EDUCATIONAL QUALITY FOR THE POOR

A LEARNING EVIRONMENTS PERSPECTIVE IN ETHIOPIAN SCHOOLS

Literatuurscriptie & afstudeeronderzoek

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PREFACE AND ACKNOWLEDGEMENTS

For several years I worked as a teacher, in particular in grade 5. During that time, I experienced that teaching is an intensive job and not easy, as it continually asks for the right actions and choices in rapidly changing situations. Notwithstanding I enjoyed it. It was my pleasure to observe the children's learning and to work together with them on different learning tasks. I liked the active involvement, personal relation and enthusiasm of the pupils. Teaching and arranging learning environments is a *fascinating* work.

Through the Dutch organisation Woord en Daad, I was able to visit different schools of an Ethiopian NGO in the period September - December 2004. The schools provide education for children from very poor families. During that time I met teachers who taught in far different circumstances than I was used to. I had the opportunity to gather in-depth information about the arrangements of learning environments, in particular by teachers from grade 5 up to 10. This study is the result of these activities.
I wish that my findings contribute to the improvement of learning environments at the schools involved in this study. That will also further the students' and teachers' pleasure in learning and teaching. In that case, education will function as a *fascinating* means in the fight against poverty in Ethiopia.

Without the cooperation of the Ethiopian teachers, I could not have done this task. Therefore I first want to thank the participants involved in this study. I especially remember your dedication to the students. You are teachers, but serve also as 'fathers and mothers' for the students.
Further I want to thank my other Ethiopian friends. The president of the NGO involved in this study, the executive director, the branch-managers, the project-manager and more staff members helped me in different ways. I still remember your kindness and hospitality.

I also like to thank my supervisors prof. dr. Gellof Kanselaar from Utrecht University and dr. Jos de Kock from Woord en Daad. Our discussions and email contacts were very useful for me. Just as the teachers who I mentioned above, you are also enthusiastic for your work. I appreciated your interest, assistance and cooperation.

Op deze plaats wil ik ook mijn ouders heel hartelijk bedanken voor hun nuchtere betrokkenheid en alles daar omheen.

I end these acknowledgements with the words of psalm 136: *Give thanks to the Lord, for He is good.*

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1. INTRODUCTION

This study reports about the arrangements of learning environments in Ethiopian primary and secondary education (grade 5-10). An interview study is conducted at three schools of a non-governmental organisation (NGO) in different parts of Ethiopia.

The Ethiopian educational policy stimulates a so-called student-centred approach in education which strives after new learning goals and interactive strategies. This approach is also stressed by the NGO involved in this study. Currently most teachers have heard about this new approach, but they are struggling with the implementation in their lessons. Furthermore the meaning of a student-centred approach is not identical for all the persons concerned. It is not known which of choices teachers currently make, when arranging learning environments for their students.

In this study the practical knowledge of teachers, in particular with regard to a student-centred approach, is explored. In 16 interviews, the teachers were asked about the arrangements of their learning environments. Special attention was given to the target group of poor students from underprivileged families who are selected for the schools of the involved NGO. The results provide a clear picture with the different aspects of learning environments and the contextual factors and conditions that influence teachers' arrangements of learning environments. All results are supported by and discussed with respect to recent educational theories about practical knowledge and - modern - learning environments.

This chapter provides a general introduction to the context of the study. Section 1.1 describes the country characteristics and educational context of Ethiopia including the role of NGOs. The second paragraph explores the educational changes and improvements which are pursued in the national policy. This continues in section 1.3 which focuses at the educational situation and policy of a specific non-governmental organisation. These information leads to the aim and relevance of the research project and the research questions which are described in paragraph 1.4.

1.1 Country characteristics and educational context of Ethiopia

Ethiopia is a sub-Saharan country in the north east of Africa. It has a population of around 70 million that is growing at an annual rate of almost 3%. Ethiopia's poverty-stricken economy is based on agriculture, which accounts for half of the GDP, 60% of the exports and 80% of the total employment. The agricultural sector suffers from frequent drought and poor cultivation practises. An OECD report (2004) concludes that Ethiopia's heavy dependence on foreign aid will continue into the foreseeable future. There is a strong need for qualitative good education to make a positive contribution to the improvement of civil society.

Out of 177 countries, Ethiopia is ranked as 170 in the Human Development Index (2004). Several indicators for this ranking are the total adult literacy rate (2002 - 41,5%), the net[1] enrolment in primary education (2001/02 - 46%) and in secondary education (2001/02 - 15%)[2].

The trend in population growth has consequences for the education sector as this may place additional strain on the education system, through increasing demand for primary and secondary education in the future. The government recorded success increasing the primary school enrolment: it doubled from 23% to 46% in ten years (1990/91 - 2000/01). Many primary and secondary schools have been built and teachers have been trained. The World Bank (2005) concludes: 'While these trends are beginning to look like a clear break from the past (see also appendix 1, table 1) in which access to even basic education was highly

[1] The net enrolment ratio is the ratio of enrolled children of the official age for the education level indicated to the total population of that age.

[2] Gender differences are not shown in these numbers. For example in 1999 the enrolment of girls in primary education was 36.6% while for boys the same enrolment was 51.2%.

restricted, there is no room for complacency if the country is to achieve the Millennium Development Goal of universal primary school completion by 2015' (p.19). Several problems with regard to educational quality and the choices for indicators to show progress in the education sector still remain.

The present Ethiopian education system includes ten years of general education, consisting of eight years primary education and two years general secondary education (grade 9 and 10), followed by two years upper secondary education (grade 11 and 12). When children reach the age of four, they can join pre-school education (kindergarten) for two years. Pre-school education is not compulsory.
Primary education is divided into two four-year cycles. Students in grade 1 up to 4 are expected to achieve functional literacy, while the second cycle prepares students for further education. General education is completed at the end of the first cycle of secondary education (grade 9 and 10). Grade 11 and 12 prepare students for continuing their studies at the higher education level or selecting their own vocations. Higher education institutions include several universities, colleges and institutes. Graduates from different grades can join Vocational Training Institutions (TVET). Teacher Training Institutes (TTI) offer one-year courses qualifying teachers for teaching in the first cycle of primary education. Diploma programmes generally last two to three years. First-degree courses leading to a bachelor's degree take four to five years. Teachers in the second cycle of primary education need to be qualified at diploma level (Teacher Trainings College, TTC), while high school teachers (grade 9 and 10) should have a bachelor degree. Table 2 in Appendix 1 provides an overview of the structure of Ethiopia's education system.

The Ethiopian education system continues to be characterised by both quantitative and qualitative limitations including shortage of classrooms, teachers, essential textbooks and other learning materials, a poor curriculum and high repetition and drop out rates, especially among girls. In general, only about 50% of all pupils who enrol in primary schools successfully complete the full cycle up to grade 8 (OECD, 2004). Comparing results for student flow in 1993/94 and 2001/02 it is clear to conclude that the system has become less efficient over time (World Bank, 2005). Due to its rapid growth of the system, pupil-teacher ratios in Ethiopia are amongst the highest in the world today (see table 1.1).

Table 1.1 Percentage distribution of Governmental and Nongovernmental Schools by range of pupil-teacher ratios, Ethiopia 2001/01

	grade 1-4	**grade 5-8**	**grade 1-8**	**Grade 9-12**
Government schools	75,2	48,8	65,3	51,5
Non Government Schools	48,3	35,1	42,2	20,0

Source: World Bank (2005, p.134)

In table 1.2 a distinction is made between governmental schools and nongovernmental schools. Schools in Ethiopia fall into those two broad categories. Most students join governmental schools. Although the nongovernmental schools serve three times the number of students in 2000/01 than they did around 1970, their proportion of the total enrolment fell from 24% to 4% in 2001. Table 1.2 provides an overview of the numbers of students and schools.

Table 1.2 Distribution of Primary and Secondary Students and Schools by sector, Ethiopia 2001/01

Levels of education/item	Number	Percentage share by sector	
		Government	Non-government
Primary education			
Schools	11.754	94,9	5,1
Students	7.876.188	95,3	4,7
Secondary Education			
Schools	436	87,6	12,4
Students	679.377	97,7	2,3

Source: World Bank (2005, p.134)

According to self-reporting by the schools, the proportion of schools with good or excellent conditions is respectively 26,1% and 63,2% of the governmental and nongovernmental primary schools and respectively 33,2 % and 91,8 % of the governmental and nongovernmental secondary schools (World bank, 2005). This numbers illustrate the differences in financial resources.

In a study of USAID's bureau for Africa (2003), the role of NGOs in basic education in Africa is examined. Governments and NGOs play both a role in the improvement of basic education and can provide services that the other cannot. Although tension and mistrust often mark relations between governments and NGOs, it should be possible to create effective partnerships. In the same publication the successful collaboration between NGOs and the Ministry of Education is illustrated with an Ethiopian example: at first Ethiopia had the tightest role over NGO activities in the country. In the past their only acceptable role was in temporary emergency relief. But over time, relations are improved. Currently workshops and other events are organised for both government staff and NGO staff. Furthermore NGO-schools keep regional education bureaus well-informed and involved. And in some cases, international NGOs have arranged for government staff to visit successful NGO programs. Gradually the government has included NGOs in its planning, for example with regard to school construction and transfer of students. And on the national level, the Ministry of Education researched alternative education programs and found them effective. In this way a collaborative effort may affect the education system as a whole.

In this research the focus is on learning environments in three different primary and secondary schools that are supported by an Ethiopian NGO. This NGO aims to provide good quality education in their schools which are accredited by the government. Therefore they use the governmental curriculum and exams and they participate in the lowest educational networks with other governmental schools in the region. Furthermore one of their goals is to serve as a good model for governmental schools. Therefore this study is not just directed to a rather exceptional NGO-school situation, but the participating schools collaborate with governmental schools and offices too.

Ethiopia does not participate in any of the international studies on student learning. The World Bank (2005) describes an overview of the pass rates on national examinations: 66,9 for grade 8 (1999/00) and 58,5 for grade 10 (2001/02).

In 2000, the Ministry of Education embarked on the first national baseline assessment of grade 4 and grade 8 student achievement. About 5500 8-graders were tested in English, Mathematics, Chemistry and Biology. The average of correct answers for all the subjects was 41%. Given that the test items were chosen from a range of key topics in the curriculum, these scores indicate that large numbers of students do not reach the curriculum objectives. The World Bank (2005) suggests that improvement of these scores is a key

challenge. In the assessment more items were evaluated: the importance of school infrastructure, school organisation and management practices, teacher characteristics and practices and the availability of instructional materials and equipment. The study found that foremost process variables (i.e. those that reflect attitudes and behaviours) were important, including teachers preparation, directors' focussing on school matters and students' engagement in homework. With regard to the 'output' of a school (percentage of correct answers), just a weak link was found with the 'input' (the average spending per student). Money is not irrelevant for schools, but 'by itself it is insufficient to achieve good results' (World Bank, 2005). Certain behaviour by teacher, students and directors is particularly more important.
This study is directed to teachers' practical knowledge which is related to teachers' and students' behaviour. It can provide better understanding of important aspects with regard to this matter.

1.2 Educational policy and change

Afework (2004) provides an overview of the Ethiopian educational policy from which several points are mentioned in this section. Until the beginning of the 20th century, Ethiopian education was in the hands of primarily the Ethiopian Orthodox Church who stressed memorization, uncritical acceptance of texts and learning by heart. Just under Haile Selassie, the educational progress quickened and education began to be coordinated. In that period an American advisor (around 1942) suggested that the educational system should be 'neither French, Italian, English nor American', but Ethiopian. He recommended Amharic as medium of instruction and a relevant curriculum. Notwithstanding, until 1966 the education sector functioned without curriculum guidelines and relevant textbooks. Mulugata W. (1958, in: Afework 2004, p.63) writes that 'the educational system should aid in the first place the transmission of the nations' cultural heritage from one generation to the next, and in addition, train capable persons who might have the ability to interpret, enrich, and adopt that heritage to new needs and to changing conditions as they arose.'
In 1969 the educational sector went down to a crisis as there was no work for graduates. Secondary students begun to demonstrate and boycotted classes. Further the church and nobility pointed out that those who passed through modern schools were being disrespectful to their society and its institutions.
During the socialistic Derg-regime in 1978 a new curriculum was developed, directed towards (1) education for production, relating practical and technical skills to an understanding of socialist modes of production and to attitudes expressing a respect and love for labour; (2) education for scientific consciousness, emphasising an environment for enquiry, experimentation, and scientific methods; and (3) education for socialist consciousness, which embraces the development of political consciousness.
Since the new government in 1991, a big shift is made and the curriculum will henceforth be inspired by the value of indigenous cultures, the teaching of democracy and democratic practices and by the need for environmental projection. The notion of democratic practices is interpreted as participation for students in the classroom. Furthermore new goals as critical thinking and problem solving become important.
This brief overview of educational history shows that the recent changes in educational goals in Ethiopia are quite ambitious and a clear break with the tradition and the past. They correspond with Ethiopia's 'road to democracy'.
In 1994 the Transitional government of Ethiopia prepared the New Education and Training Policy (NETP), which still forms the foundation of school development in the country. The management of the education system is a collective responsibility of the federal Ministry of Education (MOE) and the National Regional State Education Bureaus. Each region has its own structure which consists of Zonal Educational Departments and the so-called Woreda Education Offices. The latter are the smallest educational authorities responsible for all education institutions in its territories. The regions have to consult the federal government about their policies. (Ethiopian National Agency for UNESCO, 2001)

The major objectives of the New Education and Training Policy (NETP) in 1994 were 'enhancing the quality of education, particularly at the primary level, by improving the conditions of the school environment, upgrading teacher quality, developing new curricula and constructing schools.'
These improvements included a change to mother tongues as instructional languages up to grade 8 and new approaches for teaching and learning, such as active learning, creative thinking and problem-solving in student-centred lessons. Efforts have been made to design the curriculum and to prepare instructional materials, based on the constructivist foundation of this policy (Maekelech, 2002).
In line with these improvements, the teacher guide for English in grade 9 and 10 (1999/2000) introduces the textbooks and curriculum as 'student-oriented and communicative'. That means that 'every opportunity has been taken to involve the students in meaningful and realistic communication activities. Many of the activities have therefore designed so that the students work in pairs or small groups. This stimulates more practising, more freely speaking, more active interest, more cooperation and helping each other'
A preface from the Ministry of Education in the textbooks for mathematics and chemistry (grade 9 and 10, 1999, 2000) states:
'Following this reform, both students and teachers need to realize that the new curriculum is quite distinct from prior approaches that it is considerably student-centered. Accordingly, much more is expected of teachers in guiding students and setting favourable learning conditions. In other words: in order to acquire the intended knowledge, skills and attitudes, active and reflective learning is primarily that of the students' task. Such learning behaviours will enable students to sense and seek solutions to their own as well as pressing societal problems.'
In addition to these examples about new learning approaches, in 2002 the civics textbooks were prepared 'having in mind a student centered approach where the learners are expected to make maximum participation in the teaching-learning process' (The Federal Democratic Republic of Ethiopia, 2004).

In general, Ethiopian teachers are not trained in modern educational approaches and strategies. Until recently pre-service teacher preparation has been based almost entirely on subject matter. In teacher trainings there is limited practice training, so that trainees have little opportunity to see the real world of school and teaching. Teachers think student-centred learning cannot be practiced in the typical classrooms of Ethiopia (Maekelech, 2002). Up to now, learning environments for students at all levels are foremost directed to memorizing and cognitive knowledge. This situation is furthered by the large class sizes, due to the increased enrolment in primary and secondary education. Additional, as teachers are not prepared to be 'caring and humane when interacting with their students', the new reforms will not be implemented successfully (Maekelech, 2002).
Currently teachers in Ethiopia use prescribed lesson plans for each lesson. These plans are unfilled forms that model the structure of a lesson. On a daily lesson plan teachers describe four phases of their lesson: introduction, presentation, stabilization and evaluation. Further they have to mention the objectives, teaching aids, the activities for teacher and learners and the time for all parts of the lesson (see appendix 2).
Objectives of the lessons can be derived from the annual lesson plan, which is prepared before the start of a school year. The annual lesson plans for all subjects have to be in accordance with the curriculum charts of the educational bureau.
Lesson plans for different regions and grades are somewhat different, but the four phases of the lesson are more or less the same. The daily lesson plan can be compared with the 'direct instruction model' which is directed at product goals and strong external guidance with regard to students' learning activities (Pieters & Verschaffel, 2003).

A report by the Ethiopian National Agency of UNESCO (2001) mentions five main problems and challenges facing national education at the beginning of the twenty-first century. The following two challenges strive for substantial change:

- *'The reorientation of the educational system towards a problem-solving approach and creative thinking that meaningfully contributes to economic growth and prepares the society for fast-changing science and technology.*
- *The shift of the teaching methods from a teacher-centred to a learner-centred approach requires great demand on public resources for preparation of teachers and provision of appropriate inputs as well as for the construction of infrastructures to reduce the existing teacher-pupils ratio to the standard set in the strategy (p.12).'*

These challenges are also described in recent policy documents that point at the quality of education, for example:

'Quality education includes quality learners as well as environments that are healthy, safe, protective, gender sensitive and provide adequate resources and facilities. It also includes content that is reflected in relevant curricula and materials for the acquisition of skills, knowledge and attitude. Quality education also means processes through which teachers use child-centred teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities. It means outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society.' (Ministry of Education 2002, pp.35-36)

In the same document, involvement of parents, professional development of teachers, curriculum revision and a child-friendly learning environment are discussed. Until now, the implementation of these topics is still in its infancy.

In policy papers with regard to educational change in Ethiopia, a clear dichotomy occurs between teacher-centred and student-centred education (also called child-centred or learner-centred approaches). Principals mention these two different possibilities for teaching as well. But it is not clear what are concrete steps from a teacher-centred learning environment to a student-centred learning environment. Does it appear as a continuum of different aspects or not? Do teachers think about just two options for teaching: teacher-centred or student-centred? Or do they make different combinations of aspects which can be seen as more student-centred or more teacher-centred? In this study these assumptions are explored further, in particular at teacher-level.

In Namibia O'Sullivan (2004) carried out a case study about the implementation of learner-centred approaches. She writes that learner-approaches are promoted in developing countries and 'considered an affective antidote to the prevalence of teacher-centred didactic classroom practices, which it is claimed support teacher dominance over passive learners and lead to rote learning and the stifling of critical and creative thinking (p.585).'

O'Sullivan found that teachers initially told to be familiar with learner-centred approaches, but observations showed the opposite and she concluded that the teachers did not understand the meaning of learner-centred education. The conceptualisation of the Namibian ministry, for example about facilitation of the active learner role, was unrealistic in this context. Even degree-teachers (Rowell, 1995 in: O'Sullivan, 2004) experienced significant difficulties in attempting to adopt a constructivist view of knowledge, one of the underlying assumptions of learner-centred education. They tended to view knowledge as fixed, objective and detached from the learner and were of opinion that it is the teacher's function to transmit the knowledge.

In this study interviews are held with teachers at Ethiopian primary and secondary schools. In view of the Ethiopian educational policy and according to the school management, these teachers should know about

the student-centred approach, but it is a question whether they understand the real notion of this approach. Based on the interviews, specific information will be provided about the practical knowledge of teachers in this regard.

Research about educational issues in Ethiopia is foremost executed by international agencies as the World Bank and UNESCO. Their research agendas and priorities strongly influence the governmental policy. To date quantitative approaches have dominated their methodologies. Crossley and Vulliamy (1996) describe this situation and strongly recommend more qualitative research which its sensitivity to local needs, conditions and contexts. The quantitative approaches and surveys surely have complementary benefits, but qualitative research can be helpful in 'drawing attention to the dangers of the uncritical international transfer of global research agendas'. This study will start at 'grass-root level' with the own contexts of teachers.

1.3 Educational context and policy of a particular NGO

As described in section 1.1, nongovernmental organisations (NGOs) and the private sector contribute to the provision of education at all levels in Ethiopia. In numbers of students their part is not very elaborated, but their role in staff training and influence at educational policy is not to ignore. NGOs themselves consider 'one of their most important contributions to education as their capacity to innovate, identify problems, and test solutions' (USAID 2003, p.7). NGOs have he opportunity to start specific experiments in small sites. Furthermore NGOs are able to reach disadvantaged target groups, which cannot be reached by the government. NGO schools are foremost in disadvantaged or remote areas and have a special scope or type of intervention.

The focus of this study is on an Ethiopian NGO which is especially working for the 'poorest of the poor' in different urban regions. Its schools provide education for youngsters from very poor families. To select these students, first the community committees list the names of poor children in their communities. Then the NGO-staff visits the houses of the children on the list. The staff members fill in forms about the situation of the recruited students (parents, family size, employment, age, living space, etc.). Finally they select the most needy children, such as orphans and children from very poor families. These children would not go to school without NGO-support, as they have no money for school supplies and need to work for their families. The NGO-schools provide clothes, food, school supplies, monthly stipends and education for the students. In this study the special context and characteristics of the school and students are taken into consideration.

The schools of this particular NGO are accredited by the government and use the official educational structure and the curriculum, textbooks and exams of the Ministry of Education. Some staff members of this NGO concluded: 'The policy of the government is not bad, but the implementation is insufficient (personal conversation, 2004)'. Within the government's rules and laws, they try to be 'better' than governmental schools. For example one class consists of around 40-50 students and students have a full day program.

Furthermore this NGO is willing to assess its education program. By words of the executive director: 'Do we give education for the national exams or for the lives of our students? Exams in Ethiopia are not good and the emphasis is at memorising. Some pupils in Ethiopia have good marks in grade 12 but cannot do more than copying'. Additionally the president of the organisation writes: 'We like to develop whole persons with analytic minds, social skills, reading skills and good attitudes against reading. Furthermore, aspects of the personality as initiative taking and self-confidence are important' (e-mail discussion, 2004). Currently, 'learning has turned into memorisation as the teacher and the taught could not go beyond beaten tracks. Much creativity has been abandoned with the unenviable consequence a static and regressive development supplanting our creative tradition' (internal document, 2004, p.8). This NGO sees education as a means to

'self-sufficiency' for its students. Students have to 'develop their hearts, minds and bodies'. Furthermore they need a good proficiency and communication in English and 'awareness and application of knowledge in science and mathematics'. Analytic thinking and doing experiments are important (internal capacity building document, 2004).
In discussion with the executive director (2004), he stated that 'the learning environment is very important. It should be more than chat-and-chalk. The learning environment for students is everything: teachers, parents, books, television and so on. Students have to learn skills, life skills. Problem solving is important. When students finish their education, they should create their own jobs. They should be creative. Students should do projects, presentations, and small research. The teacher is just needed to explain the technique of something, but the students have to work by themselves. Students should be able to search for information in the library'. These quotes reflect the management's vision of this NGO on good quality education. It is interesting to consider whether its teachers - who come from governmental schools and institutes - have the same ideas about their lessons and learning environments.
Teachers and managers at these NGO-schools stress the change from a teacher-centred approach to a student-centred approach. Seminars and workshops about this issue are organised for clusters of schools by the educational bureaus of the different regions. As all managers and many teachers use the term of a 'student-centred approach' as a goal for educational improvement, this concept is also used in this study (see section 2.2.2).

In primary education teachers use the students' native language as language of instruction, in accordance with the regional educational policy. At one primary school this NGO does not follow the regional policy, but decided to use English as instructional language from grade 1 up to higher grades. Students in this school speak different mother tongues.
All secondary schools in Ethiopia use English as instructional language. Many students in different grades of primary and secondary education face problems with the use of English.

