HANDBOOK OF THE RESEARCH PROJECT

"Promoting quality and equity: a dynamic approach to school improvement"

Under the ERASMUS+ Key Action 2 - Cooperation for innovation and the exchange of good practices, Field: School Education

Designing Evidence-Based Strategies and Actions to Promote Quality and Equity in Education

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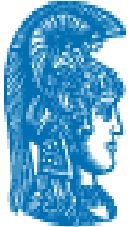
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Chapter 1

Promoting quality and equity: a dynamic approach to school improvement

Introduction

Schools are expected to deliver consistently high results in different domains of learning and subject areas. However, international evaluation studies reveal that in Europe approximately 20% of students are not equipped with basic skills in mathematics. While the latest PISA study revealed that 22% of European students were low achievers in mathematics, it also revealed that a 15-year-old student from a relatively disadvantaged home is 2.37 times more likely to be a poor performer (obtaining a score below the level 2 that measures basic skills in mathematics) than a student from an affluent family (see OECD, 2012). PISA also reports that 40% of the variation in student performance in mathematics is found between schools within a country and implies that there are significant differences in the performance of students attending different schools. Therefore, school- based interventions aiming to improve the quality of education are needed. Also, research shows that interventions supporting primary school children who are at risk have stronger effects than those addressing students at secondary school level. Indeed, a synthesis of various effectiveness programs aiming to improve the attainment of primary students with low basic skills reveals that *whole school* interventions are more effective in this regard (Creemers & Kyriakides, 2012).

In this context, this project aims to support primary schools use an evidence-based and theory-driven approach to help pupils achieve basic skills in mathematics. This approach draws on a theoretical model which provides a dynamic perspective on the functioning and effects of education and refers to factors operating at different levels (i.e., student, classroom, school and context) that need to be addressed to promote quality in education. This dynamic model is briefly presented in the next chapter and the school level factors included in the model are described. Since the dynamic model is multilevel in nature, Appendix A provides information about the student level factors which need to be taken into account in promoting quality and equity. Various national and international studies (including a European study) provided empirical support to the validity of the model and show that the factors of the model are associated with student achievement gains in different learning outcomes. Readers with

special interest on the validity of the model can find further information about these studies in this chapter. Drawing on this research, therefore, schools in socially disadvantaged areas will be encouraged to develop their own strategies and actions by using the *Dynamic Approach to School Improvement* (DASI) (Creemers & Kyriakides, 2012) and adapting it to the specific context and problems they face. Chapter 2 provides an overview of this approach which highlights the importance of a close working relationship between the target schools and the Advisory and Research team (A&RTeam) to:

i. ***Collect data on the functioning of school factors and identify improvement priorities:*** The A&RTeam will provide support to schools to help them establish/reinforce School self-evaluation (SSE) mechanisms. School stakeholders will discuss the findings of SSE and decide whether their action plans will address one or more targeted priorities concerning the factors included in the theoretical framework.

ii. ***Design school improvement strategies and action plans by considering research on promoting quality and equity in education:*** Schools (in collaboration with A&RTeam) will make use of the literature on the factors that are to be addressed and then develop their strategies and action plans.

iii. ***Monitor the implementation of the improvement project through establishing formative evaluation mechanisms:*** As a result of establishing formative evaluation mechanisms and collecting data, school stakeholders can identify ways to improve their action plans. Thus, decisions can then be made as to how to make modifications taking into account the needs of those involved in each task and their implementation skills.

iv. ***Measure the impact of this approach:*** Finally, school stakeholders and the A&RTeam will evaluate the impact of the implementation of these strategies/actions and identify under which conditions the use of an evidence-based and theory-driven approach can reduce the number of low achieving students.

Given that children in socially disadvantaged areas are more likely to have low basic skills, we investigate how this approach can be applied to promote both quality and equity in education by examining the extent to which schools and teachers manage to reduce unjustifiable differences in schooling outcomes.

In the next part of this chapter, the concepts of quality and equity are explained. The basic assumption of this project is that education can contribute to social justice and democracy by closing the gap in learning outcomes among all students, regardless of their social background or ability. As a consequence, this project aims to implement a dynamic school improvement approach and evaluate its impact on (1) promoting student achievement gains (quality) and (2) reducing unjustifiable differences in outcomes of schooling (equity).

Quality and equity: the two dimensions of educational effectiveness

This section provides definitions of the concepts of quality and equity. Schools are first and foremost places where learning takes place. Consequently, the objectives of education are primarily student learning outcomes. Schools and teachers should be supported in such a way that educational objectives are reached and educational quality becomes a fact based on research which can offer a revealing insight into factors and variables that contribute to student achievement. In this context, the term learning outcomes is used in a broader sense and both quality and equity are treated as criteria for measuring effectiveness in schools. In the case of the *quality* dimension, *student achievement gains* in the cognitive, affective and psychomotor domains are examined (Creemers, Kyriakides, & Sammons, 2010). On the other hand, *equity* is viewed as the extent to which individuals can take advantage of education and training, in terms of opportunities, access, treatment and outcomes. Equitable systems ensure that the outcomes of education are independent of socio-economic background and other factors that may lead to educational disadvantage and that treatment reflects individuals' specific learning needs. Therefore, equity is seen as related with *fairness* which implies that personal or socio-economical characteristics such as gender, ethnic origin or family background should not be obstacles to success in education. In addition, we use a specific indicator to measure equity at teacher/school/country level which is concerned with the impact that the socio-economic status (SES) has on student achievement (see Field, Kuczera, & Pont, 2007). It is argued that *equitable educational systems are those where SES has a relatively small effect on student learning outcomes*. One could therefore evaluate an intervention aiming to promote equity at school level by investigating the extent to which the effect of SES on achievement at each participating school has been reduced. In the next part of this introductory chapter,

we refer to the phases of the project to help teachers and other school stakeholders understand the rationale of this interventional project and how their school improvement strategies and actions can be designed, implemented and evaluated.

Phases of the project: Design – Implementation – Evaluation of an intervention to promote quality and equity

This next section describes the distinct phases of this project, what has already been done and what we intend to do in detail. Over the past few months we have developed and validated a battery of written tests in mathematics which will be administered to all students of grades 4, 5 and 6 at the beginning of the school year 2015-2016. We have also developed and validated a teacher questionnaire measuring school policy for teaching and the school learning environment. By administering this questionnaire to the teachers of your school, we will help you identify the improvement area(s) upon which the intervention in your school can be based. Specifically, throughout this pre-measure of school factors, we will identify three basic areas in which there is scope for your school to improve significantly. A short report presenting these three areas will be sent to you (October 2015).

In the second phase of the project, with your consent and cooperation, we intend to develop together the intervention action plan and school policy/policies. We think that our suggestions concerning the improvement areas of your school can help you develop school policy, strategies and actions for promoting learning and helping students who are at risk to improve their achievement in mathematics.

At the end of the project, after the implementation of your strategies and actions in promoting quality and equity in mathematics, in order to find out if we managed to have success we will conduct final measures. By administering the teacher questionnaire and the battery of tests to the students of your school, we will estimate together the progress that your school has made in regard to the student learning outcomes in mathematics, the school policy for teaching and the quality of the school learning environment (SLE). By comparing the final measures with the initial measures (i.e., taken before the implementation of the intervention) we will be able to measure the results of our efforts and the impact of your strategies and actions in promoting quality and equity in mathematics in your school.

In order to have success when implementing your plans, as you well know, the following elements should be incorporated in your strategies and actions to promote quality and equity.

- The teacher body of the school should agree that their school can become a more equitable place where student background factors such as SES, gender, and ethnicity are not obstacles to student learning. In this way, a consensus about the importance of the general aim of this intervention (i.e., promoting both quality and equity) can be established. Moreover, teachers should be encouraged to have high expectations from all students irrespective of their SES, gender and ethnicity. At the same time, they will be able to identify how and why student background factors have an effect on student achievement and, based on that understanding, provide practical support for this group of students.

- **Researchers** involved in the project will support your school in the promotion of quality and equity when you design, implement and reflect on your strategies and actions. They will be active participants in the whole process as they provide advice based on research evidence and assistance in interpreting evaluation data. The research team will also be available to provide concrete, practical suggestions, to exchange ideas with you and to discuss any difficulties you may face during the implementation of your strategies and action plans.

- **The school stakeholders should encourage the involvement of both parents and students in this process.** In this way, parents' expectations and student motivation may be increased and actions to improve the home learning environment can be taken by parents, teachers and students together. This focussed school intervention will consider the views and beliefs of parents and students on how quality and equity can be promoted and, in so doing, build strategies and actions that take into account any potential concerns. Furthermore, the school can encourage parents to contribute in implementing actions and strategies that are supported by the whole school community.

- To facilitate communication between your school and the A&RTeam, we suggest that you nominate one person from the teacher body or the management team to act as a coordinator for the implementation of the project. In this way, it will be easier to provide support when necessary. In addition, as it will not be possible for us to be physically presented every day in your school,

we recommend that the coordinator keeps a **log book** which will inform us about the whole process of implementing your improvement strategies and action plans (see also Table 4 in Chapter 3). Obviously, it is not necessary for the coordinator to put down your everyday progress but to mention anything which may impact upon the success of the project (e.g., problems that turn up, difficulties, achievements, remarks, hesitations). You can share these events with us and, in return, we can help you in your attempts to refine your strategies/actions.

