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Vygotskian methods of teaching and learning in the English classroom: the case of grammar

A B S T R A C T This paper describes an alternative approach to the teaching of concepts related to the English curriculum, namely literature, writing summaries and grammar. It combines a shift in the theory of school learning development by a combination with a psychological theory of development. The research was conducted over the period of six months with a class of 20 Grade 10 girls at a private convent school. A method was designed which included the concepts of "mediation", "the zone of proximal development," "the double move", using the classical interpretations. In this paper, the research on grammar is described; specifically, parts of speech. The result of this teaching experiment was a very high level of English grammar learning in the classroom.

Key words: Vygotsky, Hedegaard, Wells, Tharp and Gallimore, grammar, mediation, zone of proximal development, collaboration.

The General Aim of this Research

This research – using a case study method – aimed to test the theoretical construct of the zone of proximal development and some of the ideas surrounding Activity Theory proposed by the Russian Socio-historical School – comprising of the initial work of Vygotsky (1978) and the extension of his ideas by his fellow researchers, Leont'ev and Luria. This research took place within a classroom environment and combined school teaching with psychological theory development. This research leaned heavily on the work of Hedegaard (1996, 2002, Chaiklin & Hedegaard, 2003, Hedegaard & Chaiklin, 2005, Hedegaard & Edwards, 2012) and her idea of a "double move" (see also Davydov 1982, 1988) as well as the ideas of Wells (1999a, 1999b, Wells & Claxton, 2002), Tharp & Gallimore (1988) and Gallimore & Tharp (1990).

The research detailed below aimed to shift the perceptions of 20 students at Grade Ten level –15 and 16-year-olds – in a number of areas of the English syllabus. It also aimed at increasing the enjoyment and confidence of these students in order that they could gain competence

and improve their skills. The focus of the total piece of research was on the acquisition of the following skills as specified by the curriculum: Parts of Speech within the Language component of the syllabus; Summary Writing within the Writing / Language component, and the writing of a Literature Essay within the Literature component. The Grammar component is described here. The class involved in this teaching experiment was not streamed according to ability, so there were students who are gifted and able to use language skills with ease and some who struggle with even simple concepts such as basic sentence structure and vocabulary.

The zone of proximal development and other central ideas concerning pedagogy was developed by Vygotsky (1978, 1998) and his collaborators in the Socio-cultural School. (This study is not in the broader paradigm of "Cultural Historical Activity Theory", but sticks closely to the Cultural Historical version of Michael Cole 1995.) Moll (1990:15) makes the strong statement that Vygotsky brought psychology into education, and that education was Vygotsky's central concern. Wertsch (1990:113) agrees with Moll (1990) and makes the further claim that Vygotsky's Socio-cultural approach to mind can be characterized crucially by the tools and signs which mediate learning.

The second point made by Wertsch (1990) concerning the importance of the social is one that is very important in this study. Moll (1990:ix) maintains that modern education neglects the "paramount importance of contextual factors to thinking" and the fact that very few teachers seem to recognize that, "cognition is embedded in the social and cultural world." According to Rosa and Montero (1990:83), "Cognition is a social product that is achieved through interaction." Cole (1990:91) makes the claim that:

> The fundamental postulate of their approach [the Socio-Cultural school] is that human psychological functions differ from the psychological processes of other animals because they are *culturally mediated, historically developing*, and arise from *practical activity*. (Emphasis in original.)

Vygotsky (1998:198) is interested in the "social situation of development" (rather than the open-ended concept of context):

> ... at the beginning of each age period, there develops a completely original, exclusive, single, and unique relation, specific to the given age, between the child and reality, mainly the social reality, that surrounds him. We call this relation the *social situation of development* at the given age. The social situation of development represents the initial moment [aspect] for all dynamic changes that occur in development during the given period. It determines wholly and completely the forms and the path along which the child will acquire ever newer personality characteristics, drawing them from the social reality as from the basic source of development, the path along which the social becomes the individual. (Our emphasis)

The idea that all knowledge is embedded in a social situation is of acute importance when teachers are planning a curriculum, structuring exercises for a class or deciding on the most effective pedagogical methods to use, in order to make a meaningful and lasting, learning experience for their students. To isolate the child from her larger situation and to disregard the importance of the social in the learning process is to render learning a meaningless and

fruitless task. Rote methods of pedagogy, requiring as they do, regurgitation of endless facts by students, serve no purpose except to frustrate and bore the students, and, while most teachers are aware of this, they either can't or won't change.

