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Learner-centredness and Teacher-centredness: Pedagogical Paradigms?

Introduction

Instead of seeing teacher-centredness and learner-centredness as lying on a continuum, this chapter argues that the two pedagogies are diametrically opposed to each other. This is because the two are based on value systems that are so different from one another that it is difficult to see how they can possibly be viewed as compatible. In other words, learner-centredness and teacher-centredness represent 'pedagogical paradigms'. By employing Kuhn's (1970) concept of 'paradigm', I demonstrate the fundamental differences between the two pedagogies. In more specific terms, the two pedagogies are founded on incongruent epistemological assumptions. These assumptions give a particular orientation to classroom architecture and internal organization, student-teacher and student-student interactional patterns. As research evidence has shown (see Chapter One), teacher-centredness is the paradigmatic location of teachers and students in sub-Saharan Africa. To demand that teachers shift from a teacher-centred paradigm to the learner-centred one is to demand that they make a 'paradigm shift'. Given the fundamental differences between the two, this shift is never easy to accomplish, for basically the shift is a request for teachers to vacate their taken-for-granted world for a 'world' they know very little about. This chapter should be seen as a further repudiation of the view of teaching as a technical, rational activity as discussed in Chapters One and Two.

Concept of Paradigm

Kuhn (1970:viii) defines 'paradigms' as,

> universally recognized scientific achievements that for some time provide model problems and solutions to a community of practitioners.

Scientific knowledge, Kuhn argues, is characterized by its dynamic nature since science's conceptual structure and knowledge get transformed over time. Within a particular paradigm, practitioners set legitimate parameters within which their activities take place (Esland 1971). A paradigm has four basic properties: it contains (1) the prior knowledge of the discipline; (2) the projected legitimate problems to be addressed; (3) the methodological rules to be employed to find solutions to the problems; and (4) the criteria of truth and validity of the generated knowledge. In addition to defining what can be legitimately studied by its advocates, a paradigm also specifies what is necessarily excluded from the list of permissible topics (Shulman 1986). Practitioners operating within the same paradigm share an entire constellation of values, assumptions, goals, norms, language beliefs, techniques and ways of perceiving and understanding the world (Kuhn 1970). The shared values permit inter-subjectivity among the adherents of a paradigm. For as long as the paradigm continues to provide model solutions to the practitioners' problems, it constitutes *normal science*, that is, it is the taken-for-granted world of the practitioner. However, because of the dynamic nature of knowledge, more problems may emerge that may no longer be solved within the framework of the dominant paradigm, thus necessarily putting the latter in a crisis. A new paradigm may emerge. Practitioners in the dominant paradigm may resist shifting to the emerging paradigm and thus continue working within the parameters of the old one. However, if the new paradigm proves more promising than their own, they may shift to it. The idea that a scientific community 'adopts new values, norms, assumptions, language, and ways of perceiving and understanding its scientific world' when it shifts to a new paradigm gives credence to the realists' view that scientific knowledge does not 'represent universal truth that is true in all contexts… but instead represents a socially agreed upon theoretical and contextual truth…' (Tuthill and Ashton 1983:8). Thus, the paradigm concept negates any claim of science to value-neutrality.

Because a new paradigm makes the old one with all its paraphernalia obsolete, the tendency is for adherents of the reigning paradigm to resist the 'invading' one. This makes paradigm shifts difficult to achieve (Chalmers 1978;

Pogrow 1996). The disintegration of the dominant paradigm represents a disintegration of the practitioners' taken-for-granted world and a concomitant loss of psychological support. For the practitioners, this experience may be anomic since it leads to a disruption of the existing cognitive order. Naturally, this has a deskilling effect on the advocates of the paradigm under threat, and they may, through philosophical and methodological debates, attempt to disprove the emerging paradigm. They may also resist the emerging paradigm for fear of loss of prestige which they may have earned as occupants of the paradigm under threat.

The aim here is not to provide a critical appraisal of Kuhn's theory of scientific revolutions, but rather to sensitise the reader to the potential of the concept of 'paradigm' as an analytical framework for explaining educational/pedagogical change. For a detailed critique of Kuhn, see Masterman (1970).

Although Kuhn used the paradigm concept to explain developments in science, particularly theoretical physics, the concept has also been applied to the social sciences and education. In educational research, for example, researchers often see themselves as adhering to one or more of the well-known research paradigms – the positivist paradigm; the interpretive paradigm; the qualitative paradigm and so on. All these paradigms are ways of looking at the world, that is, they are world-views, mindsets, frames of reference or conceptual frameworks. Each views phenomena differently from the others. Each claims to be producing more reliable and dependable knowledge than the others. Thus, social practice is characterized by competing paradigms, contrary to what technical rationality tells us.

The same could be said of teaching, which is also a social practice. Teacher-centredness (also variously referred to as 'banking education' (Freire 1972) or 'transmission-reception pedagogical style' (Mac an Ghaill 1992) and learner-centredness could be looked at as constituting pedagogical paradigms (Farquharson 1990). In the arena of educational practice the two compete for recognition and supremacy. They hold assumptions about the social world, the nature of reality and about the learner which are diametrically opposed. Both pedagogical paradigms have distinct and incompatible views of what constitutes legitimate knowledge, how that knowledge should be transmitted and how it is subsequently evaluated. In short, the two are based on incongruent epistemological assumptions and values. One of the weaknesses of educational debate is the failure to recognize that pedagogical styles such as teacher-centredness and learner-centredness are informed by distinctive and particular epistemologies. The result has been that pedagogical

issues have been treated as non-problematic. It is precisely (though not solely) this neglect of epistemological issues that has largely promoted the technicist approach to pedagogical change, leading to the failure of many pedagogical innovations in the African setting.

