

A Whole School Development approach to Subject literacy

Dr Anne Samson, Education Advisor, Village Education Project Kilimanjaro

'The teacher in a village school who themselves have struggled only to a doubtful Grade VI or Grade VII level is always teaching to the limits of their knowledge. He/she clings desperately to the official syllabus, and the tighter it is the safer he/she feels. Beyond the pasteboard covers of one of the official textbooks lies the dark void where unknown questions lurk. The teacher is afraid of any other questions in the classroom but those he/she asks, for they are the only ones to which he/she can be sure of knowing the answers.' (Beeby 1966 in Wort, 1998)

The above quotation although published in 1966, is still prevalent today in many of Tanzania's primary schools, although the safeguard of the official textbook has been replaced by that of the syllabus.

Much work and research has been done on literacy, how best it should be taught, which language should dominate primary education where there is a national and a first language or two national languages, how to develop literacy through other subjects such as numeracy and so forth. However, little attention has been given to subject literacy – the language needed to be confident and competent in a subject area or 'being able to participate in appropriate ways in the discourse of one's chosen discipline, to enquire, interpret, hypothesise and challenge – in short to negotiate meaning' (Ford et al, 2008, p47). One of the consequences of neglecting the area of subject literacy is the situation described in Beeby's quotation above.

The resulting lack of confidence that teachers have in their subject matter translates into 'chalk and talk' type lessons often with the teacher reading the instructions or method out of the teacher's book whilst delivering the lesson. This may be accompanied by the teacher losing their temper or with corporal punishment, despite the latter being banned under Human Rights legislation. Rightly or wrongly corporal punishment is still found in schools across Africa (as evidenced by the Tanzanian district official who lost his job for using corporal punishment on his teachers - BBC). Without getting into a debate about corporal punishment, it appears that as teachers become more confident in their subject knowledge, the extent of corporal punishment reduces in the classroom. This is understandable as teachers are not getting frustrated with their own inadequacies and suffering the fear of 'not knowing the answer' or being 'shown up' by their pupils.

Until teachers become confident in the language of the subjects they are required to teach, they will not embrace more child-centred methodologies such as 'participatory learning'; which in itself is part of another subject literacy, that of teaching. This leads to an important point about subject literacy – the definition of subject specific terms must be clearly understood by all concerned or it leads to confusion.

The following example should help clarify what is meant by subject literacy. It is knowing that '+' in Maths means addition ($1+1=2$) or a positive number (+2), whilst in English it can be an abbreviation for 'and', 'plus' or 'also', and in Science it denotes a positive force (e^+) or is part of an equation ($v=\frac{a+b}{c}$).

A teacher who is confident in English but new to teaching Maths might well be aware of '+' as addition, but not to denote positive numbers on a continuum and therefore have even less understanding of the sign as an indicator of a positive force in Science.

Another example from a secondary science syllabus concerns the introduction of 'a "charges-transferring-energy" model, so that the behaviour of electric circuits is explained in terms of constant electric current and energy transfer' where 'students simply refer to "electricity"' (Ametller et al, 2007, p484).

As indicated above, teaching terms also need to be clearly understood by all. Our investigations suggest that each group has its own definition of 'participatory methods' – Teacher Training Colleges, the Inspectorate, teachers, Teacher Resource Co-ordinators, Ward and District Education Officers etc. As a result, the teachers are not clear what the participatory method is and although they are confident enough to talk about using the method, on close questioning, it becomes clear that they do not really know what it entails. This was further confirmed through a chance observation at a Teacher Training College where a group of students was being taught the different methods of participatory teaching in a totally orally discussion. The students were asked to think of methods themselves relating to different categories but no real definition of each ('participation by speaking' and 'participation by doing') was given. The lesson was delivered primarily as a 'chalk and talk' lesson, although students were encouraged mainly in the second part of the lesson to give examples and ask questions. Afterwards, the teacher asked if there were any recommendations. The thought of getting students to come up with methods in pairs before feeding into the class seemed to be a novel one. In the primary classrooms, I have yet to see a child ask a spontaneous question in a lesson although individuals or small groups will be involved in measuring doors, desks and writing answers on the board whilst the remainder of the class looks on. Amongst the more confident teachers, group work will be seen.

The extent to which a teacher engages in participatory methodology is determined by their level of confidence in their subject and teaching skills, irrespective of age or gender. Having subject literacy however, is not enough to make teachers more participatory, they need confidence in their skills as teachers too. This is clearly evidenced by one of our teachers being an expert at mathematics but not having confidence in his skill to change the way he delivers the subject. Since working – planning and team teaching – with the volunteer project leader, his confidence has increased.