Tharp and Gallimore (1988b:19) concur with the views outlined above:

> Vygotsky argued that a child's development cannot be understood by a study of the individual; one must also examine the external social world in which that individual life has developed. In schools, we can understand the child's developing mind by studying the *social interactions of teaching and learning*. (Our emphasis.)

Wertsch (1990:121) terms the discourse that happens within most classrooms as "decontextualized". He goes on to claim that: "A great deal of the activity of formal instruction focuses on encouraging learners to master discourse grounded in decontextualized forms of representation."

It may then seem very difficult for teachers to engender change in the face of external examinations of students. In South Africa however, with its policy of Outcome Based Education (now altered), radical innovation is expected and not attained. The Department of Education talks contemptuously of 'non-compliance' on the part of teachers. But teachers are paralysed through lack of assistance to change. The kind of teaching described in this study epitomises OBE in a most constructive form—a rare achievement.

Tharp and Gallimore (1988a:21) state that in order to move towards a system that is more conducive to real, meaningful learning:

> *Teaching must be redefined as assisted performance. Teaching consists in assisting performance. Teaching is occurring when performance is achieved with assistance.* (Emphasis in original.)

Teaching as "assisted performance" is an extremely appealing notion which will be outlined in greater detail below. This term could be seen as a particular form of mediation.

Learning is seen as a product in traditional forms of education. But what of the social structure of the *process*? Vygotsky (1987:169 as cited in Moll, 1990:2) wrote about the importance of the social organization of instruction and called it the: "[U]nique form of cooperation between the child and the adult that is the central element of the educational process […] knowledge is transferred to the child in a definite system."

Effective teaching—assisted performance—only appears to happen when the teacher has achieved a high level of competence in her subject matter and she is *unafraid* of moving in any direction that either the subject matter or the students move her. Tharp and Gallimore (1988a:17) claim the following in this regard: "To do more than manage activities and allow students to learn on their own, teachers must command the knowledge and skills they seek to impart."

Hedegaard (1996) uses this notion of *acute teacher competence* as one of the cornerstones of her research because as she claims, the teacher has to have the knowledge in order to "move" the students to the desired outcome. We return to this concept below.

The fact is that the discourse practiced in schools is a totally different form of communication, where the words themselves are "the object of study." (Moll, 1990:10) It is up to the teacher

to enable students to make meaning of the discourse and to make learning meaningful; our perception is that the student will not achieve self-regulation if the discourse of the classroom is not made meaningful.

The more learners talk about their learning, the more they are challenged to explore ideas and make and negotiate their own meaning the more successful their 'learning' will be. Why is it then, that so few teachers are using collaboration as an integral part of their practice? A part of this research included a survey with the students, asking them about effective teaching styles and methods and to highlight which types of 'learning' they find to be most successful.

An Extension of Vygotsky's Ideas – The Socio-historical School's Notion of 'Activity Settings'

Activity Settings

Tharp and Gallimore (1992:189) make the claim that where collaborative interaction, intersubjectivity and assisted performance occur, *teaching* occurs and can be referred to as *activity settings*.

An activity setting, according to Gallimore and Tharp (1990:190):

> … incorporates the two essential features: the cognitive and motoric action itself (activity); and the external, environmental, and objective features of the occasion (setting). They are the who, what, where, when, where and why, the small recurrent dramas of everyday life, played on the stages of home, community, and workplace.

Gallimore and Tharp (1990:192) explain further that:

> For each of the [three] legs of Vygotsky's theory of education, there is a crucial concept. For the theory of teaching, the zone of proximal development is the cornerstone. For the theory of schooling, activity settings are the key. (Our insert.)

All three of these areas will be addressed within this paper.