The pedagogical paradigm within which students and teachers appear to be operating in a given context constitutes their taken-for-granted classroom world which gives their classroom practices stability and constancy. The literature on classroom research in sub-Saharan Africa reviewed in Chapter One clearly locates teachers' and students' classroom practices within the banking education/teacher-centred pedagogical paradigm. To propose that they shift from this paradigm to a learner-centred one is necessarily a proposal that they fundamentally change their views of the nature of knowledge, of the learner and his/her role, and of classroom arrangement in general. But this also calls for the disintegration of the reigning paradigm, thus of the practitioners' taken-for-granted classroom world. As has been pointed out above, abandoning familiar territory is never easy for practitioners. The result might be the practitioners' rejection or subversion of the proposed pedagogical innovation. Furthermore, a paradigm shift must be preceded by a paradigm crisis or general dissatisfaction with the reigning paradigm, in which case change would be initiated from within the paradigm itself. In other words, the community of practitioners (e.g. teachers and students) must themselves feel and see the need for change. In such a situation, a paradigm shift is more likely to occur than in a situation where the change is imposed.

This raises an important question: 'Do teachers, education officials, parents and students (what one might term the pedagogic community) in sub-Saharan Africa experience that inner urge to shift from the banking-education pedagogical paradigm to the learner-centred one?' In other words, is there dissatisfaction with the banking-education pedagogical paradigm? From what we have seen as the rationale for pedagogic change in Chapter Two, there can be no doubt that the change is being initiated by outsiders, namely international aid agencies. One is yet to come across evidence of both teacher and student dissatisfaction with the pedagogical paradigm in the sub-Saharan African context. Available evidence points to a situation in which both teachers and students work hard to maintain and sustain the teacher-centred paradigm. The latter point is the subject of Chapter Four.

The concept of paradigm as applied in education in general and teaching in particular, however, is not without controversy. Gage (1989) observes that since the 1980s, the field of research on teaching has been characterized by

'Paradigm Wars' occasioned by the polarization between positivist/behaviourist and interpretive paradigms. Positions were hardened in the 1980s when supporters of the emerging naturalistic/qualitative paradigm (e.g. Lincoln and Guba 1985) maintained that this paradigm was not only incommensurate but also incompatible with the traditional positivist paradigm, while supporters of the latter paradigm (e.g. Gage 1963/1989) argued that the paradigms were complementary. In addition to being resilient, paradigms have also proliferated (Donmoyer 2006). Efforts have been (and continue to be) made to end the paradigm wars, but with very little success. For example, Donmoyer (2006:30) has made a passionate plea to educational researchers to abandon the paradigm talk on the grounds that the field of education is a 'public policy field and [that] public fields require that issues be examined from public perspectives and considering different, and, at times, even contradictory criteria'. However, pleas such as this one are yet to be accompanied by what Gage (1989:148) refers to as 'pragmatic philosophical analysis [which might show] an honest and productive rapprochement between the paradigms'. Thus despite efforts to transcend them, paradigms in research on teaching persist to date.

Similarly, the teacher-centredness versus learner-centredness debate has not been able to reconcile the epistemological differences between the two pedagogies, and yet it is these differences that are at the root of the polarized view of pedagogy decried by Barrett (2007) and others. It is difficult to see how the polarized view can disappear before epistemological differences are resolved. And the question, therefore, is, 'Are these epistemological differences resolvable?' The response is that at the moment such resolution is nowhere in sight, meaning that pedagogical paradigms are enduring and that perhaps there is something about the differences that demands closer attention than has been accorded thus far. To use the terms of Broadie et al. (2002), unless and until epistemological differences between the two pedagogies have been resolved, it will not be possible to utilize the 'substance' of learner-centred pedagogy. Only its 'form' (use of techniques) would be possible. Unfortunately, it is the evidence of the teachers' utilization of the 'form' of the pedagogy that Barrett (2007) and others have mistaken for (and conflated with) its 'substance'.

The remaining sections of this chapter demonstrate that teacher-centredness and learner-centredness are pedagogical paradigms that are neither commensurable nor compatible. They hinge on views of the nature of knowledge that are diametrically opposed, and call for classroom practices that, logically, are equally opposed. Unless and until this substantive element of pedagogy is addressed in teacher education and in-service programmes,

no amount of resources poured into interventions will bring about durable changes in teacher classroom practices in sub-Saharan countries. The objectivist/positivist view of knowledge constitutes the support structure of teacher-centred pedagogy. Before we can expect a paradigm shift, teacher education and other interventions need to be oriented to function in ways that challenge this structure.

Epistemology and Pedagogical Paradigms

According to Dupre (2007:7) epistemology is that 'area of philosophy concerned with knowledge: determining what we know and how we know it and identifying the conditions to be met for something to count as knowledge'. The view of knowledge we hold influences the way we approach teaching and learning. Two epistemological perspectives have had more influence on teaching and learning than any other perspectives. They are *objectivism* and *social constructivism*. The former is closely associated with teacher-centredness while the latter is associated with learner-centredness. Explication of these epistemological positions might highlight the fundamental differences between the two pedagogical paradigms.

> ... where views of education have been derived from different epistemological traditions and thus have been built on different epistemological assumptions, the existence of these different traditions and assumptions has not been recognized… many of the critics of "progressive" theories of education…. have failed to recognise the distinctive and particular form of epistemology upon which such theories are based, or even that there is a different epistemology… (Kelly 1986:xv).

This failure to appreciate epistemological bases of pedagogical paradigms invariably results in the technicist approach to teaching (see Chapter One). A socio-cultural approach to teaching and learning recognizes these bases as important not only in the classroom practices of the teachers and students but also to pedagogical change. Introducing, for example, learner-centred methods in an educational environment that has known nothing else but banking education requires an appreciation of these epistemological differences, in the absence of which tissue rejection is inevitable. If we accept that teacher-centred and the learner-centred pedagogies are fundamentally different, to the extent that they are incompatible, we would be inclined to view them as ideological views founded on incongruent epistemological assumptions. As Thompson (1972:64-5) states, "…the difference between the two views [lies] in deep underlying differences between their assumptions on the nature of knowledge." This makes the differences between these views fundamental.

