach deaf learners to produce music using computers, were challenged by the use of these computers, rendering student learning a passive activity and therefore this was associated with poor lecturing pedagogy. Clearly the teachers did not understand how to teach music using the given computers. Interesting to note is that at first Zolkov, (1996) could not understand why what was intended in the teaching was not happening, until he used illuminative evaluation. His findings emerged once he had sifted the data from the observations and interviews of the music teachers in the school and the questionnaires of the learners, through the lens of illuminative evaluation.

An element of illuminative evaluation, “progressive focusing” (Parlett and Hamilton, 1976:93) has also been shown to be of value in finding out what is happening within a curriculum innovation. This is used in the research method where initially there is a wide-ranging data base, which the researcher methodically lessens to give more attention to emerging issues. This was seen in the study by Downs who combined quantitative methods with qualitative methods and pre- and post-test interviews of the learners’ knowledge. He concludes by identifying both strengths and shortcomings of the experiential learning in the course (1992: 282-294). During observation of lessons and interviews, the researcher scrutinized emerging issues that occur during the process of data collection and refocusing on those emerging issues to uncover some more challenges “hidden” in the process of implementation of the programme. For instance teacher A being able to teach using computers because of the training he received which was relevant to the BGCSE Art and Design curriculum.
Another example of the use of progressive focusing is that of Dewar and Walker (1999), who used illuminative evaluation in six case studies to evaluate work-based learning in a nursing degree programme in Australia. The study was to examine potential benefits of work-based learning and how it impacted on learners practice. The investigation process uncovered that there was a considerable “gap” between the educational philosophy and the way it was transmitted within the department (1999:1463). Based on the results, the evaluators anticipated a set of recommendations to improve the practice (1999:1465). Like Macfarlane et al’s (2004) study a programme to evaluate the “Quality Team Development Programme” where they used probing questions to get learners involved, so as to improve the quality service provided from their answers, this lead to greater insights relating to the success factors of the programmes. The researcher of this study used probing questions and observations which lead to insights that gave some answers to pertinent questions.

5.1.2 What this study found

It has been seen from the review of studies on illuminative evaluation already discussed in chapter two, and noted again above, that the use of the tool uncovers information that might not emerge otherwise. Illuminative evaluation gives fruitful insights into curriculum problems. The researcher of this study found that the use of illuminative evaluation revealed insights about the challenges faced by teachers who teach the BGCSE Art and Design curriculum using computers. Teachers were not using technology because of lack of training, lack of support and maintenance of resources, and the resultant work overload. From engaging with teachers after observations of lessons, and with principals in interviews the emic voice emerged, so that the depth of what the teachers and principals are experiencing came to the fore. The data that was collected was progressively focused in order to sift through it and come up with applicable insights, and data was unearthed that could have been overlooked using the agricultural botany approach.

For instance, teacher D used a photocopier instead of the computer to produce an effect like CAD. This was not recorded in the scheme book as it was supposed to be, and no one would have known that it had not been produced on the computer. It was revealed by probing questions in the interview with the teacher, and gave a pertinent answer to the underlying question about use of technology. Similarly answers were revealed to questions such as why teacher E substituted a topic - through probing questions the issues that emerged was lack of
training and probably fear of using technology. What emerged also was the comfortable ‘rut’ into which teachers seem to have settled. They were content to continue teaching in old ways without using technology, and therefore not fully incorporating the outcomes-based approach of the curriculum. Even HODs were satisfied with the minimal outcome, that is, that Art and Design was ‘happening’.

It is also possible that the micro picture that has emerged through this research is evidence of the macro picture concerning training of Art and Design teachers in Botswana. In other words, one-third of the sample chosen are adequately trained. Could this also apply to the country as a whole?

