The Perceptions and Practice of Learner Centred Teaching in Namibia: The Case of Physical Science Teachers in the Omusati Education Region.

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ABSTRACT

This study sought to find out the practice and problems encountered by Physical Science teachers in the Omusati Education Region in Namibia. It was found that there was a discrepancy between the teachers' perceptions of their practice of learner-centred teaching and their actual practice in the classroom. It was also found that a number of problems hindered their practice of learner centred teaching. Possible solutions to these problems were also indicated.

1. INTRODUCTION

Education in Namibia before independence was enjoyed by the privileged few, whom the colonialist and apartheid regimes considered worthy of it (Ministry of Education and Culture (MEC), 1993). Few children went to school. Of those who did go to school, most did not go far. Initially, education for Black Namibians was justified in terms of its vocational utility. For the most part, its task was to prepare people for the specific jobs that German and then South African rule required. Except for a very small number of people who were to become messengers, clerks and other functionaries in the administrative system, basic literacy and numeracy was deemed sufficient (MEC, 1993).

After independence, the new Ministry of Education and Culture faced the formidable challenge of addressing this unfortunate heritage. It developed programmes and projects for education improvement, renewal, and reform which led to the development and designing of a new curriculum that would reflect the needs of the learners (MEC, 1993).

The teaching methods of Bantu education in schools before independence tended to foster memorization and rote repetition. In science, even though the learners were expected to carry out experiments, the schools in rural areas had generally no laboratories, or equipment. In addition some learners had to learn under a tree without desks (Chaka, 1998). Under such conditions, one could not expect effective learning to

occur. Thus, to address the previous imbalances and encourage meaningful learning in schools, learner-centred education (LCE) was implemented as part of the reform (Ministry of Basic Education, Sport and Culture (MBESC), 1999). According to MEC (1993:10), "Teacher-centred instruction is inefficient and frustrating to most learners, and certainly is not consistent with education for all. Hence, we shall have to help both our teachers and learners become skilled at developing and working in learner-centred settings".

1.1 Theoretical Framework

The term LCE is a very old concept in the education setting. Its origin could be traced back to the work of some well-known philosophers and educators such as Confucius, Socrates, Jean-Jacques Rousseau, just to mention a few (Cuban, 1984; Henson, 2003). LCE relies more on the theory of social constructivism, because social constructivism takes into account the social nature of the learning environment as a collaborative atmosphere between the teachers and learners (Murphy, 1997; McCombs & Whistler, 1997).

Further, Glasgow (1996:34) indicates that LCE involves an approach where "students learn to decide what they need to find success within the class and educational format". Learner-centred education places the student at the centre of education. It begins with understanding the educational contexts from which a student comes. LCE helps the student to acquire the basic skills to learn, which provides a basis for life-long learning. It therefore places the responsibility for learning on the student, while the instructor assumes responsibility for facilitating the student's education. This approach strives to be individualistic, flexible, competency-based, varied in methodology and not always constrained by time or place (McCombs and Whistler, 1997; Gunderman, Williamson, Frank, Heitkamp and Kipfer, 2003; Henson, 2003; Mahendra, Bayles, Tomoeda and Kim, 2005).

1.2 Statement of the Problem

According to Van Graan (1998:60) the progress towards learner-centred teaching by Namibian teachers has been slow. She notes that the learner-centred approach to teaching "has a long way to go, it is not progressing as expected". Physical Science is a practical subject that is amenable to the use of learner-centred approach where learners can take active roles in the teaching and learning process. It is against this background, the study sought to find out the practice of learner-centred teaching by the Physical Science teachers in selected Senior Secondary Schools in the Omusati Education Region.

(a) Questions of the Study

The following questions were addressed:

1. How do Physical Science teachers implement learner-centred methods of teaching in the classroom?
2. What problems do Physical Science teachers face in the use of the learner-centred methods of teaching in the classroom?