The improvement in subject literacy, that is subject content, has a direct impact on the extent of participatory learning which takes place in a classroom. The more literate the teacher is in their subject and is able to make links to other subjects, the easier it is to design appropriate activities which include the pupils. This is due to the teacher not having to worry about the basic aspects of the subject and can work out any difficulties with the pupils. In other words, teachers are more flexible in their application of knowledge, knowing that there is not only one correct way of doing or saying something. This is reinforced by Flynn (2007, p139) who quotes Hall and Harding (2003, p3): 'The "effective" teacher of literacy [including content] uses an unashamedly eclectic collection of methods, which represents a balance between the direct teaching of skills and more holistic approaches. This means that they balance direct skills teaching with more authentic, contextually grounded literacy [and content] activities. They avoid the partisan adherence to any one sure-fire approach or method'.

Flynn (2007, p139) continues that studies by Hall and Harding (2003), Topping and Ferguson (2005) and Wray et al. (2002) 'have given us valuable insights into the nature of effective teaching for literacy, but they lack, perhaps, the level of detail that student teachers need.' The level of detail which Flynn refers to is the understanding of terms 'such as "higher-order questioning", "meaningful literacy experiences" and "effective dialogue"'. Experienced teachers

understand what these terms mean, but for the student teachers of her study they were 'a code that is indecipherable, if not presented alongside rich and concrete exemplar material, reflecting effective practice current in primary schools.' The same holds for our teachers in Tanzania, who since Universal Primary Education from the 1970s have not had the same grounding in their education as those before. The need for teachers to have 'concrete exemplar material reflecting effective' participatory methodology related specifically to their subject and standard or level of teaching is crucial for our teachers to understand what is required of them. This is explored in more detail in *Literacy and the English Primary Syllabus* by Katy Allen (2009).

Initially, it is expected (and has been observed with competent teachers repeating the same participatory lesson every time they are observed irrespective of the time of year) that teachers will use the same lesson plan and resources each time they teach a particular lesson. However, it is envisaged that as teachers become more knowledgeable in their subject content and experience alternative delivery methods through actual demonstration in front of a whole class of pupils and peer teaching with a more experienced teacher, they will begin to vary their lessons, a point supported by Hall and Harding (2003 in Flynn, 2007, p138). As identified through a DFID study in Swaziland (Lubbin et al, 1995, pp10-11), peer teaching is valuable because it:

1. provides experience of teaching;
2. enables learning from others;
3. covers the curriculum;
4. provides time to consolidate learning;
5. builds confidence.

In contrast to the Swaziland findings, however, the teachers involved in the Whole School Development (WSD) approach have not found it difficult to embrace peer teaching as there seemed to be a culture of it already in place at the start of the programme. The teachers were keen to see participatory methods in action so that they could see what was being explained and have evidence that the methodology worked with a large group of pupils. Some teachers, though, have resisted it due to their reluctance to engage with new ideas and their lack of content knowledge, a finding which is reinforced in the Swaziland study (Lubbin et al, 1995, p11). In other words these teachers feel safe in the structure they currently use and as set out in the syllabus. Perhaps, the biggest concern regarding the peer teaching approach is that there is not enough time for preparation and that some teachers see the opportunity to further their own agenda which is not necessarily related to developing their teaching skills. This was a particular feature at the beginning of the WSD programme but soon most teachers saw the benefits to be gained.

The more teachers become confident in their subjects, the more they will be able to cross reference within the teaching of a subject. The curriculum at present is overloaded, and perhaps should be reconsidered now that secondary schooling has become a focus. However, this should not disguise the fact that if teachers were to make links for pupils across subject disciplines, they will be able to develop higher order skills more quickly. Take the following example from Singapore (Silver, 2008, p114) on ratio, proportion, and rate, with several problems for students to solve:

- a) Sarah is preparing a fruit juice.
- b) For every 2 apples, she uses 3 pears.
- c) If she uses 4 apples, she will use 6 pears.
- d) If she uses 6 apples, how many pears will she use?
- e) How many apples will she use when she uses 12 pears?

The teacher and class 'discussed the purpose of the problem overall, the purpose of the language used, the differences in using statements or questions (eg explanation as seen in (a) to (c) and problems to solve in (d) and (e)). We discussed the different grammatical realizations of these two purposes, and noted the use of statements and questions as well as the lack of instructions or directives. Subsequently [she] highlighted grammatical complexity, including the change in grammatical structure from (d) to (e) and the use of *if* versus *when*. This example was a revelation for those who had previously agreed with the initial trainee statement, "There isn't much English in a Maths lesson." The same would hold if the language was Kiswahili. This example provides support for the WSD programme approach that all teachers attend all subject literacy/content sessions so that they can develop their own skills and knowledge. Apart from being able to make links to help their pupils develop thinking capacity, there is a more fundamental reason: in Tanzanian primary schools, unlike in the UK and other countries where the same teacher will be with their class virtually all day, teachers teach different subjects and are expected to teach any of the curriculum subjects at short notice, even if they have not taught it for some time. They therefore need to be prepared and confident in all the subjects in the curriculum.