➢ A **network** of participating schools will be established. In this way, you will be able to exchange ideas and experiences with national and international school partners, as well as discuss your attempt to respond to the learning needs of different groups of students (based on their background characteristics). You can also ask for suggestions on how to deal with obstacles and specific practical difficulties which may appear in implementing your strategies and actions to promote quality and equity.

The aims and the structure of the handbook

In this handbook we provide suggestions to schools, which are evidence-based and theory driven, on how to improve their effectiveness in respect of quality and equity. These suggestions are underpinned by the theoretical framework of this project and the international research into educational effectiveness. Thus, the aim of this handbook is to encourage readers (teachers, school managers, parents, policymakers, and researchers) to use the DASI creatively in meeting the challenges they face on a daily basis in their respective schools. In so doing, these schools are equipped with the requisite skills to implement and evaluate school-based policies and action plans which promote quality and equity in education.

To achieve this aim, the current handbook includes three chapters. In Chapter 1 we have already described the rationale of our project, provided definition of the concepts of quality and equity and presented the phases of our project. In Chapter 2, we will detail the essential characteristics of the dynamic model of educational effectiveness and the specific factors operating at school level. By presenting these factors, we focus specifically on how and why student background factors affect learning (see Appendix A). School level factors will be described in more detail and specific actions

will be suggested to compensate for differences in student background factors and promote equity. In this way, the importance of differentiation not only at teaching but also in the functioning of school factors is stressed. Finally, in Chapter 3 we provide practical suggestions to schools on how DASI can be implemented. Specifically, we offer guidelines to schools on how to establish SSE mechanisms to identify their improvement priorities. We also offer suggested guidelines on how to develop strategies and actions to address these improvement priorities.

Chapter 2

The Dynamic Approach to School Improvement: An overview

The dynamic model of educational effectiveness: Rationale

The dynamic approach to school improvement has its own theoretical framework which is briefly presented in this chapter. Specifically, the rationale of the dynamic model of educational effectiveness (Creemers & Kyriakides, 2008) is outlined and factors operating at the school level found to be associated with student learning outcomes are described. The major steps of DASI are also presented in the second part of the chapter.

It is important to note that the dynamic model is multilevel in nature (see Figure 1) which means that it refers to factors associated with student learning operating at different levels (student, classroom, school and system). Critically, the model was carefully designed in a way that supports policy makers and practitioners to improve educational practice by taking rational decisions concerning the optimal "fit" of the factors to the present situation in the schools or educational systems (Creemers & Kyriakides, 2010b). Furthermore, the dynamic model can be a useful tool in helping school stakeholders (school leaders, teachers, parents and students) realise that they can actively contribute to the promotion of positive student learning outcomes. It therefore has implications for school leaders, teachers and parents as they endeavour to improve school, classroom and home learning environments. It is also based on the assumption that the ultimate aim of any school reform effort must result in an improvement in student learning.
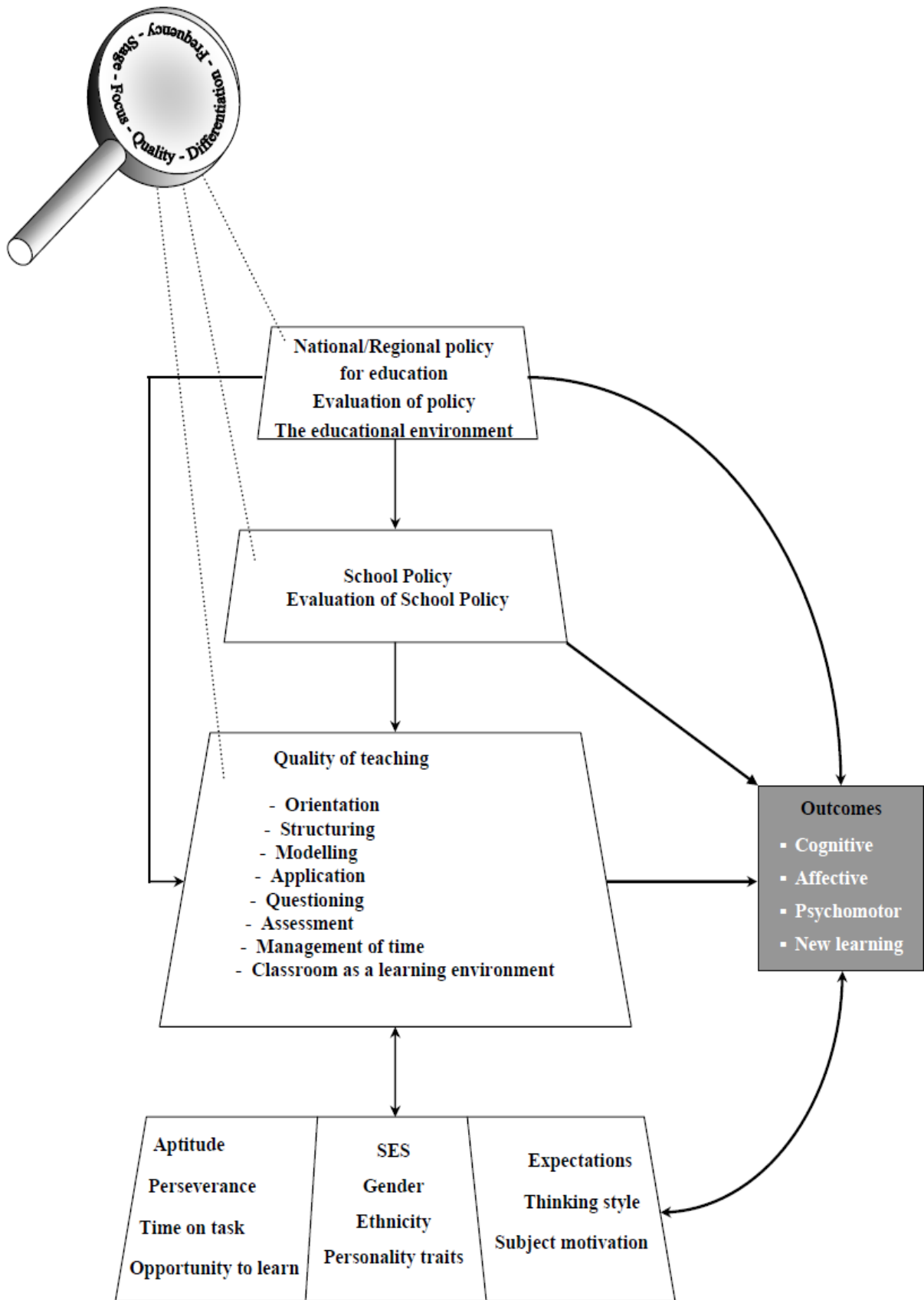
Figure 1. The dynamic model of educational effectiveness

The model introduces a specific *framework for measuring the functioning of factors*. Specifically, five measurement dimensions (see Figure 1) are taken into account: *frequency, focus, stage, quality* and *differentiation. Frequency* is a quantitative way to measure the functioning of each effectiveness factor (which we know from previous research helps to improve student learning), whereas the other four dimensions examine qualitative characteristics of the functioning of the factors and describe the complex nature of educational effectiveness. In the next paragraphs we explain briefly how each dimension is used to measure the effect of a factor on student achievement.

The *frequency* dimension refers to the quantity that an activity associated with an effectiveness factor is present in a system, school, or classroom. This is probably the easiest way to measure the effect of a factor on student achievement.

The factors are also measured by taking into account the *focus* of the activities associated with a factor. For example, in the case of school policy on parental involvement, the policy could either be more *specific* in terms of concrete activities that are expected to take place (e.g., it refers to specific hours that parents can visit the school) or more general (e.g., it informs parents that they are welcome to the school but without giving them specific information about what, how, and when). Moreover, an activity may be expected to achieve a *single or multiple purposes*. In the case of school policy on parental involvement, the activities might be restricted to a single purpose (e.g., parents visit schools to get information about student progress). On the other hand, the activities might be addressed to more than one purpose (e.g., parents visit the school to exchange information about children's progress and to assist teachers in and outside the classroom). A *balance* between specific and general tasks should exist. For example, the guidelines on parental involvement, which are very general, may not be helpful either for parents or teachers in establishing good relations which can result in supporting student learning. On the other hand, a school policy which is very specific in defining activities may restrict the productive involvement of teachers and parents in creating their own ways of implementing the school policy. Similarly, if all the activities are expected to achieve a single purpose, then the likelihood of achieving this aim is high, but the effect of the factor might be small due to the fact that other purposes are not achieved and synergy may not exist. On the other hand, if all the activities are expected to

achieve multiple purposes, there is a danger that specific purposes are not addressed in such a way that they can be implemented successfully.

Also, the activities associated with a factor can be measured by taking into account the *stage* at which they take place. We know from other research that the factors need to take place over a long period of time to ensure that they have a continuous direct or indirect effect on student learning. For example, school policy on student absenteeism is expected to be implemented throughout the year and not only through specific regulations announced at a specific point of time (e.g., only at the beginning of the school year). It is also expected that the continuity will be achieved when the school is flexible in redefining its own policy and adapting the activities related to the factor by taking into account the results of its own self-evaluation mechanism.

The dimension *quality* can be determined in two different ways. The first one refers to the properties of the specific factor itself, as these are discussed in the literature. For instance, school policy on assessment can be measured by looking at the mechanisms which have been developed in order to establish instruments which meet psychometric standards (e.g., valid, reliable, representative to the content taught). At the same time, this policy should ensure that teachers are expected to make use of the information gathered from assessment in order to meet their student's needs. In this way, the school policy gives more emphasis to the formative function of assessment.