2. REVIEW OF RELATED LITERATURE

Two central features of post-independent Namibian education policy are that it should be learner-centred and that it should be life-long (MEC, 1993). Thorough reviews of literature revealed that quite a number of studies have been done in Namibia on LCE and learner-centred methods of teaching in various contexts. Very little has been done in the context of the Physical Science classroom. Therefore, the literature review focused on LCE in those various contexts.

Researches on teachers' and teacher educators' perceptions and practice of learner-centred education by Sibuku (1997), Van Graan (1998), Shinyemba (1999), and Pomuti (2000), reveal that although many teachers are familiar with the term, only a few of them have a deeper understanding of the concept and its implications.

Van Graan (1998) indicated that most teachers were aware of the term "learner-centred education" but many practiced it as group work. She however noted that the teachers used various techniques in their teaching to support learners in their learning but they did not necessarily perceive these techniques to be learner-centred. She further indicated that few of the observed group work activities reflected real co-operative learning where there was an authentic sharing of knowledge, or support of one another in learning. In most of the observations she conducted, learners worked individually whenever there was an opportunity. She concluded that classroom practice was beginning to change but in most cases, in a superficial way simply by inclusion of group work.

According to Marope and Nooman (1995:34), "...while the use of learner-centred teaching is going on fairly smoothly in some educational institutions, problems are being experienced. For instance, the official meaning of the learner-centred approach to learning does not seem to be focused enough to guide the practicing teachers in the schools." Marope and Nooman also indicated that there is in existence a lack of integration of concepts especially between learner-centredness and assessment. Even the implementation of LCE has not been learner-centred. Hence, learner-centred teaching implies different things to different teachers IN Namibian schools.

Mpofu (2002) found that although Home Economics teachers held positive attitudes towards LCE and its methods, they still used the lecture method and only used the learner-centred methods of teaching to give them the opportunity to have control over the teaching and learning process. They mostly used the methods of group work, discussions and question and answer while, other learner-centred methods were rarely used.

O'Sullivan (2004) studied 145 unqualified primary school teachers in Namibia. He found that learner-centred approaches were not being used in the classrooms because of inadequate teacher knowledge, limited resources, cultural factors and learners' background. O'Sullivan further stated that efforts to support teachers' use of learner-centred approaches led to re-conceptualization. He concluded that the effectiveness of developing teachers' skills and enhancing learning lead to an adaptive approach which meant that whichever methods that bring about learning which may not necessarily be learner-centred in nature were highlighted. That is teachers should examine the realities within which they work and experiment with strategies that seek to achieve students' learning within the limitations of these realities.

3. METHODOLOGY

The qualitative research design was used in this study. The qualitative research relies on the collection of non-numerical data such as words and pictures. The qualitative research design was appropriate for this study because the data collected were in form of words and behaviours as they occur in their natural environments (Gay, 1998; Johnson and Christensen, 2004; Shank, 2006). The case study was used for his study because it is an in-depth investigation of an individual, a group of individuals, a school, a community or institution (NIED, 2003). It allowed the researcher to learn as much as possible about the physical science teachers' practice of LCE and helped to organize data for the purpose of reviewing the social reality in the classroom (Babbie, 1992; Shank, 2006).

3.1 Sample

Purposive sampling was used in this study (Patton, 2002; Johnson and Christensen, 2004) to select nine Physical Science teachers from four Senior Secondary Schools in the Omusati Education Region. These participants were rich in information and offered useful manifestations of the issue of interest and provided insight about their practice of LCE (Patton, 1990; Johnson and Christensen, 2004).

3.2 Research instruments

An observation schedule, questionnaire and interviews were used to collect data from the nine Physical Science teachers. These methods helped in triangulating the sources

of information to ensure validity.

The questionnaire comprised both closed and open ended questions and addressed questions about the Physical Science teacher's practice of learner-centred in the classroom and the problems encountered and how they solved these problems. The observational method was used for collecting data on nonverbal behaviours. Sowell (2001) and Shank (2006) note that non-verbal communication, tone, gestures, concrete details and verbatim comments would be obvious while observing.

The interviews were also carried out to check on the information obtained through the questionnaire and observations. This was necessary to validate the questionnaire data.