Another related aspect the WSD programme has had to focus on is the perceived notion of what a teacher is and should be; findings which are supported by (Chambers Cantrell & Callaway, 2008, p1741). The general perception is that the teacher is the fount of all knowledge and has to know everything about everything they are teaching. They are not allowed to show emotion and need to keep strict control in their classroom, ie children are not allowed to talk unless spoken to. This, however, is not a natural way to learn. Working with individual teachers has shown a sense of humour and creativity which seldom featured in the classroom. Added to the lack of subject literacy, the recipe was set for disaster – these teachers were often regarded as the worst. Since being shown that it is safe to let their humour out in the classroom, particularly when teaching 'stories' or literature, whilst still maintaining control, greater learning has started to take place in the classroom together with an increase in participatory learning.

As identified above, improving subject literacy in itself is not sufficient to improve teaching and learning although it is a fundamental aspect of it. It needs to be supported by improvements in pedagogy or teaching methodology as well as having the peripheral structures in place. This is another feature of the Swaziland study which supports the work of the WSD programme, namely in-school support.

The WSD programme makes use of the weekly double period Dini or religion where the pupils are taught by the local evangelist. Permission was granted by the District Education Officer (DEO) for this time to be used for in-service training which brings the development to the teachers in their environment. There are, however, some drawbacks in that teachers get distracted by administrative tasks and marking. As these sessions are scheduled to take place every week during the academic year, it has become important to embrace a flexible approach so that teachers are able to complete important tasks in preparation for Standard VII examinations – as on average teachers, including the head teacher, only have three 40 minute periods free in a week. The value of the input sessions is seen in that teachers are now prepared to use some of their lunch or tea break to extend the input sessions.

The timetable for input is structured so that the peer teaching and content input sessions are not seen as a 'teaching practice situation' (Lubbin et al, 1995, p11). In addition, one week in four sessions is set aside to deal with management issues relating to the school such as developing a school ethos, the importance of assemblies, engaging parents and so forth. A Senior Management Team consisting of the head teacher and two deputies has also been established.

These structures allow the teachers to see how the different aspects of the school all link together to provide a quality education. It also provides an opportunity to identify what additional work teachers are undertaking and to explore ways to complete this more effectively as well as using the opportunity to develop wider subject knowledge. For example, when completing the school budget, mathematics and problem solving can be developed.

There is still a long way to go in developing teachers' basic subject literacy, both content and methodological, especially if our aim is for children to be sufficiently empowered to ask questions in the classroom and 'Through the careful support and pacing of their learning – both in the detail of explanation and teacher modelling, and in the incremental build-up of skills and knowledge over time – [make] connections for themselves' (Flynn, 2007, p145). As Naidoo and Samuels (1993 in Lubben et al, 1995) note and as we have seen through seminars in the WSD programme, 'given appropriate opportunities, teachers in Southern Africa can be active and creative participants in curriculum development, although the vast majority do not initially see themselves as materials producers.'

The next task of the WSD programme is to extend the programme to three new schools making greater use of existing personnel in as the Teacher Resource Centres and the local Teacher Training College. Both groups have been involved in the programme to date, but the plan is to formalize the structure more. This move resonates with aspects of the National Correspondence Institute or NCI where teachers were trained on the job but completed their pedagogical and content aspects through distance learning supported by supervised group sessions (Wort, 1998, pp44-46). Our programme, however, plans to do the distance learning aspects through inset as work by Vulliamy (1988) and MacDonald and Rogan (1990) indicate 'that innovations in the syllabus, examinations, textbooks or teaching strategies are resisted by teachers, unless self-confidence is built through well-planned INSET support' (Lubben et al, 1995, p10). In this way, too, the links between subject content and methodology can be explored which will make the learning more real.

Teaching is not a straight forward task. It requires, as seen above, literacy in a number of areas, namely their language, traditional subject such as geography, science and maths, teaching methodology and management aspects. The more confident teachers are in each of these areas, the easier they are able to manipulate aspects of their work and to improve the learning experiences of their pupils. Of these literacies, those of the teacher's own language and the subject they teach are the most fundamental for embracing new ideas.

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