Teacher-centred Pedagogy: Epistemological Foundations

Teacher-centredness as a pedagogical paradigm is deeply entrenched in the objectivist epistemology which views knowledge as 'detached from the human subjectivity in which it is constituted, maintained and transformed' (Esland 1971:75). Reality under this epistemology is viewed as being 'out there'. It is a commodity that is fixed, static and unchanging. It exists independently of the learner, that is, it is objective. Objectivism, in turn, is founded upon the philosophical tradition of rationalism (a tradition in the theory of knowledge closely associated with the seventeenth-century French philosopher, René Descartes, but dating back to Plato), with its basic premise of knowledge as existing *a priori*, that is, knowledge is a certainty and has a status independent of the knower. Rationalists emphasise the primacy of reason as a source of knowledge. Their basic premise is that knowledge is independent of sensual experience and perception, that what is contained in the human mind cannot be accounted for in terms of our senses' contact with the external environment. In extreme cases, God is seen as the source of all knowledge. This means that rationalists see knowledge as certain, with a status quite independent of the knower, indicating that there exists 'intrinsically worthwhile knowledge' (Peters 1965:11). This epistemological tradition also became the orthodox view of knowledge of the Christian theology which also stressed the certainty of knowledge and played down the sensual and emotional aspects of human existence (Kelly 1986:35). As Thomson (1947:83-4) states:

> Truth was conceived of as something knowable in its completeness, and so-mething, therefore, which was fixed; static, unchangeable. It was found in the realm of 'ideas' or universals which were free from the chances and changes of this mortal world – were immutable, complete and perfect.

The stress on the certainty of knowledge leads to the search for a 'right' form of knowledge with which individuals must identify. Kelly (1986) extrapolates this view of knowledge to the political realm. He argues that rationalism necessarily leads to totalitarianism in many spheres of life – moral, political and even the educational sphere. This should be the case because if knowledge is certain, absolute and more or less unchanging, then there cannot be legitimate alternatives to it.

In education, rationalism leads to a stress on knowledge/subject matter rather than on the learner. Because there exists a 'body of knowledge', education becomes the initiation of learners into intrinsically worthwhile activities leading to the acquisition of this knowledge. The epistemology puts

children 'in the position of the barbarians outside the gates' who must be taken 'inside the citadel of civilization' (Peters 1965:107) through the process of education. Much of curriculum development today is informed by this rationalist epistemology.

This view resonates with the medieval, Calvinist doctrine of 'innate depravity' (Rusk 1954:158) and the Catholic belief in original sin. In terms of these doctrines, human beings were born evil and corrupt. Only training could improve this innately bad state. The doctrine of innate depravity meant that seventeenth-century Europe had no conception of childhood; it was a 'stage' to be grown out of as quickly as possible; the child was an imperfect adult who had to be quickened to adulthood. As Bowen (2003:186) states, 'In everything, adult models were forced upon the child. The constant companion was fear of the rod, and the maxim of "Spare the rod and spoil the child" was universal'. This significantly influenced child-rearing practices and education. Invariably, both processes involved removing the 'badness' out of the children before 'goodness' could be poured in. Because of the theological doctrines mentioned above, the treatment of children was harsh, and teachers were expected to act as authoritarian disciplinarians. Corporal punishment in the West, therefore, had its roots in Christian theology. When this model was imported into Africa by the missionaries, it found an equally authoritarian cultural environment. This often ignored convergence of Western and native culture is discussed in Chapter Five.

Besides its implications for discipline and curriculum arrangements, the rationalist conception of knowledge has obvious implications for the form in which it (knowledge) is transmitted. Everhart (1983:239) puts it this way:

> …what 'counts' as knowledge affects the process by which knowledge comes to be 'known' which in turn affects the type of activity engaged in as a result of the knowledge existing.

For example, where knowledge is understood in objectivist terms, learning involves an unproblematic authoritative transference of portions of knowledge from the teacher to the student. In this transference, the teacher is viewed as the 'expert' and the students as passive recipients of ready-made knowledge. Education, as Freire (1972) states, becomes an act of depositing in which the teacher is the depositor and the students the depositories. Such a conception of education turns students into 'containers' or 'receptacles' to be filled by the teacher. Students' scope for action is limited to receiving and storing the deposited 'commodity'. Thus the objectivist, epistemological viewpoint engenders certain assumptions about the learner; a passive receiver; an 'empty vessel' to be filled by the teacher.

This view of the learner has further implications for the definition of a 'good' and a 'poor' student. A 'good' student is one who is 'cognitively docile and deferential' (Esland 1971:89) towards the teacher. This is the student who meekly permits the teacher to deposit knowledge. The learner, Esland (1971:89) further observes, 'is a novitiate in a world of pre-existing, theoretical forms into which he is initiated and which he is expected to reconstitute'. The teacher's mastery of the subject matter is beyond question. His/her role is to organise the depositing of the objectively existing 'body of knowledge' (subject matter content) for the learner to learn and reproduce on demand. Their job is a technical one, involving the selection of means by which the ends can be achieved. It is, therefore, not surprising that teachers operating within this pedagogical paradigm tend to be preoccupied with 'right answers'. Learners become answer-producers, not thinkers. In fact the whole process of teaching-learning becomes answer-centered. The following observation by Holt (1964:154) is still as relevant today as it was four decades ago:

> Practically everything we do in school tends to make children answer-centred. In the first place, right answers pay off. Schools are some kind of temple for "right answers", and the only way to get ahead is to lay plenty of them on the altar. The chances are good that the teachers themselves are answer-centred. What they do, they do so because this is what the book says to do (sic), or what they have always done. One consequence of this is that children are too busy to think.

Consider the following example of what typified general lesson progression in the lessons observed by the author. The topic in the Geography lesson was 'Weathering':

Teacher: What is weathering?

Student: The erosion of rocks?

Teacher: No, you are confusing weathering with erosion. Who can give us the correct definition?

Students: It is the breaking up of rocks.

Teacher: Correct. But who can put it in a more sophisticated geographical language?

Student: It is the breaking up or disintegration of rocks by chemical or mechanical processes.

Teacher: Good. (He writes the definition on the board)

[I later found out that this was a verbatim recitation of the class textbook definition of 'weathering'.]

The teacher then continued:

Teacher: How many types of weathering are there?
Student: Two
Teacher: Which are they?
Student: Chemical and mechanical.
Teacher: What is the difference between the two?
Student: Chemical weathering changes the chemical composition of the rocks unlike in mechanical weathering.
Teacher: Good. (Writes the answer on the board)

This interrogative style of questioning exhibits three characteristics. First, the teacher's questioning style was geared towards eliciting from students what the teacher considered to be the 'right' answers. It would appear that when the teacher asked questions, he already had preconceived 'right' answers that he expected students to produce. But right-answerism tends to have the inadvertent effect of reproducing the authoritarian teacher-centered methods of teaching.