Finally, *differentiation* refers to the extent to which activities associated with a factor are implemented in the same way for all the subjects involved with it. The importance of treating differentiation as a separate dimension of measuring effectiveness factors arises from the fact that students of any age and in any culture will differ from one another in various intellectual and psychomotor skills, in both generalised and specialised prior knowledge, in interests and motives, in their socio-economical background, and in personal styles of thoughts and work during learning (Dowson & McInerney, 2003). Thus, adaptation to specific needs of each subject or group of subjects will increase the successful implementation of a factor and will ultimately maximize its effect on student learning outcomes. Head-teachers are, also, expected to adapt their leadership to the specific needs of the teachers and other school stakeholders (e.g., parents, pupils) by taking into account the extent to which they are ready to implement a task. For example, information to parents (e.g., information letters

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about the school policy, regulations, excursions, activities, etc.) should be available to them in different ways such as written in their mother tongue (if they do not speak or understand English), orally through telephone communication, and online by email. The differentiation dimension does not imply that the subjects are not expected to achieve the same purposes. On the contrary, adapting the policy to the special needs of each group of schools, teachers, or students may ensure that all of them will become able to achieve the same purposes.

In the next part of this chapter, we will discuss more about the school level factors and explain the way that they affect student achievement. Since one of our project's main aims is to reduce unjustifiable differences in outcomes of schooling (promoting equity), which implies that personal or socio-economical characteristics should not be obstacles to success in education, Appendix A is concerned with the impact of those background factors on student learning. Here it is stressed that some student factors, such as student motivation and expectations, are likely to change so the school management team and the teachers should take targeted actions to improve motivation and expectation. This can also be done indirectly by providing relevant guidelines and support to students and parents. Other student factors are not likely to change (e.g., socio-economic status, ethnicity, gender) but schools should be aware of how these factors affect learning (see Appendix A) in order to adapt their policy to the special needs of students coming from different background. In addition, they should help parents and students to improve their home learning environment especially those coming from low SES background (see also Chapter 3 for actions taken to improve partnership policy).

School factors: Promoting quality and equity by taking actions to improve school policy for teaching and the learning environment

Factors at the school level are expected to influence classroom-level factors, particularly teaching practice. Since learning takes place both inside and outside the classroom, the model emphasises not only on how to improve *teaching* but also the school learning environment. As a consequence, the model refers to the: a) school policy for teaching, and b) school policy for creating a learning environment at school. Based on the assumption that the essence of a successful organisation in the modern world is the search for improvement (Hopkins, 2001), the processes and the activities which

take place in the school in order to improve the teaching practice and the SLE are also examined. For this reason, the processes which are used to evaluate the school policy for teaching and the SLE are investigated. Thus, the following four factors at the school level are included in the model (see Figure 2):

a) *School policy[1] for teaching and actions taken for improving teaching practice*

b) *Policy for creating the SLE and actions taken for improving the SLE*

c) *Evaluation of school policy for teaching and of actions taken to improve teaching*

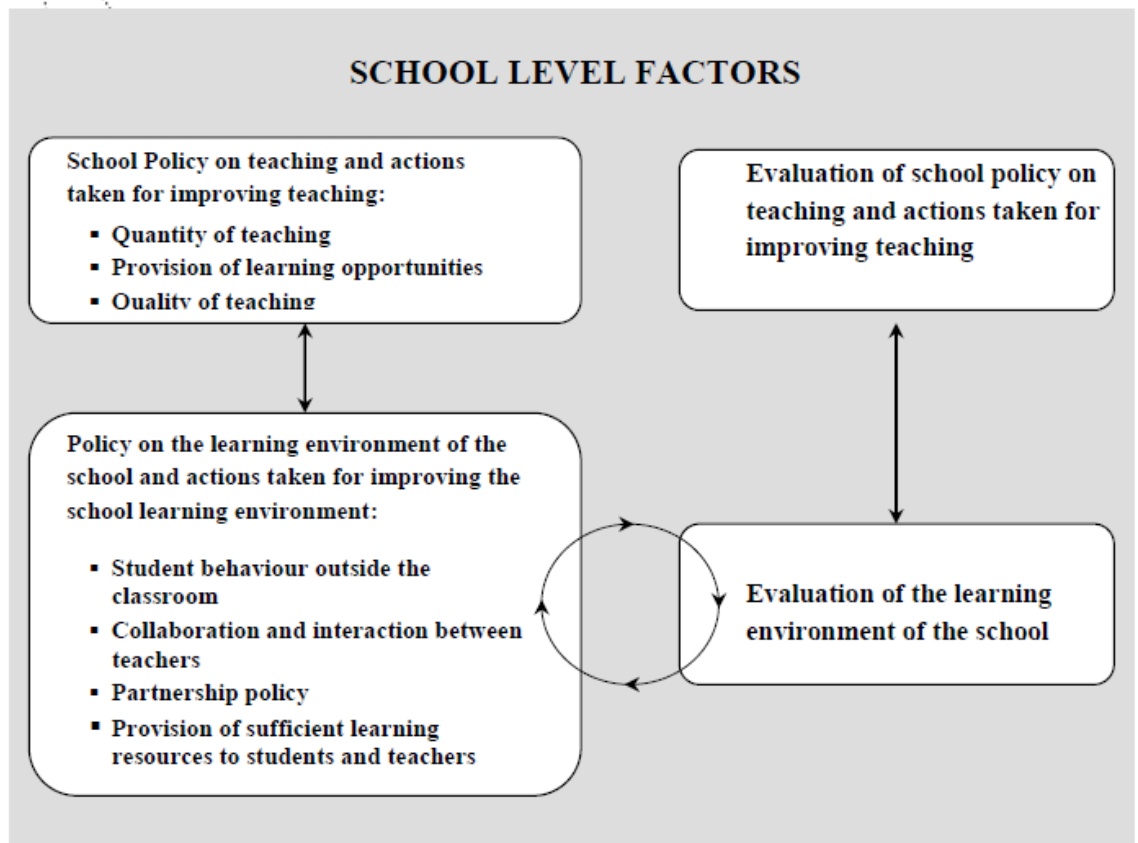d) *Evaluation of the SLE*

Figure 2. Factors of the dynamic model operating at the school level

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[1] School policy for teaching does not refer to one particular policy necessarily, but to the collection of school policies that focus on particular subjects and/or pedagogical practices in the schools.

In order to explain concisely how and under what conditions school policy may have an impact on student achievement, we present a framework (Kyriakides, Creemers, Antoniou, Demetriou, & Charalambous, 2015) containing the main assumptions of this impact (see Figure 3). The first assumption, which is supported by various effectiveness studies (see Reynolds et al., 2014) posits that there are many factors associated with student achievement which operate at four different levels: the student, classroom, school, and system levels. Second, the framework places emphasis on the school policy and actions taken to improve teaching and on the school policy and actions taken to improve SLE.

Third, the framework assumes that the impact of school policy depends on the extent to which stakeholders implement the policy guidelines. This is based on research suggesting that viewing implementation failure as a result of poor policy clarity neglects the complexity of human-sense making processes consequential to implementation (Spillane, 2005). For example, a school may develop a clear policy on partnership, which includes the involvement of parents in teaching. However, not all teachers may be persuaded to implement this policy, especially if they believe that parental involvement may jeopardize their professional autonomy. This implies that stakeholders' actions may have a direct impact on improving the SLE and teaching practice, whereas school policy may have an indirect impact by changing stakeholders' actions.

Fourth, it is assumed that there is a reciprocal relationship between school policy and school stakeholders' actions. Changes in school policy may have an impact on changing the actions of school stakeholders. At the same time, it is also possible that the stakeholders' actions might influence school policies by stressing the need to change the policy or policies in order to address current stakeholders' needs. To illustrate this reciprocal relationship, consider student absenteeism. A new school leadership team appointed in a school with student absenteeism problems might develop a policy on student absenteeism to ensure that it is minimized. This move indicates the direct impact that a change in policy might have on changing stakeholders' actions. In contrast, in schools where the greatest majority of students regularly attend school, there is no need to develop such a policy. This illustrates the effect of the stakeholders' actions on setting or changing school policies.

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Finally, the framework assumes that school policy has a situational effect on student achievement implying that its impact may vary depending on the current situation of the school under investigation. This situational character of school policy suggests that, in developing the school policy, school leaders should take into account the *abilities and readiness* of those who are expected to implement it. For example, take a school that originally had no minority ethnic students from a particular country and had to teach a Geography lesson on that country mainly by using secondary sources of information (e.g., books, internet). When students from that country join the student population, the school could for example invite the parents of these students to talk about their country.

Three elements of school policy are considered. First, it is expected that school policy should *clarify all stakeholders' role* in improving learning. When the school policy is clear, the stakeholders are more likely to judge its recommendations and decide whether it is worth making the effort to change their actions. Guidelines are seen as one of the main indications of school policy. In using the term guidelines, the dynamic model refers to a range of documents. These include: staff meeting minutes, announcements, and action plans. These make the policy of the school more concrete to school stakeholders. However, this factor does not imply that each school should simply develop formal documents to install policy. The factors concerned with the school policy mainly refer to the **actions** taken by the school to help teachers and other stakeholders have *a clear understanding* of what is expected from them to do. Second, the framework assumes that in introducing a school policy, the *skills and the willingness of school stakeholders* should be taken into account. If a certain policy expects stakeholders to undertake roles they do not have the skills to perform or they are strongly opposed to, it is unlikely that the policy will be implemented effectively. The third element of school policy is concerned with the *support* that the school management team should provide for stakeholders to help them change their actions. Introducing a policy on teaching and/or the SLE that addresses these three elements is likely to influence stakeholders' actions. Below, the elements of the school factors are presented in detail to clarify the concepts upon which school stakeholders' actions should be based.