Three lessons per teacher were observed. The classroom observations provided data on how teachers used the learner-centred methods in the teaching-learning process. Directly observation of the teachers' practices of the learner-centred methods gave a rare glimpse of their teaching behaviours.

The data that were collected through the questionnaires, observation schedules and interviews were coded and categorized (Sowell, 2001; Johnson and Christensen, 2004). Descriptive statistics were also used to present and analyze the data including frequency tables.

4. RESULTS AND DISCUSSION

The nine teachers comprised four female and five male teachers from four Senior Secondary Schools in the Omusati education Region. Their ages are given in Table 1.

Table 1: Ages of the respondents (N = 9)

Ages	No. of respondents
21 – 25	1
26 – 30	5
31 – 35	1
36 – 40	0
41 – 45	2
Total	9

Seven of the respondents were below 35 years while the remaining two were 41 years and above (Table 1). The age of the teachers may have a bearing on the teacher's use of learner-centred methods of teaching. The pointed out that some Older teachers may not have adequate skills to use learner-centred methods of teaching because they were trained at a time when teacher-centred methods of teaching were encouraged (Presidential Commission on Education, Culture and Training, 1999).

The majority of the respondents in this study were trained as teachers after

independence. Accordingly, they must have been trained in the use of the learner-centred paradigm in the Colleges of Education (Van Graan, 1998). Hence, they were expected to be able to use the learner-centred methods in their teaching.

4.1 Teaching experience

The Physical Science teachers' teaching experience is shown in Table 2.

Table 2: Teaching experiences of the Physical Science teachers (N = 9)

Number of years	No. of respondents
0 – 5	5
6 – 10	2
11 – 15	1
16 – 20	1
Total	9

As shown in Table 2, seven of the respondents had been teaching for at most 10 years while two had been teaching for between 11 and 20 years. This seems to show that these teachers were newly trained and as such could have been exposed to learner-centred methods of teaching. Hence, they were expected to be able to use these methods of teaching in the classroom. However, the Presidential Commission on Education, Culture and Training (1999) points out that in some schools, the newly trained teachers were discouraged from using learner-centred methods by their principals who did not understand the learner-centred approach to teaching.

4.2 Physical Science teachers' practice of the learner-centred approach

Table3 summarizes how often the respondents used each learner-centred aspect.

Table 3: Physical Science teachers' responses on how often they used a learner-centred aspect (N=9)

Learner-centred aspect	Frequency		
	Always	Seldom	Never
Allow learners to choose learning activities	0	4	5
Encourage peer tutoring	4	5	0
Allow students to work in groups	3	6	0
Involve learners in the organization of the learning activities	1	6	2
Allow learners to move freely in the classroom	1	3	5
Give students the opportunity to evaluate their own work	3	6	0
Allow learners to teach each other	3	6	0

Table 3 shows that four respondents seldom allowed their learners to choose learning

activities, while five never allowed learners to choose learning activities. This finding suggests that the Physical Science teachers did not usually involve learners in the choice of the learning activities at any stage in their teaching. This finding is contrary to what Glasgow (1996), MBESC (1999) and NIED (2003) said about LCE "as being an approach to teaching and learning that involves democracy and active participation of the learners in the teaching and learning process".

Five of the respondents rarely encouraged peer tutoring, while four respondents always used peer tutoring in their teaching as shown in Table 3. This finding seems to suggest that the Physical Science teachers sometimes used peer tutoring in their teaching. Although, four respondents indicated that they always used peer tutoring in their classroom, the observations indicated otherwise. It was observed that seven of the respondents did not use peer tutoring in their classrooms (Table 4).

Further, Table 4 shows that three respondents always allowed students to work in groups, and six seldom allowed their students to work in groups. The three respondents who always used group work in their teaching placed much emphasis on students group work and did not provide opportunities for students to work individually. This finding is contrary to what the MBEC (1998) said with regards to teachers varying the organization of the class according to the task being given. Students should be given tasks that promote individual work, working in pairs, working in small groups or working together as a class. Allowing students to always work in group does not foster variety in instruction provision.