The Potential for Learning – the Idea of the Zone of Proximal Development

The classic definition of the zone of proximal development is that learners are more capable of learning or solving problems with a more able peer or adult, than they would be if they were addressing the problem on their own. Vygotsky, in passing, refers to a *group* as well (1998). In this research, the class's zone of proximal development is created, along the lines of Hedegaard (1996).

The concept of the zone of proximal development has become part of the folklore of teaching, and when this happens, concepts get leached of their meaning. A simple Google search yields 1.4 million hits on the concept. Every undergraduate teacher can recite the mantra of the more capable other. Luckily in the last decade, even in the last five years there have been a small set of a few dozen highly critical articles and chapters on this concept (e.g. Chaiklin, 2003, Zuckerman 2007, Levykh, 2008, Hakkarainen & Korepanova, 2009, Roth & Radford 2010), questioning the way it has been understood, and helping us to reconceptualise it: some of the queries that have been raised are that there is a vagueness regarding the process; that there is a failure to consider developmental aspects; that there is a disregard of children's individuality,

and that there is a vagueness concerning the precise meaning whereby learning is produced. While Roth & Radford would like to move beyond the orthodox paradigm by reconceptualising the nature of communication, Levykh (2008) believes that apart from emotion, we can safely stay within the orthodox Vygotskian paradigm which covers cognitive, social, cultural and historical factors. He then says (2008:83): "culturally developed emotions must mediate successful establishment and maintenance of the ZPD to be successful". He goes on (2008:99) to list nine positive outcomes if affect is well-established.

Each individual child will move through a generic, set activity and achieve her own level of competence for that particular task. An added extremely important facet when considering the construct of the zone of proximal development is that each individual task has its own unique zone of proximal development. In a series of lessons designed by a teacher, she has to formulate a new zone of proximal development for that task.

The teacher has to be aware of the capabilities of her students and set activities that allow each student to achieve her maximum potential by the completion of the set activity. This is an extremely complex and time-consuming exercise for the teacher and as stated previously, the teacher has to be highly competent on the content knowledge and exceptionally conversant with the range and ability of her students. The series of lessons designed for this research paper aimed to meet this criteria operating within the zone of proximal development. Each series of lessons was different and used various means in order to move students through the stages of the zone of proximal development for that specific task (Tharp & Gallimore, 1988b).

Moll (1990:13) explains that the focus of such lessons or activities would not concern the "transferring" of skills from learners who "know more" to those who "know less", "… but on the collaborative use of mediational means to create, obtain and negotiate meaning." The role of the adult (in this case the teacher) is to: "[A]ssist learners in appropriating or taking control of their own learning." The lessons designed for this research paper will demand this *agency*—taking control—from the students. The collaboration with peers and the teacher and the mediation of the texts and materials will also demand active participation from the students. It is highly structured activity, quite different from simplistic views of teaching by way of groups.

The Role of Instruction

According to Wells (1999a:328):

> Teaching certainly involves preparation, instruction and assessment; but to be truly effective it also involves the ongoing co-construction of each student's zone of proximal development and on-the-spot judgments about how best to facilitate his or her learning in the specific activity setting in which he or she is engaged.

Teachers themselves have to move through their own zones of proximal development for each task. They need to consult with their own peers and colleagues and decide on the most appropriate strategies to use within their own classrooms in order that they can then 'move' their students. In this study, this was not possible. The other teachers were teaching by rote.

Once the teacher has assessed the student's actual level of development, she can plan instruction accordingly and 'move' the student to where she achieves her potential level of development, using the tools of mediation at her disposal. This research aimed at using this approach.

It is possible to use and adopt different approaches when utilizing the theoretical construct of the zone of proximal development within different contexts. Hedegaard (1996, 2002 *et passim*) maintains that it is possible to establish the zone of proximal development of an entire class and modify instruction accordingly. Her 1996 research article (developed more in her 2002 book) seems to support this claim, as does the research, which is outlined in this paper. It is possible to set a generic question and for students to engage with and answer that question at completely different levels. The level at which students will engage with the material is also different, according to their level of maturity.