School introducing a policy:

1) Make clear what is expected to do
2) Taking into account stakeholders skills
3) Providing support

School Policy Before → School Policy After

Stakeholders' actions Before → Stakeholders' actions After

SCHOOL LEVEL

Improving school learning environment

CLASS LEVEL

Improving quality of teaching
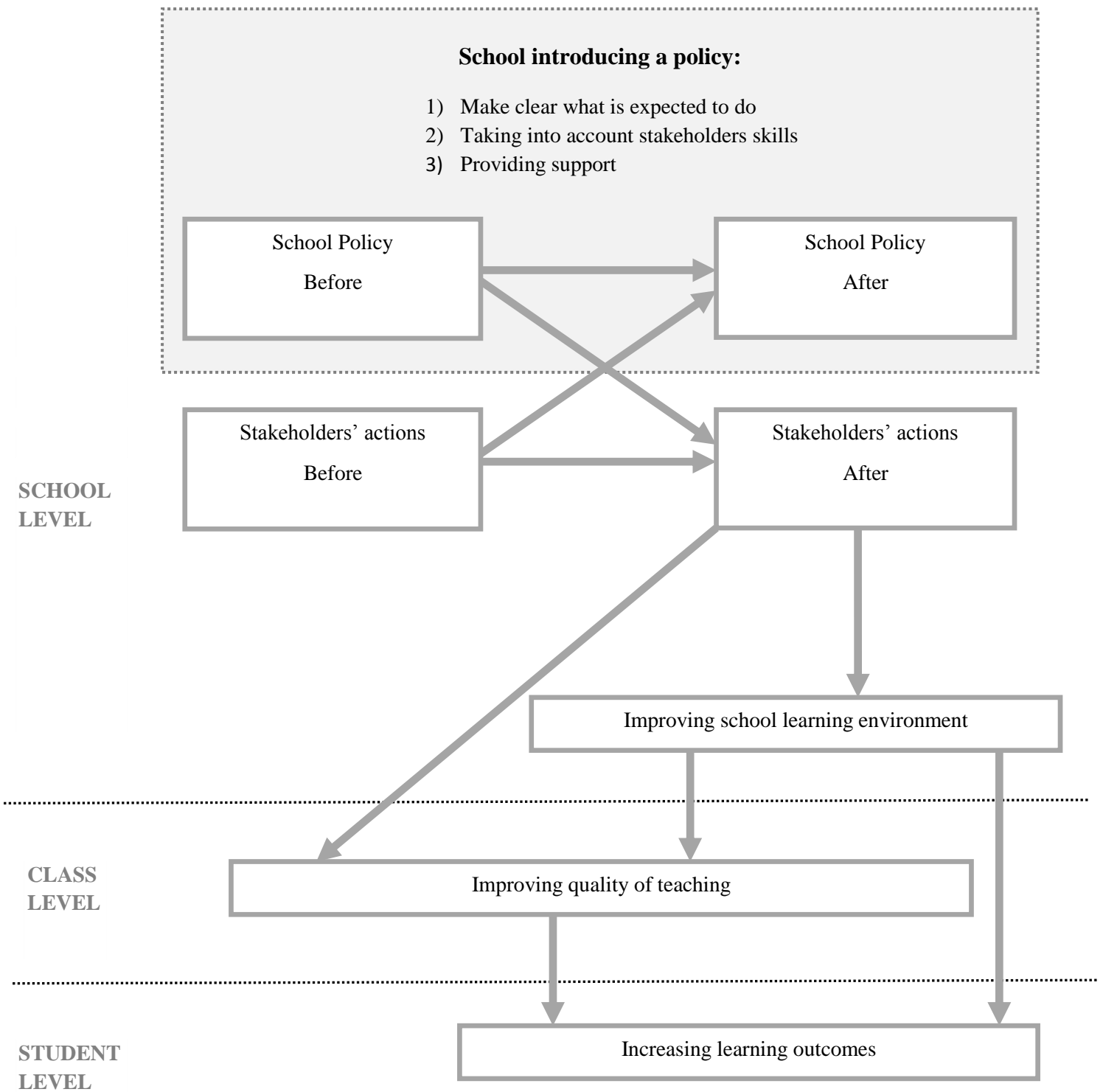
STUDENT LEVEL

Increasing learning outcomes

Figure 3. A theoretical framework investigating the impact of school policy on teaching and school policy for SLE on student learning outcomes

A. *School policy for teaching and actions taken for improving teaching*

The definition of the dynamic model at the classroom level refers to factors related to the key concepts of *quality*, *time on task*, and *opportunity to learn*. Therefore, the model attempts to investigate aspects of school policy for teaching associated with a) the quantity of teaching, b) provision of learning opportunities, and c) quality of teaching. Actions taken for improving the above three aspects of teaching, such as the provision of support to teachers in improving their teaching skills, are also taken into account.

1) *Policy on quantity of teaching*

The following aspects of school policy on quantity of teaching are taken into account:

- School policy on the management of teaching time (e.g., lessons start on time and finish on time; there are no interruptions of lessons for staff meetings and/or for preparation of school festivals and other events)
- Policy on student and teacher absenteeism
- Policy on homework
- Policy on lesson scheduling and timetable

2) *Policy on provision of learning opportunities*

School policy on provision of learning opportunities is measured by looking at the extent to which the school has a mission concerning the provision of learning opportunities beyond those included in the formal curriculum. Therefore, school policy on long-term and short-term planning and school policy on providing support to students with special needs is examined. Furthermore, the extent to which the school attempts to make good use of school trips and other extra-curricular activities for teaching/learning purposes is investigated.

3) *Policy on quality of teaching*

School leaders are expected to encourage teachers to discuss, what they consider to be, the characteristics of effective teaching. By drawing on teachers' views and on the literature on effective

teaching, guidelines on effective teacher behaviour in the classroom are expected to be produced, resulting in a school policy of teaching. Since the dynamic model refers to specific teacher factors found to be associated with student achievement (see Chapter 3, Table 3), it is expected that policy on the quality of teaching will refer to these eight factors measuring teacher behaviour in the classroom. The school management team should also identify ways to support teachers improve their teaching skills accordingly.

Therefore, the way school policy for teaching is examined reveals that effective schools take decisions on maximising the use of teaching time and the learning opportunities offered to their students. In addition, effective schools support their teachers in their attempt to help students learn by using effective teaching practices (Hallinger & Heck, 2011; Heck & Moriyama, 2010). In this context, the definition of this factor implies that the school management team strives to ensure that:

i. Appropriate and adequate teaching time is provided for students.

ii. Students are provided with learning opportunities beyond those offered by the official curricula.

iii. Teachers take actions to improve the quality of their teaching

B. *School policy for creating the SLE and actions taken for improving the SLE*

Since learning does not only take place inside classrooms, we also need to explore the impact of the school policy for improving the SLE. The dynamic model refers to the extent to which a learning environment has been created in the school and therefore, we only focus on policy initiatives which aim to improve stakeholders' learning, and through that student learning. This is accomplished by focusing on the following four school factors concerned with policy for improving SLE:

1) *Student behaviour outside the classroom*

2) *Collaboration and interaction between teachers*

3) *Partnership policy (i.e., relations of school with community, parents, and advisors)*

4) *Provision of sufficient learning resources to students and teachers*

The first three aspects refer to the practices which the school has developed for establishing a learning environment inside and outside the classroom. Here the term *learning* does not refer exclusively to student learning. For example, collaboration and interaction between teachers may contribute to their

professional development (i.e., learning of teachers) but may also have an effect on teaching practice and thereby may also improve student learning. The fourth aspect refers to the policy on providing resources for learning. The availability of learning resources in schools may not only have an effect on student learning, but may also encourage the learning of teachers. For example, the availability of computers and software for teaching Geometry may contribute to teacher professional development as it encourages teachers to find ways to make good use of the software in their teaching.

Actions taken for improving the SLE beyond the establishment of policy guidelines are also taken into account. Specifically, actions taken for improving the SLE can be directed at changing the school rules and providing educational resources (e.g., teaching aids and educational assistance). For example, a school may have a policy for promoting teacher professional development. However, this might not be enough- especially if some teachers do not consider professional development to be an important issue. In this case, actions may be taken to help teachers develop positive attitudes towards learning, which may help them become more effective.

C. *School evaluation*

The dynamic model also refers to the mechanisms used to evaluate school policy for teaching and the SLE. The following paragraphs aim to clarify how school evaluation is examined by taking into account the five measurement dimensions of the dynamic model described above.

Frequency: Frequency is measured by exploring how many times during the school year (if at all) the school collects evaluative data concerning its own policy for teaching or its own policy for the SLE. Emphasis is also given to the sources of data that are used. Previous research tells us that effective schools use various sources for collecting evaluative data, and that this data is collected periodically during the school year, not only at the beginning and at the end of the school year.