On the other hand, six of the respondents rarely allowed their students to work in groups. This may probably show their over reliance on individual work. It is clear that the majority of the Physical Science teachers sometimes allowed their students to work in groups. This finding is contrary to the findings by Mpofu (2002) and Van Graan (1998) who reported that teachers usually allowed learners to work in groups. Physical Science is an interactive and practical subject and requires a lot of interactions between the learner and lesson contents hence, the need for learners to sometimes be allowed to work in groups in order to learn from each other. The findings from the questionnaire were collaborated by lesson observations.

Six of the Physical Science teachers indicated that they rarely involved learners in the organization of the learning activities and two respondents never involved learners in the organization of the learning activities. It could be construed from this finding that these Physical Science teachers did not provide opportunities for learners to be involved in the organization of the learning activities contrary to the findings by Brandes and Ginnis (1996), McCombs and Whistler (1997) and Barends (2004). It appears in this study the learners did not have a voice in the selection and organization of learning activities, which denied them the opportunity to actively participate in the learning process.

From Table 4 one teacher always allowed learners to move freely in the classroom, three rarely allowed free movement of students in class and the other five respondents never allowed students to move freely in the classroom. The practice of allowing students to move freely in the classroom is a hallmark of learner-centred methods of teaching (McCombs and Whistler, 1997). It reflects and reinforces the values and practices of democracy, whereby learners take responsibility for their own learning. In a classroom where learner-centred methods of teaching are used, learners have the freedom to move freely in the classroom. The findings, in this study appear to suggest that the Physical Science teachers never allowed learners to move freely in the classroom. Therefore, the Physical Science teachers seem not to ever practice one of the main features of the learner-centred methods of teaching. However, the large number of learners in Namibian classrooms could be responsible for the non-movement or free movement of the learners in the class.

Further, it can be seen from Table 4 that three respondents always provided opportunities for their students to evaluate their own work, while six rarely allowed the students to do so. Given the standing requirement for teachers to evaluate their students' work, it would appear that the use of "always" in this case does not in any way prevent the teacher's evaluation of the students' work. It can be concluded from these findings that Physical Science teachers sometimes involved students in the evaluation of their own work.

Finally, three respondents indicated that they always allowed learners to teach one another, while six indicated that they rarely allowed learners to teach one another. These findings are in agreement with those by Chipeta (1997) and McComb and Whistler (1997). They noted that the working together by learners was a valuable asset in teaching, because it promoted co-operative work habits, a sense of competence and elevated self-esteem among the learners.

Nonetheless, the overall picture that emerges is that, to a certain extent, the Physical Science teachers did not practice some learner-centred methods in their teaching except those learner-centred methods that gave them control over the teaching and learning process. This was confirmed by the observation of the lessons (Table 4).

Table 4: Physical Science teachers' learner-centred practices (N = 27)

Learner-centred practice	Frequency (%)						Total (%)	
	Very satisfactory		Satisfactory		Not used at all			
Learners are encouraged to work in groups	3	11	1	4	23	85	27	100
The learners are allowed to move freely in the classroom	5	18	1	4	21	78	27	100
Learners are given a chance to ask question	24	89	2	7	1	4	27	100
Learners are free to ask questions	21	78	5	18	1	4	27	100
The teachers responds to the learners' questions	21	78	5	18	1	4	27	100
Students are given the opportunity to respond to other students' contributions	11	41	11	41	5	18	27	100
The teacher encourages all students to participate	11	41	9	33	7	26	27	100
The teacher encourages peer tutoring	2	7	0	0	25	93	27	100
The teacher allows students to teach each other	2	7	1	4	24	89	27	100

As shown in Table 4, the observations revealed that in 85% of the lessons observed, the Physical science teachers did not encourage students to work in groups but placed more emphasis on individualized work. In 78% of the lessons observed the teachers did not allow their learners to move freely in the classroom.