A small research-paper by this particular NGO (Addis Ababa, 2004) focuses on child-participation as an aspect of child-rights and its relation to the teaching and learning process. The authors recommend: 'Teachers should create a suitable environment for students to express themselves. They have to be helpful and students should have pleasure in learning. Insure the students to participate as it is good for their development.' In a workshop, this recommendation leads to a discussion about the practice of corporal punishment, which should be avoided. Therefore it can be said that the pedagogical and interpersonal approach is an explicit aspect of the desired educational improvements at the schools.

1.4 Research questions, aim and relevance of the study

As described in previous sections, the current educational policy of a particular Ethiopian NGO is to stimulate a 'student-centred approach' in the teaching and learning process. This policy is also stressed by the Ministry of Education. It can be viewed as one of the modern reform efforts, 'calling for changes in our educational system that will help students to develop rich understandings of important content, think critically, construct and solve problems, synthesize information, invent, create, express themselves proficiently, and leave school prepared to be responsible citizens and lifelong learners' (Borko & Putman, 1995, p.37). Teachers need to think in new ways about the arrangement of learning environments, to achieve the new goals for their students. Although teachers are willing to apply a student-centred approach, currently they are often not succeeding to use student-centred principles. The specific backgrounds of the students who come from very poor families, may influence the arrangement of learning environments in such

a way that it is very difficult for teachers to apply a student-centred approach. Also the limited availability of learning materials that support student-centred approach may play a role. Further, not all teachers may have enough knowledge and skills about the new learning goals and strategies for the arrangement of new learning environments.
Hence a small-scale interview study is set up, to gain more insight in teachers' considerations when giving their lessons for their students. The purpose of this research is to get more insight in the arrangement of learning environments by 16 teachers in grade 5-10, for poor youngsters from underprivileged families in Ethiopia. As many educational policy and theories just mention two types of learning environments, with a traditional approach and a modern approach, it is interesting to ask teachers about their experiences and knowledge with regard to the arrangement of student-centred learning environments. Possibly learning environments are more diversified in their views, as different choices about aspects of learning environments can be distinguished.

The both following research questions are explored:
a) Which choices do teachers make - according to their opinion - when arranging learning environments in general and which of these choices do they relate to a student-centred approach in particular?

b) Which important factors, both inside and outside the schools, do affect teachers' arrangements of learning environments - according to their opinion - in a context of education for poor students from underprivileged families?

In Ethiopia, 'there is a growing awareness of the critical role of teachers' abilities, motivation and morale in improving educational quality', describes Maekelech (2002, p.2). 'It is what teachers think, believe and do in classrooms that ultimately will shape the successful learning of pupils' (p.4). Therefore it is important to ask for their perceptions about the arrangement of learning environments and the new so-called student-centred approach.
Implicit professional knowledge of teachers often serves as a filter for the interpretation of the rhetoric associated with top-down educational innovations (Pajares, Putnam & Borko, and Verloop et al. in: De Kock, 2004). For understanding and furthering processes of educational change, it is needed to match to some extent to the knowledge and beliefs of teachers themselves.
The results of the study can be used by NGOs and others to make tools for teachers to analyse their own teaching practice and to design 'student-centred learning environments'. All Ethiopian teachers have to use daily lesson plans which contain a kind of 'direct instruction' model, for the arrangements of their learning environments (see section 1.1). An impression will be given about the sufficiency of this instructional approach for the ambitious educational goals of the current reform.
Furthermore the results of the study provide an insight into the contextual factors influencing teachers' arrangements of learning environments and give input for the discussion about the relevance of a learning environments perspective for the strive of educational quality in Ethiopia.

1.5 Overview of the remaining chapters

The next chapters describe the different parts of the research process. First chapter 2 gives an overview of theoretical backgrounds with regard to teachers' practical knowledge and the arrangement of learning environments. In two classification schemes in section 2.2.4 and 2.3.3, the most important aspects and factors concerning learning environments are summarized.

In chapter 3 the research method is explained further with a description of the participants, materials, procedure and data analysis.

Chapter 4 provides a picture of all relevant aspects and factors that play a role in the choices teachers make when arranging learning environments. An overview of all results from the interviews is given, including many utterances of the teachers.

Finally conclusions as answers on the research questions are written and discussed in chapter 5, which ends with recommendations for the NGO involved in this study, the governmental policy and the role of NGOs and educational research in Ethiopia.

2. THEORETICAL BACKGROUNDS

The previous chapter introduced the research questions about the arrangement of learning environments. This chapter reviews relevant theories about this topic. As this study contributes to the domain of teachers' practical knowledge, this field is outlined in section 2.1.

Section 2.2 discusses different learning environment aspects. Contextual factors which affect the arrangement of learning environments are described in paragraph 2.3. These sections lead towards two conceptual models which contain respectively learning environments aspects in 2.2.4 and contextual factors regarding the arrangement of learning environments in 2.3.3.

2.1 Teachers' practical knowledge

As Van Driel, Beijaard and Verloop (2001) and Verloop (2003) notice, the interest of educational researchers in teachers' practical knowledge has increased in the past decades. This increase was influenced by a growing dissatisfaction with mainly process-product research which focused exclusively on teacher behaviour. These studies were characterized by the 'search for effective variables in teacher behaviours that correspond to pupil achievement scores'. But to understand the complex process of teaching and teachers' behaviour, understanding of teachers' practical knowledge is necessary.

A fundamental assumption is that teachers' cognitions and actions have a mutual relationship. The teachers' practical knowledge underlies teachers' behaviour, although this does not imply a rational decision processes. Within this perspective 'practical knowledge' is defined as 'the integrated whole of knowledge, beliefs and values with regard to teaching, that a teacher has accumulated on the basis of his or her personal and professional experiences' (De Kock et. al., 2005; in agreement with Van Driel & Verloop, 1998 and Verloop et al., 2001).

In their review, Van Driel, Beijaard and Verloop (2001) list the most important features of practical knowledge:

1. *It is action oriented knowledge which can immediately be used, acquired without direct help from others.*
2. *It is person- and context bound. It allows teachers to achieve the goals they personally value. In addition, practical knowledge is affected by teachers' concerns about their own teaching context.*
3. *It is, to a great extent, implicit or tacit knowledge.*
4. *It is integrated knowledge: formal knowledge which may be derived from formal schooling, everyday knowledge, including norms and values, as well as experimental knowledge.*
5. *In building practical knowledge, teachers' beliefs play a very important role, by acting as a filter through which new knowledge is interpreted.*

The second aspect mentions the context of teachers. This topic is examined further in section 2.3.

More about the specific topics of practical knowledge can be derived from Borko and Putman (1995) who write about general pedagogical knowledge. Firstly they describe three domains of knowledge in a conceptual framework of the teachers' knowledge base: general pedagogical knowledge, subject-matter knowledge and pedagogical content knowledge. General pedagogical knowledge is explained as 'a teacher's knowledge and beliefs about teaching, learning, and learners that transcend particular subject-matter domains. It includes the knowledge of various strategies for creating learning environments and conducting lessons; strategies and arrangements for effective classroom management; and more fundamental knowledge and beliefs about learners, how they learn, and how that learners can be fostered by learning.' Primarily this domain is explored in this study.

Pointed at the arrangement of learning environments, teachers individually make choices leading to specific learning environments. In this study, the practical knowledge of teachers with regard to these choices is examined. As De Kock et al. (2005) explain, arguments may be made that teachers do not have completely 'free' choices, due to different social and institutional pressures. But to some degree teachers can and do make choices, which can be illustrated by the appearance of 'mixed configurations of learning environments' (Windschitl, 2002; in De Kock et al, 2005) which reflect the individual choices teachers make. More about these different categories and aspects of learning environments is described in section 2.2.2. With regard to educational change efforts, teachers can possibly implement different parts of an innovation, but resist against others. In teachers practical knowledge not only rational decisions but also beliefs and implicit considerations lead to different choices.

As practical knowledge is directly related to teachers' choices and behaviour in classrooms, it has a major influence on the way teachers respond to educational change (Van Driel, Beijaard & Verloop, 2001). Therefore it cannot be overlooked in efforts to reform educational practice. Following others, Borko and Putman (1995, p.38) state: 'To help teachers change their practice, we must help them to expand, enrich and elaborate their knowledge systems. At the same time, however, teachers' existing knowledge and beliefs acts as lenses or filters through which they view calls for change (..). Their knowledge systems are simultaneously the objects of change and factors that support or constrain the change process.'

Similarly practical knowledge is important in training of prospective teachers. In all cases it is important that the process of learning starts with the own knowledge of teachers, which is starting point for their personal knowledge construction. A main function of examining practical knowledge of teachers is not prescription, but improving the 'practical arguments' in the thinking process of the teacher (Fenstermacher, 1986; in: Verloop et al. 2001). The teachers' existing practice should not be considered as the norm per se. In attempts to change this knowledge, however, one should realise that the role of teachers' practical knowledge in the context of educational reform is complex. Occasionally, when a large gap is identified between innovative ideas and the practical knowledge of a vast number of teachers, one may arrive at the conclusion that a reform needs to be redefined, for instance, at a lower level of ambitions (Verloop et al., 2001). An investigation of teachers' conceptions seems to be especially important in contexts of developing countries as reformers should be aware of blindly transferring approaches into other contexts (see O'Sullivan (2004) for a Namibian case study).

Van Driel e.a. (2001) suggest that research on practical knowledge should aim to identify common patterns in the practical knowledge of individual teachers, and in the development of this knowledge. As a result, this may lead to a conceptual framework, which may function for supporting prospective and experienced teachers' professional development.

Beijaard (1998) advises to shift the spearhead of studies in practical knowledge to teacher experiences with the implementation of new, process-oriented educational models and theories in their own practice and which factors influence these experiences and practical knowledge.

This study particularly stresses the choices of teachers with regard to new learning approaches in Ethiopia.

2.2 Learning environments

In this section attention is given to the concept of a learning environment in general, the features or aspects of learning environments and more specific to the student-centred approach. Finally these topics are summarized in paragraph 2.2.4.

2.2.1 The concept of a learning environment

In recent educational literature, the metaphor of a 'learning environment' is used for instruction and different tasks regarding learning and teaching with or without technology. It emphasizes the learner and meaningful learning processes in a coherent environment (Lowyck & Terwel, 2003).

Wilson (1995) suggests that viewing instruction as a learning environment tends to have some connection to a meaning-construction view of knowledge and constructivistic theories. Other instruction metaphors are the classroom metaphor, the product delivery metaphor, systems definitions with inputs and outputs and process definitions. Nowadays the environmental metaphor is a needed complement to these metaphors, presenting the learning environment as 'a place were people can draw upon resources to make sense out of things'. Although, following Lagerweij (2004) who mentions Wilson (1995) as well, not all learning environments are considered to be constructivistic. Therefore additional characteristic features are necessary to define. In section 2.2.2 the aspects of modern (also called powerful, constructivistic or student-centred) learning environments are discussed further.

In general a learning environment refers to 'all aspects in the environment of a learner that influence the achievement of learning goals within a specific content' (Boekaerts & Simons, 1995; in: De Kock, 2004, p.20). According to De Corte (1996, in: Lowyck & Terwel, 2003), the learning environment is 'a situation or context which encourages, supports, and keeps going the required learning processes, to achieve the intended learning results.' In this study, the learning environment is restricted to school settings.

The most relevant aspects of learning environments found in literature include: the physical context in which the process of learning and instruction occurs, the division of roles between teacher and learner, learner roles towards each other, learning goals, the teacher's instruction, the tasks to be performed by the students, the materials used and the role they have, assessments and differentiation (Anderson, 1989; Joyce & Weil, 1996; Reigeluth, 1983; Lowyck, 1995; in: De Kock, 2004; Lowyck & Terwel, 2003; Dochy, Segers & De Rijdt, 2002).

Schuh (2004) describes an individual classroom learning environment as a complex interaction among a variety of elements, including teachers' and students' perceptions, instructional practices, learning needs, and larger system issues such as prescribed curricula, available resources and funding, government guided accountability standards and so on. Lowyck and Terwel (2003) also write about various factors from outside, such as educational structures and resources, overall learning goals, the own characteristics of the learning contents and the characteristics of the learners, which influence the arrangement of learning environments.

In this study a distinction is made between 'aspects of the learning environment' which are arranged by teachers themselves and contextual factors which affect these arrangements. The aspects are merely about choices and conceptions which directly affect the arrangement of a learning environment by teachers' behaviour, strategies and decisions. Contextual factors are pre-conditions and factors which cannot easily be influenced by teachers themselves. These factors are discussed further in section 2.4. The distinction between aspects and contextual factors is not very strict. Some aspects can be viewed as contextual factors and aspects of the learning environment too, for example learning goals which are ordered by the government and goals which are strived after by teachers themselves. Notwithstanding, this distinction can provide more insight in teachers considerations about their influence and practice.

2.2.2 Aspects and categories of learning environments

Most literature regarding the aspects of learning environments is written in a context of educational change and improvement. For example Roelofs, Van der Linden, and Erkens (2000; in Roelofs et al. 2002) distinguish six dimensions on which learning environments can differ:

1. Construction of knowledge versus transmission of knowledge
2. Learning in complete task situations versus learning by means of split tasks
3. Personal meaning versus teacher-led meaning
4. Professional or scientific contexts versus formal contexts
5. Cooperation and communication versus individual learning
6. Developing learning climate: growth in expertise versus momentary mastering

The right-hand extremes represent the transmission model of learning environments, while the left-hand extremes represent a model of discovery learning. Differences in learning environments can be characterized by means of these dimensions. In practice, these extremes will not be seen often in their pure form. Mixed forms are more likely. However, much educational literature about educational change suggests a clear distinction between a set of traditional learning environments' aspects and a set of modern learning environment aspects. In practice, teachers tend to think more diverse. In all probability, practical knowledge regarding the arrangements of learning environments does not fit into only two configurations of different aspects.

Recently De Kock (2004) presented a classification scheme for learning environments in secondary education, based on a review of existing classification schemes and literature about New Learning. The classification scheme in his dissertation is based on three aspects of learning environments: learning goals, the division of teacher and learner roles and the roles of learners towards each other. Particularly these aspects are assumed to influence new forms of learning. They represent three different principles of new learning: learning is a constructive activity, learning is a situated activity and learning is a social activity.

Within each aspect, different categories are to be distinguished. For the learning goals, a distinction is made between learning products and the learning process. Specific knowledge, skills and attitudes refer to the product of learning, while the use of specific sets of knowledge and learning skills, such as 'orientation towards learning goals' refers to the process of learning as a goal in itself. Product goals can be divided into knowledge of learning content, knowledge of learning process, attitude towards learning content, attitude towards learning process, cognitive learning skills, affective learning skills, social learning skills and transfer skills.

For the division of teacher and learner roles, the behavioural model, developmental model and apprenticeship model are different categories (Farnham-Diggory, 1994; in: De Kock, 2004). In a behavioural model, the learner follows the instructions of the teacher who tells the learner what and how should be learned. Reinforcement of students is important. In a developmental model, the teacher functions as a coach, regulating the students' own learning. In an apprenticeship model, the learner and the teacher participate in a shared world with respect to a particular subject, while the teacher tries to model his/her expertise for the learner. The 'shared responsibility model' can be located somewhere between the behavioural model and developmental model, in which the teacher and the learner cooperatively steer the learning process. This category is found by De Kock (2004) in his interview-study.

Concerning the learner roles with respect tot each other, De Kock distinguishes competitive, individual and cooperative roles. In a competitive role, the learner's learning is only beneficial to himself and not to his peers, as learners compete with each other. In an individual role, the learner's learning has no connection

with the learning of others. In a cooperative role, the learners cooperate as peers and a learner is beneficial to others in one way or another.
The classification scheme can be used to describe different learning environments, by different combinations of learning goals, divisions of teacher and learner roles and learner roles towards each other. These aspects are of equal importance. Some combinations are considered as relatively traditional learning environments, while others are more progressive forms of education.
In this study, the classification scheme can be used to describe the practical knowledge of teachers about learning environments in Ethiopia's second cycle of primary education (grade 5-8) and first cycle of secondary education (grade 9-10). Some additional aspects will be added, which are described below.

Firstly learning materials are considered to be an important aspect of the arrangement of learning environments (Roelofs, 2000). This is also is found by De Kock (2004) in his interview-study, in which teachers frequently mention different teaching aids. Learning materials will be added as aspect to the classification scheme. The different categories are concrete materials which can be derived from the data.
Further, the dimensions of learning environments (mentioned above, by Roelofs et al., 2000; in: Roelofs et al., 2002), provide some additional aspects to the classification model of De Kock (2004). Already included are the first dimension which is related to different goals, and the fifth dimension, regarding the roles of students towards each other. Three other dimensions of learning environments (2,3,4) are related to the characteristics of the task situation or assignments. Tasks can be very elaborated in an professional context with the emphasis at personal meaning of the students, or more restricted in a formal context with a split task.
The sixth dimension is related to the assessment of students, but also to the 'atmosphere'. Assessments are further described by Dochy and Struyven (2002), who suggest a continuum from teacher-controlled assessments to learner-controlled, from traditional assessment, to co-assessment, peer-assessment and self-assessment. In the classification scheme of learning environments from De Kock (2004), this can be attributed to the 'roles of teacher and learners towards each other'.
Another distinction is made between formative, summative and diagnostic assessments or evaluations (Dochy, Segers & De Rijdt, 2002; Weeden, Winter & Broadfoot, 2002). A formative assessment is done at one time or regularly during the learning process and helps pupils learn. Formative assessments result in actions that are successful in closing the gap between current and expected performance. A summative assessment is used to certify or record end of course performance. It is the final product of a unite or course, often an examination. A diagnostic assessment provides detailed information about the strong and weak points of individual students, a group of students and/or the learning process. Diagnostic assessment can be used to identify specific problems that a pupil may be experiencing.
The atmosphere can be seen as an aspect of the learning environment too. It is also related to interpersonal teacher-student behaviour. De Kock (2004) in his interview-study asked explicitly which aspect of the learning environment teachers consider as most important. As a result, the division of teacher and learner roles was mentioned most. But next, teachers' interpersonal behaviour and atmosphere were brought up. Also in different pedagogical studies, aspects as 'relation' and 'thoughtfulness ' (Van Pijkeren, 2003; Van Maanen, 1993) are important in teachers' practical knowledge about teaching and the arrangement of learning environments.
With regard to interpersonal teacher-student behaviour, Brekelmans, Wubbels and Den Brok (2002) distinguish proximity and influence as categories, adapting the Leary model. These categories are also used by De Kock (2004) in his interview study. Influence represents the degree to which a teacher controls the

communication in the classroom. Proximity represents the degree to which a teacher cooperates with the students and tries to understand their needs.
The aspects and categories mentioned in this paragraph are summarized in a scheme in paragraph 2.2.4.

2.2.3 Towards modern learning environments

'Educational goals for the twenty-first century are very different from the goals of earlier times.' This statement is from the American National Research Council (2000) in their book 'How people learn', which tries to link the findings of educational research to the practice in the classroom. 'The society envisions graduates of school systems who can identify and solve problems and make contributions to society throughout their lifetime (...). To achieve this vision requires rethinking what is taught, how teachers teach, and how what students learn is assessed (p.133).'
Of years, people have had ideas about learning and teaching. For example Dewey (1916, in: Joyce & Weil, 2000) wrote: 'The core of the teaching process is the arrangement of environments within which the students can interact and study how to learn'. Since Dewey, many names for modern learning environments and its features are used, such as: active learning, new learning, powerful learning environments, student-centred, learner-centred and child-centred environments. Most of these concepts are related to a constructivistic view of learning. From this perspective, Jonassen, Peck and Wilson (1999) describe five interdependent attributes of meaningful learning as active, constructive, intentional, authentic and cooperative.
De Corte (1990, in: Dochy et al., 2002) characterizes powerful learning environments 'by a good balance between discovery learning and personal exploration on the one hand, and systematic instruction and guidance on the other, always taking into account the individual differences in abilities, needs, and motivation between students' (p.12). Guiding principles for designing powerful learning environments are the fostering of students' self-regulation of their learning processes, the use of authentic contexts, resources and materials that have personal meaning for students, opportunities for collaboration and the acquisition of general (meta-)cognitive skills within the subject-matter domains (De Corte, 2000). Altogether these ideas have different consequences for the arrangement of learning environments.
For this study, it is needed to examine the Ethiopian situation with regard to educational views and preferences. First it should be taken into consideration that the history and political context of Ethiopia is different from Western-Europe and America (see section 1.2). Therefore literature about modern learning environments and learning goals should not be gratuitous accepted for Ethiopia. Notwithstanding these insights seem to be useful and can be discussed in dialogue with the Ethiopians.
As described in section 1.3, the new educational policy includes a shift from a teacher-centred approach to a student-centred approach. According to a principal of the NGO involved in this study, for a student-centred approach 'teachers should use the knowledge and experience of the students. Student have no empty minds in which you can put knowledge, the same as you can put your money on a bank. Students should participate and the teacher must facilitate them' (personal conversation, 2004).
Other principals agreed with the following aspects of student-centred learning (personal conversation, 2004):

1. Students are active and participate during the lessons, for example in a discussion in a small group or with the whole class.
2. Student take initiative: they ask questions, etc.
3. Students make their own choices, they solve problems and present their solutions to the class, they carry out small research projects and other independent tasks. Process goals with regard to learning are important. Students have to plan for their own.

When comparing the ideas about student-centred learning with the aspects of a learning environment (as mentioned in previous paragraphs), some categories of a learning environment (see 2.2.2) can be considered as more student-centred than others. In addition these ideas seem to relate just partly to descriptions of modern learning environments and dimensions (Jonassen et al., 1999; De Corte, 2000; Roelofs et al., 2002). In the classification scheme of section 2.2.4, some remarks are made about the important choices at category level with regard to the student-centred reform.

Lastly special attention is given to interpersonal teacher-student behaviour and the atmosphere for learning. As described in section 1.3, corporal punishment is an issue at Ethiopian schools. A comparable example can be given from South-Africa where this practice was made illegal in 1995: 'At present fear of teachers is still part of schooling. Learners rarely experience the relative freedom to approach teachers or initiate conversations, as many learners in 'developed' countries do' (Brodie, Lelliott & Davis, 2002, p.549). For learner-centred environments, the pedagogical atmosphere and interpersonal teacher-student behaviour are important aspects to take into consideration.
Other factors from inside and outside the school also affect the reform of a student-centred approach. This is described further in section 2.3.

2.2.4 Classification scheme

The classification scheme of the different aspects and categories of learning environments in table 2.1 summarises the previous paragraphs. A part of the aspects and categories are derived from the classification scheme of De Kock (2004).