Scientific and Everyday Concepts

Moll (1990:9) maintains that Vygotsky (1978) placed great emphasis on two characteristics of instruction: "One was the development of conscious awareness and voluntary control of knowledge, which he thought of primarily as a product of instruction." The second, according to Kozulin (1990:223), is that Vygotsky (1978) believed that scientific [schooled] concepts—only acquired through formal instruction as school-based knowledge—occur in advance of everyday concepts and that through careful instruction these scientific concepts become a part of the child's everyday knowledge. Vygotsky (1978 in Kozulin 1990:223) called this, his 'General Law of Cultural Development' where:

> [I]n working its slow way upwards, an everyday concept clears the path for a scientific concept in its downward development. It creates a series of structures necessary for the evolution of a concept's more primitive, elementary aspects, which give it body and vitality. Scientific concepts in turn, supply structures for the upward development of the child's spontaneous concepts towards consciousness and deliberate use.

In order to make learning meaningful and applicable to the life of the student, the student needs to learn to use these scientific concepts voluntarily and manipulate them at will in order to achieve mastery and control over them. It is when the student can achieve mastery over scientific concepts, that scientific knowledge has become deeply embedded and has become a part of the child's "retrievable system" of everyday knowledge. The child will then be capable of achieving self-regulation – which should be the end-point of any learning experience according to Vygotsky (1978).

Vygotsky (1978) criticized the view that instruction must be oriented towards already completed stages of development, which is what rote learning aspires to do. Vygotsky argued instead that:

> Instruction is good only when it proceeds ahead of development. It then awakens and rouses to life those functions which are in a stage of maturing, which lie in the zone of proximal development. […] It is in this way that instruction plays an extremely important role in development. (Vygotsky, 1956:278 as cited in Wertsch, 1985:251)

The use of the theoretical construct of the zone of proximal development by a teacher in a classroom situation implies that she must have a working knowledge of how the construct operates and functions. She must understand the theoretical ideas surrounding the construct and how it might be used to facilitate lesson design and learning. It appears as if a zone of proximal development can be created for any series of lessons and can be used with any task that has been designed and structured carefully. This is a powerful notion of which all teachers who truly wish to teach their students effectively need to take cognisance.

The Germ Cell Model and Double Move

The germ cell model, which is associated with the double move, has a long and illustrious history, from Goethe, Hegel, Marx, Engels, and Vygotsky. It is lately attributed to Davydov (1982). Unfortunately this work is in German, so here we offer a description given by Hedegaard (Internet):

> In his theory of knowledge and thinking, Davydov succeeded in solving the problem between situated and abstract knowledge and integrated these conceptions into a connected theory of knowledge and thinking. His use of *germ-cell models* as a methodological tool is the key to understand this integration of abstract knowledge with the concrete complex and situated knowledge of a domain. Core concepts of a knowledge domain are seen as defining each other and become the *germ-cell* of this knowledge domain. Within the *germ-cell model* these key concepts are depicted as dialectically related so that these concepts are each other's conditions. When pointed out, these key conceptual relations would be obvious in all concrete cases within the knowledge domain of the subject area. An example is the relation between work and commodity in the knowledge domain of economics, another is the relation between species and population in the knowledge domain of evolution. If one changes one of the phenomena described within these conceptual relations in a concrete case, then the other relational element also changes. (Our emphasis)

Hedegaard (1996) maintains that it is the task of the school to pass on knowledge and skills, but that often, students do not seem to be able to transfer this knowledge or these skills into their everyday conceptions. She goes on to argue that the reason for this is that most of the knowledge imparted within the school environment is *empirical* knowledge—factual or text knowledge. As such, this knowledge has very little use in the everyday lives of the students. In order to make this *theoretical* knowledge of use to the child, Hedegaard (1996:176) claims that:

> *Theoretical knowledge* must be acquired through exploratory activity. In school, this activity is controlled activity, consisting of the exploration of problems that contain the fundamental conflicts of the phenomenon. A prerequisite for theoretical knowledge acquisition is teaching activity built on tasks that illuminate the contrasts found in a phenomenon's *fundamental relations*. Through this exploration it becomes possible to gain insight into the development of the phenomenon. (Our emphasis.)