Focus: Evaluation and reflection on school policy may attempt to measure the properties of the school policy (e.g., clear, concrete, in line with the research literature), its relevance to the problems which teachers and students have to face, and its impact on school practice and student outcomes. It also considers whether each school evaluates not only the content of the policy for teaching and the actions taken to improve teaching practice but also the knowledge/ understanding and readiness of those

who are expected to implement the policy. Moreover, the focus dimension is measured by looking at the extent to which information gathered from the evaluation is too specific or too general. Research on school self-evaluation reveals that data collected should not be too specific or place blame on any individual (e.g., Fitz-Gibbon, 1996; Hopkins, 2001; Visscher & Coe, 2002) because such an approach serves the summative purpose of evaluation and does not help the schools to take decisions on how to improve their policy. At the same time, information gathered from evaluation should not be too general but should be focused on how to influence decision-making. In particular, the process of allocating responsibilities to school partners in order to introduce a plan for improving the effectiveness of their school is essential (Kyriakides & Campbell, 2004; MacBeath, 1999; Meuret & Morlaix, 2003).

Stage: The stage dimension is examined by looking at the period in which evaluative data are collected. More effective schools are those who conduct evaluation regularly and systematically (i.e. not just at the end of school year); they establish evaluation mechanisms which operate on a continuous basis during the whole school year. More effective schools are also those that review their own methods and systems of reflection and evaluation adapting them in order to collect appropriate and useful data (Cousins & Earl, 1992; Torres & Preskill, 2001).

Quality: Quality is measured by looking at the psychometric properties (i.e., reliability, validity and use) of the instruments schools use to collect data. It also is expected that evaluation data will be used for formative rather than summative reasons, as school evaluation is seen as closely related to the school improvement process (Hopkins, 1989; Kyriakides, 2005b).

Differentiation: Finally, the differentiation dimension is measured by looking at the extent to which the school places a greater emphasis on conducting evaluation for specific aspects/reasons of the policy for teaching. This is especially relevant to those aspects which refer to the major weaknesses of the school. For example, if policy on homework is considered problematic the school may decide to collect data related to homework practices more often and in greater depth instead of collecting data for any other aspect of school policy for teaching.

Testing the validity of the dynamic model

Some material supporting the validity of the dynamic model has been produced since 2003, when the model was first developed (Creemers & Kyriakides, 2015). Specifically, the model has received empirical support (see Table 1) from national studies (e.g., Antoniou & Kyriakides, 2011; Creemers & Kyriakides, 2010a; Kyriakides & Creemers, 2008, 2009), international studies (e.g., Kyriakides, Archambault, & Janosz, 2013; Panayiotou et al., 2014), and two meta-analyses (quantitative syntheses) of studies investigating the impact of teacher and school factors (i.e., Kyriakides, Chistoforou, & Charalambous, 2013; Kyriakides, Creemers, Antoniou, & Demetriou, 2010) as well as from empirical and theoretical reviews (see Heck & Moriyama, 2010; Hofman, Hofman, & Gray, 2010; Sammons, 2009; Scheerens, 2013). These studies reveal that factors included in the dynamic model are associated with achievement gains in different learning domains of primary students. In addition, research also suggests that the greatest difference can be made in schools that are in underprivileged communities and/or initially low-achieving students (Kyriakides, 2007; Reynolds et al., 2014).

Therefore, all the above mentioned school factors are not only important in promoting quality but also in promoting equity in education (see Kyriakides & Creemers, 2011). We are interested to explore if schools, especially those in disadvantaged contexts, can simultaneously improve the quality of what they do as well as realise greater equity (reducing differences between children) through the intervention. That the majority of students in your school are from a low SES background is significant to the type of interventions that might be effective. In the next chapter we propose specific actions that can be taken in schools in socially disadvantaged areas in order to improve the functioning of the school factors and the student factors that are likely to change (e.g. motivation, expectations, and opportunity to learn). In this way both the school and the home learning environment might be improved. In the final section of this chapter, the rationale of the dynamic approach to school improvement (DASI) and its main steps are concisely presented. This approach will be used in our project to help your school improve its effectiveness in terms of quality and equity.

Table 1. Empirical evidence supporting the main assumptions of the dynamic model emerging from empirical studies and meta-analyses

Assumptions of the dynamic model	Studies	Meta-analyses
1. Multilevel in nature	All	All
2. Five dimensions can be used to measure		
a) teacher factors	1, 2, 4, 5	
b) school factors	1, 3, 4	1
3. Impact of teacher factors on learning outcomes	1, 2, 4, 5, 6	2
4. Impact of school factors on learning outcomes	1, 3, 4, 6	1
5. Situational character of school factors	1	
6. Relations among factors operating at the same level: stages of effective teaching	1, 2, 5, 6	2
7. Changes in the functioning of school factors predict changes in the effectiveness status of schools	3	
Negative results in relation to any assumption	None	None

Studies:
1) A longitudinal study measuring teacher and school effectiveness in different subjects (Kyriakides & Creemers, 2008).
2) A study investigating the impact of teacher factors on achievement of Cypriot students at the end of pre-primary school (Kyriakides & Creemers, 2009).
3) A follow-up study testing the validity of the model at the school level (Creemers & Kyriakides, 2010a).
4) A European study testing the validity of the dynamic model (Panayiotou et al., 2014).
5) A study in Canada searching for grouping of teacher factors: stages of effective teaching (Kyriakides, Archambault, & Janosz, 2013).
6) An experimental study investigating the impact upon student achievement of a teacher professional development approach based on DASI (Antoniou & Kyriakides, 2011).

Meta-analyses:
1) A quantitative synthesis of 67 studies exploring the impact of school factors on student achievement (Kyriakides, Creemers, Antoniou, & Demetriou, 2010).
2) A quantitative synthesis of 167 studies searching for the impact of generic teaching skills on student achievement (Kyriakides, Chirstoforou, & Charalambous, 2013).

The dynamic approach to school improvement: Rationale and major steps

DASI has its own theoretical framework (i.e. the dynamic model of educational effectiveness) which refers to school factors that need to be considered in implementing change. It is also based on the assumption that school stakeholders decide themselves which improvement actions and tasks should be carried out. However, school stakeholders are not left alone to develop their improvement strategies and action plans. This approach is based on the assumption that an *Advisory and Research Team (A&RTeam)* will support school stakeholders and share its expertise and knowledge with practitioners in order to help them develop strategies and action plans that are in line with the knowledge-base of research in this area. Finally, DASI emphasizes the role of school evaluation and self-reflection (especially its formative function) in improving learning outcomes of the school.

Figure 4 illustrates the main steps of DASI. It highlights the fact that school stakeholders and the A&RTeam are expected to be actively involved in each step of DASI. Their ability to work together and exchange skills, expertise and experiences is critical to the success of any school improvement project. While the main purpose of our project is to implement an improvement plan for promoting both quality and equity in your school, it is essential that each step of this approach will be followed.

Step A: **Establishing clarity and consensus about the general aims of school improvement by considering student learning as the main function of the school.** It is important to start with a clear understanding of the aim of the project and how improvement in quality and equity of education will be achieved. Therefore it is important to establish procedures to ensure clear understanding among all school stakeholders about the ultimate aim of school improvement. The project is based on the premise that school improvement is centred on the promotion of student learning (quality) and the reduction of unjustifiable differences in student learning outcomes (equity).

Step B: **Establishing clarity and consensus about the aims of school improvement by addressing school factors which influence teaching and learning.** The dynamic model and its factors are presented to the school stakeholders. This presentation will help teachers understand how and why addressing the school factors promotes student learning.
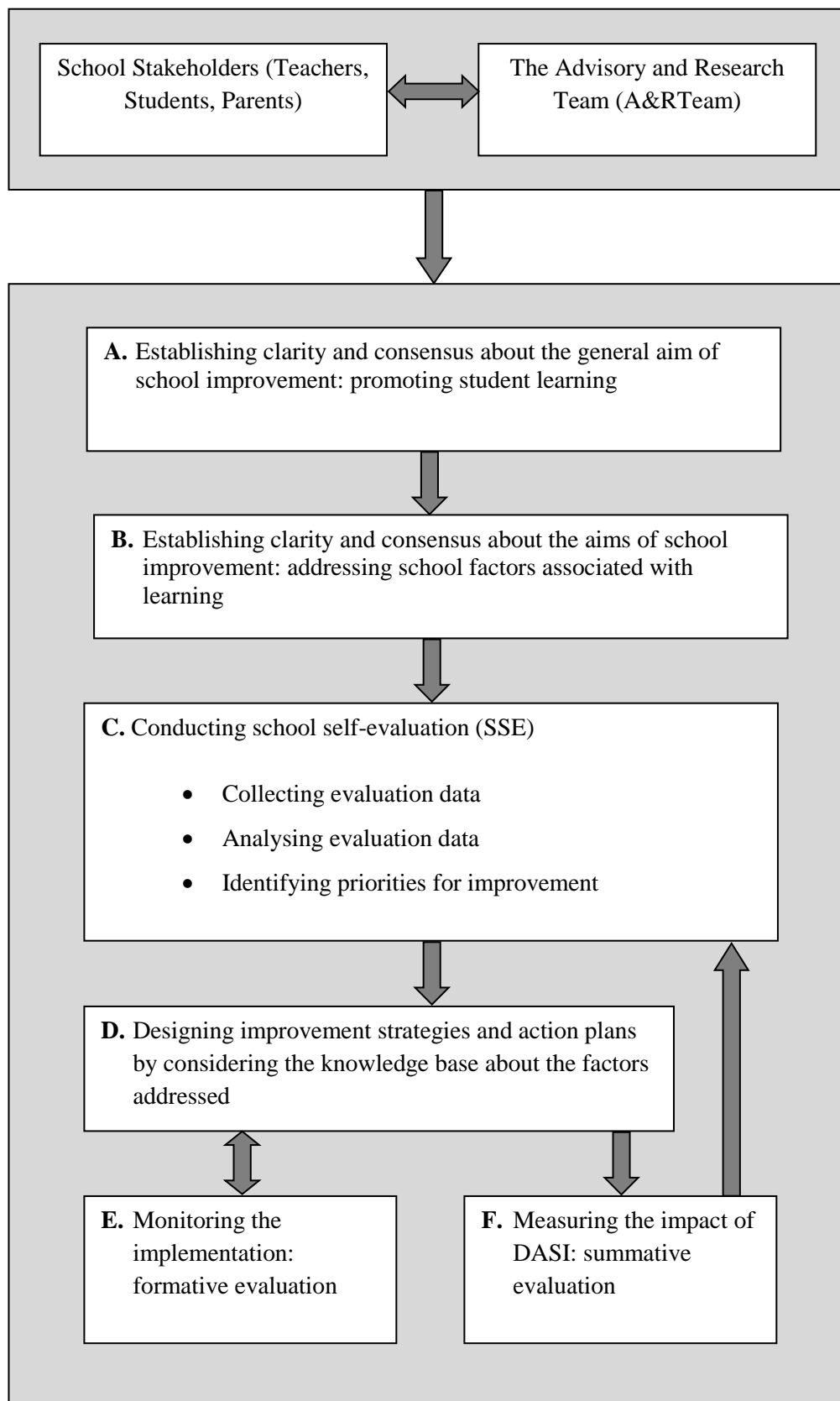
Figure 4. The major steps of the Dynamic Approach to School Improvement (DASI)