Table 2.1 Aspects learning environments

Aspect	Category	Remarks about relation to a student-centred approach
1. Learning goals	- Learning products: *knowledge of learning content;* *knowledge of learning process;* *attitude towards learning content;* *attitude towards learning process;* *cognitive learning skills;* *affective learning skills;* *social learning skills;* *transfer skills* - Learning process	Not only knowledge of the learning content is strived after, but also other goals regarding skills and attitudes. Furthermore the learning process is a goal in particular.
2. Division of teacher and learner roles	- Behavioural model - Shared responsibility model - Developmental model - Apprenticeship model	A shift from the behavioural model to a shared-responsibility-model is desired.
3. Learner roles with respect to each other	- Competitive role - Individual role - Cooperative role	More cooperative learner roles towards each other occur.
4. Learning materials used	- All materials used can be listed	Varied materials are used to avoid the 'chalk and talk' method. The materials are suitable for a student-centred approach.
5. Characteristics of the task	- Authentic task situation - Abstract task situation - Complexity	Authentic environments stimulate modern learning goals, e.g. problem solving.
6. Role of assessments	- Formative - Summative - Diagnostic	Different functions of assessments are used. Teachers adjust to the students using formative and diagnostic assessments.
7. Interpersonal teacher behaviour	- Influence - Proximity	Teachers have a positive relation with the students.
8. Atmosphere		A good and safe atmosphere is a condition for student-centred learning environments

2.3 Contextual factors affecting the arrangement of learning environments

Next to the choices teachers make in arranging learning environments, there are also factors and conditions from outside which influence teachers' arrangements of learning environments. These contextual factors are discussed in this paragraph.

2.3.1 Contextual factors in education

Teachers play crucial roles in the learning process of their students by the arrangement of learning environments. Choices about aspects of learning environments are part of teachers' practical knowledge, which are described in previous sections. Teachers' concerns about contextual factors from outside affect these choices (see section 2.1; Van Driel, Beijaard & Verloop, 2001). Therefore these contextual factors and teachers' considerations about it are important to know, in particular for the purpose of reform efforts.

School-effectiveness research studies provide several models with student, classroom, school and contextual factors which influence students learning results (Creemers, 2000; Scheerens, 1990 in: Scheerens, 2000). Also the surveys of SACMEQ (for example about Kenya, IIEP/UNESCO 2001) provide a list of contextual factors.

In this study the contextual factors are defined as all aspects at student level, classroom level, school level and society level which affect the arrangement of learning environments by teachers, for students. A list of factors can be derived from the above-mentioned publications:

- The society level includes the authorities and their policy regarding the curriculum and exams, the teacher training institutes and colleges, cultural traditions and values and the influence of local authorities.
- The school level is about the availability of different teaching aids, the facilities and services, the timetable, class size, language of instruction and finance.
- The classroom level can also be mentioned as the teacher level. Important categories are teacher qualifications and training, years of experience as a teacher, social background and the work load of teachers.
- At student level, the teachers' perceptions of students' learning and students' characteristics are important, further the backgrounds of the students, their gender, time on school (absenteeism) and preparation at home.

It is also possible to discuss about the context of education by considering the functioning of schools in the society, on national level (Creemers, 2000). It must be clear that in this study the approach of the contextual factors in education is viewed from side of the teacher and the arrangement of learning environments in the classroom. Notwithstanding, both approaches are finally directed to students' learning.

2.3.2 The context of education in developing countries

In a review of the evidence on effect-enhancing conditions for schooling in developing countries, a larger impact found than for industrialized countries. For example the teacher/pupil ratio was significant positive associated in 27% of the studies in developed countries and for 15% in industrialized countries. The relevance of school facilities in developing countries is no less than 70%, expressed as the percentage of significant positive studies (Hanushek, 1995,1997; in: Scheerens, 2000). Scheerens explains that 'the larger impact of these resource input factors in developing countries can be attributed to a larger variance in both the dependant and the independent variables. Both human and material resources in education in industrialized countries are distributed in a relatively homogeneous way' (p.59), while schools in developing countries are more varied. If basic resources and facilities are not present, this will obviously influence the educational outcomes.

Brodie, Lelliott and Davis (2002) studied learner-centred teaching in South-Africa. They stress that particularly in under-resourced contexts, the ways in which teachers can develop alternative practices are limited. in addition of inadequate materials, they mention what is generally known in South-Africa as a 'breakdown in the culture of teaching and learning'. That means for example that late coming and absenteeism for both teachers and learners is rife and that they lack a culture of homework. Furthermore poor pupil knowledge constrains the ways in which teachers can enable pupil participation. Another problem is the fact that the official medium of instruction is not always the main language of the majority of teachers and learners. Possibly these aspects are important in the Ethiopian context too.

Modern learning approaches presuppose certain perceptions of students' learning and also ask for a particular space and class sizes (O'Sullivan, 2004). Probably these conditions are not present in the context of Ethiopia. Further O'Sullivan mentions the cultural factor in her Namibian case-study. Learner-centred approaches focus on the individual and seek to develop children's critical skills, but in the Namibian culture, children are not encouraged to ask questions. This contextual factor can also arise in this study.

With regard to culture, it is important to consider the value of educational theories for different cultures and countries. Foskett and Lumbey (2003) suggest that 'the growing frequency and detail of international comparisons encourage a trend towards universal standards, which some countries do not have the resource to achieve and which may be culturally inappropriate. The pressure is towards cultural homogeneity' (p.50). Following Woodhead (1998), they explain that absolute relativism in relation to quality – and in case of this study to the arrangements of learning environments – is as unhelpful as universal standards. When standards should only be determined in relation to local conditions, 'this may encourage complacency. Lack of resources or the existence of particular traditions or practice may be taken as justification for allowing unsatisfactory conditions in schools, or retaining outdated teaching and learning methods' (p.50). Schools and governments should discuss about the standards and negotiate about the meaning of 'good' education in the light of the competing views of modern educational theories and local knowledge. In fact, this is a micro political process.

Most of the students at the schools involved in this study are from underprivileged families. This will probably affect teachers' arrangements of learning environments. Ten Dam and Vermunt (2003) derive from different studies that there is a relation between the social-economic backgrounds of students and their educational achievements. It can be explored what are teachers' opinions about this issue.

2.3.3 Classification scheme

In the previous paragraphs, different levels and contextual factors are distinguished. Table 2.2 provides an overview as a summary. Besides information of chapter 1 about the contextual situation of Ethiopia is taken into consideration too.

Table 2.2 Contextual factors in the arrangement of learning environments

Levels	Factors	Categories
Society	- Ministry of Education	- Curriculum and textbooks / policy
	- Local authorities	- Lesson plans
	- Teacher training	- Teacher Training Institute / Teacher Training College / University
	- Culture	- Individualism / collectivism
School	- Type of school	- Governmental / private / NGO / church
	- Identity	- Secular / Religious
	- Medium of instruction	- Mother tongue / English
	- Availability of teaching aids	
	- Facilities	
	- Timetable	
	- Class-size	
	- Finance	
Teacher	- Teacher qualifications	- Certificate / Diploma / Bachelor degree
	- Educational experience	
	- Social background teachers	
	- Teacher load	
Student	- Teaching and learning culture	- Absenteeism and late coming / homework
	- Teachers' perceptions of students' learning	
	- Teachers' perceptions of students' characteristics	
	- Backgrounds of the students	- Economic status / family situation
	- Gender	

3.METHOD

This chapter gives insight in the research method of the study about teachers' choices in the arrangements of learning environments. The different sections describe the participants, the materials, the procedure and the data analysis.

3.1 Participants

In this study, teachers of three schools in different regions of Ethiopia participated. The researcher contacted an Ethiopian NGO with several educational projects in different regions. She got permission to visit its school in the country's capital Addis Ababa (school A), a second school in the Amharic region (school B) and a third one in Gambella, near the Sudanese border (school C).

For practical reasons, it was only possible to talk with the teachers who were able to communicate in English. Therefore the teachers in lower grades and teachers in Ethiopian languages did not participate in this study. The researcher contacted all teachers from grade 5 up to 8 (general primary education, second cycle) and grade 9 and 10 (general secondary education). The teachers in grade 5 up to 8 mainly have a Teacher Training College Diploma while teachers in grade 9 and 10 studied on university and have a bachelor degree.

Totally 17 interviews were held (inclusive a first pilot-interview) All teachers of the schools were willing to participate in this study. Most of them taught two or three different subjects in different grades. The researcher was able to visit lessons of all subject teachers of the schools in grade 5 up to 10, except the teachers for native languages, arts, music and sports.

Table 3.1 gives an overview of the teachers included in this study. School A and B provide education up to grade 10, while school C has classes up to grade 8.

Table 3.1 Participants

	No.	**Subject**	**Sex**	**Qualification training**[1]	**Years experience as teacher**[2]
School A	07	English, grade 7	m	BD	1+1
	08	English, grade 6	m	TTC	9+8
	09	Mathematics, grade 9	m	BD	7+1
	10	Biology, grade 8	m	BD	2+2
	15	Chemistry, grade 7	m	BD	3+9
	16	Physics, grade 9	f	BD	6+6
	17	Mathematics, grade 6	m	TTC	6+1
School B	*01*	*English, grade 7 (pilot-interview)* [3]	*m*	TTC	5+11
	02	Biology, grade 10	m	BD	3+1
	03	Mathematics, grade 9	m	BD	5+1
	04	English, grade 8	m	BD	4+1
	05	History, grade 10	m	BD	6+1
	06	Science, grade 5	m	BD	33+1
School C	11	Mathematics, grade 8	m	TTC	1+1
	12	Biology, grade 5	m	TTC	1+1
	13	Social studies, grade 5	m	TTC	3+1
	14	English, grade 7	f	TTC	8+1

[1] BD = Bachelor Degree; TTC = Teacher Training College Diploma

[2] years experience before the present school + years at present school

[3] Not included in data-analysis

3.2 Materials and procedure

The teachers were informed about the interview study by their principals. The researcher got the timetable of the lessons and was able to contact each of the teachers personally. She selected lessons in different grades and in different subjects from the timetables of grade 5 up to 10. The teachers were asked permission to visit one of their lessons, at best one day before. Always this was allowed by them and the researcher was warmly welcomed for an observation during their lesson.

Next the 17 teachers were interviewed individually. These interviews were held on the same day or one or two days after the observation of the teachers' lessons. The observations provided concrete reference points to mention during the interviews. They are not used separately in the data-analysis but only as a frame of reference for the interviews. During the interviews the teachers could explain their ideas by referring to the concrete lesson and the researcher was able to ask the teacher why he or she acted in a particular manner at a particular point in time. This could reveal very relevant knowledge.

The interviews were semi-structured topic-interviews. Therefore an interview guide with several questions and topics was constructed by the researcher (see appendix 3). It is based on the interview guide used by De Kock (2004) in the second study of his dissertation, about 'New learning and choices of secondary school teachers when arranging learning environments'. This study was conducted in Dutch upper secondary education and directed to the so-called Study House reform. The researcher changed this focus to the Ethiopian reform of a 'student-centred approach'. In section 2.2.3 this reform is described further.

As the research was conducted to explore the practical knowledge of teachers, the interviews were explorative. The researcher used the interview guide foremost as a mean to let the teachers talk about their knowledge related to the arrangement of learning environments. Therefore the interview starts with an open question about the observed lesson.

After talking about the observed lesson, the teachers spoke about other different lessons and related their lessons to the choices they made. The interview guide asks for that in the second question. Not before these questions, the researcher explicitly asked for the new student-centred approach, if the teachers had not mentioned it already. This sequence is different from De Kock (2004), who mentions the Study House reform earlier in his interview guide.

As the second research question asks for contextual factors, some explicit topics are added to the interview guide in question 4 (textbooks and curriculum materials) and 5 (background of the students).

Further section 2.2.2 pointes to the importance of evaluation in learning environments. This topic is mentioned explicitly in the interview guide, as it was expected to be a main issue.

The last question of the interview guide is the same as by De Kock (2004), asking which aspect of the learning environment teachers consider as most important.

The first interview at school B was a pilot test interview with an English teacher after which a few modifications were made, especially in the language. As some teacher were not used to speak in English and felt somewhat nervous, is was needed to use simple language. Therefore an idea is given in the interview guide. In addition the researcher got some experience with interviewing about this topic and using the interview guide in the pilot interview. This first interview is not included in the data-analysis.

The interview length varied from 20-40 minutes and all interviews were audio recorded and transcribed. Some teachers taught different subjects. They spoke mainly about the subject of the observed lesson, but referred also several times to the other subjects they taught.

The questions of the interview guide were discussed in different orders. The researcher listened carefully, inquiring about the topics mentioned by the teachers. When all topics from the interview guide were discussed, the researcher always ended with the same last question.
The interviews were audio recorded and transcribed.

3.3 Data analysis

For the data analysis all transcripts (no. 02 – 17) were divided into utterances. Therefore the computer programme MEPA (version 4.9) for qualitative data analysis was used. At first utterances were defined as everything a teacher says between one question posed by the researcher and the next. Short remarks and questions of the researcher, which are just intended for the participant to continue his/her speech were not considered as distinction between two utterances. Finally this process resulted into 240 utterances, but many of these utterances mentioned different aspects of the learning environment and the context of it.
The analysis of this initial protocol took place in twofold with two labelling systems, separately for the both research questions that are central in this study. The final protocol and labels directed to different aspects of learning environments is called protocol A. The final protocol and labels directed to contextual factors and conditions which influence teachers' arrangements of learning environments is called protocol C.
The method and phases for analysing are mainly derived from Baarda, De Goede and Teunissen (2001) and Stokking (2002).

During the first phase of analysing, an initial list of different aspects of the learning environment referred to by the teachers was made (protocol A). Therefore the utterances of four interviews (02,03,13,15) were divided into smaller parts which belong to one category. Several categories together refer to one aspect. For example, 'the knowledge of learning content' and 'attitude towards learning process' are two categories of the aspect 'learning goals'. Teachers spoke in terms of categories and not in aspects of a learning environment. The different categories were examined in the four interviews. Also the other interviews were looked over for additional categories. Finally an initial list with categories and aspects was made.
The same process was done with the four interviews, looking for factors and conditions which affect the arrangement of learning environments, mentioned by the teachers (protocol C). Also a distinction between two levels was made for different factors.

The researcher discussed these initial lists with two other researchers and after that she tried to identify the different categories in the 17 interviews. During this second phase of the analysis, the initial two lists with aspects and contextual aspects of learning environments were further refined. With use of the theory in chapter 2, the labels were rearranged and some aspects and categories were added as they were found in the data. This process leaded to an improved versions of the coding system, to be used in a new round of labelling.
Further in this second phase, the parts of the protocol which are not relevant for answering the central research questions were selected and further not labelled. For example some teachers talked about topics that were not related to their work situation. This was done in protocol A and C. Also in protocol A the utterances which are just conditional or contextual factors were not labelled. The same was done in protocol C, as utterances that are only about the choices teachers make, were not relevant.
The final coding system was as concrete as possible. For example it did not speak about a behaviour model, but mentioned the category as 'teacher steers learning process, learner executes'.

Finally in phase three the definitive coding scheme was used to label all utterances from protocol A (see appendix 4 for the scheme) and C (see appendix 5 for the scheme) with use of the computer programme MEPA. Therefore utterances were split up if they mentioned different aspects or contextual factors.
The researcher labelled all utterances in protocol A with one aspect. Several aspects have different categories. These categories were allocated as a second label to each utterance about these aspects.
By way of exception, utterances about the aspect learning materials could receive more than one category label (maximal 3). This was done as many teachers mention different learning materials in one sentence, for example 'I use students textbooks and a teacher guide' (A48-4).
The same process was executed for protocol C. Many contextual factors consist of different categories and these utterances received a second category label. The utterances about the 'availability of teaching aids and learning facilities' could also receive more than one category label, for the same reason as the category 'learning materials'.
At the end of phase 3, all utterances and labels were checked and read over. Some categories were put together as their frequencies were very low.
Finally the protocol consisted of 431 labelled utterances belonging to 12 aspects. From these, 8 aspects had different categories. Protocol C consisted of 245 utterances about 17 factors on society, school, teacher and student level. From all factors, 7 were divided into categories.

In both protocols, two subsets were made. One subset contained all utterances which are related to a student-centred approach by the teachers. For that purpose the answers at questions about this approach (number 3 and a part of 4; see appendix 3) and also the utterances in which teachers themselves explicitly point at this approach were selected.
The other subset contained all utterances which are in particular related to the target group of poor students at the participating schools. Therefore the answers at the interview question about the possible adjustments to these special target group (number 5; see appendix 3) were selected, complemented with utterances in which the teachers spontaneously mention this issue.
For making these subsets, but also for the labelling as a whole, it should be stressed that the context in which the teachers say something is taken into consideration. This can be done in MEPA as it is easy to see the labelled utterance in the context of the interview with the foregoing and following utterances.

During the forth phase of the analysis an overall analysis of the labelling from both protocols was produced. Therefore a matrix with frequencies of the total set of utterances and the different subsets was made for protocol A and C (see appendix 4 and 5). In the overall analysis, different percentages could be calculated such as proportions from the total (sub)set of utterances and the utterances about each aspect. Further the schools can be compared to each other by the mean frequencies per teacher about an aspect.
Next to the quantitative results, the different utterances of the both protocols were numbered. All utterances in protocol A start with the letter A, then the number of the utterance and then the number of the participant (see table 3.1). The utterances in protocol C, start with the letter C, also followed by the number of the utterance and the number of the participant. From the protocols a summary with the results is written about the different aspects and factors, occurring in the data (see chapter 4). The most important features of the different (sub)sets are described. The original data and protocols are available by the researcher.
The research questions could be answered from the quantitative overview of results and the qualitative description of all data.

4. RESULTS

This chapter reports on the results of the learning environment study in an Ethiopian context. Section 4.1 gives an overview of all aspects of learning environments which are mentioned by teachers in grade 5 up to 10. Special attention is given to characteristics of the so-called student-centred approach in the view of the teachers and also to the adjustments teachers make for their target group of poor students. Section 4.2 draws the results from the same interviews, but focuses at contextual factors which affect the arrangements of learning environments. In that paragraph, the student-centred approach and context of students from the 'poorest of the poor' are examined too.

4.1 Aspects of learning environments

When teachers talk about their lessons, they mention 12 different aspects. These aspects are considered to be important for them when arranging learning environments for their students. An overview is given in table 4.1. See appendix 4 for an elaborated scheme of quantitative results.

Table 4.1 Aspects of learning environments

Total set of utterances	n	N	Selection of student-centred utterances	n	N	%
1. Learning goals	78	16	3. Division of teacher and learner roles	22	14	35
2. Learning materials used	74	16	4. Activities of the students	17	10	35
3. Division of teacher and learner roles	62	16	6. Students' roles towards each other	16	10	53
4. Activities of the students	48	15	2. Learning materials used	10	9	14
5. Role of learning materials used	33	12	1. Learning goals	10	7	13
6. Students' roles towards each other	30	16	8. Characteristics of tasks and contents	7	6	29
7. Role of assessments	29	15	9. Interpersonal teacher behaviour	6	6	32
8. Characteristics of tasks and contents	24	12	12. Language	2	2	29
9. Interpersonal teacher behaviour	19	11	7. Role of assessments	1	1	3
10. Phasing of instruction	19	9	10. Phasing of instruction	1	1	5
11. Atmosphere	8	6	11. Atmosphere	1	1	13
12. Language	7	5	5. Role of learning materials used	0	0	0
Total	**431**	**16**	**Total**	**93**	**16**	**22**

n = Number of utterances

N = Number of teachers from whom these utterances are

% = Proportion of student-centred utterances from the total set of utterances about this aspect

Aspects that are mentioned most frequently are (1) learning goals – 18%[3], (2) learning materials used – 17%, (3) division of teacher and learner roles - 14% and (4) activities of the students – 11%. All 16 teachers talked about the first three aspects in the interviews (see appendix 4).

From the 12 aspects, 11 also occurred in utterances which are in particular directed to a student-centred approach in education. In this selection of utterances (1) the division of teacher and learner roles is mentioned most frequently – 24%[4], followed by (2) activities of the students – 18% and (3) students' roles towards each other – 17% (see appendix 4).

[3] Proportion of utterances about each aspect from the total set of utterances about the arrangement of learning environments

[4] Proportion of utterances about each aspect from the total subset of utterances related to a student-centred approach

The utterances about a student-centred approach (n=93) are a subset out of the set of utterances (n=431). The proportions of student-centred utterances about an aspect out of the total set of utterances about each aspect are showed as a percentage in table 4.1. From all utterances about the students' roles towards each other, 53% is related to a student-centred approach. Other aspects with a fair proportion of student-centred utterances are the division of teacher and learner roles (35%) and the activities of the students (35%).
It should be noted that four teachers spoke spontaneously about the student-centred approach as a choice for the arrangement of their learning environments, without any question of the researcher. The remainder twelve teachers were asked explicitly about this approach.
All teachers could explain the meaning of a student-centred learning environment, but one of them did not understand it clearly, as she related it to a different policy measure of the government which replaces the subject teachers in lower grades by one teacher for all subjects in one grade-level.

In the last question of the interviews, all 16 teachers were asked what they considered as the most important choice for the arrangement of their learning environments. An overview of these choices is given in table 4.2.

Table 4.2 Most important aspects with regard to the arrangement of learning environments

Labels of utterances which are answers on the last interview question (see appendix 4)	**n**	**subset - related to a student-centred approach n**
Division of teacher and learner roles	6	2
Learning goals	3	0
Interpersonal teacher behaviour	3	1
Atmosphere	1	0
Activities of the students	1	1
Learning materials used	1	0
Characteristics of tasks and contents	1	0
Total	**16**	**4**

n = number of utterances

It becomes clear that the division of teacher and learner roles is very important in the opinion of teachers, but also six other aspects are mentioned. The student-centred approach is mentioned 4 times in these answers as belonging to the most important choice for the arrangement of a learning environment.
Teachers did not talk frequently in the overall interviews about interpersonal teacher behaviour and atmosphere, notwithstanding these aspects are emphasized by four teachers, when explicitly asked for the most important aspect.

With regard to the aspects of learning environments, different categories can be distinguished (see also appendix 4). This section briefly describes and defines all aspects and their categories, illustrated with many statements from the teachers. Special attention is given to the relation of some aspects and categories with a student-centred approach. Further some statements are about special adjustments for the students who come from very poor families. In appendix 4 the quantitative results are subdivided for the three different schools, involved in the study. These results are taken into consideration too.

1. Learning goals

Appendix 4 provides a list of all goals mentioned by the teachers. Most utterances with regard to learning goals (39 out of 78; 50%) are about the knowledge of the learning content. Teachers also refer to the attitude towards learning content and process, learning skills, practical skills and the learning process.

Teachers talk about knowledge of learning contents when they mention the topics of their lessons. According to them, students should have knowledge about the topic. For example:

> They [the students] can identify what evaporation is and they can tell me the use of evaporation. For example it is very important to prepare salt from seawater. (A366-15)

Several teachers explain that the curriculum is too wide. Students need to remember too many and difficult things. One teacher decreased the number of facts for his students when he prepared his lesson:

> First I read the paragraph from the book (...). Then I tried to relate the paragraph to the map and to the children. There are many mountains written in the book, but all mountains cannot be learnt by the children, because the name is very difficult or the place of the mountain is very far. They are very difficult for the children. (A309-13). [I chose some of them.] First for example Ras Desha, it is a mountain in Ethiopia. And mount Kenya, Kenya is our neighbour country, all children know that. And Kilimanjaro, which is also very famous. Only these three mountains are enough [for the children to know]. (A311-13).

In the lesson plan, teachers have to write their preparations about this aspect. A mathematics teachers tells:

> [I write in the lesson plan:] At the end of this lesson, the students are expected to remember or to understand a [certain] concept. Built on this plan, I explain the latest ideas, definitions, forms, mathematical formulas, and more. (A206-9)

Five utterances are about the attitude of students towards the learning content as a learning goal. They point at motivation and students' interest. 'Students must like a subject' (A429-16). This is also related to the category learning goals with regard to the attitude towards the learning process, which is mentioned 12 times (15%).