In almost all observed lessons (96%) learners were given a chance to ask questions (Table 4). An interesting finding was that in most lessons the teachers (82% and 74% respectively) gave the students the opportunity to respond to other students' contribution and encouraged them to participate in the learning activities.

Peer tutoring was only encouraged in two lessons observed. In the other 25 observations this was not practiced. Maybe the need to complete the syllabus played a role in what methods teachers used.

It is evident from the results in this study that, to a greater extent, the Physical Science teachers did not practice some learner-centred methods in their teaching. They rarely involved learners in the selection and organization of the learning activities, did not encourage peer tutoring, rarely allowed learners to work in groups, and rarely gave opportunities for learners to evaluate their own work. In addition, they rarely allowed students to teach one another in their classrooms and never allowed learners to move freely about in the classroom.

During the interviews the Physical Science teachers were asked to indicate the methods they used in teaching. Table 5 gives their responses.

Table 5: Methods of teaching used by respondents from the standardized open-ended interview (N = 9)

Teaching method	No. of respondents	Percent
Group work method	8	89
Discussion method	9	100
Question and Answer method	9	100
Project work method	4	44
Independent inquiry method	8	89
Discovery method	5	56
Debate	0	0
Field trip	4	44
Simulations	2	22
Lecture method	8	89

As can be seen from Table 5, the question and answer and the discussion methods shared the first position as the most widely used methods. The group work, independent inquiry and the lecture methods shared the second position. In the questionnaire the lecture method was cited by five respondents as the method of teaching they normally used in the classroom while eight teachers cited the lecture method in the interviews. Further, there was an increase in the number of respondents from six to eight who indicated that they used the independent inquiry method as can be seen from the questionnaire results given in Table 6. In addition, seven respondents indicated that they used the discovery method of teaching (Table 4), but Table 5 indicated otherwise. Only five respondents used the discovery method in the classroom.

From Tables 4, 5 and 6, it would appear that the commonly used methods of teaching by the respondents are the question and answer method, discussion method, group work method, independent inquiry method, discovery method and the lecture method.

Nevertheless lesson observations were contrary to the respondents' answers to the questionnaire and the interviews, as shown in Tables 5 and 6. This seems to suggest that teachers' perceptions of what their practices were different from what they did in the classroom.

Table 6: Methods of teaching learners used by Physical Science teachers (N =27)*

Teaching method	No. of times the respondents used	Percent
Group work method	2	7
Discussion method	5	19
Question and Answer method	22	82
Project work method	0	0
Independent inquiry method	13	48
Discovery method	0	0
Debate	0	0
Field trip	0	0
Simulations	0	0
Lecture method	19	70

*Number of observations

As shown in Table 6, the observations of the Physical Science teachers revealed that the question and answer method was used 22 times, the lecture and the independent inquiry methods 19 times and 13 times respectively. The discussion method and group work methods were used five and two times respectively, while the project work, the discovery method, field trip method, simulations and debate method were never used at all. The results from the classroom observations are not the same as those from the questionnaire and the interviews (Tables 5 and 6). The results appear to confirm Good and Brophy's (1997) views about the use of the lecture method. They pointed out that despite much research suggesting better alternatives, classrooms still appear to be dominated by teacher-centred methods of teaching. These are methods of teaching that gave them control of the teaching and learning process.

It is worth noting that the lecture method, which for all intents and purposes is a teacher-centred method of teaching, was used by all the respondents. It is also worth noting that while the Physical Science teachers used some of the learner-centred methods of teaching, they preferred those learner-centred methods that gave the teacher the opportunity to play a dominating role in the teaching and learning process. These methods included the question and answer method, the discussion method, the group work (though rarely used) and the independent inquiry method.

4.3 Problems faced by the Physical Science teachers in the implementation of the learner-centred methods of teaching and the solutions.

The respondents' responses as to the main problems they faced in the implementation of learner-centred methods of teaching and the possible solutions to these are given in Table 7.