The difficulties English students have the most with, are with grammar. Hedegaard (1996:180) claims that: "The zone of proximal development can be used to guide students … from the learned and understood scientific concepts [school-based knowledge] to the spontaneously applied everyday concepts through a method of teaching has called a *double move*." According to Hedegaard (1996:181), knowledge should be acquired by students through a process of "guided investigations". Through these investigations, planned by the teacher and based on the curriculum, students will come to their own understandings and constructions of the relevant concepts. Because these constructions are of their own making, they will become embedded in the student's memory and they will be able to be recalled and applied whenever the student needs to draw on them.

These "psychic" tools such as "spoken language", "systems of notation", "works of art" "written language", "schemata", "diagrams", "maps" and "drawings" are produced through social activity. This notion is an extremely important one for the purposes of this research. The students within the classroom were going to be constructing their own knowledge, in co-operation with one another and with very little 'visible' assistance from the teacher. The "assistance" from the teacher here, would be in the form of the structuring of the relevant lessons and the suggestions during the process.

Hedegaard (1996) claims to be able to accomplish this shift from the "intermental" to the "intramental" through her idea of the "double move". In order to accomplish this "double move" Hedegaard maintains that the teacher, when she is planning her lessons, must have a deep and thorough understanding of the general laws and concepts of the subject. The lessons must be planned in such a way that they advance from (1996:190):

> [T]he general laws to the surrounding reality in all its complexity. In order to explain these laws the teacher must choose concrete examples that demonstrate the general concepts and laws in the most transparent form.

Hedegaard (1996) goes further to explain that while the teacher's planning must move from the "general" to the "concrete" – *this is the double move* – and the student's learning must develop from their "pre-conceived actions" to a concrete application of the knowledge they obtain through their research. The final step is that they should able to formulate and discuss their findings and show their understanding of the "new" concept. Hedegaard (1996) posits that the basis for instruction should be the division of the learning activity into three different types of actions:

> *Delineation of the problem, problem solution and problem construction and finally, evaluation and control.*

This progression was followed in this study.

Concluding Thoughts on Design

Wells (1999b:331-333) draws the following conclusions concerning the relevance of the use of the ideas posited by the Socio-cultural school in the context of education. Here is a paraphrase: – the zone of proximal development constitutes a potential for learning that is created through the interaction between participants as they engage in a particular activity together. The end-point of the learning process is *essentially unknown*, because each learner will achieve competence at his or her own level. Often, the end-point shifts as the activity progresses and new directions and opportunities are created that were not initially envisaged. As an opportunity for learning with and from others, the zone of proximal development is available to all participants, not only those who are more competent or those who are struggling. Each student's goals and current stage of development are important when designing materials and lessons, as well as a consideration of the end-point of the set task.

The model which was used may be seen on the next page:

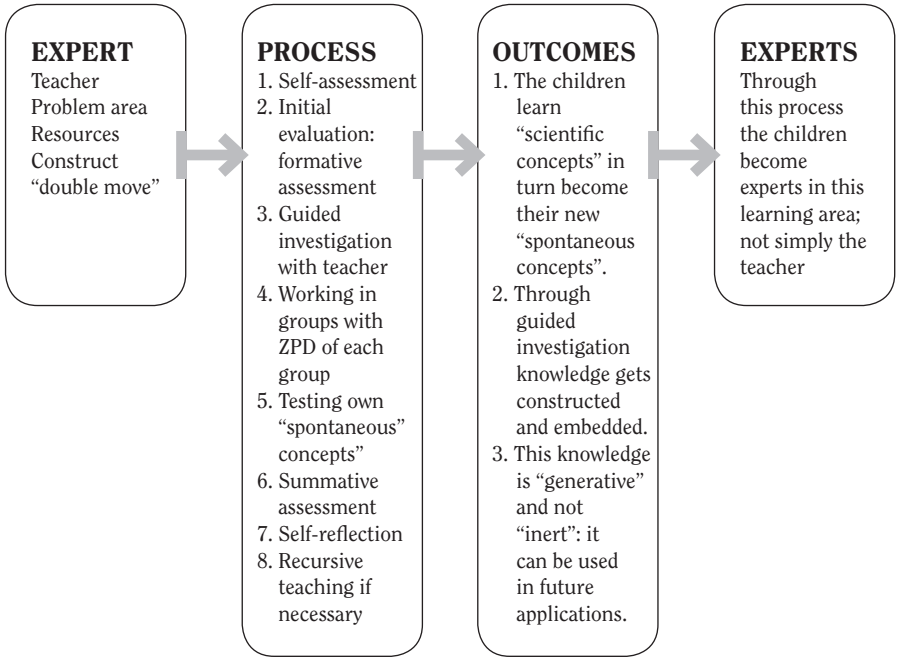

Figure 1: Diagrammatic representation of the movement through the zones of development