> The first thing that must be done is that we should convince the students that they could achieve. They could be better students, top-scorers. (...) I intend the students' attitude, especially slow learners, they could be fast learners. I have told them in time, but this will not be accepted as reality. (A94-5)

Three of these utterances are also indicated as important for a student-centred approach. One of the teachers explains that it is not easy to change the attitude of his learners:

> This is what student-centred means: as far as possible I make them to take part. It takes much of my time to explain instructions and to motivate them to take part in every activity. You have observed that: it is a bit challenging! (...) But I have to be flexible. (A56-4)

Initially different categories of learning skills were distinguished in the data. But it became clear that they did not occur frequently, and they were put together in one category: learning skills, which occurred in 6 utterances (8%).

For example one teacher explains that the teachers at his school do their best to 'make the students know their goals: (...) they have to learn and after that, they will get something good' (A73-4).

Another teacher point at the overall goal of raising 'self-sufficient citizens' (A301-12). However, he does not think that this goal will be reached at the moment, due to lack of time for preparation of the teachers.

Further a teacher mentions transfer skills as he asks his students for more examples in different situations.

Practical skills to be achieved by the students are for example reading, listening and writing. In 17% (n=13) of all utterances about learning goals teachers mention these skills. At school C, the teachers arrange extra

group work for the students during the lunch time ‘to help the students reading’ (A349-14) as their students are very weak in reading. Some of them even cannot read at all. This is partly due to differences in mother tongues. For English teachers, the improvement of spoken language is an important goal.

Three teachers explicitly mention the category of the learning process as a learning goal. When one teachers mentions the student-centred approach as student-participation, he says:

> I try my best. My target is just to make them to use it! (A62-4)

Also the other utterances are related to a student-centred approach and stress that communication and participation is a goal in itself, ’because when the students participate, we know how they think’ (A375-15).

Three teachers indicated the aspect of the learning goals as the most important choice for their lessons.

> I think the objective is most important. To specify the objective - how can I express this topic? - this question is very important. (A47-3)

2. Learning materials used

All teachers mention the use of learning materials. In 17% of all utterances (n=74), teachers talk about this aspect. A list of 13 categories is made: textbooks for students, textbooks/guides for the teachers, reference-books/library for the students, reference-books/library for the teachers, laboratory materials, presentation materials (map, pictures, etc.), television/video, radio/tape-recorder, authentic materials, blackboard, ICT, stickers and worksheets.

Textbooks for students are mentioned most frequently, followed by laboratory materials, reference books/library for the teachers and textbooks/guides for the teachers.

> Most of the time, I use the textbooks. Grade-6-textbooks have a systematic approach. That textbook is related to the grade. This one [showing a textbook], is [written] in English. (A440-17)

Several textbooks and teacher-guides are not available at the different schools. Teacher guides seem to be not very important:

> The teacher guide is only for the answers [of exercises]. (A418-16)

A problem is explained about the use of the library by students in the following statement:

> In the library there are some problems. Sometimes it is closed and the students are not introduced with the use of catalogues. Even they don’t know [anything about the catalogue]. Most of the students don’t use the library, I have asked that. That’s the problem. (A64-4)

About the blackboard, which is used by all teachers, a teacher explaines:

> Well, the text is given in note-form [to the students]. So I will read that [the contents of the lesson in the textbook] first and then during eating [in break time of the students], I put the main points on the blackboard [so the students can copy in their exercise books]. (A124-6)

It is notable that the activity of writing notes from the textbook on the blackboard, to be copied by the students, is observed very often by the researcher during the lessons.

All schools do not have enough laboratory materials for experiments in chemistry, physics and science. On different schools, different materials are used, due to their availability (see also section 4.2).

From all utterances about a student-centred approach, 11% is directed to this aspect. Most of the student-centred utterances are pointed at the category textbooks for students. Many teacher see the textbooks as too thick.

> [The textbooks] are too wide. If you go to geography and history classes, they are not good for a student-centred approach. But if you come to civics education, they are highly participatory. (A107-5)

3. Division of teacher and learner roles

About 14% of the 244 (n=62) utterances regarding learning environments is directed to the division of teacher and learner roles. This aspect is distinguished in two different categories. Teachers most frequently (n=41; 66%) mention the first category: the teacher steers the learning process and the learner executes. The second category is mentioned 21 times (34%): teacher and learner are partners in learning and cooperatively steer the learning process.

The first category includes all utterances that represent a behavioural model for the division of teacher and learner roles. The teacher tells the learner what and how things should be learned and the learner has to follow these instructions.

> Before I ask for discussion, I usually try to present in highly supervised form. And I teach the main ideas, so that the students can easily digest. (A84-5)

When the students have to work independently, a mathematics teacher guides his students as follows:

> We are watching the students. Are they working good or not? We see the exercise books, we give some aids, we say: 'do this, do this example. Do this according to this formula.' Finally we give correction to the whole class. (A208-9)

Controlling and checking students' homework and activities in the classroom seems to be an important aspect of this model. That is also a difficulty on the way towards a more 'sharing responsibilities-model', for example:

> If you instruct the students by telling them: just talk about this one. How do you control them and what do you know even whether they talk about their mates? I think we have to take care. (A61-4)

Another teacher tells about the reason for his way of teaching:

> Mostly it is just in lecture-way. Specially grade 10. The book is bulky, as you see. How do you finish it? It is very wide. The contents are for lecture. (...) You can use the lecture method and I would show them also some things about the nervous system [from a video]. After two days they [the students] get a test about the nervous system. (A233/234-10)

Further the following example makes clear that the contents of the lesson influence teachers' choices with regard to this aspect:

> Most of the times, when you teach about theories, for example historical developments, you can teach them just by giving notes. But if it is practical, you have to be practical. (A280-12)

The second category includes all utterances that give somewhat more responsibility to the role of the learners. It can be characterized as teachers and learners who are partners in learning. Therefore the teachers have to adjust to the students' possibilities and give them more opportunities for their own contributions in the process of learning, for example by participation. One teacher emphasises the participation of students:

> The teacher is not the only source of knowledge. The students are also the source of knowledge. They learn from the world, from the society. They have their knowledge. (A306-12)

Also another statement shows the involvement of students:

> I always try to communicate with my students, with discussion. I raise some questions or I write a topic [on the blackboard] and I want to say something about that topic to the students. (...) They told me something about that, and then I say something about that topic. And that is the method which I follow. And I think it is good. (A180-8)

Some teachers mention the necessity to differ from their initial lesson plan when they try to adjust to the students.

> For instance the class may just ask difficult questions or there may be a group discussion in a class. Then, during that time, I usually not follow the lesson plan, but the students. (A83-5)

A large part of the utterances who speak about 'cooperatively steered learning processes' are related to a student-centred approach (11 out of 21).

> I think a student-centred approach is: the students talk a lot, the teachers try to make a good condition for their discussion. I do that, they [the students] discuss with group, with their partner. They discuss in class. They talk a lot and I will connect their ideas when they say something about the topic. I use that method, I like it. It is good. (A181-182-8)

In spite of the previous teacher, it should be noted that talking about 'partnership in learning' not implies that all teachers have completely implemented these thoughts in their classrooms. For example one teachers explains:

> Student-centred is governmental policy, but it is not deeply applied in Ethiopia. It is not applied! Student-centred means: I give you some questions and I teach you some questions. And the students can discuss by themselves. And I summarise the concept of it. (...) It is difficult, such kind of discussion. (...) It is not understand easily for the students. (...) [Therefore] I discuss examples. (A36-3)

Also according to this statement, the student-centred approach is not fully in practice yet:

> Surely the educational policy is supposed to be student-centred here. But for teaching-learning activities, the facilities and conditions are not such as it should be. (...) The teaching methodology is almost one-way. Always the teacher will use the lecture-method and go to lecture. And then he will ask: are there any questions? Most of the teaching-learning activities are instead of student-centred, teacher-centred. (A211-9)

In particular for difficult contents of the lesson, the so-called student-centred approach takes too much time (A255-11).

'Cooperatively steering of the learning process' does not mean that the teacher and the students have equal control of the learning process. The teacher still has the final responsibility, but the students are permitted some contribution in the learning process. One teacher mentions the word 'democratic' with regard to his teaching approach. Students should not just shut their mouths, but 'be equal' and participate (A148/153-7).
The following statement gives an example of the involvement of students:

> In this model, the teacher is a guide who suggest the students: 'Try this way, try this way'. (A285-12)

The students discover new things by themselves. The teacher does not make the decisions for the students, but the students find solutions by themselves (A282-12). 'Doing' something on themselves (A410-16) is important for a student-centred teaching methodology according to the teachers.

With regard to the roles between a teacher and learner in general, many teachers talk about 'different approaches'. This is also mentioned by the teachers who point at this aspect as the most important choice for the arrangement of their learning environments. They mean different activities for their students, different materials and also variation in the lecture-method of the teachers (A325-13; A117-5).

4. Activities of the students

All teachers, except one, mention the activities of the students in their interview (n=48, 11%). This aspect is an important issue of their preparation for a lesson. In the data different activities of the students are distinguished. Writing and copying notes from a teacher who gives a lecture is seen as a passive student-activity. This category is mentioned 11 times (23%). For example one teacher explains how she is working without textbooks with her students:

> They have to write all the things, all the exercises, all the notes [from the blackboard in their exercise books]. (A261-11)

More teachers mention difficulties because of a lack of materials.

Involvement of students in discussion and group-work is labelled as activities which need active participation. This category is mentioned in 58% (n=28) of the utterances about students' activities.

One teachers gives an example about students' participation in his class:

> Specially my method is exercising at home before the coming lesson. Then they read and prepare and they ask their parents and their environment. They come in the class and they will talk. They deeply discuss in class, because they have already prepared their mind. That's good. So the students' participation is very important, in all subjects in all grades, I think. (A397/398-15)

An English teacher tells: 'I try my best to make it more communicative in class' (A70-4)

With regard to a student-centred approach, it is remarkable that 15 out of 16 utterances in the category 'active participation of students' are mentioned by the teachers together with a student-centred approach.

> It is very good to use a student-centred approach, because then we know what the problem is. Because when the students participate, we know how they think. And then they express their own feelings. That is important and also useful for teaching and learning. Otherwise, if the teacher comes and the students simply shut their mouth, simply write, it is no teaching. (A375/376-15)

Teachers frequently use the word participation, but many utterances do not concretely explain what is meant by this topic. Several teachers seem to know just the following information:

> Students centred means, eh well: students participate, answering questions, asking questions. That is how they participate. (A136-6)

Another category of students' activities is their homework. Homework means the preparation students have to make for the lesson, without the presence of the teacher. When arranging learning environments, teachers add activities such as checking and giving homework. They have problems with students who have not properly done their task.

Lastly two teachers tell that they use songs for the students. This activity is somewhat different from the previous categories, although is should not be overlooked as an aspect of the learning environment of some teachers:

> 'I use songs to make the students happy, for their motivation' (A175/176-6).

5. Role of learning materials used

In the interviews 12 teachers mention some categories of the role of learning materials used (n=33; 8%).

From them, six (18%) utterances handled about learning materials as a source of information. For example students can search for information in the library or gather information from a map in their textbook.

The second category includes demonstration and explanation by the teacher. 13 utterances (39%) belong to this category, for example:

> I know that the video is very good for them. I have discussed [the topic] in the classroom and then I go for demonstration to the library [=the place with the video]. That makes [the students] very happy. They see it, they understand all the problems. Because in the classroom it is only with me, and in the video-shop they see, and they keep it. (A228/229/230-10)

In the statement above it becomes clear that the students like the video. More teachers consider this role for their learning materials and 7 utterances (21%) belong to the category motivation.

Lastly 5 teachers (n=7) explicitly mention their materials - foremost textbooks and teacher guides - as a guideline for their lessons.

6. Students' roles towards each other

From the total number of utterances 7% (n=30) is about the aspect of the students' roles with respect to each other. For this aspect some considerations are important before looking at the categories. In the interviews, the researcher has not asked any question which was explicitly about this point. For the teachers

an individual role of the students in their class goes without saying. Therefore this 'category' is not labelled in the data, but the researcher has observed it in all classrooms.
As an exception on this matters of course, almost all teachers (15) mentioned 'working in pairs or groups' (25 out of 30 utterances; 83%). Three teachers also mentioned students who are tutors for other students and 2 utterances are about a competitive role between students. A large part of the total set of utterances about this aspect is pointed at a student-centred approach by the teachers (n=16; 53%).

A statement from the category learning in groups:

> I organise them [the students] in groups of 5 or 4 students and they can seek for solutions. Whenever they come up to difficult or challenging problems, they can do it together. [I use it] not always, because they are not very fast. (A279-11)

In the previous statement, one difficulty for working in groups is already mentioned: it takes time. It is remarkable that 9 of the teachers tell about one or more troubles with regard to group-work. Their problems vary from lack of textbooks (on school C) to the large curriculum, class-size, no motivation of students and disturbance of the class. For example:

> There is one very very big problem. (...) That problem is chatting and disturbing the class. 'Wow, we are right! He is not right!' Such kind of disorder may arise. (A98-5)

Most teachers are strongly convinced about the advantages of working in groups, but are afraid of 'bad behaviour' of the students (A38-3), as they are not used to this way of learning.

> When you see grade 8, they don't have the habit to be in groups. They don't like that. I have to ask: why are you not... Just they do it alone. [I told them:] 'Let's be in groups, it will help you, you have to exchange your knowledge, your ideas. [They answered] 'But we don't know all things.' Some students won't go, others are very low. That kind of problems. (A348-14)

Notwithstanding several teachers also mention that their students like this way of teaching and learning.

The three utterances about students who are tutors are about groups with a good and fast student as a leader for the other -weaker- students. Such group work is conducted additional to the lessons for all students, for example during break-time.
For a competitive role of the students towards each other, giving marks by the teacher is important.

With regard to the student-centred approach, no special description is needed as the teachers identify a student-centred approach with the implementation of group-work. However one teacher gives a more specified description of the organisation of groups in his class, which is interesting to mention:

> When I say student-centred, students can easily express themselves, within subjects, forming groups. There are four or five groups in each class. Within a group there will be a supervisor and a secretary. And now every individual is given the chance to express themselves at that specific topic. Finally each group presents the idea to the whole class, and the whole class comments on that idea. (A96-5)

7. Role of assessments

All teachers were asked about their way of evaluation. They explained about two roles of their assessments: formative and summative. Formative evaluation is done during the learning process and it helps the learners to learn. Summative evaluation is done on the end of the learning process, to assess the final results.
With regard to formative evaluation, the phase of evaluation in the lesson plan was mentioned.

> And then, the last step [of the lesson plan] is evaluation. I had some last questions, [for example] what is evaporation? (A365-15)

During each lesson, teachers try to evaluate their students.

> Students are usually followed by asking questions. At the middle or at the end of a lesson. When I begin class, I evaluate what the students have learnt in a previous lesson. And when I get feedback from the students, I just evaluate that and I know if my lesson was quite understand. (A114-5)

Other teachers emphasise the use of class-work and homework for evaluation whether the students understand the lesson. Further the concept of 'continuous assessment' was mentioned by one teacher. That means that teachers give regularly tests and not wait unto the final exam. In this way teachers and students receive 'feedback' about the understanding of the topics.

The category of summative evaluation is directed to the exams and tests of students.

> Students are preparing for the national exam. In the national exam, they ask all [things] from the textbooks. (A99-5)

Also from summative assessments teachers should learn about their own approach:

> There are results, for example the exams. You can evaluate your methodology from that. (...) If they have understand you, the result will be good, so that means that your methodology or teaching approach was good. (A140-6)

Two utterances are taken apart with regard to the roles of assessments. One is about evaluation with a diagnostic goal: the teacher tries to understand the problems of his students.

> [In the afternoon] we help them: Which one is difficult for you? How do you do these things? I ask different questions. (A193-19)

The other one relates the assessment of students to the comparison between different schools (A74-4). At national level, the scores of students in different grades can be compared to show the performance of a school.

8. Characteristics of tasks and contents

In 6% of all utterances (n=24) teachers give some information about the characteristics of the contents and tasks to be completed by the learners. This aspect was mentioned by 12 teachers (out of 16). There are different topics with regard to this aspect and four categories are made.

When teachers speak about tasks of the students, they regularly say that students should ask their parents and others in their own environment. After that, they can discuss about these experiences in the classroom. This kind of activities is labelled as learning in an authentic environment (n=8, 33%). The students sometimes have to play drama about their own environment. This is also seen as an representation of their authentic environment.

The next category is more about contextualisation of the tasks of students (n=3, 13%). One teacher points at this issue as the most important choice and improvement for his learning environment:

> If the subject or the topic invites us to show the students [something] by using a chart or a practical problem, that is better. Then the students can easily understand. Normally we see (...) that most of the [tasks] are not practical. For example we have a topic about percentages in grade 7 here. Some of the examples are a matter of formula: 'What is the percent change from 5 to 8?' The students use a formula. Instead of such a problem, there are other practical problems. [For example:] 'The daily average number of customers in a shopping street increases from 250 to 640. What is the increase of the number of customers?' Most of the examples are not given in this way (...) but it is better for the students to explain the lesson to a practical implementation. Mathematics is not contextualised now. That is the problem. It needs time [for the teachers in their preparation] to prepare practical problems. (A277-9)

This category is also related to the 4 utterances about 'problem solving' that are distinguished as a third category. The three teachers explicitly mention 'seeking for solutions and problem solving' as part of their student-centred approach.

> Student-centred means: you lead students to a problem and they will search for the way how to solve that problem. [They think:] 'What is that problem, what should be done?' They will be problem-solvers. That is good. (A243-10)

Further this teachers explains about a restriction:

> We must choose which topic is good for problem-solving of students and which one is good for explanation, demonstration and other methods. (A244-10)

Problem-solving is seen as a way to 'initiate' students.

With regard to the characteristics of tasks, 9 utterances (38%) are about the complexity of the task. Teachers change their lesson plans and preparations as the tasks and contents are difficult for the students. Sometimes they decide to give additional instruction.

> If we have prepared some points and that is not clear [for the students], we use another approach. Again we try to revise he previous contents with more simpler examples. We try to adjust to the students. (A205-9)

This teacher is very clear:

> The examples should be from simple to complex. (A219-9)

Another teacher says that he does not use the student-centred approach when a task is easy.

> When the problem is somewhat difficult, I ask [the students] to seek solutions, to strengthen them. (...) When the question is somewhat smooth, I want to pass it by myself, because it saves time. (A256/257-11)

9. Interpersonal teacher behaviour

In 19 utterances (4%) of 11 teachers, the interpersonal behaviour of the teachers is mentioned. Furthermore 3 teachers refer to this aspect as most important for their lessons.

First of all motivation is considered as an issue to be strived after. One teacher explains:

> I try my best, in different ways. By calling their names, to feel that they have been given special attention by the teacher. Every students, if they are good or less achievers, I try to make them motivated. (A57-4)

Other teachers also mention their personal attention for their students. For example:

> When I teach them, I walk into the class: good morning, good morning. When I see students who not serve or maybe they are not talking with each other at all, there is some problem what makes them to do that. After I explained my idea to the class, I go to that girl or boy and then I ask: What do you understand from my lesson, or for example, what do you think, what is your problem? (A224/225-9)

In the interviews teachers (11 out of 19 utterances) relate this aspect to the backgrounds of the students they teach.

> These students have lost their parents (...). I have seen these students as a father and as a mother and as a teacher. It is not equal to a governmental school. (...) I am here now, I am thinking about the relation wit the students. It is a positive relation. (A149-7)

Another teacher also explains the importance of relation and knowledge of the personal situation of the students. She compares her class with a governmental school which is 'open'. Students come and go there if they want. 'But here, if you come, you have to study' (A356-14). Sometimes this asks many efforts from the teacher. One teacher explains that he was 'struggling with them (the students) and now it is somewhat changing' (A266-11). His students failed to do their homework and by talking to them and sending students who did not listen away from the lesson, he managed to improve their behaviour.

But in general the 'handling of students is good':

> We don't beat them for example. We don't shout at them and we take care of them. (...) We don't want to let them cry or feel something bad. (A133-6)

Furthermore six teachers (n=6, 32%) clearly relate their interpersonal teacher behaviour, in particular about care, personal knowledge and advising of the students, to a student-centred approach.

10. Phasing of instruction

Nine teachers explicitly talk about the different phases of their instruction (n=19; 4%). Mostly this is directed to the use of lesson plans, with different phases: introduction, presentation, stabilisation, evaluation.

> I think this is very excellent, very clear: introduce, then present, then stabilize and then evaluate. It is fantastically, I think. (A361-15)

During the introduction phase, the teachers revise the previous lesson. Some others also mention the motivation of the students during this phase. In the presentation phase, the 'main points' (science) or 'examples' (mathematics) about the topic are presented to the students. Adjustments can be made during this presentation phase, due to the understanding of the students.

> If we have prepared some points and if that is not clear, we use another approach. Again we try to revise the previous contents by more simpler examples. We try to adjust to the students. (A207-9)

In the stabilisation phase, the teachers give 'class-work', which means foremost asking questions about the presented topic. The answers can be checked during the last phase of evaluation. Other teachers use the stabilisation phase for their oral questions to the students and the evaluation phase for the questions of the students themselves. One of these teachers also points at a difference in the phase of stabilisation in the new, student-centred approach:

> Formally when you go into class, we revise the past lesson, and then we present the new one. When we complete, again we ask questions. And then we give chance to the students to ask questions. Eh... we ask questions to our students. But at present, the new one, I think they make groups and group discussion, I think. (A131-6)

Another difference in the student-centred approach is stressed in the following quotation, as it relates to the practice of giving notes in the beginning of the presentation phase:

> When I give them the lesson, I don't give notes first. Anyway, in my lesson, first they [the students] understand. I start from what they know. (...) When I give them the lesson, they think about it and after we discuss, I give them notes. Then after all, I ask them in the revision the conclusions. (A286/288-12)

11. Atmosphere

> Without a good atmosphere, how do you teach? You must have a good communication and being comfortable with your class. (A459/460-17)

This statement illustrates the importance and practice of atmosphere in a class. 7 utterances from 5 teachers are about this aspect (2%).

Sometimes teachers change their lesson plans, due to the atmosphere as students are 'tiresome or cheating' (A162-7).

Another part of the atmosphere is that these poor 'students always ask about their problems, not about their education' (A194-8). Basic facilities are an important condition for a 'learning atmosphere'. Further one teacher from school A suggests that in his class the students who are from poor backgrounds 'are dominated by the others' which are fee-payers. 'So they are also good' (A374-15). At school B and C, all students are selected from the poorest families, so there is a different situation.

12. Language

With regard to the use of language by teachers (n=7, 2%), one teacher mentions the adjustment to the age of the students.

> The maturity of their mind is different. Even their language. The language you use for grade 5 and grade 8 should be different. (...) Their understanding is different. (303-12)

All other utterances (6) were about the differences in instructional languages. At school A and B, students are taught in Amharic in the lower grades. Then teachers have to prepare them on the shift in language.

> Students learn in Amharic. (...) Next year they change in English. Then I use Amharic and English. Most of the times I translate in English. (...) I use most of the times Amharic and English words. (A441-17)

In classes which are taught in English, teachers face problems.

> Actually there is a problem with English. Even they [the students] cannot understand what they read in English. I talk in English and then I make the translation to Amharic. because they don't understand. (A2-2)

These language difficulties also constrain the arrangement of student-centred learning environments, as teachers expect the students cannot talk independently in English with each other.