Step C: **Collecting evaluation data and identifying priorities for improvement.** The collection of the evaluation data will be undertaken jointly by the research team and the school stakeholders. The research team could afterwards proceed in analysing the data and help school stakeholders identify their priorities for improvement. The improvement areas will then be announced to the whole school community and suggestions will be considered in order to define the specific area/areas of improvement.

Step D: **Designing school improvement strategies and action plans by considering the available knowledge base concerning the factor(s) to be addressed.** This step is one of the most important steps of DASI. Members of the research team will share their expertise with school stakeholders providing additional input to existing ideas, experiences and knowledge in order to help schools develop their own strategies and action plans. Whilst the research team is expected to provide suggestions for school stakeholders, which are based on research evidence, it is the schools themselves that must decide on the content of their action plans, having considered their evaluation data, needs and abilities as well. In developing action plans it is important to specify which tasks need to be undertaken, who is going to be responsible for implementing each task, when each task is expected to be implemented and which resources should be provided for the stakeholders to implement these tasks.

Step E: **Monitoring the implementation of the improvement project by establishing formative evaluation mechanisms.** School stakeholders should not only develop strategies and action plans, but should also establish formative evaluation mechanisms in order to be able to take decisions on how to improve these action plans. Both school stakeholders and the research team will be involved in conducting formative evaluation. In addition, an internal school evaluation mechanism should be developed wherein school stakeholders may reflect upon their abilities not just to implement the action plans, but also to improve the functioning of school factors. As a result of establishing formative evaluation mechanisms and collecting data, school stakeholders can identify weaknesses in their action plans and take targeted measures to improve them.

Step F: **Measuring the impact of DASI.** Finally, the A&RTeam and the school stakeholders should develop summative evaluation mechanisms in order to measure the impact of DASI on promoting student learning. This step may also reveal the importance of identifying a new priority area

for improvement. If summative evaluation reveals that a school has managed to substantially improve the functioning of the factor(s) addressed, school stakeholders and the A&RTeam may decide to collect new evaluation data and identify a new priority improvement area. By conducting school evaluation (moving back to Step C) the new priority area will be identified and a new improvement project will be developed and implemented. It can be argued, therefore, that Figure 4 shows that more effective schools always search for improving their effectiveness status irrespective of how effective they are.

The impact of DASI on promoting quality in education

Table 2 presents the five previous experimental studies which have been conducted in order to identify the impact of DASI on promoting student learning outcomes. The first two studies detailed in this table are concerned with the use of DASI for improving teacher effectiveness. These studies have shown that DASI was more effective than either the Competency Based Approach (CBA) or the Holistic Approach (HA) to teacher professional development which are considered as the two dominant approaches to teacher professional development internationally (see Creemers, Kyriakides, & Antoniou, 2013). Teachers employing DASI managed to improve their teaching skills substantially and, as a result, improve the learning outcomes of their students. The other three studies were concerned with the use of DASI at school level and demonstrate the added value of using DASI to promote student learning outcomes. It is also important to note that one of these studies was conducted in different European countries and showed that DASI had an impact not only on improving the functioning of school factors but also on reducing bullying. Finally, the fifth study took place in socially disadvantaged schools and revealed that DASI had an impact on promoting not only quality but also equity.

Table 2. Experimental studies investigating the impact of using DASI rather than participatory approaches that are based on practitioner's expertise and effects on student learning outcomes

Area of investigation	Impact on factors	Ultimate aims
1. Using DASI rather than HA to offer INSET to primary teachers (n=130)	Only teachers employing DASI managed to improve their teaching skills	DASI had an impact on student achievement
2. Using DASI rather than CBA to offer INSET course on assessment (n=240)	DASI had a stronger impact than CBA on improving assessment skills of teachers at stages 2, 3 and 4	DASI had an impact on student achievement
3. Using DASI to establish school self-evaluation mechanisms in primary schools (n=60)	Not examined since schools had to deal with different improvement areas	DASI had an impact on student achievement
4. Integrating DASI with research on bullying to help schools (n=79) in five European countries to establish strategies to face and reduce bullying	DASI had an impact on school factors	DASI had an impact on reducing bullying
5. Using DASI to promote quality and equity in socially disadvantaged schools (n=40)	DASI had an impact on school factors.	DASI had an impact not only on student achievement, but also on reducing unjustifiable differences between students' achievement.

Studies:
1. The impact of a dynamic approach to professional development on teacher instruction and student learning: results from an experimental study (Antoniou & Kyriakides, 2011).
2. Searching for stages of teacher skills in assessment (Christoforidou, Kyriakides, Antoniou, & Creemers, 2014).
3. The impact of school self-evaluation upon student achievement: a group randomisation study (Demetriou & Kyriakides, 2012).
4. Using the dynamic model of educational effectiveness to design strategies and actions to face bullying (Kyriakides, Creemers, Muijs, Rekers-Mombarg, Papastylianou, Van Petegem, & Pearson, 2014).
5. Promoting student learning outcomes in socially disadvantaged schools (Kyriakides, Charalambous, Michaelidou, & Creemers, 2014).

In the aforesaid studies, schools were given guidelines on how to design strategies and actions to improve their effectiveness. Those actions were based on the school effectiveness factors of the dynamic model. Consequently, in the next chapter we will provide suggestions to help your school make use of DASI and design strategies and action plans to improve its effectiveness in order to promote both quality and equity.

Chapter 3

Using DASI for school improvement purposes: Translating the approach into actions

This chapter provides practical suggestions to help school stakeholders use DASI, its design strategies and action plans to improve the effectiveness of their school. In the first section of this chapter, we explain the importance of conducting SSE (School Self Evaluation) as this is one of the major steps of DASI. In the second and third section of this chapter, we give examples of strategies and actions which schools could undertake in order to improve the functioning of each school factor, while the fourth section offers examples of how each school could monitor the implementations of its action plans. In the last section, the main conclusions emerging from this handbook are outlined.

Using school self-evaluation to identify school improvement priorities

SSE is an essential part of DASI (see step C of Figure 4 in Chapter 2), therefore there are two overarching goals when it is implemented: to improve the quality of the school and to improve teaching and learning. For this reason, SSE is conducted for formative reasons. In practice, it implies that schools which conduct SSE are not simply expected to collect data and announce results on what works and what does not work in a school, since this is usually the task of external school evaluation. The end product of SSE is not only the identification of priorities for improvement, as may be the case in external school evaluations (Kyriakides & Campbell, 2004).

Our approach to school improvement using DASI is based on the assumption that SSE should be targeted and concerned with specific school factors that we know from previous research are strongly associated with student achievement. The two most important overarching school factors are **school policy on teaching** and the **school policy on the School learning environment (SLE).** We view DASI as a very practical and strategically focused approach to school improvement. As such it does not focus on everything that happens in schools.

To be able to identify the areas of improvement, the teachers in your school will be asked to complete a **teacher questionnaire** at the beginning and at the end of the school year to collect data about the functioning of each one of the school factors of the dynamic model (see Chapter 2). Also,

since it was agreed that the ultimate aim of DASI is the improvement of learning and learning outcomes, data on students' achievement in Mathematics (basic skills) will be collected. Therefore, students of Grade 4, 5 and 6 will be administered with a **mathematics test** at the beginning and at the end of the school year.