Lesson Series on Grammar (Parts of Speech)

Questionnaire 1

This 'pre-questionnaire' was designed in order to ascertain how students have been taught grammar previously, as well as their perceptions about their present understanding of this section of the syllabus.

Eighteen out of the 20 students who completed the survey agreed that it was extremely necessary to study grammar. Many of the girls claimed that as English is their home language, it is of vital importance that they understand its 'building blocks'. Fourteen of the students did not feel at all confident when using grammar skills. Six students felt that they were 'fine' but that they would not mind honing their skills.

Eighteen of the students stated that they had not really ever been 'taught' grammar. They were given exercises to complete and they had to use their English Handbooks in order to check their understanding of the concepts. The methods used were only rote ones. Five of the students had an excellent teacher in Grade 7 and they are the ones who felt more confident than the other 15 who expressed concern in this area.

The students expressed the need to 'learn' from their peers, but stated that they valued the input of the teacher because then they had validation for what they had discussed. At least seven students made the point that the teacher needs to be involved and that groups only 'work' if everyone is 'forced' to participate. It is interesting to note that the students felt that they learned best from their peers.

After the test, the students were asked how well they thought they had achieved in this test. The tests were marked and the class average was shared with the class. They were worried when they learned about the low average, but they were assured that it would improve when they went through the process.

The Pre-Test

This consisted of 25 sentences (50 marks) asking students to identify parts of speech. Here are three examples:

(o) This is a confusing exam.
(p) This exam is confusing me.
(q) I know that it is no good to become confused.

The results are detailed as follows:

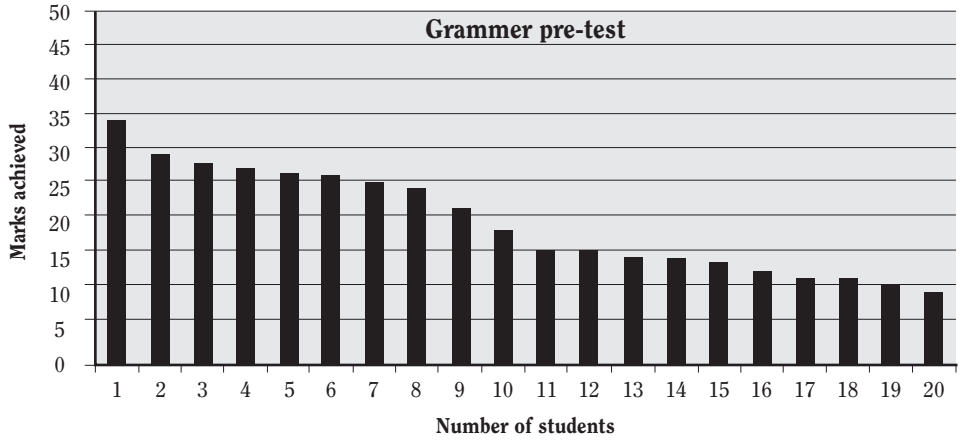

Figure 2: Pretest Results

The class average for this test was 40%. Eleven students out of 20 achieved below 40%.

Moving Through the Process:

The girls were placed into groups. Group leaders were appointed (the most capable students) and allowed the rest of the girls to choose where they wanted to work. The most able students were selected by their previous marks in English. There were five groups of four students, randomly selected. We unpacked the acronym NAPPIVAC (nouns, adjectives, pronouns, prepositions, interjections, verbs, adverbs and conjunctions) firstly in groups and then as a class. The groups were then allocated specific parts of speech to discuss – nouns, adjectives and pronouns; prepositions and interjections; verbs; adverbs; conjunctions. The groups used their handbooks and discussed and compiled notes about the various areas they were assigned. The teacher moved between groups and facilitated their discussion at this stage.