> They [the students] do not express themselves, not in English. (A93-5)

Subset of student-centred utterances

In the foregoing descriptions about aspects of learning environments, the student-centred approach is separately mentioned several times. As already explained, the division of teacher and learner roles, the activities of the students and the students' roles towards each other are the most frequently mentioned aspects in this regard. From them the categories 'teacher and learner cooperatively steer the learning process', 'active participation' of students and 'learning in groups' are most important.

Another aspect which is occasionally combined (6 out of 19; 32%) with a student-centred approach is the interpersonal behaviour of teachers. It seems that a student-centred approach is related to a personal approach of the students and relation is an important focus of attention.

The same can be said from the aspect 'characteristics of tasks and contents'. In that case 7 out of 24 utterances (29%) are related to a student-centred approach. Foremost 'problem-solving' and an 'authentic environment' are mentioned.

When looking at the number of teachers from whom these utterances are, it can be said that most of the teachers know something about a student-centred approach. There is some similarity in their opinions. But on the other side, most of the teachers are not able to give a comprehensive description of a student-centred approach. They just mention some concepts as participation of students or problem-solving, but it is difficult for them to tell more about their choices than:

> Student-centred is good for the classroom. Students can participate and they can solve their problems. That's good. (A245-10)

Teachers face different problems in implementing these aspects in practice. This is described further in the next paragraph.

Subset of utterances related to the target group of poor students

Teachers were asked if they made special adjustments to the students in their classes, who are selected from poor families. As is already explained, all of the students at school B and C are selected from the 'poorest of the poor'. At school A, there are also students from families who are able to pay school fees.

The numbers of utterances about learning environment aspects which are related to the target group of poor students are showed in table 4.3 and appendix 4.

Table 4.3 Aspects of learning environments related to the target group of poor students

Subset of utterances, related to the target group of poor students	**n**	**N**
Interpersonal teacher behaviour	11	9
Learning goals	6	6
Activities of the students	4	3
Atmosphere	3	3
Division of teacher and learner roles	1	1
Role of assessment	1	1
Characteristics of tasks and contents	1	1
Atmosphere	1	1
Total	**28**	**14**

Most utterances are about the interpersonal behaviour of the teacher. Teachers try to understand students background problems and give special attention to them. But these students do not need other learning goals and contents:

> The reality for rich people and for poor people, it doesn't matter. The reality is the reality. But the way we approach is exceptional. (...) The way that we facilitate, that is the learning process here, should be quite different. (A116-5)

Notwithstanding, it should be noted that more attention for the attitude towards the learning process is reasonable, according to the following teacher:

> These orphans, they don't have interest. They don't give attention to such things [as learning]. Maybe they don't have a role model. Maybe because their families are uneducated and also there is no person to control them: 'What did you learn today?' (A350-14)

This is also related to the activities of students. For example these student do not do their homework and find it more difficult to participate in the lesson.

Teachers should teach practical (A279-12) and keep on to advise the students. A good relation between the teacher and the student is very important (A356-14).

Subsets of the different schools

Appendix 4 gives an overview from the frequencies of learning environments' aspects for each school.

When we compare school A, B and C, the average number of utterances for each teacher is more at school A (29) as at school B and C (25). Also there are differences in the subsets with utterances related to a student-centred approach. Teachers from school A tell somewhat more about this topic than at school B and C. The proportions of utterances related to a student-centred approach are respectively 23%, 21% and 19% for school A, B and C.

An overview of the different proportions for each aspect is given in table 4.4. Most percentages are quite similar, but in particular in the selection with the student-centred utterances are differences. Teachers at school A mention the division of teacher and learner roles (26%) and the activities of the students (23%) most frequently in this subset. But teachers of school B speak foremost about the students' roles towards each other (22%), followed by the division of teacher and learner roles (19%). At school C, the division of teacher and learner roles is also the first (26%), followed by students' roles towards each other (21%) and thirdly characteristics of tasks and contents (16%).

When looking at the students' roles towards each other, school A has less percentages in the total set of utterances (5%) and the set of student-centred utterances (13%) compared to school B and C. This can be clarified by the fact that at school A, only the cooperative learning roles towards each other are mentioned

by the teachers. At school B and C, also the competitive roles and the tutoring roles towards each other are mentioned.

Table 4.4 Aspects of learning environments at three schools

Total set of utterances at each school	A %[1]	B %[1]	C %[1]	Selection of student-centred utterances at each school	A %[2]	B %[2]	C %[2]
1. Learning goals	16	19	22	3. Division of teacher and learner roles	26	19	26
2. Learning materials used	16	18	19	4. Activities of the students	23	15	11
3. Division of teacher and learner roles	15	16	11	6. Students' roles towards each other	13	22	21
4. Activities of the students	12	9	13	2. Learning materials used	13	11	5
5. Role of learning materials used	11	6	4	1. Learning goals	11	11	11
6. Students' roles towards each other	5	9	9	8. Characteristics of tasks and contents	6	4	16
7. Role of assessments	6	9	4	9. Interpersonal teacher behaviour	6	7	5
8. Characteristics of tasks and contents	6	5	5	12. Language	0	7	0
9. Interpersonal teacher behaviour	5	5	2	7. Role of assessments	0	4	0
10. Phasing of instruction	4	3	6	10. Phasing of instruction	0	0	5
11. Atmosphere	3	0	1	11. Atmosphere	2	0	0
12. Language	1	2	2	5. Role of learning materials used	0	0	0

[1] proportion of utterances from the total set of utterances of each school:
n school A = 206; n school B = 127; n school C = 98

[2] proportion of utterances from the subset of student-centred utterances of each school:
n school A = 47; n school B = 27; n school C = 19

The use of learning materials is related less to the student-centred approach by teachers of school C than by teachers at school A and B. The schools differ in the amount of available learning materials. At school C there is a shortage of textbooks in general and only worksheets are used especially for a student-centred approach.
Teachers at school C relate more of the utterances about the characteristics of tasks and contents towards a student-centred approach. They stress problem solving by the students.
With regard to the activities of the students, teachers at school A do have more knowledge and skills concerning active student-participation and relate this more frequently to a student-centred approach (23% of all student-centred utterances).

The learning goals in the total set of utterances are mentioned more frequently by teachers at school C. Foremost the knowledge of the learning content and the practical skills such as reading and speaking are stressed by these teachers, related to the weak results of their students. In the subset of student-centred utterances, the learning goals do not receive more attention at school C.

4.2 Contextual factors affecting learning environments

Table 4.5 gives an overview of all important factors from outside and inside the school which affect teachers' considerations when arranging learning environments. These aspects are located at society-level, school-level, teacher-level and student-level. Some of them are divided into different categories. See appendix 5 for a more elaborated overview of the quantitative results.

table 4.5 Contextual factors affecting learning environments at different schools

Contextual factors which influence the teachers' arrangements of learning environments	**School A/B/C**			**Subset of student-centred utterances**		**subset of utterances related to the target group of poor students**	
	n	N	%	n	%	n	%
School - Availability of teaching aids and learning facilities	42	14	17	4	9	1	1
Student - Teachers' perceptions of students characteristics	39	14	16	16	36	11	15
Society - Local authorities- lesson plans	28	11	11	0	0	0	0
Society - Ministry of Education - curriculum	25	12	10	8	18	3	4
Students - Backgrounds of the students	21	15	9	2	4	20	28
School - Basic facilities	20	9	8	1	2	17	24
School - Medium of instruction	18	12	7	1	2	2	3
Student - Teaching and learning culture	10	7	4	0	0	4	6
Student - Teachers' perceptions of the students learning	10	5	4	3	7	1	1
Teacher - Qualifications, knowledge and experience	7	6	3	0	0	0	0
School - Time	7	4	3	4	9	9	13
School - Class-size	5	5	2	3	7	1	1
Teacher - Work load	4	3	2	1	2	0	0
Student - Gender	4	3	2	1	2	0	0
School - NGO School	2	2	1	1	2	1	1
Teacher - Social background teachers	2	2	1	0	0	2	3
School – Finance	1	1	0	0	0	0	0
total	**245**	**16**	**100**	**45**	**100**	**72**	**100**

Most frequently mentioned by the teachers are (1) the availability of teaching aids and learning facilities - 17%, followed by (2) the teachers' perceptions of students' characteristics - 16%, (3) the local authorities with their lesson plans - 11% and (3) the ministry of education with the curriculum - 10%.

In the subset with student-centred utterances, the frequencies are different: the teachers' perceptions of students' characteristics are mentioned in 36% of the utterances and the Ministry of Education with its curriculum and policy in 18%.

With regard to the target group of poor students, teachers stress the following contextual factors and conditions: (1) Background of the students - 28%, (2) basic facilities - 24%, (3) teachers' perceptions of students' characteristics - 15% and (4) time - 13%.

In this section all different factors at the four levels are described. Special attention is given to the two subsets of utterances related to a student-centred approach and the target group of poor students. On the end the results of these groups and the different schools are summarized separately.

Society-level

1. Ministry of Education

On society level, teachers mention the Ministry of Education which influences the arrangement of learning environments by its curriculum and textbooks, the national exams and its policy themes. This factor occurs in 25 utterances (10%).

> Usually I teach English, so I use textbooks and teacher guides. They are already prepared by the Ministry of Education. (C37-4)
>
> What I have taught today about the myelin sheath, (...) it is not written in the book, but it is in the national exam. So I teach. (C22-2)

With regard to a student-centred approach, some teachers point at the preparation of suitable materials:

> [The textbooks] are too wide. If you go to geography and history classes, they are not much good for a student-centred approach. But if you come too civics education, they are highly participatory. (C72-5)[5]

Five teachers give indications about the new educational policy of the government. Four of their utterances are in particular pointed at a student-centred approach, but two of them express doubts about the implementation.

2. Local authorities

All teachers make use of lesson plans, which are provided by the local education authorities. In the interviews 11 teachers in 28 utterances (11%) explicitly talk about these planning forms. There are annual lesson plans which are prepared in the beginning of the school year. They contain a general planning of all topics, chapters and materials, say an overview of the curriculum contents. Besides that, teachers prepare a more elaborated weekly (or daily) lesson plan every week (see Appendix 2).

> Based on this format, I prepared. Simply here you must fill in the grade and the subject and the units if it is possible. And also how long [the phases of the lesson are]. (...) Here you can fill in what the students must do and what is expected from the students after the lesson. That is the objective. (C4-2)

A teacher is positive about the plan in the following statement:

> You have to plan: what am I doing? What am I going to do? (...) When do I complete this lesson? Planning is good, not only for education, but for any person. (C164-12)

The plan strongly influences the phasing of instruction:

> I am satisfied. I have been using that plan: I have to introduce the topic. If there is a new topic I have to introduce the unit and the topics of the unit. After that I have to discuss, I have to explain. I have to give them examples and so on. At last, in the evaluation part, I have to ask questions to them. I have to use it. (C239-16)

Notwithstanding, several teachers do not like to prepare the weekly lesson plans as becomes clear in the following parts of two utterances:

> The yearly lesson plan is enough I think. But the daily lesson plan is not important. It is repeating the yearly lesson plan. (C216-15) I always use these steps [of introduction, presentation, stabilisation and evaluation]. It is good I think, but without the lesson plan I will teach it. Because I am exercised in ten years, without change! (C218-15)

[5] This teacher even gives a clarification for the matter of thick textbooks: 'The textbook designers who prepare the textbooks earn money for every page. So that is why it is very wide.'

School-level

3. NGO School

Two teachers emphasise that the school at which they teach is no governmental school or private school, but a school of a Non-Governmental Organisation. This includes that education is not 'for profit', but for 'helping the society'. In their utterances they think positively about the staff and its dedication.

4. Medium of instruction

The language which is medium of instruction for all lessons is different in the regions of Ethiopia. In the interviews 5 teachers mention difficulties when teaching in another language as the mother tongue of the students. It affects their lessons and they try to adjust to their students as is described in the previous paragraph.

5. Availability of teaching aids and learning facilities

The availability of teaching aids and learning facilities is mentioned most frequently when teachers talk about factors and conditions which influence their arrangements of learning environments. In 42 utterances (17%) this point is raised. An overview of all different teaching aids and facilities is given in appendix 5. The laboratory materials, textbooks for students and presentation materials occur most frequently.

In many utterances the lack of teaching aids and learning facilities is obvious. The following statements are some examples:

> We cannot get Social Studies textbooks from the educational bureau here. Social Studies textbooks are prepared by the regional educational bureaus. For example in Addis Ababa, there is another social studies textbook, written in Amharic, not in English. Therefore we cannot get textbooks. Especially Social Studies, Mathematics, Amharic, all students in G. have no textbooks. There is only one textbook for the teacher (C173-13).
>
> I have no apparatus. That is a big problem, because in Ethiopia there is no kind of organisation to prepare or import this kind of materials. They are too expensive. But it is difficult for some interesting experiments. (...) Chemistry without laboratory is lifeless, because chemistry is experimental science. (C227-15)

The lack of teaching aids strongly affects teachers' arrangements of learning environments, for example:

> I sometimes use lecture method, because the textbook is not available for each of the students. How can you facilitate group-work without having the text? In that case I use lecture method. (C198-14)

Notwithstanding there are some materials available at the schools in a 'pedagogical centre'. Most of the materials are prepared by the teachers. Compared with governmental schools, the teachers see their situation as better.

6. Basic facilities

Nine teachers (n=20; 8%) mention the influence of providing basic facilities for the students in their classes. Food, clothes, sanitation, workspace and learning materials are important conditions for learning. Most of these utterances (85%) are related to the poor backgrounds of the students. When asked, one teachers says that the students need the same learning goals, but more facilities:

> I think they need a basic problem solving. They need things, not only for their education. They have to eat, they have to get everything, like other students: clothes, a place to study, facilities. How do you follow the lesson if you are starving? That's difficult... (C244-16)

At the schools involved in the study, basic facilities are financed from a foreign financial adoption program.

7.Time

18 utterances (7%) point at the factor time as an important condition affecting learning environments. Several teachers complain about less time. Especially when talking about the target group of students from poor families, teachers say that they need more time. They struggle with the problems of students who learn slowly:

> O, what can I do! Can I thin the curriculum? If I could, I would do, but I cannot. The only thing here is to arrange tutorial classes. To handle this matter, this is needed. They need more time. (C132-10)

Another teacher has the same expectations about teaching the poorest of the poor:

> Then I must work more hard. Because they are in problems. For example at this time the higher students have other helpers in their homes. (...) So in class, there is no big problem, because they have learned at home. Also their fathers and mothers, they are educated. (...) But in lower grades, families are very poor. They have not enough money to pay for teachers, so they need more time. (...) There must be additional time, more instruction, because they must be more exercised. (C224-15)

8. Class-size

The class size is an important issue for some teachers (n=7; 3%). The different schools have class sizes from 40 up to 60 students. Compared to other schools this is somewhat good. But still one teacher explains:

> You have seen that we teach large class sizes: more than 50, up to 60. So lecture method, asking and responding questions is only possible. (C38-4)

9. Finance

One teachers mentions the factor finance explicitly, but it is also included in the some utterances of the availability of materials.

Teacher-level

10. Qualifications, knowledge and experience

In 7 utterances (3%), the own qualification and knowledge or experiences of teachers are mentioned. Teachers like to emphasise that their own knowledge is very important for their lessons. In the following statement a teachers says that he has no problems with his subject:

> I have diploma in mathematics TTC, so the grade in which I teach is not difficult for me. Everything is under my control. I have been trained in that questions, so I have enough knowledge for that level. (C133-11)

11. Social background teachers

Two utterances mention the social background of the teachers. One teacher relates his own poor background to his current duty.

> I want teaching this poor. I like teaching. Interesting. Because I have no external but internal motive. I think about teaching poor families. Because I am one of the poor families. (C168-12)

The other teacher thinks that the fact that he has grown up in the same town as the students can help him to understand the students.

12. Work load

In the interviews 3 teachers indicate that their workload is too high and they do not have enough time for preparation of materials. They have to teach more lessons in a week as in governmental schools.

Student-level

13. Teaching and learning culture

With regard to the teaching and learning culture of students, 10 utterances (4%) are noticed. Most teachers point at the practice and necessity of homework. 4 teachers relate this factor to the poor backgrounds of the students and they mention different problems:

> There are so many things which are not good. Really, I sometimes suspect the aim of why I teach now. Student don't have the capacity to buy reference books. (...) They are from (...) [some tribes]. Their culture, the way they think about education: they don't think about education. They think it is easy. They don't study, they don't do their homework regularly. They are very struggling in the group. In their culture they (...) don't know the value of education. (C143-11)

This statement is from a teacher on school C. Teachers at school A and B have more positive experiences with their students.

Next to students' attitude towards homework, also absenteeism and late-coming of students is mentioned as a problem. This is strongly affected by other factors at society-level, such as working for the parents or for example at school C, many students stayed away from school for more than one month due to a conflict in the town.

14. Teachers' perceptions of the students' learning

10 utterances (4%) are about teachers' perceptions of students' learning. Five teachers mentioned discussion as an important condition for learning. When students discuss something with the teacher or with each other, they learn by this interaction.

Two teachers in physics and chemistry emphasised 'doing' as important. They pointed at doing exercises and experiments. One other teacher, talking about his lesson with a video, stressed that students learn by seeing something.

It should be noted that many teachers do not explicitly talk about their perceptions of the students' learning. For example the frequent use of lecture method does not correspond with a view on learning as interaction.

15. Teachers' perceptions of students' characteristics

Students' characteristics are frequently mentioned in all teachers' utterances about contextual factors (n=39; 16%). From them 18 utterances are about the knowledge of students. This category includes students' intellectual capacities and practical skills. Teachers have different expectations from the capacity of their students:

> I think we can help the students, we can facilitate. But it is difficult. They are poor. Most of the students they are academically weak. Some of the students are academically very talented. The gap is very, very wide. (C35-3)

Teachers try to adjust to these characteristics for example by helping students who are poor in language.

In particular at school C, teachers' perceptions about their students' knowledge are low. In their classes they have students who came from governmental schools and who have no ability to read or write sufficiently. When they write their notes, it is 'taking a picture from the blackboard' (C161-12).

From all 39 utterances 16 (41%) are related to a student-centred approach. On the one hand students have to participate and the teachers know about their achievements and knowledge:

> I know when they discuss which student is good, and which is average, and which one is poor. Because I know when they do, when they communicate, when they talk (...) I know each and everything. (C110-8)

On the other hand, a student-centred approach requests a certain basic level of knowledge from the students which is not always available:

> When you come to the reality, because of their poor educational backgrounds, [students] do not express themselves. (C61-5)

In 18 utterances (46%), teachers talk about their conceptions regarding students' attitudes. They try to change students to positive attitudes towards learning and participation. Therefore they advise them and discuss with them. In particular they try to improve their motivation.

One teacher is somewhat disappointed about her students, when she compares them with her previous school:

> When I was in that place, that refugee camp, they [the students in my class] were initiated, they want to know new things. (...) If I asked them: do you have any questions? They asked and they came to your home to discuss. But these students, they don't have this behaviour. Maybe they develop in future. (C209-14)

This teacher is more positive about the attitude of her students:

> They come, and they ask me. So they are free. They talk with me and with the other teachers. I think because they are free. (C220-15)

The same teacher adds:

> They are from higher grades. There is a difference in lower grades. Because they come from the destitute and poor families and it is more difficult for them. (C220-15)

In addition, 3 utterances with regard to students' characteristics are about the age of students. A teacher has to adjust to the students' age.

16. Backgrounds of the students

The factor of the students' backgrounds is distinguished in the economic status and circumstances of their families and their family situation, for example with whom they live in a house. Totally 21 utterances (9%) are about this factor.

In 11 utterances (52%) about the economic situation is explained how the students live in very poor circumstances. Only at school A, there are also students in higher grades from richer families. The others live as in this statement:

> They are all very poor. They have no lights in their family house. (...) They cannot read in their homes. They help their mother or father when they work on the streets to relieve themselves. (C14-2).

With regard to the family situations (n=10; 48%), many teachers emphasise the orphans and children without father or mother in their class. They lack their support and control. For the contents of the lessons, it doesn't matter, but it does matter for the facilities.

> The reality is the reality for rich people and poor people, but the way we approach is exceptional. (C75-5).

Students with relatives are supported by their parents or family. The others need special attention, for example in extra lessons, but then 'they can cope with the others' (C119-9).

17. Gender

In 4 utterances (2%) the topic of gender is mentioned by 3 teachers, when they talk about their lessons.

In all utterances the girls achieve less results as the boys. Therefore one teacher considers extra lessons for girls.

> It should be changed, it is possible to change, I surely believe it. (C65-5)

Subset of student-centred utterances

As already described, teachers relate the students' characteristics to the implementation of a student-centred approach. They point at students' knowledge and attitude as problems:

> Some students are very dull. Even they can't understand the words. Even those grade 8,9,10 students, they cannot identify the elementary words (C41-4).
>
> They [the students] have no attitude to ask their environment. They only listen. (C13-2)
>
> Due to these characteristics it is not simple to do, to make us free. (C82-6).

Further teachers know that the policy and curriculum of the Ministry of Education is directed to a student-centred approach. 'They have done their best, with student-centred material and methodology' (C40-4). But for different subjects it is still not as it should be: 'The curriculum is too large. If we make the teaching and learning student-centred, we cover only half of the textbook' (C117-9). This is related with the factor 'time', which is also important in this regard.

Teachers do not relate the use of lesson plans to the student-centred approach.

Class size is mentioned in 3 out of 7 utterances as related to this new approach. One teacher compares the present situation with his other job:

> The class size is important for student-centred. I also teach in SOS Children Village. I teach tutorial programs, in student-centred [method]. I give some questions and I say them to contact friends. Then they are asking that friends. If they ask, their friends are answering. This is important. And the class size is 25 students in one class. This school has above 45 [students] in one class. Then it is difficult. (C257-39)

With regard to teachers' perceptions of students' learning, it should be noted that learning by doing, and learning by discussion are mentioned related to a student-centred approach by few teachers.

> [The students] have to do a lot of work. You have to guide. Simply if it is student-centred, they [the students] have to do different things. (C232-16)

Subset of utterances related to the target group of poor students

It is self-evident that teachers talk about students' backgrounds as they mention the adjustments in the arrangements' of learning environments to their students who belong to the 'poorest of the poor families'. All teachers know about the environment of their students. Two teachers also relate this explicitly to their own social background.

Furthermore basic facilities are stressed in this regard. Food, clothes, sanitation, workspace and the free provision of learning materials as books and supplies are highly appreciated for the students.

At school B, a teacher explains:

> Sometimes they [the students] go and eat their breakfast and lunch here and they do not get their dinner. It is good to do something like this. (C51-4)

School A and C do not provide breakfast. One teacher tells:

> Some of the students live by only one meal. They eat their lunch, (...) if they get something from begging, they eat that thing at night. If they don't get anything, they come in the morning. In the morning they don't get anything else here also. So they wait until the lunch time. I tell you, at the lunch time, they run for their food. Because of that problem, they always ask about their problems, not about their education. (C108-8).

Also the work space is important:

> Maybe with help of God and Woord en Daad, we will open a library. That will help them [the students]. They can study within the library (C204-14).

More time for teaching and learning is also an important topic with regard to these students. From the 16 teachers, 8 mention that the students need extra tutorial classes for more help 'especially for the lower, the slow-learner students' (C34-3).