Another vital element of SSE that is taken into account in designing improvement strategies has to do with its participatory character. SSE promotes the idea that *all school stakeholders should be involved in the evaluation of their school*. Therefore, as soon as the schools attempt to design an improvement project, stakeholders must be brought together and each given a role to play in the project. Readers are reminded that the dynamic model refers to partnership as a school factor. More effective schools are known to improve this important aspect of the school learning environment. For this reason, DASI refers to the importance of conducting SSE rather than any other form of internal evaluation which might be the initiative of only a specific group of school stakeholders (e.g., school evaluation conducted by the school management team). To be effective it must involve the whole school community.

The A&RTeam has a very crucial role to play in helping schools design the improvement project, analyze data emerging, identify priorities for improvement and develop their strategies and action plans for school improvement. The members of our research team are therefore expected to take an active role in sharing their knowledge and insights to school stakeholders at all stages of DASI. For example, school stakeholders may like to develop their policy on teaching and especially its aspect concerned with the provision of learning opportunities, by organizing activities that promote creativity. In such case, members of the A&RTeam may not only provide suggestions based on research evidence on creativity but may also help schools either develop their own instruments to measure creativity or help the stakeholders to use relevant tests that have good psychometric properties and were used in previous studies. Although the A&RTeam has technical expertise and may have to conduct the analysis of evaluation data, school stakeholders should have a say for this process too. For example, the A&RTeam may analyze the results and produce a report to school stakeholders but anyone may ask from members of the A&RTeam to run extra analysis and give them answers to questions that may be of interest to them.

It is finally important to note that one of the major assumptions of SSE is that "human beings can learn from their experiences" (see Kyriakides & Campbell, 2004). This implies that SSE encourages school stakeholders to reflect on their practice and identify their weaknesses. In this way, realizable targets can be created in order to contribute to student learning. DASI takes into account this value assumption of SSE but it also moves a step forward and reminds us that, while reflection is important, it alone is not enough to promote student learning. We recognize that school stakeholders need support from the A&RTeam to reflect on their practice and identify ways to improve practice in their school. For example, in the European study investigating the use of DASI to face and reduce bullying mentioned in Chapter 2, it was found that school stakeholders in schools which made use of DASI to deal with bullying, did not have simply to reflect on their experiences and develop their strategies and action plans. Without the support of the A&RTeam, it is likely that they may have not been aware of the problem in the school in the first place. It was, in fact, the SSE conducted by the school stakeholders and the A&RTeam that revealed that bullying incidents occurred during school breaks. In addition, some schools did not have any policy on how to deal with bystanders and unless the A&RTeam raised this issue, school stakeholders might not have had to pay attention to it. In this context, the involvement of school stakeholders in SSE is not only expected to encourage them to reflect about their practice but to reflect by bearing in mind the literature which refers to best practice when dealing with bullying or any other challenge that their school is facing. At this point, school stakeholders are expected to make use of the dynamic model and the A&RTeam to reflect on the functioning of their school factors that promote learning and learning outcomes.

In the next two sections of this chapter, we refer to the actions that school stakeholders and the A&RTeam can take, in order to design their improvement strategies and action plans. It is first of all stressed that when developing their school policy and action plans, stakeholders should bear in mind how and why each aspect of the overarching school factor addressed (i.e. the policy on teaching, the policy on the learning environment, and school evaluation) is related to learning and the learning outcomes. The policy should also outline the *roles, responsibilities and procedures* for staff and other adults, including parents and community volunteers who may be involved in DASI and the specific

school improvement project. When developing school policy and designing action plans and strategies, it is also very useful for school stakeholders and the A&RTeam to take into account the following:

A. The term 'school policy' does refers not only to the various formal documents or letters sent to different school stakeholders which explain the policy of the school, but also to the various actions that the school management team (teachers, deputy heads, and administrator) undertake, to improve the quality of teaching and the school learning environment. It is further important for the format of the policy to be clear, especially in the messages that are delivered to the teachers and other stakeholders. This is because they provide specific direction for the role that each individual involved has to undertake, in regard to the implementation of the various aspects of school policy.

B. During the designing of action plans, it is suggested that school stakeholders and the A&RTeam take into account the knowledge and skills of teachers, students and parents in implementing the intervention policy. For example, encouraging teachers to visit each other's classrooms to observe specific teaching skills, may not be an appropriate decision to make if this is not usual practice in the school. On the other hand, more approachable actions and strategies, such as staff meeting presentations of the successful approaches teachers may use, could have a positive impact on the effectiveness of the intervention. Equally they should ensure that the stakeholders are willing to be involved in implementing the policy, and that the school is further able to provide them with the support needed to implement the policy.

The strategies and action plans described below can be modified according to your school and teachers' specific needs, yet they should remain in line with the skills of the various stakeholders of the school. Therefore, recommendations presented beneath may assist readers to make decisions for the effective development of a school improvement project.

Designing strategies and actions to improve school policy for teaching

In this part, suggestions regarding the three aspects of the first overarching factor can be found, which are concerned with school policy on teaching and the actions taken to improve teaching (see Chapter

2). The three aspects of this domain concern: *a) quantity of teaching, b) provision of learning opportunities*, and *c) quality of teaching*.

A) *Quantity of teaching*

This factor refers to the ability of the school to tackle problems that may reduce teaching time. Teaching time is very important for achieving any of the cognitive and affective goals and for carrying out activities that can reduce differences in achievement among students particularly since teachers have to run differentiated tasks that need time to be organized and completed. Thus, two types of reactions are presented regarding the four aspects (*absenteeism of students, teacher absenteeism, management of teaching time and policy on homework*) of this factor: the first regarding methods of persuading school stakeholders to avoid reducing teaching time (i.e. kind of disciplinary actions) and the second identifying techniques for regaining lost teaching time (or in part), by offering extra time for learning.

i. *Absenteeism of Students*

Student absenteeism is an aspect of this factor that has direct and negative consequences to the quantity of teaching offered to students. Some actions for reducing this phenomenon and for replacing the lost time are given below.

Actions for reducing the phenomenon: Firstly, teachers, if they do not already do so, could keep records of student absenteeism on a daily basis and if possible, selected school stakeholders could be responsible for analysing them, by searching for general trends of which students are missing lessons and when this is occurring. Although schools usually keep record of student absenteeism, this is typically done only for managerial purposes. Schools may also choose to present the results and send a short report to parents, which may display when the phenomenon is occurring, or on which days the students are usually absent. The analysis of data can also help school stakeholders to set targets that will be announced to all stakeholders, in order to reduce the phenomenon. Moreover, if the figures show that a greater number of students are absent on specific day(s), the school management team may investigate the possible reasons for this trend by discussing such findings with the absent students. For example, if mass absenteeism occurs on the same day as an organised school trip, the reason for the

students' lack of attendance could simply be that they did not want to participate in the event. Similarly, if a relatively high percentage of students are regularly missing on a Friday, it may be due to particular families purposefully extending their weekends. In such cases, there would be a need to contact these parents to request that teaching time is respected. Another trend may indicate that students tend to be absent from a particular subject (i.e., Mathematics). Again, the reasons should be sought and taken concrete steps to reduce the phenomenon. Also, through the record books we can see if some students who are repeatedly absent belong to specific groups (e.g., ethnic minority students or students in challenging circumstances and to look for the reasons why they are absent. The approach should be one of openness and a desire to understand the reason for the absenteeism. We must be very careful and to focus our attention on absenteeism. The findings should not be exported arbitrarily but after discussion and gathering of relevant data.

Secondly, schools should announce their policy on student absenteeism to parents and students, clarifying that there should be a serious justification for students not attending school. In addition, it can be reiterated to students and parents who missed lessons or a school day for an acceptable reason (e.g. illness, participating in competitions, representing the school in events), that they should provide supporting documents detailing the reason for their absence. These documents should be given promptly to the school staff members responsible for dealing with absenteeism and checked if necessary. On the other hand, those students who missed lessons or school days without acceptable reasoning should be addressed individually and measures should be taken to avoid absenteeism in the future.

Thirdly, schools can develop a "Sign in book" where every student who is late to school is required to 'sign in' at the front reception. A book for this activity is held at the front of school with columns such as:

Date	*Name*	*Class*	*Time in school*	*Reason for lateness*	

The final column can be used for admin purposes – such as indicating that time has been caught up, reason verified as reasonable cause for lateness, parent contacted or similar. Senior teachers monitor

this book to ensure there are not repeat offenders. Calls home are made as necessary. Such a book could be signed by pupils and/or parents.

Regaining the lost teaching time: In some schools, each student is expected to nominate or have classmates whose responsibility it is to inform him/her of what happened during the day and of any homework that was assigned whilst he/she was absent. In this way, the student will have the opportunity to work on the topic at home and the parents (or other members of the family) may help him/her to catch up with the lost time. In other schools and especially in the cases of students who may receive little or no support at home (e.g., students in challenging home circumstances), it may be the teachers that are expected to find extra time to inform and assist students in catching up with the part of the curriculum they have missed. This can be either when the student returns to the school or even during the period that they are missing the lesson for, at a place outside of the school (e.g. visit students at home to inform them about the lessons that they missed). The teachers could also send the teaching material of the day to the students who were absent, either by email or through a close friend or through their own parents.

ii.   *Teacher Absenteeism*

Teacher absenteeism is another important aspect of this factor that may have negative consequences to the quantity of teaching offered. Just as with student absenteeism, every effort should be made to ensure that teacher absenteeism is minimised and most importantly, that there are clear policies in place in relation to making up for any loss in teaching time when colleagues are absent.