Second, answers that are perceived as incorrect are ignored, thereby depriving the learner of the opportunity to 'learn' from the wrong answers. By stressing the production of correct answers, the teachers ignored the perceived incorrect answers. On the surface, this might appear as a trivial observation. At a deeper and hidden level, however, the teacher's ignoring of 'incorrect' answers may be viewed as an unconscious strategy to define, legitimize, and augment the prevailing classroom power and authority relations in which she or he plays a dominant role. Prophet and Rowell (1993) capture these effects in these words:

> From the teaching-learning perspectives, the rejection of answers precludes opportunities for cognitive development by the students. . . Ignoring student responses reinforces a behaviourist approach to teaching with rote learning as the model and right answers as the outcome (p. 202).

Third, the questions are closed ended. By unwittingly allocating 'turns at speaking' and asking closed-ended questions, which demanded definite and precise answers, the teacher made sure that he always remained in control of the interactional situations. The danger with open-ended questions is that they may yield unpredictable answers that may put the teacher 'off-balance', resulting in a possible loss of classroom control. Thus, the strategy of asking closed-ended questions and allocating turns at speaking helps the teacher to

'shape the meaning of what is said in the desired direction' (Edwards and Furlong 1978:17), and helps them to maintain a strong grip on interactional processes. All this tends to work towards the reproduction of an authoritarian pedagogical style.

The objectivist epistemology has the other effect of developing a schism between *teaching and learning* as distinct but inextricably related activities, with one becoming meaningless without the other. Not only does this teach-learn converse place the teacher in a very powerful position, 'it also serves to demarcate role boundaries between the teacher and the students; the teacher teaches and the students learn' (Tabulawa 1997:201). This sentiment is nicely captured by the title of an article on Tanzanian secondary schools by Stambach (1994, as cited in Vavrus 2009:304): 'Here in Africa, we teach; students listen'. Thus, whether or not one is an 'effective' teacher becomes a function of how well one carries out those activities associated with teaching. Likewise, whether one is a 'good' or 'nice' student becomes a function of how well one carries out those activities associated with learning. This schism helps in constituting students' and teachers' identities (i.e. it tells them who they are and what they can or cannot do). Possible and permissible practices are delineated. Once these boundaries have been demarcated, each group is expected to play its role. The effect of this is the narrowing of the range of possible and permissible practices and actions. Furthermore, the teach-learn schism leads to the view of school knowledge as a commodity out of the students' reach. And because the teacher's duty is seen in terms of executing prescribed subject matter, his or her work is cast in terms of 'optimizing efficient performances' (Pignatelli 1993:419). Teachers then become mere technicians who 'pass along a body of unproblematized traditional "facts"' (Kincheloe 1997:xxix). All this fits the definition of the term 'technical' by Bartolome (1994:173), which is:

> the positivist tradition in education that presents teaching as a precise and scientific undertaking and teachers as technicians responsible for carrying out (preselected) instructional programs and strategies.

The teacher's effectiveness is then judged by how well he or she transmits the ready-made knowledge. By their very nature, '[t]echnicist practices sustain and exacerbate asymmetrical relations of power in the schools' (Pignatelli 1993: 422) and, by extension, in the classroom.

Perhaps the most ubiquitous manifestation of the objectivist epistemology is in school architecture and the internal arrangement of classrooms. Classrooms in many African schools are oblong in shape. Inside the classroom, desks are

arranged in rows all facing the front (usually the chalkboard) part of the class. A diagramme of this arrangement is shown below as Figure 3.1.

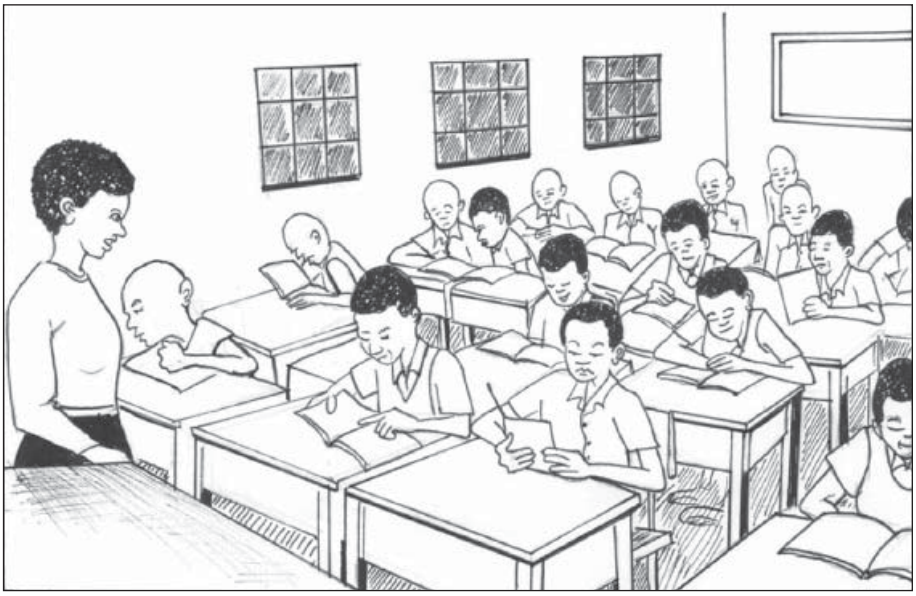

Figure 3.1: Typical desk arrangement in many public schools

All the students sit facing the front part of the class. Typically, the teacher's desk is at the front part of the classroom. How did teachers make sense of the arrangement?

Teacher 1: I always feel psychologically in control of the class when they are all facing me, and again I can also detect instances of playfulness in class when they are all seated facing me.

Teacher 2: It becomes easier to bring order in class in the sense that you are able to see who amongst your students is not listening attentively, is falling asleep, or is doing something different from what the whole class is doing.