Differences between school A, B and C

Table 4.6 provides an overview of the mean frequencies of utterances from the teachers at the three different schools. Also the proportion from each factor of the total number of utterances is showed as a percentage.

Table 4.6 Contextual factors at different levels and schools

	School A (n=95; N=7)		**School B (n=78; N=5)**		**School C (n=72; N=4)**	
	n/ total N	%	n/total N	%	n/total N	%
Society						
Ministry of Education - curriculum	1,4	11	2,2	14	1,0	6
Local authorities- lesson plans	2,9	21	0,8	5	1,0	6
School						
NGO School	0,1	1	0,2	1	0,0	0
Medium of instruction	0,0	0	0,6	4	0,5	3
Availability of teaching aids and learning facilities	1,9	14	2,0	13	4,8	26
Basic facilities	1,0	7	1,0	6	2,0	11
Time	1,0	7	1,2	8	1,3	7
Class-size	0,6	4	0,4	3	0,3	1
Finance	0,0	0	0,2	1	0,0	0
Teacher						
Qualifications, knowledge and experience	0,0	0	0,6	4	1,3	6
Social background teachers	0,0	0	0,2	1	0,3	1
Work load	0,3	2	0,0	0	0,5	3
Student						
Teaching and learning culture	0,6	4	0,2	1	1,3	7
Teachers' perceptions of the students learning	1,0	7	0,4	3	0,3	1
Teachers' perceptions of students characteristics	1,4	11	4,0	26	2,3	13
Backgrounds of the students	1,3	9	1,0	6	1,8	10
Gender	0,1	1	0,6	4	0,0	0
total	**13,6**	**100**	**15,6**	**100**	**18,0**	**100**

n = Total number of utterances per school

N = Total number of teachers per school from whom these utterances are

n/ total N = Mean number of utterances per teacher at each school

% = Proportion of utterances about this aspect from the total set of utterances of each school

From table 4.6, it is clear that there are different situations concerning the mean number of utterances at the three schools. Teachers at school C mention the contextual factors and conditions more frequently (18,0) than the teachers at school B (15,6) and school A (13,6).

With regard to the local authorities and lesson plans, teachers at school A (2,9) mention this factor more often than teachers at school B (0,8) and C (1,0).

Another difference is about the 'availability of teaching aids and learning facilities', which factor is much more mentioned by teachers at school C (4,8). This is due to the lack and shortage of many learning materials such as textbooks and laboratory materials at that school.

The students' characteristics are more often mentioned at school B (4,0) than at school A (1,4) and C (2,3).

5. CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

The aim of this study is to gather more insight in the considerations of teachers, when arranging learning environments for poor youngsters from underprivileged families in Ethiopia. The study is done in a context of educational change towards more student-centred approaches.
In the following paragraphs conclusions are formulated as answers to the two research questions that are central in this study. These conclusions are discussed further and lead to recommendations in section 5.5.

5.1 Aspects of learning environments

The first research question in this study is:
a) Which choices do teachers make - according to their opinion - when arranging learning environments in general and which of these choices do they relate to a student-centred approach in particular?

It can be concluded that the teachers make choices with regard to 12 aspects of learning environments, from which the following are most frequently mentioned: *learning goals*, *used learning materials*, the *division of teacher and learner roles* and *activities of the students*. When explicitly asked, *interpersonal teacher behaviour, atmosphere* and *characteristics of the tasks and contents* are also of first importance. Other aspects indicated by the teachers are the *role of learning materials used,* the *students' roles towards each other,* the *role of assessments, phasing of instruction* and *language.*
All teachers know the student-centred approach as a new educational reform and relate it first and foremost to the *division of teacher and learner roles.* Further almost two third of them also explicitly mention the aspects *activities of the students* and *students' roles towards each other*. Other aspects (total 11) are mentioned by some teachers too.

At category level teachers make the following choices:
- Regarding learning goals, teachers foremost emphasize *knowledge of the learning content*. Secondly *practical skills* and *attitude towards the learning process* are mentioned.
A few teachers relate the *attitude towards the learning process* and the *learning process* itself to a student-centred approach. More than 50% of the teachers do not talk about a relation of learning goals with a student-centred approach.
- *Textbooks* are used by all teachers as *learning materials*. If available, also other materials such as laboratory materials, reference books and maps or pictures are regularly used.
With regard to a student-centred approach, teachers say that some textbooks are good and others are not suitable for this approach. Variety in materials stimulates different approaches in teaching, next to lecture-method.
- Currently the *division of teacher and learner roles* is first and foremost that *the teacher steers, and the learner executes*. This division is changing somewhat towards a *cooperatively steering of the learning process by the teacher and the learner* together, as is explained by 56% of the teachers. Cooperatively steering the learning process is the most important feature of student-centred education.
- When talking about the *activities of the students,* teachers try to change their practice with *passive* student activities as listening, towards *active participation of the students.* This category is stressed as an important aspect of the student-centred approach. According to the teachers, active participation means foremost questioning and answering from the students and teacher.

- Concerning *students' roles with respect to each other*, teachers mention *'learning in groups'* as an important category. Most teachers sometimes choose to let the students work together, but just a few teachers are able to explain cooperative learning strategies. Learning in pairs or groups is strongly related to a student-centred approach.
- With regard to the *characteristics of tasks and contents,* teachers explain that an *authentic environment* and *contextualised tasks* are of importance to make their teaching more 'practical'. Especially the use of an *authentic environment* and *problem solving* are seen as belonging to student-centred tasks. The present curriculum seems too difficult and abstract for the student centred approach.
- *Interpersonal behaviour* and *atmosphere* are considered to be important conditions for a good lesson. Without a good relation, communication and atmosphere, learning and working is very difficult. A positive personal relation and interest for students' problems and backgrounds is related to a student-centred approach by several teachers.

At category level the student-centred approach can be defined as choices for more cooperative steering of the learning process, participation of students in the lesson and working in groups, further supported by the use of sufficient learning materials, tasks that fit in to the students and a personal relation between the teacher and the students.
A lot of teachers have just poor knowledge about the implementation of this approach. They scarcely know examples and strategies about this reform. Notwithstanding, most teachers are positive about the direction of change, but they still notice a lot of restrictions for a full implementation.

At the different schools involved in this study, the teachers talk about the same choices in their learning environments. At school A, teachers have more and better experiences with the implementation of a student-centred approach.

5.2 Contextual factors affecting learning environments

The second research question in this study is:
b) Which important factors, both inside and outside the schools, do affect teachers' arrangements of learning environments - according to their opinion - in a context of education for poor students from underprivileged families?

Factors and conditions which affect the arrangement of learning environments occur at society, school, teacher and student level. The *availability of teaching aids and learning facilities* (school level), *the perceptions of teachers about students' characteristics* (student level), the local authorities with their prescribed *lesson plans* (society level) and the Ministry of Education with its *curriculum, national exams and policy* (society level) are mostly mentioned by the teachers.

The following can be said about the above-mentioned factors:
- With regard to the *availability of teaching aids and learning facilities*, teachers foremost stress the availability of *textbooks, laboratory materials, presentation materials, television/video, radio/tape-recorder, teacher guides* and *reference books for teachers and students.* Lack and shortages of these materials, especially textbooks and laboratory materials, do stimulate the use of lecture-method.
- Teachers try to adjust their lessons to *students' characteristics*, such as *age*, *basic knowledge* and their *attitude* towards learning. But furthermore several teachers assign poor students' to these characteristics. In their opinion

not the teachers' strategies and lessons, but the students themselves have to improve their knowledge and attitude for better results.
- The *local authorities* and *Ministry of Education* have to do with the regional and federal governmental policy rules and regulations. The authorities strongly affect the goals and approach of education. Special attention deserve the *textbooks*, written by the authorities, and the *lesson plans*. Annual lesson plans provide an overview of all contents of a subject for one year. The daily - also called weekly - lesson plans prescribe a strict model of teaching with the four phases introduction, presentation, stabilisation and evaluation.

Other contextual factors at school level are: the status of *NGO-school,* the *medium of instruction*, *basic facilities, time, class-size* and *finance;* at teacher level: *teachers' qualification/knowledge and experience*, *their social backgrounds* and *workload*; at student level: the *culture towards teaching and learning, students' learning* in itself*, students' characteristics*, their *backgrounds* and *gender*.

The arrangement of a student-centred learning environment is first and foremost affected by *teachers' perceptions of students' characteristics.* Teachers notice that students are not used to participate actively during the lessons and to ask questions. Further they are weak in many subjects. The practice of student-centred education asks for active involvement and therefore the students do not have enough knowledge and lack the right attitude. Notwithstanding, teachers see a student-centred approach as advisable for their lessons, but with these students' characteristics, it is more difficult.
Secondly the textbooks and policy of the *Ministry of Education* are important categories, affecting student-centred education. They are the reason that teachers know about this reform. The supply of student-centred materials stimulate this new approach. But at present it is noticed by the teachers that the curriculum for several subjects is too broad and too abstract for a student-centred approach.

With regard to the backgrounds of students who are foremost selected from underprivileged families, teachers in particular point at some factors at school level: *basic facilities* and *time*. The free supply of *food, clothes, sanitation, workspace* and *learning materials* such as textbooks is very important for the students. It is appreciated as conditional for learning, as students without sufficient basic facilities cannot concentrate and just think about their problems.
Further teachers are convinced that these students need extra *time* for learning. Extra time can be arranged by special tutorial classes after school. Students from very poor families do not receive help and encouragement from their parents or 'extra teachers' at home.

The contextual factor of the students' poor backgrounds also affects some choices in the arrangement of learning environments. Teachers make adjustments with regard to the following aspects: *interpersonal teacher behaviour, learning goals, activities of the students* and *atmosphere*. In particular for this target group, teachers emphasise a good relation with their students. They personally advise these students about their attitude towards the learning process, which is an explicit learning goal for them. Other learning goals about knowledge of the contents are the same for all students, but it is more difficult for the group of poor students to participate and to do their homework.

The situation with regard to contextual factors and conditions is different at school A, B and C. School C has less facilities, teachers at school A gives more attention to the lesson plans, while teachers at school B tell more about students' characteristics.

5.3 Discussion

In this section some conclusions from the previous paragraph are discussed.

Reviewing the research process

The purpose of this study is to gain more insight in the arrangement of learning environments by 16 teachers in grade 5-10. The results and conclusions give a clear picture of the teachers' considerations. This practical knowledge about the arrangement of learning environments can be distinguished from the practice in the classrooms itself and also from the educational theories about it. Stokking (2002) mentions these 3 levels as respectively 'world 1' for the real practice, 'world 2' for the knowledge people personally have about this practice and 'world 3' as the general scientific knowledge which is open for everybody. Reviewing the research process, it is interesting to consider how far the opinions of the teachers in the interviews are in accordance with the practice in their classrooms. The researcher has observed at least one lesson from each teacher, but also participated for several months at the three schools involved. From these experiences an indication of this matter can be given.

First it is important that the teachers and the researcher could refer to the observed lesson during the interviews. These utterances are consistent with the practice, although it can be mentioned that several teachers in the interviews started to 'defend' themselves, by explaining that the observed lesson was not as good as it should have been. One example is the first interview utterance of a teacher (13) who gave a lesson in lecture method about the African Highlands: 'Maybe group discussion method is better, but I can't apply that method because I have not enough time. And demonstration method is also better, but there is a problem: we have no map.' Also another teacher (05) was somewhat disappointed to the researcher about his lesson. His history lesson was a lecture about a war between Ethiopia and Egypt. During that lesson the teacher asked several questions, but just few students answered. Furthermore nobody of the students asked a question or told something to him. Notwithstanding, in his interview this teacher explained about his ideal as a 'highly participatory class'. He also mentioned his doubts and problems about the reasons why this ideal was not the case at present.

More than one half of the observed lessons were given in strict lecture-method, without any question or with very few questions of the students themselves and teachers explained this situation to the researcher. It is remarkable that teachers give more attention to participation and cooperative steering of the learning process in the interviews than in their lessons.

Altogether the total contents of the interviews do not exactly describe the situation in the classrooms, although the researcher has tried to let the teachers refer as much as possible to real lessons, but the results are mixed up with additional ideals and beliefs, which belong to teachers' practical knowledge too (Van Driel et al., 2001).

It should be noted that the interviews are not used to evaluate the practice in the classes, but the results contribute to the understanding of the teachers' perspectives with regard to the arrangement of learning environments including the difficulties that hinder teachers to implement their ideals and a student-centred approach. This notion stresses the relevancy of the second research question which asks about contextual factors. In the general description of results, special attention is given to the teachers' problems when arranging learning environments for their students. New reform efforts should take these factors into consideration and anticipate at the teachers' prejudices. Therefore the words teachers use are important results of this study, as new efforts for educational change can adjust to these conceptions.

Student-centred learning environments

'If a large gap occurs between an intended educational reform and teachers' practical knowledge, it is advisable to redefine the reform, for instance at a lower level of ambitions' (see section 2.1, Verloop et al., 2001). With regard to this issue, some comments can be made about the meaning of a student-centred approach according to the teachers.

The definition in section 5.1 shows that teachers have ideas about the contents of student-centred learning environments. Their opinions are quite similar and foremost limited to a cooperatively steering of the learning process by the teacher and the learner, active participation of the students and learning in groups. These features are an ideal and not implemented yet.

Compared with theories about modern learning environments, it is obvious that interaction and cooperative learning are important features of the student-centred approach, which are also stressed in modern educational literature. On the other side, this reform is not so far-ranging than for example the constructivistic features mentioned by Jonassen, Peck and Wilson (1999) or the developmental model of the division between teacher and learner roles in the classification scheme of De Kock (2004). According to the teachers, the students need to be involved in the learning process as much as possible, but have very few own responsibilities and cannot plan or choose learning activities by themselves.

Further teachers scarcely relate learning goals to a student-centred approach. The way most teachers think about learning goals is traditional, directed to knowledge of the content, except some teachers who mention problem solving and other skills, but in general it is clear that the new goals as mentioned by Borko and Putman (1995) in section 1.4 are not realised or even strived after.

Looking back at the advice of Verloop et al. (2001), currently it seems not realizable to implement modern constructivistic methods that let students regulate their own learning (e.g. Jonassen, 1999) at the schools involved in this study. It can be said that the student-centred approach is already located 'at a lower level of ambitions'. When looking at these ambitions, it appears that the lack of new learning goals is a bottleneck for the implementation of this approach. New learning goals include skills and processes, such as learning to cooperate in groups, which are supported by new student-centred approaches as participation and group-work. Traditional goals such as memorizing facts can also be reached by the traditional teacher-centred learning environments. At present teachers cannot use the new approach as it takes too much time and they will not finish the textbooks. When new goals are included in the curriculum, this will also stimulate a new approach.

Currently many teachers attribute their problems with regard to a student-centred approach to the students' characteristics, e.g. they are not used to participate in the lessons. This is not incorrect, but the problem is also the lack of teachers' knowledge and strategies, for example to involve the students in the lesson. When looking at the knowledge teachers have about a student-centred practice, all teachers use rhetorical concepts as participation and group work. But it is remarkable that many of them are not able to tell about their strategies or can give examples. They simply do not know about different ways of cooperative learning, realistic contexts for tasks, etc. etc. and are used to chalk-and-talk methods.

In their study about learner-centred teaching, Brodie, Lelliot and Davis (2002, also mentioned in section 2.3.2) noted that many of the South-African teachers were in fact struggling with more basic aspects of their lessons such as the levels of tasks. Brodie et al. advise that in-service teacher education programmes need to find ways to integrate what has not been enabled by pre-service programmes. Further O'Sullivan has done an action-research in Namibia which led to a reconceptualisation of the learner-centred approaches which were implemented, to more 'basic learning-centred skills' for the teachers (see section 1.2). Altogether it can be said that the teachers in this study need a basic educational skills training too.

Contextual factors

It is clear that the availability of teaching materials has a strong impact on the learning environments teachers arrange. New reform efforts should be accompanied with sufficient materials.
With regard to the materials it is good to consider that textbooks, teacher guides and reference books are even more needed as the teachers themselves are not very qualified. For most teachers in this study, this is not the case regarding their subject knowledge, but teachers lack sufficient general pedagogical knowledge.

Looking at the special target group of poor students at the schools involved in this study, the extra efforts are obvious: more basic facilities, more time, more personal attention and more advice about their attitude towards learning. Teachers have the opinion that their students need more help as they are from underprivileged families.
This study does not prove that this approach improves the results of the students, but it seems reasonable. It is interesting that the teachers foremost stress their personal relation with the students, which is important for their work-satisfaction.

With regard to the differences in the interviews of teachers at school A, B and C, it is obvious that school C has less facilities and teachers therefore talk more about this topic. Many textbooks are not available. Therefore the teachers at school C have more difficulties with a student-centred approach and use foremost the lecture method.
At school A, teachers seem to know more than at the other schools about teaching and the student-centred approach. Possibly this has to do with the fact that they already teach for several years at that school. Some of these teachers have implemented parts of the student-centred approach in most of their lessons. Therefore it is interesting that just these teachers speak - and complain - more about the lesson plans. One reason can be that these experienced teachers do not need to write lesson plans – they already know the four steps without writing. Another possibility is that the lesson plans do not correspond with their way of teaching and are too strict. Although teachers do not indicate a relation between the lesson plans and the student-centred approach, it is still needed to consider if the current daily lesson plan is sufficient for new learning goals. Probably the plan is very sufficient when the teacher steers the learning process and the goal is directed to knowledge of the content. But when arranging different learning environments, directed to cooperative steering of the learning process and process goals, a more process-oriented model is advisable (see also Veenman, et al., 1994).

A learning environments perspective in Ethiopia

When comparing the theory of chapter 2 with the two schemes (appendix 4 and 5) used to analyse the interviews it is clear that the theories that distinguish more diversified learning environments provide a good base for this study. The learning environments perspective seems to be useful when studying Ethiopian education.
The schools involved in the study are NGO-schools, from one organisation. They are not representative for all NGO-schools in Ethiopia or other governmental schools, but it is plausible that the considerations of the teachers are not very exceptional or unusual. Therefore the results may serve as background information for more research, for example about the real practice (see above, ‘world 1’) at Ethiopian schools. With regard to the reform efforts in Ethiopia, this study can be a starting point for a design study towards the implementation of a student-centred approach.
The learning environments’ perspective does not require an uncritically adaptation of western education theories and goals. The advice of the American advisor in 1942 (see section 1.2) is still useful. Therefore

this study should be discussed by Ethiopian authorities, teachers, parents and other persons concerned. The learning environments perspective can be used as an instrument to design quality education in Ethiopian schools.

5.4 Interpretation from a quality perspective

In the introduction of this study several aspects of the strive for quality education are mentioned, such as the importance of new learning goals, the policy of a student-centred approach, the role of teachers, the physical environment of the school and the role of lesson plans. In this section, these different issues regarding educational quality are reviewed in the light of the foregoing results and conclusions. Thereafter special attention is given to 'educational quality for the poor'. Furthermore quality differences between the schools involved in this study and also the specific role of NGO-schools in quality-education are indicated. Finally the relevancy of a learning environments' perspective for the strive after educational quality in Ethiopia is discussed.

Learning goals

Learning goals have an important place in teachers' considerations, but these thoughts and choices are strongly affected by the pre-scribed curriculum and textbooks. Teachers foremost emphasise knowledge of the contents and, as a consequence, 'rote learning'. A few teachers mention different learning skills, but they all have to do the same exam-and-textbook-driven curriculum. The goals of most subjects do not meet the challenges 'problem solving and creative thinking' by the students yet, as for example suggested by the Ethiopian National Agency of UNESCO (2001, see section 1.2). At present, it can be said that the quality of learning goals is not sufficient. Also teachers do not have time to experiment with new learning goals as they need to cover their textbooks in one year.

The current educational reform of a student-centred approach does not contribute to improvements in this regard, as teachers do not relate this approach to new learning goals. Furthermore teachers do not relate assessments to a student-centred approach too. But for good educational quality in Ethiopia a change in the learning goals (including the textbooks and exams) is needed. This can be done by the educational authorities, but if that takes too much time the schools involved in this study can formulate their own additional goals to strive after from now on. In that case, a solution must be found for the time-problem and the schools must choose for its own priorities. In this regard, increasing the active learning time of students by way of teacher training is also recommendable.

Student-centred policy

The student-centred policy is known by all teachers at the schools involved in this study. But most teachers do not understand the real meaning of the underlying assumptions with regard to students' learning and responsibilities. Teachers see teaching foremost as transmitting knowledge to the students (see also O'Sullivan, 2004 in section 1.2). Furthermore teachers do not have enough knowledge and skills for the implementation of cooperative and active learning strategies.

'Teacher-centred' and 'student-centred' approaches are mentioned in the interviews as the 'old lecture-method' and the 'new participative method with discussion and group work'. These rhetoric about a clear dichotomy is used by almost all teachers. But when looking at the aspects of learning environments, it can be said that there are more variations possible. Some teachers mention these diversity as they stress the use of 'different approaches' for a good lesson. Then they mean the use of different roles for the teacher and the students and the use of different materials and activities.

The student-centred approach can be seen as a strive towards more interaction and cooperative learning which will be better for the students than the chalk-and-talk method, so that is positive for the quality of education. On the other hand, the implementation is still very low.
In addition to the above mentioned aspect of goals, it is important to reconsider the meaning of student-centred learning by the teachers. Also other aspects of a learning environment such as new learning goals and the role of assessments should be included in their knowledge and skills directed to a student-centred approach. This can be reached by way of discussion and experimentation, supported by the school management and experienced teachers or educational experts.

The role of teachers

Teachers play an important role in the provision of quality education. But as is said, at present they lack sufficient knowledge about teaching strategies and the student-centred approach. They have never experienced the new way of teaching and learning by themselves. Quality improvement should start with upgrading teachers' knowledge and skills in a practical setting.
In general the moral and motivation of the teachers is good. They try to do their best and are willing to change their lessons. Many of them have a passion for the students and their subject.
At present most teachers do not blame their insufficient knowledge, but reproach their way of teaching towards the students' characteristics, the lack of materials, and so on. They should reflect on their lessons more systematically and search for other ways of teaching that adjust to the good and weak students in their classes.
Teachers are controlled and evaluated by way of lesson plans. Possibly these plans can function as a means or lever for change of the teaching approach and phasing of instruction.

Physical learning environment

When looking at the environmental conditions and facilities for learning, the schools involved in this study have a better quality as the average Ethiopian school. Classrooms and furniture are sufficient. But still, teachers face difficulties when arranging their learning environments, due to a lack of materials and facilities. Textbooks are basic materials and should be available for all students in all subjects. For example for biology, chemistry and physics, more laboratory materials are needed, while geography teachers need more maps.
Teachers make their own materials, to improve the quality of their lessons. This is stimulating for the students, but takes time for the teachers.

Lesson plans, teaching models and tools

The daily (or weekly) lesson plans are important for the arrangement of learning environments and teachers are used to the four steps of introduction, presentation, stabilisation and evaluation. Most teachers follow the plan as a strict rule, but change sometimes during the lesson as the contents are too difficult for the students.
The model is somewhat good, as it provides a clear connection with the previous lesson: during the introduction, the teacher ask questions about the previous lesson. In this model the teacher guides the students towards a clear learning goal. It helps the students to remember the contents by way of stabilisation and evaluation. Unfortunately most teachers see the model as a model for lecture-method. They held the lecture during the presentation phase which is usually the longest part of the lesson. During the stabilisation phase students take notes from the blackboard or the teacher repeats the most important points of his lecture, and finally the teacher and students ask or answer questions during a short evaluation phase.