Likewise in the researcher’s study a ‘gap’ emerged in terms of the teachers views as opposed to the principals views. The principals felt that because the support for the teaching of the BGCSE Art and Design was in place and Art and Design teachers had degrees, therefore the curriculum was being taught as intended in the Curriculum Blueprint. This could be the most significant issue that emerged. The principals were not fully in touch with the Art and Design department and therefore could not see the real problems, and were content to believe that the measures in place were working. They believed that the HODs were handling the support system and the senior teachers in turn were ensuring that system worked. They were aware of challenges facing teachers in using technology. But they felt the challenges were minor ones that could be sorted out via the hierarchy. It is the senior person on the shop floor who knows the magnitude of the challenges, and from the researcher’s view the senior person has opted to let things flow according to what the teachers do (or don’t do), and could feel disempowered to address the problems of the curriculum. It is hoped that other researchers will use this research to come up with issues that will improve further the quality of the BGCSE Art and Design programme.

5.2 Recommendations

In order to address the challenges identified through this study on what is happening in the teaching of Art and Design in the BGCSE, the following recommendations are suggested.
5.2.1 Recommendation 1

Those teachers who are not fully trained or competent to transmit a syllabus that includes technology should be given opportunities to further their training by doing courses on how to utilize the machinery. In-service training should be given more time so that these teachers have more practice in using these machines so that they acquire the skill. They should liaise with other subject teachers in the same department who have skills in using machines and benefit from their experience. The expensive equipment supplied to the schools is not utilized fully to benefit the learners. Lessons should be prepared in advance so that teachers are aware of what is to be taught. It is clear from observation of lessons that some teachers cannot handle all the learning areas including machinery as they require a lot of skill and time.

It is recommended further that there should be information technology technicians in schools, and companies that are on call to maintain machinery in the Art and Design labs. Technicians will be there to assist computer illiterate teachers as well as to ensure the upkeep of the computers; this would help alleviate the problem of schools using other schools’ computer labs, and save time too. To avoid such a chaotic situation, is important to have companies that can adopt a proactive maintenance approach on machinery in the Art and Design labs.

5.2.2 Recommendation 2

Teachers should be trained so that they understand how to teach OBE Art and Design. OBE Art and Design is brought about by its competency performance-based approach to education which is aimed at supporting education with the demands of the workplace and develop transferable life skills such as problem solving and critical thinking. The change in the curriculum is a result of learners’ previous acquisition of academic skills that were not geared towards tackling the work situation. The inability to apply themselves is a direct result of irrelevant teacher qualification and/or inadequate in-service training for them to teach autonomously using the facilitation method. This leads to teachers having challenges when they have to teach the ever evolving curriculum. At best the curriculum cannot on its own result in effective teaching and learning in the classroom. A central issue is therefore, the relationship between Curriculum Blueprint structures and professional development. The recommendation is that emphasis in training renews and re-focuses the teaching pedagogy, and approaches the teaching and learning environment with a fresh perception.
5.2.3 Recommendation 3
There should be a more intentional and focused monitoring of the teaching and learning in their schools by HODs, to assist teachers to move intelligently into OBE practice. Some of teachers were observed to be pre-dominantly using one method of teaching, that is the question and answer method. The group work method which they also attempted to employ is wrongly used as they still treat the learners as individuals although they are put in groups to work as a team. After observing pedagogical practices of the teachers involved in the study practices, based on more than ten years of teaching experience in a content based curriculum characterised by teacher-centred pedagogical practices, this study can safely conclude that the teachers may be feeling secure in using the old methods which they think give them success. The teachers’ observed pedagogical practices in the teaching of Art and Design concurs with Mahlangu’s (2001) argument that implementation of a new curriculum often requires teachers to change attitudes and roles.

The lesson plan should act as a reminder to the teachers to use a variety of teaching methods and other important aspects of Art and Design. In addition to a variety of teaching methods which need to be included in the teachers’ lesson plans, the teachers also plan for academic diversity in the classroom to cater especially for fast learners, and also to cater for work that is done at home, in accordance with the OBE approach.