These comments illustrate the extent to which teachers were concerned with control (which they equated with learning). Except in group discussions, student-student interactions were conspicuously absent. Perhaps such interaction would not have been in tune with the teachers' understanding of a classroom atmosphere most conducive to learning. When asked to comment on what they considered to be a classroom atmosphere most conducive to learning, two of the teachers had this to say:

First teacher: This is a classroom atmosphere in which there is maximum concentration and where the teacher has as much control as is possible to make sure that the students do not get out of hand.

Second teacher: First of all, a friendly one where there is no fear. In terms of control it all depends. When you break them into small groups, you should allow them to talk among themselves. But if you are teaching, you are not going to allow them to chat among themselves. That must stop.

Thus, any form of student-to-student talk is only considered purposive so long as the classroom activity for that time allows for it, as, for example, during group discussions. As the teachers' comments show, there exists a difference between group discussions and teaching. Group work, it appears, is not teaching proper. Teaching proper seems to be when the teacher is talking or when activities over which the teacher has full control are taking place.

Observation of lessons showed that teaching and learning was characterized by the absence of pedagogical differentiation, that is, students were involved in one task, at one given time, carrying it out at the same pace. All students had to be involved in one activity at a time before moving on to another, en masse. Indeed, the teachers did not see the need for a differentiated pedagogy. In the words of one of them, 'There is no point in having each student working at his/her own pace. After all they are going to sit for the same examination at the same time and on the same day'.

Activities, therefore, tended to be routinised, and this routinization of classroom activities inevitably leads to predictable patterns of behavior. Once this is achieved, it becomes easier for the teacher to manage the class, thereby enforcing and re-enforcing his/her authority. Teaching and classroom management become almost indistinguishable from social control.

Conformity to these interactional patterns needed to be enforced. 'Teaching by surveillance' ensured that no student did something different from what the whole class was expected to be doing. All students had to conform to one common goal. According to Foucault (1979), the classroom design was 'Panoptic' in that it facilitated the extension of the teacher's 'disciplinary gaze', which gaze ensured that students conformed to the 'norm'. Doing something other than what the teacher expected all students to be doing did not constitute 'doing school work.' By 'mass processing' the students, the teachers made sure that they (teachers) were always in control. At a deeper level, though, the classroom arrangement was an indication of the implicit

assumptions the teachers held of the nature of knowledge – the objectivist view of knowledge. The classroom arrangement facilitated the unidirectional transmission of this knowledge to the students. This required a classroom environment that was conducive, which the teachers described as one where there was maximum student concentration. One teacher summed up the rationale for the classroom arrangement thus:

> Well, it is reminiscent of the church situation where the priest stands there to impart the knowledge of the Scripture. So, basically the role of the teacher is like that of the priest. The teacher has all the knowledge and the students must get it from him.

This accurately defines the transmission-reception pedagogical style.

How, on their part, did the students make sense of the internal organization of the classroom described above?

Student 1: I think the intention is that students have to be attentive.

Student 2: It is a good arrangement because students have to face the teacher. Since they have to get the information from the teacher they must face him and be attentive.

An important aspect of the objectivist view of knowledge in the context of teaching is *teacher visibility*, where the teacher is the centre of most classroom processes. When students are seated facing the front part of the class, they are not facing empty space or the chalkboard, which is just a part of the four walls. They are facing the front part of the class which is the *teacher*. In light of the prevailing view of the nature of knowledge, a class without a teacher may not have a 'front' or 'centre'. Since it is the teacher who is the centre, she or he must never be out of sight. Students protest when this 'centre' is not visible, such as when the teacher is teaching seated. Teacher dominance/surveillance, therefore, is also *demanded* by the students. Thus, far from being an orchestration by the teacher acting on the students, teacher dominance is a demand from students themselves. This issue is taken up in more detail in Chapter Four.

The desk arrangement in the diagramme above facilitates the mobility of the 'centre' (teacher) within and around the classroom, thus facilitating the disciplinary gaze. As long as the visibility of the centre is maintained, activities may progress relatively unhampered. In situations where there is mass teaching i.e. no pedagogical differentiation, monitoring to ensure that students are doing the same task at the same pace and time becomes very important. Teacher visibility, facilitated by the arrangement of desks in rows, becomes an effective way of making sure that students conform to one common goal. This way the teacher's gaze is extended and made even more effective.

Now, all these effects of the objectivist epistemology tend to lead only to the entrenchment of asymmetrical power relations and, subsequently, to a congruent, authoritarian classroom pedagogical style.

Scientific Legitimation of Teacher-centred Pedagogy

The banking education pedagogical paradigm has its scientific backing and legitimation in behaviourist psychology which adopts a:

> view of man as a passive creature, of learning as a modification of behaviour, of the study of human learning and behaviour as not qualitatively different from the study of animal behaviour and learning (Kelly 1986:91).

As pointed out in Chapter One it is difficult to think of any discipline that has escaped the pull of the scientific method. In the field of psychology, behaviourism emerged in the nineteenth century as a direct result of the application of Newtonian cause-and-effect analysis in the study of human behaviour. Represented by the likes of Ivan Pavlov (1849-1936), Edward L. Thorndike (1874-1949), John B. Watson (1878-1958) and Burrhus F. Skinner (1904-90), behaviourism became the most influential branch of psychology in the twentieth century. The basic premise of the behaviourists was that human behaviour was basically patterned (just like the natural world) and, therefore, governed by pre-existing laws which, once discovered, would make human behaviour predictable and controllable. In the words of Tuthill and Ashton (1983:12), psychologists of the behaviourist mould 'believe that behaviour can be understood and explained by physically observable (and measurable) stimuli and response'. When applied to teaching, the behaviourist conception 'assumes that learning is caused by teachers' behaviour and that, consequently, teachers must be in total control of their classrooms' (Donmoyer 2006:22). Behaviourism, therefore, supports the mechanical transfer of knowledge from the teacher's head to the students' head. In short, behaviourism scientifically justifies teacher-centred pedagogy. This pedagogy, therefore, constitutes a pedagogical paradigm, one in which those who have been socialized share a common language, assumptions, values and goals. They inhabit a common world, one in which their thinking and actions are taken for granted. After a period of decline in the 1970s behaviourism is making a major come-back in the form of competency-based models of curriculum design. This is the subject for discussion in Chapter Eight. In the meantime, let us juxtapose teacher-centred pedagogy with learner-centred pedagogy in order to further illuminate the paradigmatic differences between the two.