New and complex learning goals ask for (shared) learner steering. That does not fit exactly to this model and also in the previous section is stated that a more process-oriented lesson plan is advisable. For example the possibilities for the use of advanced organisers (steps which lead the student through a process) or independent group work should be included in the model.
When striving for new learning environments it is interesting to consider changes in this model (or changes in the use of this model) for the arrangement of different learning environments. For better educational quality, these lesson models should not be overlooked as a tool for the implementation and evaluation of innovations.
For the elaboration of the lesson plan and its use to arrange learning environments for the students, the aspects of a learning environment as viewed in this study can be used. These aspects give an overview of all most relevant choices.
This tool can be used when teachers learn to design new learning environments. It is not advisable to write elaborated lesson plans for all lessons in future as it takes a lot of time and at that time teachers should be able to prepare their lessons without elaborated writing of schemes.

Educational quality for the poor

Good quality education for students from very poor families is important for the lives of these students. The schools involved in this study give hundreds of such students a chance to improve their living situation in future.
Regarding their learning at school, teachers indicate that these students need more basic facilities than other students, such as food, clothes, sanitation, etc. The sponsor program is important for financing these facilities and it can be said that this is good at school A and B. School C is struggling for improvement, which will be realised in the near future.
At all schools, extra time for learning and instruction is needed, according to the teachers. They explain that these students are not able to do their homework and have no additional teachers at home as other students have. It is not impossible that these students need more time for learning, but at present the schools should try to improve the 'active learning time' during the lessons. When students actively participate and work on different activities, the results can possibly improve.
The students' backgrounds affect the implementation of a student-centred approach. These students do not have the habit to participate. At the schools is a large gap between good and weak students. At present teachers are not able to differentiate in their lessons for these students.
With regard to the poor backgrounds of the students, but also in general for learning and teaching, the teachers stress their pedagogical approach and interpersonal teacher behaviour. Teachers point at the avoidance of (corporal) punishment and stress a good relation with their students. They feel themselves as fathers and mothers of the students who are orphans. Teachers think about students' personal problems and try to help them. This bearing for the students gives them a real dedication to their work.
This positive relation is not always at present. Teachers feel themselves not capable to meet all problems of their students. This cannot be solved by some financial or technical measures. It needs personal counselling and guidance for the students and the teachers.
Altogether, when looking at educational quality for the poor and a student-centred approach, in particular the interpersonal teacher behaviour should not be overlooked.

Differences in quality

When comparing the three schools in this study, the quality of education at school A is better than at the other two schools. The teachers from school A mention more different goals and problem solving, they have

better facilities and materials for the students and the teachers also use more different teaching strategies, such as working in groups and pairs.
At school B, the situation is different, as teachers use foremost lecture method, have less materials and do not mention these different goals. But at school C the facilities are absolutely insufficient and teachers are not able to teach well without textbooks. For that reason lecture-method is common. On the other side, at all schools there were some excellent teachers who used different approaches.
It is possible that the situation at school A, the best school, is due to the students' population. In grade 5-10 at school A, only few students are selected from the poorest families and the others are fee-payers. At school B and C, all students are from underprivileged families. Participation and cooperative learning at school A is better, but that may be related to the backgrounds of the students.

NGOs and educational quality

It is suggested in chapter 1 that NGOs play an important role in the provision of quality education. For the schools involved in this study we can say that their exam results and several aspects of its learning environments are better than at most governmental schools in their regions, according to the teachers. This is remarkable as the students come from the more difficult target group of poor families. On the other hand, this NGO has the possibility of purchasing more and better materials and facilities which supports their education. But foremost the personal guidance of the students stimulates the good results and quality.
All three schools have contacts with a foreign NGO for financing its running costs. But it is also important to point at the possibilities for knowledge exchange. In particular with regard to educational quality, it becomes clear in this study that some problems cannot be solved by just finance. The Worldbank (2005, section 1.1) was right to suggest that money is not irrelevant, but certain behaviour by teachers, students and directors is more important. Further in a situation of less materials, the teachers' knowledge and skills are even more needed than in a situation with highly pre-structured and elaborated materials. Therefore the contribution to knowledge projects, such as capacity building, should be a priority for NGOs involved in quality education.
On the other hand, it is impossible to solve the problems with regard to educational quality without financing basic facilities, teaching materials and salaries of teachers.
At present the schools have good relations with other schools in the surroundings. The NGO involved in this study should try to serve as a knowledge centre for these schools, contributing to the general strive for educational quality in Ethiopia.

Relevancy of the learning environments perspective for educational quality

In this study the use of a learning environments perspective provides an overview of teachers' practical knowledge about the choices they make, leading to specific learning environments. Teachers are viewed as 'designers' of these learning environments. As is explained in section 2.1, teachers do not have completely free choices in this regard and in particular in the traditional Ethiopian situation, the choices of the teachers are foremost restricted to 'following the textbook'. But when looking at the strive for educational quality, which consists of new learning goals and communicative learning approaches, the design role of teachers becomes more important. Therefore the relevancy of the learning environments perspective in nowadays Ethiopia is increasing. Teachers need to adjust to the students and differentiate in their lessons. The learning environments' perspective provides an overview of choices regarding different aspects. This can serve as tool for the teachers, when arranging learning environments.
At present teachers are talking about just two types of learning environments: the traditional and the student-centred approach. They face difficulties when changing from the 'old' to the 'new' one. The learning

environments' perspective as used in this study can help them with 'mixed configurations' which can lead them towards more student-centred learning environments.
From an organisational point of view, the school management should use the learning environments perspective when striving for professional development and evaluation of the teachers. At present the lesson plans are an important tool to evaluate and control the teachers, but these plans are too strict for the modern learning environments. The learning environments perspective stimulates discussion about the choices teachers make.

For the organisation, the continuity of teachers is an important issue. When striving after professional development of teachers, it is important to ensure that the teachers are willing to stay for more years at a school. Currently, most teachers at school A teach for more years, while teachers at school B and C are recruited not long ago. Possibly the facilities for teachers can contribute positively in this regard, especially when the location of the school is outside the country's capital such as school B and C. Further it is interesting to consider if teaching the 'poorest of the poor' is more difficult than teaching at other schools. Teachers at school A stay longer, and they have a more varied students' population. But teachers with an 'internal motive' seem to be more involved in the school's activities and will stay longer.

Further the society level should not be overlooked in the learning environments perspective. The Ethiopian educational authorities have an important role in the improvement of educational quality by way of the curriculum, textbooks and exams. Therefore good cooperation with the schools at the grass-root level is very important. It is interesting to consider if there is room for experimentation with new learning environments. The teacher training institutes and colleges should play an important role in this regard.

5.5 Recommendations

The previous sections give indications for different recommendations, which are summarized in this paragraph.

For the NGO involved in this study, the following recommendations are directed to its policy and strive for quality improvement:

1. Next to the learning goals regarding the learning contents, more different goals such as problem solving and other learning skills and attitudes should be strived after by the teachers. Therefore the NGO should conduct a discussion about additional goals and the way how to approach these goals. This discussion can be seen as an aspect of the student-centred approach.
2. The teachers need teacher training about basic (active) teaching strategies and should implement these strategies in their lessons to increase the students' participation.
3. The use of lesson plans should be changed towards a more process oriented teaching model and the use of a tool for the arrangement of more diversified learning environments.
4. For all training and innovation activities, the contextual factors and conditions as described in this study should be taken into consideration.
5. Use of a 'train the trainers approach': more experienced teachers with a student-centred approach counsel less experienced teachers.
6. With regard to the target group of poor students, the program for basic facilities should be continued and even improved. Furthermore the use of learning time should be taken into consideration. The active learning time during the lessons can be improved and weak students are assisted in tutorial classes.

At society level, the following recommendations are main challenges for the governmental policy and the role of NGOs:

7. The educational authorities should discuss the consequences of a student-centred approach for their learning goals. In this study, it is clear that the change of approach from teacher-centred towards student-centred is not possible without fundamental changes in the curriculum. When problem solving and other cognitive learning skills or goals towards students' attitudes are strived after, the memorizing of facts should decrease. This discussion should be held together with all persons involved in education.
8. NGOs should experiment with curriculum changes and changes in the learning environment, in cooperation with the authorities. During and on the end of the process, evaluations of the learning experiences should benefit other schools.
9. The current teacher training is not sufficient for teachers' development regarding new learning goals and arrangements. To make teachers free from their own traditional experiences with teaching, they need elaborated possibilities for try out and experiments wit new learning environments during their study.

In future, more educational research should be conducted to support the Ethiopian educational situation. Therefore the following recommendations are given:

10. There are only few studies about education in Ethiopia, foremost from foreign researchers. The own capacity of Ethiopian educational research should be strengthened.
11. This study is about teachers' practical knowledge, with data derived from interviews. It is advisable to conduct further observational research in classrooms to get a more validated picture of educational practice in Ethiopian schools.

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SAMENVATTING (SUMMARY IN DUTCH)

Onderwijskwaliteit voor de armen
Een leeromgevingsperspectief op Ethiopische scholen

Ethiopië ligt in het noordoosten van Afrika en hoort bij de armste landen ter wereld. Het onderwijssysteem in dit land is in de afgelopen jaren sterk uitgebreid, maar nog steeds gaat een aanzienlijk deel van de kinderen niet naar school[6]. Daarnaast is ook op het gebied van onderwijskwaliteit nog veel te verbeteren.

De overheid streeft in haar beleid onder meer naar een student-gerichte benadering en vernieuwde leerdoelen (bijvoorbeeld probleem oplossen) op de scholen. Het traditionele onderwijs legt veel nadruk op het uit het hoofd leren van feiten.

Niet-gouvernementele organisaties (NGO's) spelen een belangrijke rol in het verstrekken en beïnvloeden van het onderwijs In Ethiopië. Op drie NGO-scholen is een interviewstudie uitgevoerd naar de praktijkkennis van leraren, met als doel inzicht te krijgen in de keuzes en opvattingen van leraren rond het arrangeren van leeromgevingen voor hun studenten. Deze studie rapporteert over dit onderzoek.

Het onderzoek is opgezet vanuit de volgende twee onderzoeksvragen:

(1) Welke keuzes maken leraren – volgens henzelf – wanneer ze leeromgevingen arrangeren en welke van deze keuzes relateren ze in het bijzonder aan een student-gerichte benadering?

(2) Welke belangrijke factoren, binnen en buiten de school, beïnvloeden het arrangeren van leeromgevingen – volgens de leraren – in een context van onderwijs voor arme studenten uit kansarme families?

Met 16 leraren uit klas 5 tot 10 zijn interviews gehouden aan de hand van een aantal half-open vragen. De data is geanalyseerd met behulp van een label-systeem. Als basis voor dat systeem is recente literatuur over leeromgevingen en omgevingsfactoren gebruikt.

Uit de resultaten blijkt dat de leraren keuzes maken rond de volgende aspecten: (1) leerdoelen, (2) leermaterialen, (3) verdeling van leerkracht- en leerlingrollen, (4) actviteiten van de leerlingen, (5) rol van de leermaterialen, (6) rollen van leerlingen ten opzichte van elkaar, (7) functie van beoordelingen, (8) kenmerken van de leertaak en inhoud, (9) interpersoonlijk leraargedrag, (10) fasering van de instructie, (11) atmosfeer en (12) taal.

Verschillende aspecten zijn verdere onderverdeeld in categorieën. Leraren zien de volgende categorieën van de aspecten 3,4 en 6 als kenmerkend voor student-gericht onderwijs: (1) de leerkracht en de leerling sturen gezamenlijk het leerproces, (2) studenten participeren actief in de les en (3) leren met behulp van groepswerk.

Als antwoord op de tweede onderzoeksvraag onderscheiden leraren 17 verschillende factoren op maatschappij-niveau, school-niveau, leerkracht-niveau en leerling-niveau die hun keuzes in de vormgeving van leeromgevingen beïnvloeden. Met name (1) de beschikbaarheid van leermaterialen en faciliteiten, (2) de opvattingen over kenmerken van de studenten en (3) het overheidscurriculum spelen een belangrijke rol. Een tekort aan leermaterialen zoals tekstboeken laat leraren kiezen voor de traditionele frontale methode, waarin hij/zij een mondelinge uitleg geeft en de leerlingen vervolgens de aantekeningen van het bord overnemen. Op dit moment is de student-gerichte benadering nog niet voldoende geïmplementeerd in de lessen en leraren wijten dit aan verschillende factoren, zoals tijdgebrek.

[6] In 2001-02 ging 64% van de kinderen in de leeftijdscategorie van het primaire onderwijs en 85% in de leeftijdcategorie van het secondaire onderwijs niet naar school (In: Human Development Index 2004).

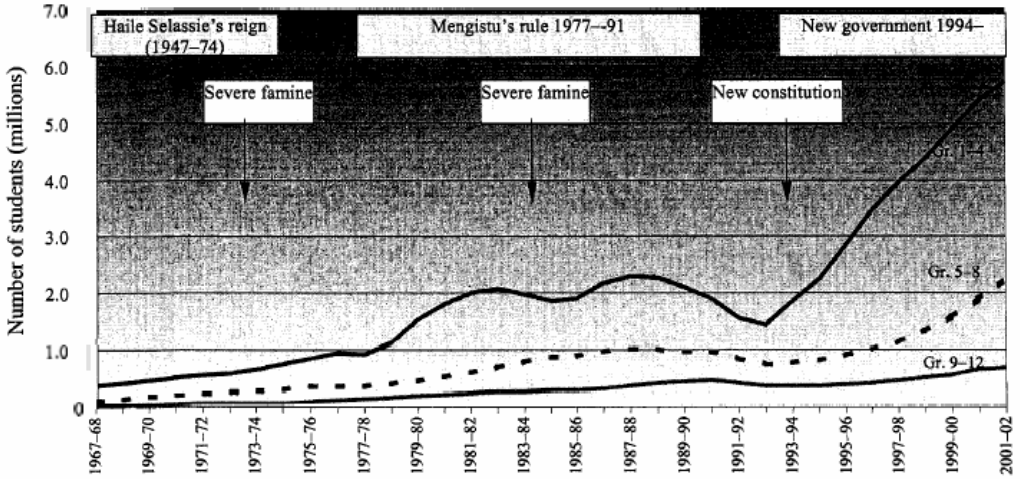
De leerlingen op de scholen uit dit onderzoek worden geselecteerd uit de armste families in de omgeving. Met betrekking tot deze doelgroep zijn leraren van mening dat deze leerlingen hetzelfde onderwijs nodig hebben als op andere scholen, maar dat extra basisvoorzieningen zoals voedsel en kleding noodzakelijk zijn. Verder verwachten de leraren dat deze studenten meer instructietijd nodig hebben, bijvoorbeeld in de vorm van bijles.

Het streven naar nieuwe leerdoelen blijkt nog weinig voor te komen in de kennis van de leraren en in het curriculum. Ook zijn leraren niet in staat de onderdelen van de student-gerichte benadering voldoende toe te lichten met voorbeelden of strategieën, maar zijn ze wel positief over de ingezette richting.

Naar aanleiding van de conclusies worden aanbevelingen gedaan richting de betreffende scholen en de overheid om de kwaliteit van het onderwijs te kunnen verbeteren. Training van leerkrachten, discussie over de gewenste leerdoelen en de praktische toepassing van het leeromgevingsperspectief zijn daarin belangrijke componenten.

APPENDIX 1 ETHIOPIAN EDUCATION

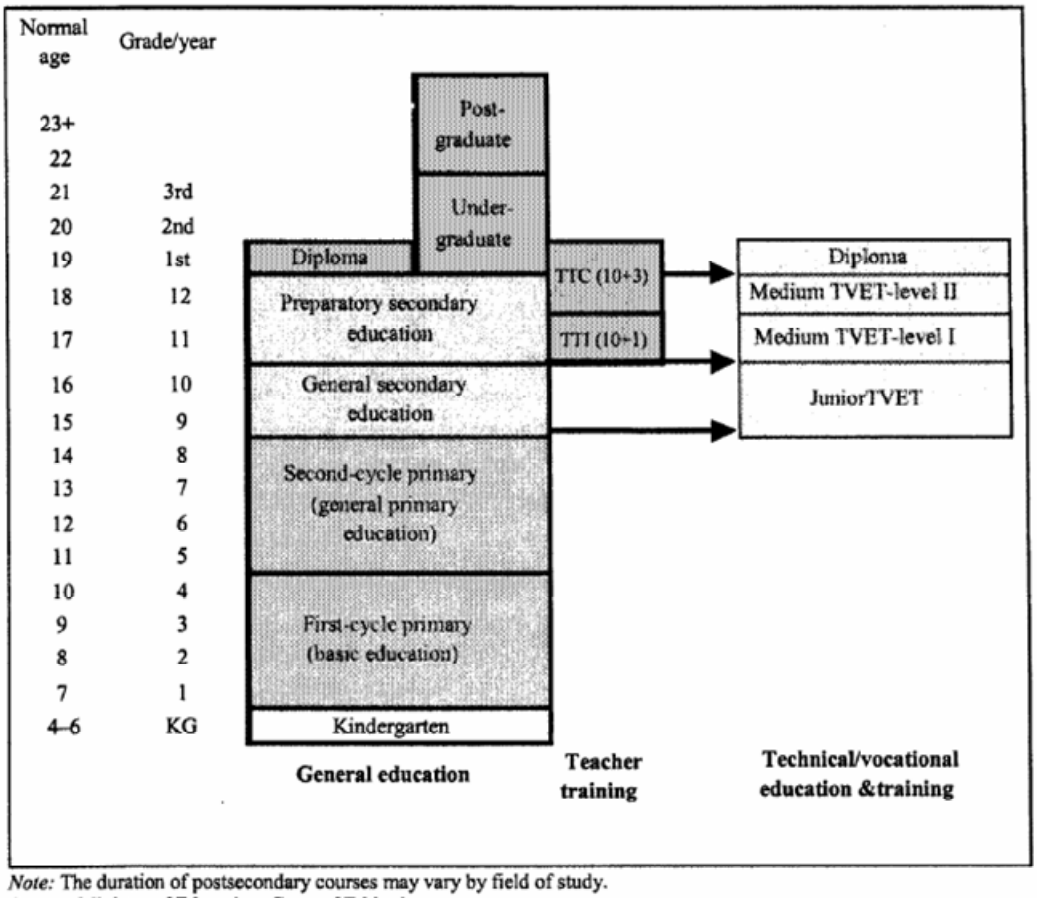
Table 1 Enrolments in grades 1-12, Ethiopia 1967-2002



Note: Data include only students in regular programs in government and nongovernment schools.
Source: Govt. of Ethiopia 1994, for 1967–68 – 1992–93 data; Govt. of Ethiopia 1995, for 1993–94 data; Govt. of Ethiopia 1996, for 1994–95 data; Govt. of Ethiopia 1997, for 1995–96 data; Govt. of Ethiopia 1998, for 1996–97 data; Govt. of Ethiopia January 1999, for 1997–98 data; Govt. of Ethiopia August 1999, for 1998–99 data; Govt. of Ethiopia 2000, for 1999–00 data; Govt. of Ethiopia 2001, for 2000–01 data; and Govt. of Ethiopia 2002, for 2001–02 data.

Source: Worldbank, 2005 (p.22)

Table 2 Structure of the Ethiopian Education System in 2003-04

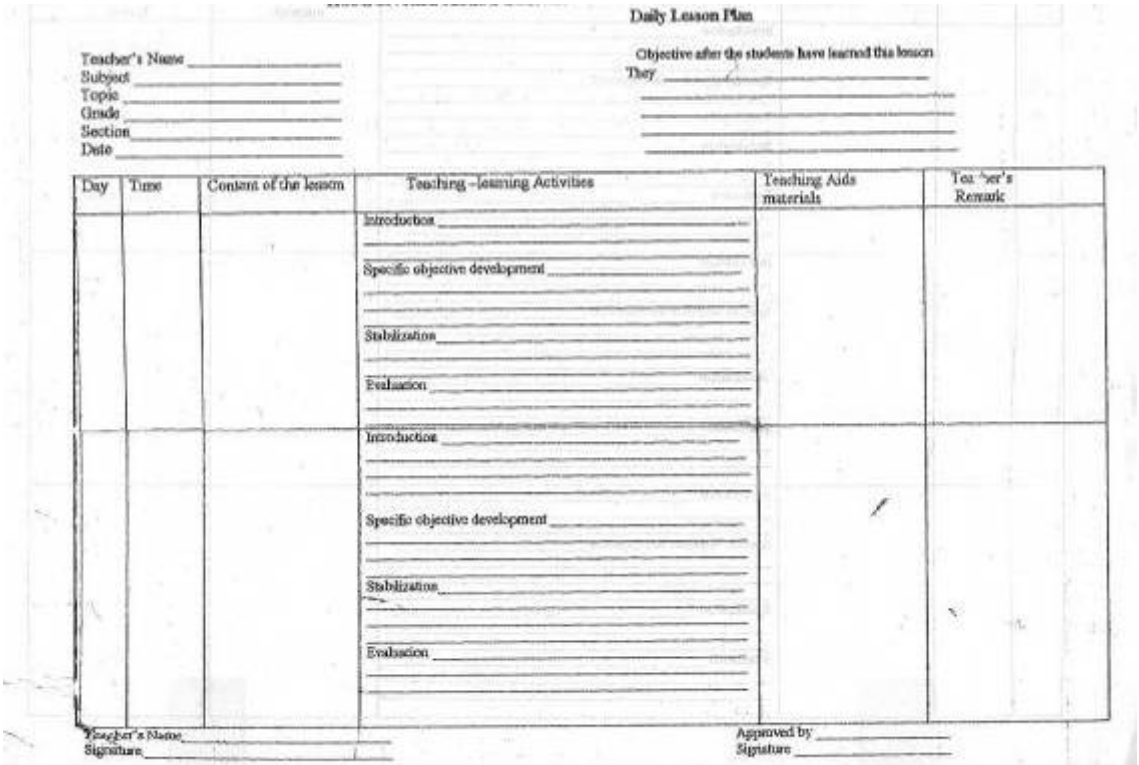


Note: The duration of postsecondary courses may vary by field of study.
Source: Ministry of Education, Govt. of Ethiopia.