5.2.4 Recommendation 4
It is recommended that the assessment processes are reviewed to make them more consistent and uniform. Having seen portfolios of the learners it was clear that in some of schools assessment processes were not consistent. Some of the learner’s work was not available and one wondered how the formative and summative assessment was done as per the Curriculum Blueprint. This was clearly lacking on the teachers’ part, as the portfolios are important because the work is available to show the successful or otherwise demonstration of mastery at the specified level, and fulfilment of the conditions and criteria defined for each competency in a specific module. As Hamilton (1976: 203-204) so clearly stated the introduction of (any innovation) is not merely equivalent to introducing a new syllabus but implies a radical change of emphasis in the organisational context and thinking of the institution. “Such innovation also exposes tensions with regard to the expectations on teachers regarding their role as “inter-disciplinary” and subject specialists, and academics.” It also illustrates the tension that occurs at classroom level, it also highlights transformational mismatches and
teacher influences on the implementation of the instructional system and impact on the learning milieu. They also show whether the teacher is teaching according to the strategies given in the Curriculum Blueprint. I therefore, recommend that the senior teacher grade 1 Art and Design should check thrice a term that the portfolios have all the learners’ work in them. These portfolios are part of the BGCSE examination.

5.2.5 Recommendation 5
It is also recommended that principals and HODs should support teachers in the selection of relevant initial teacher training programmes. Teachers are advised currently by education attaches who represent university students in different countries on behalf of The Ministry of Education. Hence it is their duty to help potential student teachers choose relevant Universities for their initial training. From the post-lesson teachers’ interviews it was discovered that the two teachers who were computer literate had studied industrial Art and Design in Australia. This seems to be a good university to use for the training BGCSE Art and Design teachers. Fullan (1992) argues that teacher training and development are challenges facing implementation of a curriculum innovation, and this is borne out by the findings of this study. The significance of a curriculum is determined by the teacher, and therefore the schools should have a say in the type of teacher they need.

5.2.6 Recommendation 6
It is recommended that the vote (Government funding for schools) that is provided for Art and Design departments in schools be reviewed yearly as Art and Design materials are expensive and the work cannot progress without adequate materials and resources.

5.3 Concluding Comments
The major aim of this study was to evaluate the challenges in the teaching of BGCSE Art and Design curriculum. The effectiveness is concerned with how far programme outcomes are being achieved as intended or not. The data revealed that the reformed BGCSE Art and Design curriculum with the infused technology is essentially in place, but not as strongly as intended. There is a need to do more to ensure that the teaching and learning within the curriculum is in accordance with the ideology laid down for the programme.

The observed pedagogical practice of the teachers in the study can be related to close to ten years of teaching a content-based curriculum which is characterised by the teacher centred
pedagogical practices. It can be concluded that the teacher feels secure in using the methods which they feel comfortable with. A good example is a teacher who decided to change the topic to “pattern” as is expected in the instructional system, because she felt uncomfortable with the new technology that was to accompany teaching a ‘logo design.”

The researcher also felt that improvement of teaching would better reproduce the intention of the programme in lessons; teachers should promote student to student learning, teachers’ ability to demonstrate to learners so that the learners learn the skill. Teachers should take more consultative roles in monitoring learners’ work so that the learners become more independent and acquire the skill necessary as per the instructional system.

Most teachers feel that principals do not partake in their development, this has already been discussed in the recommendation, It is suggested that curriculum development unit of the Ministry of Education should involve the teachers directly in designing and developing the curriculum because they are on the ‘shop floor” and very aware of what would be needed to make relevant addition instead of using the cascade model of training. They could also encourage the University of Botswana to take up a similar curriculum used in the Australian University for the training of Botswana Art and Design teachers.

Bearing in mind the above, it is valuable to remember that the overall aim of evaluating this programme is to ensure that challenges that hinder transmission and learning are abated so that learning becomes a smooth transition and the schools produce independent learners.
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