Learner-centred Pedagogy: Epistemological Foundations

In Chapter One, I described learner-centred pedagogy briefly. In this section I now take a much closer look at it, the aim being to demonstrate that the pedagogy differs fundamentally from the teacher-centred one we have just discussed in the preceding section. Learner-centred pedagogy is a pedagogical paradigm whose adherents share common values, norms, beliefs and assumptions, but these differ fundamentally from those shared by the adherents of the teacher-centred pedagogical paradigm.

Learner-centred pedagogy is based on the epistemological notion of knowledge as a social construction, and that the learner plays an active role in the construction of knowledge. Such an epistemology engenders views on the classroom roles of both the teacher and the student and classroom organization that are different from those identified with banking education. In more precise terms, the learner-centred pedagogy is based on the social constructivist epistemology. Constructivism is an elusive concept precisely because its definition has a number of variants (see Nola 1997; Windschitl 2002; Terhart 2003). Its key features as summarized by Hyland (1994) are:

> …emphasis on learning as a continuous process grounded in experience, on the idea of a holistic process of adaptation through the resolution of conflicts and opposing viewpoints, and on the notion that learning needs to be regarded as a means of creating knowledge rather than merely the regurgitation and reinforcement of existing norms and traditions (p. 54).

The implications of social constructivism for teaching and learning are immense, and Terhart (2003:32) succinctly captures them in the following words:

> Learning should not be directed from the outside: it does not consist of "processing" pieces of information or knowledge which – kept ready and available outside – are actively "taken in" by the learner…. There can be no more teaching in the sense of transmitting prepared packages of knowledge divorced from concrete situations – nor can such teaching be morally justified.

With its emphasis on the 'situatedness' and 'constructedness' of knowledge, social constructivism turns the objectivist epistemology on its head: knowledge and truth cannot be absolute and certain. Furthermore, to the extent that it aims to assist learners 'lead a self-determined existence, and live in tolerant and relaxed togetherness with other human beings and nature' (Terhart 2003:33) constructive pedagogy resonates with democracy, hence international aid agencies' interest in the pedagogy.

As a view of knowledge, constructivism is informed by the empiricist philosophical tradition (of which Francis Bacon and John Locke are among its renowned representatives) which was born out of the criticisms of the rationalist theory (Sharpes 2002). It arose as a direct challenge to the central tenet of rationalism: it did not accept the rationalist notion that all knowledge comes a *priori* from the rational mind (Kelly 1986:7). In its most extreme version, empiricism rejected the notion of innate ideas and knowledge and only saw the human mind as a *tabula rasa*, a clean slate, when the individual is born. Knowledge only comes into the human mind through the human senses. Locke, for example, proposed that where there is no experience, there is no knowledge. Because knowledge cannot be independent of the knower, there is no way in which it can ever be a certainty and thus an end in itself. For this reason, knowledge is tentative and hypothetical, and, as Kelly (1986:7) puts it, 'knowledge is procedural... a means to coming to learn'. Because it is created by human beings, knowledge is a social construction and therefore can only exist a *posteriori*. Thus, on the basis of its assumptions derived from the empiricist philosophical tradition, learner-centered pedagogy refutes the rationalists' notion that there exists a body of knowledge 'out there', independent of the learner, into which the latter must be initiated.

In the sphere of education, empiricism led to priority being given to the concept of the individual, not the concept of knowledge, in educational planning (Sharpes 1988). Because of the tentative, uncertain and problematic nature of knowledge, educational planning cannot take a knowledge-centred stance; it has to be learner-centred. As Kelly (1986:7) points out, educational planning has to 'see the development of the individual as the central concern of education and the selection of knowledge content as subsidiary and subordinate to that'. Bacon and Locke laid the foundation for the 'progressive' learner-centred view of education. It was left to Rousseau (1712-1778) to develop Lockeian thought in particular into a theory of education at the centre of which was learner-centred education. This he did in the Emile. However, it was John Dewey who gave learner-centredness its current philosophical basis, and it found its scientific justification in the developmental psychology of Jean Piaget, Lev Vigotsky and Jerome Bruner. A brief discussion here of the views of Rousseau will illustrate the nature of learner-centredness. Rousseau forms the watershed between theories of the Middle Ages and those of the 'modem era'.

Rousseau was one of the first theorists of *Individualism* and his writings signaled change in philosophy and education (Sharpes 1988:28). Whereas

rationalists believed in innate depravity, Rousseau believed in the innate innocence or goodness of the child. It is society that corrupts the child and that inhibits individual freedom and liberty. He thought it essential that children ought to escape from the inhibitions of society and learn in the freedom of nature. Not only did this view challenge rationalism, it also challenged the Church's doctrine of original sin. It was for this reason that Rousseau was seen as anti-social, anti-establishment and a 'revolutionary'. Rousseau saw education's aim as to foster the liberty and happiness of the child. Education was only education through things, as he emphasises:

> I am never weary of repeating: let all the lessons of young people take the form of doing rather than talking: let them learn nothing from books which they can learn from experience (quoted in Sharpes 1988:28).

Experiencing, therefore, was to be the cornerstone of education. By rejecting the then prevailing rationalist belief that knowledge alone constituted the structure of what individuals know, Rousseau was placing the learner at the centre of curriculum planning. He proposed that the structuring of learning experiences be in accordance with the child's stage of development. This psychological standpoint was as much a harbinger of developmental theories of psychology as it 'was the acceptance of the participation as opposed to the preparation view of education' (Rusk 1954:156). One can only create the learner's interest in tasks if those tasks are adapted to the learner's capabilities. Thus, education for Rousseau becomes a matter of guiding the learner rather than imposing knowledge on him/her. Rousseau, therefore, was the first to shift the centre of gravity from the curriculum (knowledge) to the learner (Rusk 1954:165), and herein lay the seeds for the 'progressive' theories of education. All the other disciples of Rousseau (e.g. Pestalozzi, Herbart, Froebel and Montessori) emphasised certain aspects of his view of education (Kelly 1986:107). Zemiles (1987:204) has this to say about 'progressive' methods:

> Calling for openness to experience, and pointing to the importance of personal choice and free expression, progressive education negated the traditional emphasis on achieving inner control by inhibition, and competence by adult modeling.