Once the groups had reached an understanding about the concepts they were unpacking, they were asked to 'jigsaw' and discuss 'NAPPIVAC' as a whole. It was very interesting because at this stage, the girls started 'seeing' that the parts of speech were related and that they all fit into a sentence like a puzzle. They began speaking about the relationships between the words

and how an adjective, for example, can only ever be placed next to a noun. They looked at 'descriptors' such as articles and how these always indicate adjectives and nouns. One of the students asked the question why parts of speech are always taught in isolation, when really, one needs to look at all of them in order to understand how these building blocks function. This was a 'breakthrough' moment for that student. Another student realised that different words can function as different parts of speech depending on where they are used within a sentence. All of a sudden the girls were excited and animated about their new understanding. When their 'new', consolidated knowledge was put on the board and overhead projector, they 'knew' the answers. They were confident when they answered questions and were suddenly 'enjoying' a 'boring' thing like grammar.

In order to reinforce the concepts, the girls were then issued with a copy of the poem *Jabberwocky* by Lewis Carroll and asked to work in their 'Jigsaw' groups. This is a 'nonsense' poem and does not contain many 'recognisable' words. The students were asked to identify the function of each word in the poem. This section of the process was extremely rewarding to watch. The girls were debating, reasoning, justifying and creating a 'sediment' of their knowledge. It was almost unnecessary to work through the answers, because they 'knew' what was correct. They were delighted with their progress. Exercises were issued to be completed at home and we told them that we would write a test the following week.

The Post-Test

Consisting of 25 sentences (50 marks) asking students to identify parts of speech. This test used the same sentences as those in the 'pre-test'. The sentences were simply shuffled around.

The results are detailed as follows:

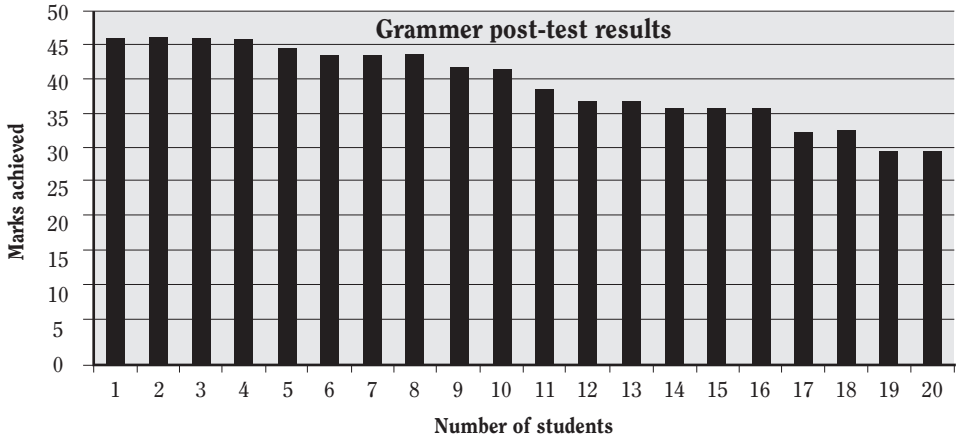

Figure 3: The post-test results

The class average for this test was 80%. Every student passed and most achieved over 60%.

The Final Questionnaire

Sixteen students reported that they felt that they had coped very well in the test. Four students struggled with English tests in general. They lack self-confidence and as one of the students

stated, she 'second-guessed' herself and this led to confusion. These students will receive some extra help and extension work – "recursion through the zone of proximal development", but there is confidence that they will master this area of the syllabus.

All 20 students indicated a resounding "yes" in response to the question about their increased competence in grammar. Among the reasons cited were, "When I learnt it in Grade 7, it was more of a parrot thing … but now I actually understand it." "I understand how the whole thing works." "On first being told we were going to be doing grammar I honestly felt like 'heading for the hills', but recently I've become more comfortable with it and am confident."