Source: Worldbank, 2005 (p. 20)

APPENDIX 2 LESSON PLAN

Weekly Lesson Plan – **Addis Ababa** (English version)



Daily Lesson Plan

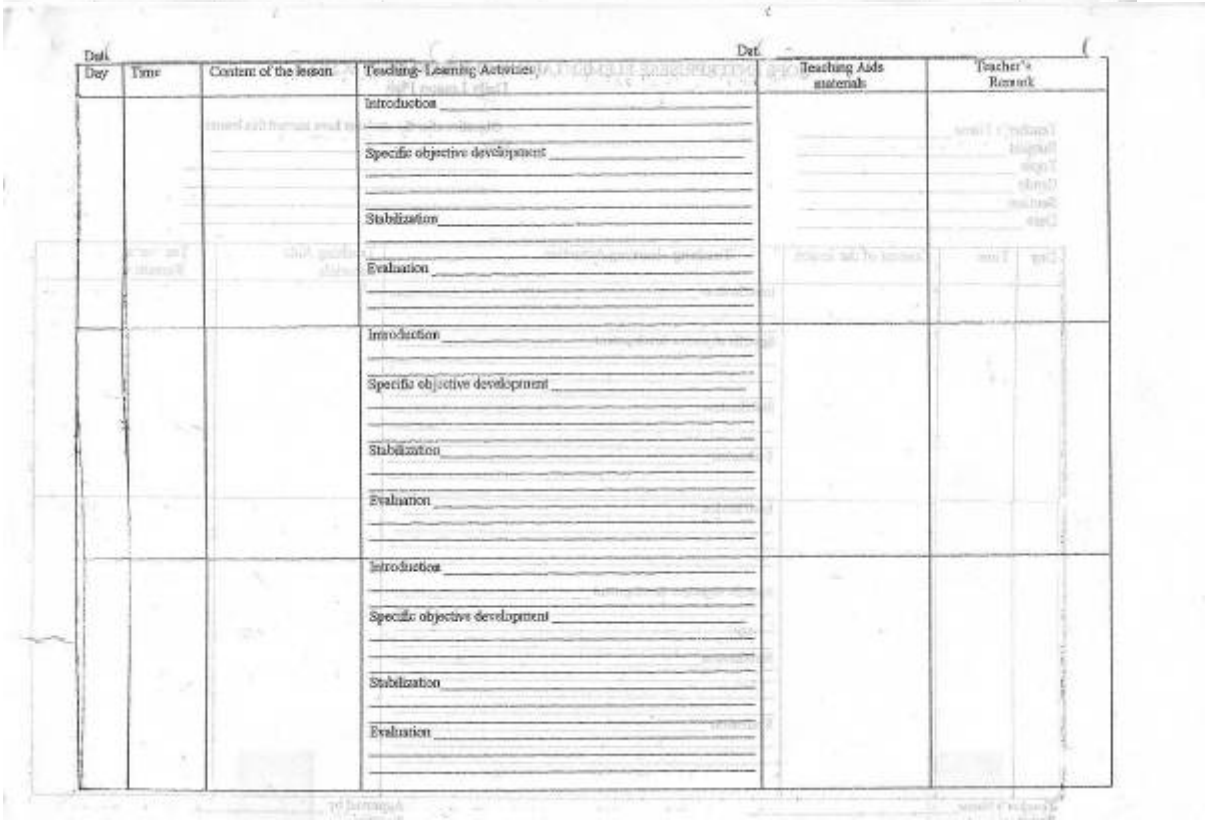
Teacher's Name _____
Subject _____
Topic _____
Grade _____
Section _____
Date _____

Objective after the students have learned this lesson
They _____

Day	Time	Content of the lesson	Teaching –learning Activities	Teaching Aids materials	Tea 'ser's Remark
			Introduction _____ Specific objective development _____ Stablization _____ Evaluation _____		
			Introduction _____ Specific objective development _____ Stablization _____ Evaluation _____		

Teacher's Name _____
Signature _____

Approved by _____
Signature _____



Dat

Dat

Day	Time	Content of the lesson	Teaching- Learning Activities	Teaching Aids materials	Teacher's Remark
			Introduction _____ Specific objective development _____ Stablization _____ Evaluation _____		
			Introduction _____ Specific objective development _____ Stablization _____ Evaluation _____		
			Introduction _____ Specific objective development _____ Stablization _____ Evaluation _____		

APPENDIX 3 INTERVIEW GUIDE

Topic-interviews after observations

1. What kind of choices did you make in the planning of this lesson, in order to realize this particular form and content of the lesson?
Did you also make some choices during the lesson that have determined the form and/or content of the lesson?
- What is the importance of these specific choices? Which specific options were present for each of the choices you made? What are restrictions in your choices?
In case of misunderstanding due to language difficulties: How did you prepare your lesson? Did you change something of your preparation during the lesson?

2. Can you describe a lesson in the past which was totally different from the observed lesson? Can you describe the differences and similarities between these two lessons?

3. Was the lesson, I observed, given with a student-centred approach in your opinion? Why or why not? Could you explain this way of teaching? What do you think about it? Do you always use it? Which choices do you have to make for such a lesson?
- How does an excellent lesson look like in your opinion?

4 .What kind of textbooks and/or curriculum materials did you use, in order to realize this particular form and content of the lesson? Could you explain which information you got from these materials?
- Did you change something in order to realize the lesson, I observed? Could you explain what and why? How important is it for you, to use this method/these materials?
- From the perspective of a student-centred-approach: how do you think about these materials?

5. Did you make special choices in the planning of this lesson or in other lessons, that have relations to the background of the students? Are there special adjustments to be made for the students at this school? What kind of events in your lessons do you relate to their backgrounds?
- What kind of learning goals are desired for these students? Do they need the same education as students on other (governmental) schools?

6. How do you usually evaluate the progress and results of your students? What are other ways to assess their results? Which way do you prefer?

7. In this interview you have told me about a range of choices for giving your lessons. But which choice do you consider as most important for the realization of the form and content of lessons?
In case of misunderstanding due to language difficulties: You told me a lot of things about teaching in this interview. But what is the most important thing for a good lesson in your opinion?

APPENDIX 4 CODING SCHEME AND RESULTS 'ASPECTS OF LEARNING ENVIRONMENTS'

	School A/B/C (N=16)											School A (N=7)								School B (N=5)								School C (N=4)							
	Total set of utterances (n=431)			*Subset of student-centred utterances (n=93)*				*Subset of utterances related to the target group of poor students (n=28)*				*Total set of utterances (n=206)*				*Subset of student-centred utterances (n=47)*				*Total set of utterances (n=127)*				*Subset of student-centred utterances (n=27)*				*Total set of utterances (n=98)*				*Subset of student-centred utterances (n=19)*			
	n	**N**	**%[1,2]**	**n**	**N**	**%[1]**	**%[3]**	**n**	**N**	**%[1]**	**%[3]**	**n**	**N**	**n/N[4]**	**%[1]**	**n**	**N**	**n/N[4]**	**%[1]**	**n**	**N**	**n/N[4]**	**%[1]**	**n**	**N**	**n/N[4]**	**%[1]**	**n**	**N**	**n/N[4]**	**%[1]**	**n**	**N**	**n/N[4]**	**%[1]**
Learning goals	**78**	**16**	**18**	**10**	**7**	**11**	**13**	**6**	**6**	**21**	**8**	**32**	**7**	**4,6**	**16**	**5**	**3**	**0,7**	**11**	**24**	**5**	**4,8**	**19**	**3**	**2**	**0,6**	**11**	**22**	**4**	**5,5**	**22**	**2**	**2**	**0,5**	**11**
Knowledge of learning content	39	15	50	1	1			2	2			18	7			1	1			10	4			0	0			11	4			0	0		
Attitude towards learning content	5	4	6	0	0			0	0			3	3			0	0			2	1			0	0			0	0			0	0		
Attitude towards learning process	12	7	15	3	2			2	2			2	1			0	0			7	3			2	1			3	3			1	1		
Learning skills	6	3	8	1	1			1	1			2	1			1	1			3	1			0	0			1	1			0	0		
Practical skills	13	6	17	2	2			1	1			5	2			1	1			1	1			0	0			7	3			1	1		
Learning process	3	3	4	3	3			0	0			2	2			2	2			1	1			1	1			0	0			0	0		
Learning materials used [5]	**74**	**16**	**17**	**10**	**9**	**11**	**14**	**0**	**0**	**0**	**0**	**32**	**7**	**4,6**	**16**	**6**	**5**	**0,9**	**13**	**23**	**5**	**4,6**	**18**	**3**	**3**	**0,6**	**11**	**19**	**4**	**4,8**	**19**	**1**	**1**	**0,3**	**5**
Textbook for student	33	16		7	7							11	7			4	4			16	5			3	3			6	4			0	0		
Textbook / guide for teacher	10	9		0	0							2	2			0	0			3	3			0	0			5	4			0	0		
Reference-book / library for student	6	5		0	0							3	3			0	0			3	3			0	0			0	0			0	0		
Reference-book / library for teacher	11	9		0	0							4	3			0	0			3	2			0	0			4	4			0	0		
Laboratory materials	13	6		2	1							7	3			2	1			3	1			0	0			3	2			0	0		
Presentation materials (map, pictures, etc.)	9	7		0	0							3	3			0	0			2	1			0	0			4	3			0	0		
Television, video	5	3		0	0							2	1			0	0			3	2			0	0			0	0			0	0		
Radio, tape-recorder	3	3		0	0							1	1			0	0			0	0			0	0			2	2			0	0		
Authentic material	2	2		0	0							1	1			0	0			1	1			0	0			0	0			0	0		
Blackboard	6	5		0	0							2	2			0	0			1	1			0	0			3	2			0	0		
ICT	1	1		0	0							0	0			0	0			1	1			0	0			0	0			0	0		
Stickers	2	2		0	0							2	2			0	0			0	0			0	0			0	0			0	0		
Worksheets	2	2		1	1							1	1			0	0			0	0			0	0			1	1			1	1		
Division of teacher and learner roles	**62**	**16**	**14**	**22**	**14**	**24**	**35**	**1**	**1**	**4**	**2**	**31**	**7**	**4,4**	**15**	**12**	**7**	**1,7**	**26**	**20**	**5**	**4,0**	**16**	**5**	**4**	**1,0**	**19**	**11**	**4**	**2,8**	**11**	**5**	**3**	**1,3**	**26**
Teacher steers learning process, learner executes	41	15	66	11	9			1	1			19	6			5	4			14	5			3	2			8	4			3	3		
Teacher and learner cooperatively steer the learning process	21	9	34	11	8			0	0			12	6			7	5			6	2			2	2			3	1			2	1		

Activities of the students	**48**	**15**	**11**	**17**	**10**	**18**	**35**	**4**	**3**	**14**	**8**		**24**	**7**	**3,4**	**12**	**11**	**5**	**1,6**	**23**		**11**	**4**	**2,2**	**9**	**4**	**3**	**0,8**	**15**		**13**	**4**	**3,3**	**13**	**2**	**2**	**0,5**	**11**
Passive	11	7	23	1	1			1	1				3	2			1	1				3	2			0	0				5	3			0	0		
Active participation	28	11	58	15	10			1	1				16	6			9	5				6	4			4	3				6	2			2	2		
Homework	7	5	15	1	1			2	2				3	1			1	1				2	3			0	0				2	2			0	0		
Music	2	2	4	0	0			0	0				2	2			0	0				0	0			0	0				0	0			0	0		
Role of learning materials used	**33**	**12**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**22**	**7**	**3,1**	**11**	**0**	**0**	**0,0**	**0**		**7**	**2**	**1,4**	**6**	**0**	**0**	**0,0**	**0**		**4**	**3**	**1**	**4**	**0**	**0**	**0,0**	**0**
Source of information	6	3	18										3	2								3	1								0	0						
Demonstration/explanation	13	9	39										8	5								3	2								2	2						
Motivation	7	5	21										6	4								1	1								0	0						
Guideline	7	5	21										5	4								0	0								2	1						
Students' roles towards each other	**30**	**15**	**7**	**16**	**10**	**17**	**53**	**0**	**0**	**0**	**0**		**10**	**6**	**1,4**	**5**	**6**	**4**	**0,9**	**13**		**11**	**5**	**2,2**	**9**	**6**	**4**	**1,2**	**22**		**9**	**4**	**2,3**	**9**	**4**	**3**	**1,0**	**21**
Competitive	2	2	7	1	1								0	0			0	0				1	1			1	1				1	1			0	0		
Learning in groups	25	15	83	14	10								10	6			6	4				9	5			5	4				6	4			3	2		
Tutoring	3	3	10	1	1								0	0			0	0				1	1			0	0				2	2			1	1		
Role of assessments	**29**	**16**	**7**	**1**	**1**	**1**	**3**	**1**	**1**	**4**	**3**		**13**	**7**	**1,9**	**6**	**0**	**0**	**0,0**	**0**		**12**	**5**	**2,4**	**9**	**1**	**1**	**0,2**	**4**		**4**	**4**	**1**	**4**	**0**	**0**	**0,0**	**0**
Formative	15	12	52	1	1			0	0				8	6								6	5			1	1				1	1						
Summative	12	9	41	0	0			0	0				4	3								5	3			0	0				3	3						
Diagnostic	1	1	3	0	0			1	1				1	1								1	1			0	0				0	0						
Comparison	1	1	3	0	0			0	0				0	0								0	0			0	0				0	0						
Characteristics of tasks and contents	**24**	**12**	**6**	**7**	**6**	**8**	**29**	**1**	**1**	**4**	**4**		**13**	**6**	**1,9**	**6**	**3**	**3**	**0,4**	**6**		**6**	**4**	**1,2**	**5**	**1**	**1**	**0,2**	**4**		**5**	**3**	**1,3**	**5**	**3**	**3**	**0,8**	**16**
Authentic environment	8	6	33	3	3			1	1				5	4			2	2				2	1			1	1				1	1			0	0		
Contextualized	3	3	13	0	0			0	0				2	2			0	0				1	1			0	0				0	0			0	0		
Problem solving	4	3	17	3	3			0	0				2	2			1	1				0	0			0	0				2	2			2	2		
Complexity	9	8	38	1	1			0	0				4	3			0	0				3	3			0	0				2	2			1	1		
Interpersonal teacher behaviour	**19**	**11**	**4**	**6**	**6**	**6**	**32**	**11**	**9**	**39**	**61**		**9**	**5**	**1,3**	**4**	**3**	**3**	**0,4**	**6**		**4**	**3**	**0,8**	**3**	**2**	**2**	**0,4**	**7**		**6**	**3**	**1,5**	**6**	**1**	**1**	**0,3**	**5**
Phasing of instruction	**19**	**9**	**4**	**1**	**1**	**1**	**5**	**0**	**0**	**0**	**0**		**11**	**5**	**1,6**	**5**	**0**	**0**	**0,0**	**0**		**6**	**3**	**1,2**	**5**	**0**	**0**	**0,0**	**0**		**2**	**1**	**0,5**	**2**	**1**	**1**	**0,3**	**5**
Atmosphere	**8**	**6**	**2**	**1**	**1**	**1**	**13**	**3**	**3**	**11**	**38**		**7**	**5**	**1,0**	**3**	**1**	**1**	**0,1**	**2**		**0**	**0**	**0,0**	**0**	**0**	**0**	**0,0**	**0**		**1**	**1**	**0,3**	**1**	**0**	**0**	**0,0**	**0**
Language	**7**	**5**	**2**	**2**	**2**	**2**	**29**	**1**	**1**	**4**	**14**		**2**	**1**	**0,3**	**1**	**0**	**0**	**0,0**	**0**		**3**	**3**	**0,6**	**2**	**2**	**2**	**0,4**	**7**		**2**	**1**	**0,5**	**2**	**0**	**0**	**0,0**	**0**
Total	**431**	**16**	**100**	**93**	**16**	**100**	**22**	**28**	**14**	**100**	**6**		**206**	**7**	**29,4**	**100**	**47**	**7**	**6,7**	**100**		**127**	**5**	**25,4**	**100**	**27**	**5**	**5,4**	**100**		**98**	**4**	**24,5**	**100**	**19**	**4**	**4,8**	**100**

[1] % = the proportion of utterances about an aspect from the total (sub)set of utterances

[2] % = the proportion of utterances in a category from the total number of utterances about the corresponding aspect

[3] % = the proportion of utterances from the total number of utterances about this aspect

[4] n/N = the n of utterances about this aspect divided through the *total* N of school A, B or C

[5] The sum of all utterances in the categories of learning materials is more than the total number of utterances about this aspect. Some aspects are counted in more categories. (see chapter 3 for an explanation).

APPENDIX 5 CODING SCHEME AND RESULTS 'CONTEXTUAL FACTORS'

	School A/B/C (N=16)											School A (N=7)				School B (N=5)				School C (N=4)			
	Total set of utterances (n=245)			*Subset of student-centred utterances (n=45)*				*Subset of utterances related to the target group of poor students (n = 72)*				*Total set of utterances (n=95)*				*Total set of utterances (n=78)*				*Total set of utterances (n=72)*			
	n	**N**	**%[1,2]**	**n**	**N**	**%[1]**	**%[3]**	**n**	**N**	**%[1]**	**%[3]**	**n**	**N**	**n/N[4]**	**%[1]**	**n**	**N**	**n/N[4]**	**%[1]**	**n**	**N**	**n/N[4]**	**%[1]**
Society																							
Ministry of Education	**25**	**12**	**10**	**8**	**7**	**18**	**32**	**3**	**2**	**4**	**12**	**10**	**5**	**1,4**	**11**	**11**	**4**	**2,2**	**14**	**4**	**3**	**1,0**	**6**
Curriculum/textbooks	16	10	64	4	4			1	1			7	5			7	4			2	1		
National exam	4	3	16	0	0			1	1			1	1			3	2			0	0		
Policy	5	5	20	4	4			1	1			2	2			1	1			2	2		
Local authorities- lesson plans	**28**	**11**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**6**	**2,9**	**21**	**4**	**3**	**0,8**	**5**	**4**	**2**	**1,0**	**6**
Annual lesson plan	6	6	21									5	5			0	0			1	1		
Daily lesson plan	22	11	79									15	6			4	3			3	2		
School																							
NGO School	**2**	**2**	**1**	**1**	**1**	**2**	**50**	**1**	**1**	**1**	**50**	**1**	**1**	**0,1**	**1**	**1**	**1**	**0,2**	**1**	**0**	**0**	**0,0**	**0**
Medium of instruction	**5**	**5**	**2**	**1**	**1**	**2**	**20**	**2**	**2**	**3**	**40**	**0**	**0**	**0,0**	**0**	**3**	**3**	**0,6**	**4**	**2**	**2**	**0,5**	**3**
Availability of teaching aids and learning facilities [5]	**42**	**14**	**17**	**4**	**3**	**9**	**10**	**1**	**1**	**1**	**2**	**13**	**6**	**1,9**	**14**	**10**	**4**	**2,0**	**13**	**19**	**4**	**4,8**	**26**
Textbook for student	11	7		2	2			0	0			2	2			2	1			7	4		
Textbook/guide for teacher	4	3		0	0			0	0			0	0			0	0			4	3		
Reference-book/library for student	6	5		0	0			0	0			3	3			2	1			1	1		
Reference-book/library for teacher	3	3		0	0			0	0			0	0			1	1			2	2		
Laboratory materials	13	6		2	1			0	0			7	3			3	1			3	2		
Presentation material (picture, map, etc.)	9	7		0	0			0	0			3	3			2	1			4	3		
Television, video	4	3		0	0			0	0			1	1			3	2			0	0		
Radio, tape-recorder	4	3		0	0			0	0			1	1			0	0			3	2		
Authentic material	2	2		0	0			0	0			1	1			1	1			0	0		
ICT	1	1		0	0			0	0			0	0			1	1			0	0		
Classroom	1	1		0	0			1	1			0	0			0	0			1	1		
Staffroom	1	1		0	0			0	0			0	0			0	0			1	1		
Basic facilities	**20**	**9**	**8**	**1**	**1**	**2**	**5**	**17**	**9**	**24**	**85**	**7**	**2**	**1,0**	**7**	**5**	**3**	**1,0**	**6**	**8**	**4**	**2,0**	**11**
Food	6	4	30	0	0			5	3			3	2			2	1			1	1		
Clothes	3	3	15	0	0			3	3			1	1			0	0			2	2		
Sanitation	3	2	15	0	0			2	1			2	1			0	0			1	1		
Workspace	5	4	25	1	1			5	4			1	1			3	2			1	1		
Learning materials (books, supplies)	3	3	15	0	0			2	2			0	0			0	0			0	0		

Time	**18**	**12**	**7**	**4**	**4**	**9**	**22**	**9**	**8**	**13**	**50**	**7**	**6**	**1,0**	**7**	**6**	**3**	**1,2**	**8**	**5**	**3**	**1,3**	**7**
Class-size	**7**	**4**	**3**	**3**	**2**	**7**	**43**	**1**	**1**	**1**	**14**	**4**	**2**	**0,6**	**4**	**2**	**1**	**0,4**	**3**	**1**	**1**	**0,3**	**1**
Finance	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0,0**	**0**	**1**	**1**	**0,2**	**1**	**0**	**0**	**0,0**	**0**
Teacher																							
Qualifications, knowledge and experience	**7**	**6**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0,0**	**0**	**3**	**3**	**0,6**	**4**	**4**	**3**	**1,0**	**6**
Social background teachers	**2**	**2**	**1**	**0**	**0**	**0**	**0**	**2**	**2**	**3**	**100**	**0**	**0**	**0,0**	**0**	**1**	**1**	**0,2**	**1**	**1**	**1**	**0,3**	**1**
Work load	**4**	**3**	**2**	**1**	**1**	**2**	**25**	**0**	**0**	**0**	**0**	**2**	**2**	**0,3**	**2**	**0**	**0**	**0,0**	**0**	**2**	**1**	**0,5**	**3**
Student																							
Teaching and learning culture	**10**	**7**	**4**	**0**	**0**	**0**	**0**	**4**	**4**	**6**	**40**	**4**	**3**	**0,6**	**4**	**1**	**1**	**0,2**	**1**	**5**	**3**	**1,3**	**7**
Teachers' perceptions of the students learning	**10**	**5**	**4**	**3**	**3**	**7**	**30**	**1**	**1**	**1**	**10**	**7**	**4**	**1,0**	**7**	**2**	**2**	**0,4**	**3**	**1**	**1**	**0,3**	**1**
Learning by discussion	7	5	70	2	2			1	1			4	2			2	2			1	1		
Learning by doing	2	2	20	1	1			0	0			2	2			0	0			0	0		
Learning by seeing	1	1	10	0	0			0	0			1	1			0	0			0	0		
Teachers' perceptions of students characteristics	**39**	**14**	**16**	**16**	**8**	**36**	**41**	**11**	**9**	**15**	**28**	**10**	**5**	**1,4**	**11**	**20**	**5**	**4,0**	**26**	**9**	**4**	**2,3**	**13**
Knowledge	18	11	46	8	5			4	4			4	2			9	5			5	4		
Attitude	18	10	46	6	6			7	6			5	3			9	5			4	2		
Age	3	2	8	2	1			0				1	1			2	1			0	0		
Backgrounds of the students	**21**	**15**	**9**	**2**	**2**	**4**	**10**	**20**	**16**	**28**	**95**	**9**	**6**	**1,3**	**9**	**5**	**4**	**1,0**	**6**	**7**	**4**	**1,8**	**10**
Economic status	11	8	52	2	2			11	8			6	4			3	2			2	2		
Family situation	10	8	48	0	0			9	8			3	3			2	2			5	3		
Gender	**4**	**3**	**2**	**1**	**1**	**2**	**25**	**0**	**0**	**0**	**0**	**1**	**1**	**0,1**	**1**	**3**	**2**	**0,6**	**4**	**0**	**0**	**0,0**	**0**
Total	**245**	**16**	**100**	**45**	**14**	**100**	**18**	**72**	**15**	**100**	**100**	**95**	**7**	**13,6**	**100**	**78**	**5**	**15,6**	**100**	**72**	**4**	**18,0**	**100**

[1] % = the proportion of utterances about a factor from the total (sub)set of utterances

[2] % = the proportion of utterances in a category from the total number of utterances about the corresponding factor

[3] % = the proportion of utterances from the total number of utterances about this factor

[4] n/N = the n of utterances about this factor divided through the *total* N of school A, B or C

[5] The sum of all utterances in the categories of the availability of teaching aids and learning facilities is more than the total number of utterances about this factor. Some factors are counted in more categories. (see chapter 3 for an explanation).