The pedagogical implications of this educational paradigm are clear: knowledge cannot be studied employing traditional methods such as teacher-telling and lecturing. Since knowledge resides in the individual, it cannot be transferred intact from the 'head of the teacher to the heads of students' (Wildy and Wallace 1995:145). The absence of any 'bodies of knowledge' to be assimilated

by the learner means that knowledge can only be gained by 'involvement in the process of knowledge-using and thus of knowledge-getting, by the experience of developing knowledge in order to solve problems' (Kelly 1986:54). Thus the constructivist perspective holds a view of the learner as an active and purposeful being in class. This is in stark contrast to the passive view of the learner that is promoted by the objectivist perspective of knowledge. The starting point of educational planning from the constructivist perspective, therefore, is the learner and *not* the subject matter to be learnt.

Constructivist epistemology calls for school and classroom design and internal arrangements that are different from those designed with an objectivist view of knowledge. To illustrate this point, I present findings from a study I carried out in a private, independent secondary school located in an exclusive suburb of the capital city of Gaborone, Botswana (for details see Tabulawa 1995). The school's pedagogical credo was undoubtedly constructivist.

Instead of oblong-shaped classrooms, this school had hexagonally-shaped classrooms. Inside the classrooms, instead of desks for single students, were tables long enough to be shared by two or three students. Although these tended to be arranged in a more or less haphazard manner, students generally faced the teacher. The important thing, however, is that the arrangement did not appear to be formally enforced. Figure 3.2 below illustrates a typical classroom arrangement.

Figure 3.2: Desk arrangement

Going through the school's official documents, it emerged that this classroom arrangement reflected the school's philosophy. The school offered a course called 'Language, Logic and Learning' to its Form One students (the first year of secondary schooling in Botswana). Two of the course's aims were:

1. To give students confidence in the fact that they have skills in themselves that they can develop;
2. To reduce the students' dependence on the teacher, teacher notes and the textbook as a ….path to examination success.

These aims recognize learners' existing knowledge – that they are not clean slates; that self-confidence and assertiveness are valued; and, that students need to be independent, i.e. they should construct knowledge and not just depend on the 'objective' sources of knowledge such as textbooks and teachers. From what we now understand by learner-centredness, there is no doubt that these aims reflect this pedagogical credo. Right from conception, the founders of the school wanted it to be an independent institution:

> They felt strongly that such a school would need a freedom in the conduct of its affairs that could only be assured and safeguarded by making the school independent of public funds (School Yearbook 1992:4).

The school's commitment to a democratic ethos was not merely rhetoric. It was reflected in a number of its organizational features. First, the school's layout was designed with democratic practice in mind. This is confirmed by the school's Principal in his/her Foreword to the school's 1993 Yearbook: 'There is no central administration building and no claustrophobic classroom blocks' (p. 3). This decentralization of the administration was an attempt to democratize the school's structures. In terms of students' involvement in the running of the school, the school's Principal had this to say: 'The school has eschewed from the start any kind of prefect system, opting instead for an elected Student Council' (School Yearbook 1992:3). The prefect system is what prevails in almost all public schools in Botswana and functions more or less as the eyes and ears of central administration in the dormitories and other corners of the school. Although we should be careful not to exaggerate the role of the Student Council in the day-to-day running of the school, there can be little doubt that its mere existence symbolised democracy-in-action. This is not to suggest that there was no hierarchy of authority in the school. Hierarchy existed, but it was mediated by features such as the decentralized administration and the unique Student Council. The results of these features were relaxed and informal teacher-student relationships as well as democratic classroom practices. The following came from teachers during interviews:

> Here, student-teachers, relations are pretty good. Only a few students find it difficult to approach a teacher. I think this is one thing that distinguishes this school from the rest.
>
> This school's students have an independent mind. They view the teacher in a different light altogether. To them the teacher is just one of them. There is no barrier between them and the teacher.

These sentiments were corroborated by the school's 1992 Yearbook:

> Relations between younger and older members of the community are easy and informal. The reserve and submissiveness that one often finds in student-faculty relations in America is almost absent at [this school]. Instead, we share a special sense of humour that helps us with such otherwise sensitive topics as politics, religion and race (p. 9).

Regarding classroom practices, lesson observations showed that emphasis was less on the product of learning and more on the process of learning. I will illustrate this by taking a snapshot of one of the teachers' lessons (Mrs. Smith – a pseudonym), on the Okavango Delta of Botswana with her Form Four class.

Although there was ample published material on how the Okavango Delta and other lakes in northern Botswana evolved, Mrs. Smith made no reference to the material. Instead, she based the entire lesson on an extract, entitled *The Return of the Lakes,* from a local newspaper by the columnist Cliff Meyer. The extract is a fairy story of how the lakes in northern Botswana were formed, how most of them disappeared, and how they might reappear in future. In it he writes of 'raging fires', 'cities turning into rubble', 'the Kalahari sands burning with fires', and rivers 're-emerging in the Kalahari Desert' (of course there is geological evidence that the Kalahari Desert once had flowing rivers). Geographical concepts such as 'earthquake', 'epicentre' and 'depression' feature in the extract.

After introducing the topic, Mrs. Smith starts reading out the extract. Each student has a copy. Along the way students interrupt her by asking questions, talking loudly among themselves and giggling. The teacher ignores all this. One student comments:

Student: There is nothing like this. This is frightening (Class laughs).
Mrs. Smith: Quiet please. This is just a hypothetical situation. Could you please wait until I have finished reading the extract?
Student: Why does the writer use a hypothetical situation? This sounds unrealistic.

The teacher ignores the comment. Having heard the whole extract, the class starts to isolate and discuss concepts of geographical interest. For example, she asks:

Mrs. Smith: How would you describe an earthquake in the context of this extract?
Student: Mm . . . It is a destructive movement of the earth.
Mrs. Smith: Why destructive movement in particular?
Student: Because in the extract the writer talks of raging fires, cities being destroyed and the desert burning.
Mrs. Smith: Is that a convincing answer, Tau?
Tau: Yaa! I think so. It has to be destructive. Remember that when we talked about the earth's position in the solar system we said that it rotates and revolves. That is earth movement but it is not destructive. So, an earthquake has to be destructive.