Thoughts on Grammar Teaching

The last part of this process involved the handing back of the pre and post-tests, a class discussion about the process and interviews with two of the students. A paraphrase of the class discussion and the interviews is as follows:

Initially, the students felt that the idea of providing the 'answers' for themselves and the fact that they had to come to grips with the concepts independently, quite daunting. Up to this point, they had been familiar with dealing with grammar concepts in isolated units. They would look at 'nouns', for example, in isolation and then in a week or two, 'adjectives'. They did not have much of an idea how the different parts of speech complemented each other and how they all fit together like pieces in a jigsaw puzzle. They did not know that words can perform the function of different parts of speech depending on where they are placed in a sentence. They were fascinated. All of a sudden they realized the interdependence of words on one another. One of the students remarked that when she 'saw' how they fit—during the *Jabberwocky* exercise—she suddenly felt as if she 'had' it. "All of a sudden I knew that I understood. No-one has ever 'taught' us grammar like this before. Why?" This conversation brought home the importance of English as a living, breathing entity with a life and a character that cannot be 'compartmentalised'. One of the other girls said, "I was scared of grammar, now I don't know why I was. It is not actually difficult or complicated."

I asked what they thought my role was and one student said,

> "Mrs P, we couldn't do this without you. We wouldn't know if we were right or not and we wouldn't know how to move on. You have to be there to guide us and tell us if we are going in the right direction. We can do some of the work, but we need you to tell us what we need to focus on. The lessons have to be planned by you. It is because you make us work so carefully that we 'get' what we are supposed to 'get'."

This exercise was extremely rewarding since most students really dislike grammar and these girls managed not only to shift their perceptions, but also their attitudes. These attitudes were captured in their written responses to this teaching module. This shift in both areas was one of the initial aims of the research. Because of their age, students understood what was happening to them—they saw the double move, which is unlike the work of Hedegaard, because she worked with much younger children. This paper should have shown the viability of a specific combination of differing conceptions of the zone of proximal development and act as a spur for other teachers to experiment with their own teaching. Setting up tasks which groups address

with the careful help of the teacher is the simplest level which teachers reading this paper could attempt. Competent performance is a great spur to student learning.

Final Reflections on the Research

Each student was considered when the lessons were planned. We paid attention to the fact that group work activities tend to develop a zone of proximal development for the class as a whole, where each student acquires personal knowledge through the activities shared between the teacher and among the children themselves.

The developmental stage of the learners was a determinant in the nature of the lessons: the fact that teenagers value their independence was noted. Once the students realized how much "fun" it was to "learn" this way, they became "hooked" on the idea and embraced it.

The zone of proximal development does constitute a potential for learning that is created through the interaction between participants as they engage in a particular activity together. The end-point of the learning process is essentially unknown because each student will achieve competence at their own level. Often, the end-point shifts as the activity progresses and new directions and opportunities are created that were not initially envisaged.

As an opportunity for learning with and from others, the zone of proximal development is available to all participants, not only to those who are more competent or struggling. Each student's goals and current stage of development are important when designing materials and lessons, as well as a consideration of the end-point of the set task.

As is the received position in the socio-cultural model, mediation is not only achieved by language but by other cultural artefacts as well. Texts and visual materials provide other aspects of the mediation.

Learning in the zone of proximal development involves all aspects of the learner – acting, thinking and feeling. It has the potential to transform the student's identity and ultimately the community as a whole. The classroom, therefore, as a microcosm of the broader society, has to be representative of all that is positive – a commitment to sharing, collaboration, participation, as well as individual excellence.

This type of learning involves other aspects of the learner as well and leads to the development of identity as well as of skills and knowledge. There must be an environment created of trust, mutual respect and concern. Students will learn to develop the skills necessary to act responsibly, creatively and ultimately be able to reflect on their own practice if they are allowed the opportunity for meaningful interaction.

Let Hedegaard (1996:192) have the last word:

> The zone of proximal development *must* be used as a tool for class instruction. In our teaching experiment, we saw that it was actually possible to make a class function actively as a whole through class dialogue, group work and task solutions. The teaching experiment differed from traditional instruction in that the children were constantly and deliberately forced to act. The children's research activity was central in these guided actions … .

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