Table 7: Problems faced by Physical Science teachers in implementing the learner-centred method of teaching and suggested solutions from the questionnaire (N = 9)

Problems	Solutions	Frequency
Time constraint	a) Monitor learners' work and encourage them to finish faster. b) Try to manage time more effectively. c) Organize extra lessons to cover the syllabus. d) Give limited time to learners to do their class work.	1 2 1 1
Learners' lack of self-confidence	a) Motivate and encourage the passive learners to participate. b) Move around the classroom and point at shy learners to participate; and also give individual task to learners. c) Give shy learners leadership positions such as group leaders. d) Identify the capable learners to do activities in the class.	4 1 1 1
Lack of resources	a) Improvise and try to give practical examples for learners to visualize. b) Do more demonstrations for learners to see.	1 1
English language barrier	a) Correct learners' use of English without embarrassing them and help learners with proper pronunciation. b) b) Simplify the lesson by using simple words learners can easily understand.	1 1
Learners' lack of knowledge and reluctance to participate	a) a) Give learners more responsibility in doing more reading. b) b) Review the teaching method and make it more interesting. c) Give learners the copy of the syllabus to enable them to familiarize themselves with the aims and objectives of the curriculum.	1 2 1
LCE is better and more effective for brilliant learners	a) Give remedial lessons to the not so clever learners. b) Use the teacher-centred approach which is the only option for the not so clever learners.	1 1
It encourages lots of noise	a) Monitor learners' activities and tell them to keep quiet.	1

The results in Table 7 seem to suggest that the following were barriers to effective implementation of learner-centred teaching in the Physical Science classrooms in the Omusati Education Region; English language, learners' lack of self-confidence, time-constraints, lack of adequate resources, and learners' lack of knowledge and reluctance to participate in the lesson activities.

However, Table 7 also gives the solutions as suggested by the Physical Science teachers.

For time-constraints, it was suggested to organize remedial and extra lessons for learners to cover the syllabus and to manage time more effectively. The suggested solution to the problem of lack of resources and appropriate teaching aids was to improvise and use available materials and use more demonstrations while the solution to the problem of noise made by learners during the teaching and learning process was for the teacher to move around the classroom monitoring the learners' activities. For the problem associated with the English language, the teachers suggested the simplification of the lesson by using simple words which learners would understand and give leadership responsibilities to shy learners. It was suggested that these solutions might go a long way in making the practice of learner centred teaching visible in Namibian schools.

The results presented in this paper appear to confirm the findings by Van Graan (1998) that the process of implementing learner-centred teaching in Namibia was slow. Indeed several factors appear to militate against the use of learner-centred methods of teaching as indicated by the respondents in this study. These problems will have to be addressed if learner-centred teaching is to become a reality in Physical Science classrooms in Namibia and indeed in all other subjects.

5. CONCLUSIONS

On the basis of the results presented, it could be concluded that the Physical Science teachers used and practiced some learner-centred methods of teaching at various points in their teaching. Nonetheless, they mainly used the lecture method in their classrooms as compared to learner-centred methods.

Furthermore, it can be concluded that the Physical Science teachers practiced some learner-centred aspects in their classrooms. These practices included encouraging students to ask questions, allowing students to respond to other students' contributions, encouraging learners to participate in the lessons, responding to learners' questions, sometimes allowed the students to teach each other at some stage in the lesson and allowed students to work individually. Finally it can also be concluded that the Physical Science teachers' perceptions of their practice of learner-centred teaching was different from their actual practice in the classroom.

6. RECOMMENDATIONS

On the basis of the results of this study, the following recommendations are made:

1. Physical Science teachers should maximize the use of the different learner-centred methods of teaching to enhance learner participation in the teaching and

learning process.

2. Adequate teaching materials and equipment should be provided to the Physical Science teachers by the Ministry of Education and school management to encourage them use various learner-centred methods of teaching, which encourage learner active participation. Physical Science is a practical oriented subject.
3. The time allocated for teaching Physical Science needs to be increased. Double periods of 90 minutes rather than single periods of 45 minutes duration may give teachers ample time to organize the lesson especially practical lessons in a learner-centred way.

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