[There is laughter and shouting. The teacher manages to quieten down the class and continues]

Mrs. Smith: What is the epicenter?
Student: The earthquake is underneath. But the point at which it starts, that is, the focus, is the epicenter.

Typically, the lesson progresses in this dialogue form. There are no attempts by the teacher to impose answers. When the class has exhausted defining and explaining the important concepts, Mrs. Smith poses the following question:

"Is the scenario presented by Cliff Meyer in this extract a realistic view of a possible future?"

She requests them to discuss the question among themselves. Students can be heard and seen arguing intensely.

Worth noting is that the question posed is open-ended, giving students relative autonomy in answering it and rendering inappropriate the search for wrong or right answers. It demands that students apply geographical concepts such as 'earthquake' and 'epicenter' to explain the geological evolution of the delta and other lakes in that region of the country. During the discussion there is little interference from the teacher, except for the constant reminder to minimize noise. By the end of the discussion it is clear that students have failed to reach any sound conclusions. There are shouts of: 'This is impossible', 'It is unrealistic'. Mrs. Smith then rephrases the question:

> 'Would you imagine an earthquake one day devastating the whole of southern Africa, leading to changes in climate, and rivers re-emerging in the Kalahari sands?

One of the students, seemingly off-handedly, remarks:

> 'No way. Not when we are still alive. It might happen in future, say 100 years to come.

This seemingly off-handed remark becomes the basis for the discussion of the importance of *time scale* in geological evolution. It is agreed that since geological processes take millions of years, the scenario depicted by Meyer, though exaggerated, is a possibility.

The teacher had the easier option of asking the students to name factors that influence geological evolution – *time scale* being one of them. Instead, she decides on a more elaborate, longer route to the answer. The questions posed and their contexts are such that they leave little room for the mere recall and memorization of isolated facts. Mrs. Smith does not tell the students the answer. All she does is set a context or framework within which students work their way to the answer. She harnesses the students' natural curiosity by basing the lesson on a fairy tale which she knows is going to arouse interest, thus motivating the students. When the motivation is induced and the learning context developed, students start to produce classroom knowledge. The whole learning context (of open-ended tasks and problem-solving) forecloses rote learning and opens up opportunities for dialogue, requiring students to apply concepts and principles.

It can be deduced from this extract that the school, teachers and students did not favour transmission of knowledge from the teacher to the students. In interviews with both the teachers and students, it was very clear that lecturing at the students, as one teacher put it, 'can't work with these students'. It was an elite school of students of middle-class background. There was no doubt in my mind that pedagogical processes in the school approximated learner-centredness.

ScientificJustification of Learner-centered Pedagogy

Just like teacher-centred pedagogy, learner-centered pedagogy has its own scientific justification – in developmental psychology, of which the most famous representatives are Piaget, Vygotsky and Bruner. This branch of psychology emerged as a reaction to behaviourism's neglect of mental operations. These psychologists were not only concerned with the way children learnt, they were also concerned with the way children developed. They stressed the distinction between learning and cognitive development.

Developmental psychology posits that children develop intellectually by structuring and restructuring their perceptions of the environment and by active forms of interaction with that environment. Intellectual development, therefore, cannot take place through a passive process; it has to take place in a process characterised by physical and motor activity. Thus the developmental

psychologists' view that true learning comes from the experience of genuine interaction with the environment can be considered a scientific justification of the views on learning expressed by Rousseau and later developed John Dewey.

The fact that the two pedagogical paradigms are each scientifically justified by two opposing schools of psychology only serves to highlight their fundamental paradigmatic differences.

Conclusion

I have attempted in this chapter to demonstrate the potential of the concept of paradigm in helping us understand the nature of pedagogical change. Seeing teacher-centred and learner-centred pedagogies as two incompatible paradigms, given their diametrically opposed epistemologies, helps us to appreciate the problematic nature of change, contrary to the view promoted by the dominant, technical rational model. Thus, learner-centered and teacher-centered pedagogies are a world apart from each other. They differ fundamentally, and therefore treating them as if they form a continuum (along which teachers and students can be moved from one end to the other) and are informed by the same underlying assumptions about knowledge is erroneous. Thus, the expectation by curriculum developers in many African contexts that teachers and students change from their teacher-centered pedagogical style to learner-centered one is necessarily to expect them to make a paradigm shift. History, however, testifies that it is never easy to shift from one paradigm to the other. Pogrow rightly observes that '[w]hile paradigm shifts are important in the evolution of knowledge, they are extremely rare; most fields do not even have one per century' (Pogrow 1996:659). Education is one such field. Thus it takes more than mere advocacy and in-service training to convince teachers to shift from one pedagogical style or value-system to the other. To change from one pedagogical paradigm to the other necessarily requires that teachers abandon their taken-for-granted classroom world for another world with which they are not familiar. This has serious implications in terms of their accumulated skills and knowledge used for solving the practical and often unpredictable classroom dilemmas they encounter on a day-to-day basis. It is, therefore, not surprising that teachers tend to resist such change. The problem with the technicist approach is that it does not view the shift from a teacher-centered to a learner-centered pedagogy as necessarily entailing radical change. Sarason (1990:90) made an instructive observation that '[c] hanging the regularities in the classroom is a very complex, demanding, and

personally upsetting affair'. Inherent in the concept of paradigm shift is the notion of radical change. But radical change is never easy to accomplish.

In the next chapter, I present study findings that demonstrate that teacher-centredness as the paradigmatic location of students and their teachers in public schools in most sub-Saharan African schools is constructed not by teachers alone acting *on* the students, but rather by teachers acting together *with* students. Through a process of *co-construction,* both teachers and students jealously guard their teacher-dominated ambiance because it is their taken-for-granted world. It imbues their actions with meaning and intelligibility. The concept of *co-construction* directly challenges the often implicit assumption in classroom research that it is the teacher acting *on* the students who constructs the teacher-centred classroom environment. The rendition complicates further pedagogical change in that contrary to what technical rationality preaches to us, students are an important factor in pedagogical change.