With regard to the aspect of teacher absenteeism, school management should also consider stress in the workplace as a contributory factor which can especially occur in schools in challenging circumstances. The term 'teacher stress' refers to a situation "when the pressures upon a teacher exceed the resources to cope with those pressures" (INTO, 2003, p.1). It appears that teachers who experience personal satisfaction from their work seem to strive for success, meeting the requirements of their job in order to feel creative and self-fulfilled. Consequently, constant fulfillment is connected to teachers' encouragement of self-knowledge and improvement in terms of appreciation of their work by students

and social support by the headmaster (Papastylianou, Kalia, & Polychronopoulos, 2009). To facilitate the above, what could be done is to arrange for practical training with the aim to enable the teacher to (1) solve problems resulting from the organization of the class-work and establish and maintain order in the classroom so that lessons will be as productive as possible, (2) solve problems resulting from the teaching-learning process, looking in depth at the problems posed by the psychology of teaching and learning, particularly at the difficulties many new teachers have in organizing their teaching to make it accessible to all of their students (Cole & Walker, 1989).

Regaining the lost teaching time: Teachers who know in advance that they will be absent (e.g. have to attend a course offered externally) may be required to prepare teaching materials which can be used during their absence by replacement teachers. In cases when absenteeism cannot be predicted (i.e. teacher illness), other available teachers may be asked to cover the lessons affected. In those cases that there is no teacher available to run the lesson(s), students may be given the opportunity to undertake extra-curricular activities (e.g. going to the library and studying under the supervision of the librarian, playing educational games, developing a project by using the internet). If no action is taken, then students may lose the teaching time and could even cause problems for other classrooms as well, as misbehaviour is likely to occur especially if being without supervision.

iii.   *Management of teaching time*

School policy on the management of teaching time is also an aspect of the factor concerned with quantity of teaching. In defining this policy, the dynamic model refers to several aspects of the management of teaching time, such as ensuring that: a) lessons start on time and finish on time; b) there are no interruptions of lessons for staff meetings, announcements, or preparation of school events. Resultantly, school stakeholders ensure that the time allocated for teaching is used to achieve the aims of the official curriculum.

Actions for reducing the phenomenon: Schools can take several actions to reduce the interruption of lessons and guarantee that they start and finish on time. For example, schools may have an official policy (which will be announced to all school stakeholders) that lessons will not be

interrupted by anyone (e.g. other teachers, deputy heads or heads) or for any managerial reason (e.g. for making an announcement or collecting money for school trips/charity reasons etc.). The starting and finishing times of the lessons can also be announced to the teachers, students and parents which the school management team should enforce, by ensuring that students and teachers go to class on time after each school break. The school should officially inform the parents with a brochure on the exact time by which all students should be at school. This brochure could explain clearly to the parents that the timely arrival of the students is very important in order not to waste any teaching time. Consistency in the arrival time serves the learning objectives and favours the development of multiple activities since the teacher has the opportunity to differentiate his/her teaching and give more time to the students who need it.

Moreover, it is often the case that some headteachers "extend" the break time to discuss an important matter with the staff and to take certain decisions. Such habits should be avoided and the headteacher should wait until the end of the day or take some time before the lessons start in the morning (when all teachers and staff members can meet and they do not have any teaching responsibilities) to discuss any emerging issues.

Schools can also consider the possibility of keeping record of students who are not on time to attend the lesson. In some schools these results are announced to various stakeholders and are also communicated with parents (for disciplinary reasons). If students arrive late in the morning, teachers can request that their parents bring them to school on time. Certain schools may enforce punishment for those arriving late in the morning, for example by not allowing them to enter the class, yet stakeholders should be aware that this approach can create more problems, as further teaching time is lost. Similarly, teachers who regularly start lessons late or not finish on time should be addressed individually by the headteacher and appropriate measures should be taken to avoid this phenomenon (e.g. warnings, negative evaluation) in the future. Also, when a student is consistently arriving late to class, the teacher has to contact his parents personally to seek the reason of delay. If there is a serious reason for this, (e.g. because of the nature of the work of parents or if there is no transportation to school) then the school must provide adequate support to parents and arrange timely transportation to the school (e.g., with the school bus).

Regaining the lost teaching time: Students who are late can be asked to spend extra time in school or to do extra homework to compensate for the lost time. Therefore, not only is the lost teaching time regained, but students are also discouraged from arriving late to school. Some schools require late students to stay during their break time to discuss with their teacher how to compensate for the learning tasks they have missed.

iv.   *Policy on Homework*

Schools are expected to have a policy on homework and the policy should be accessible to teachers, parents and students. Policy on homework should cover the following aspects:

1) *Amount of homework given to students*: This should be differentiated according to the needs of students. There are students who will not be able to complete all their homework either because they will not have any support by their parents or because of the difficulties that they will encounter in undertaking the activities (e.g., low achievers, students with low SES).

2) *Type of homework that should be given:* This should be also differentiated according to the needs of students. For example, research has shown that students with low SES benefit more from structured exercises that guide the student through the steps they have to follow to complete them (Brophy, 1986) and with exercises that link the lesson of the day with their daily lives (Hopkins & Reynolds, 2002). Homework must be "doable", for example, it is unrealistic to give homework which requires a search on the internet when a group of students do not have a computer at home.

3) *The role of parents in supervising homework:* Parents are only expected to check that their children spent time doing the homework and not solve the problems/tasks that their children are supposed to do. Some schools could organise special events which will teach parents (including those with limited education themselves) how they can supervise and support their children. Schools may also encourage parents to have regular communication with teachers and provide feedback on how their children behave whilst doing homework and the kind of problems their children face. Teachers may also prepare a logbook where the parents of the students could indicate how much time their child has spent on completing the homework for

each lesson. This information will help teachers indicate if the amount and difficulty level of homework was appropriate. Finally, schools should emphasize the importance of the place and time where homework is completed. A quiet place early in the afternoon could be a suitable choice when students are completing their homework.

4) *Teacher evaluation of homework and feedback given to students on the homework assignments:* It is important that teachers keep records of the students who neglect their homework and seek possible reasons for not accomplishing it, as students with no acceptable reason for doing so can be addressed individually and appropriate measures can be taken to reduce this problem. Equally, the importance that teachers place on homework should be conveyed to the students and parents alike. In cases where parents cannot provide their child with the necessary support to complete the homework at home, then the school and the teacher need to find ways to support this student (completion of the homework at school under the supervision of the teacher or provision of remedial teaching in certain subjects).

B) *Provision of learning opportunities*

School policy on provision of learning opportunities is measured by focusing on the extent to which the school has a mission concerning the provision of learning opportunities which is reflected in its policy on curriculum. Providing learning opportunities for students is a very important aspect of school policy for teaching to offer equal educational opportunities and to promote simultaneously quality in learning. The development of this aspect gives the opportunity to students who are unable to be engaged in educational activities outside the school (e.g. students with low SES and/or ethnic minority students), to enrich their knowledge by reducing the differences that they have with students with high performance. In particular, we argue that effective schools in promoting both quality and equality are those where teachers provide appropriate and well-designed learning opportunities designed to meet the relevant cognitive and affective objectives of different groups of students. School policy on long-term and short-term planning and on providing support to students with special needs is also examined under this aspect. Furthermore, the extent to which the school attempts to make good use of school trips and other extra-curricular activities for teaching/learning purposes is investigated.

i. Making good use of school trips and other extra-curricular activities for learning purposes

Regarding this aspect of school policy, it is important to note that some schools may adhere to the notion that school trips are only for fun and not for educational purposes, presenting the impression that learning and fun cannot go together. However, school policy on provision of learning opportunities consists of ensuring that numerous learning opportunities are offered to children both inside and outside of the classroom. For this reason, schools should consider school trips as a very good opportunity to show children that what is learnt in school has significant relevance to everyday life. For example, a school trip to another city could include a visit to a local museum, which would offer the children additional learning opportunities and could provide an integrated approach to teaching history/geography/art. School stakeholders can therefore be informed that the various events and extracurricular activities that students are involved with are chosen on the basis that they can offer learning opportunities to students without negatively affecting the time that is offered for teaching a specific subject. This implies that the school management team should select their students' activities through specific criteria, which are used whenever a suggestion for a trip or involvement in a project is made. This further suggests that schools will have to offer different extracurricular activities to different groups of students (e.g. Year 1 students are likely to visit a different place than Year 5 students) by taking into account their learning needs. Evaluation of the impact that these activities have on student learning could also be undertaken.

Additionally, school stakeholders may realise that the involvement of students in activities that do not provide any learning opportunities have a negative impact on student learning, because teaching time is simultaneously reduced. It is for this reason that the school management team should place a great deal of emphasis on the selection of activities offering learning opportunities to students that cannot be offered through the formal curriculum.

Finally, the school should be informed of the various events taking place in the community as well as the various competitions and programs organized, to accordingly inform students who want to participate. This is very important especially for children from minority groups who may not have the opportunity to learn about them through their parents. Also, it will be very helpful if the teachers of the

school ask their students about their experiences so far (e.g., if they have ever visited a museum, if they went to another country, etc.) so that they could provide them with the appropriate learning opportunities that address their special needs. Moreover, parents of students might also be invited to participate in certain school trips or events, especially if their knowledge and background can support the learning of the students.

ii.   School policy on long-term and short-term planning

Some schools expect teachers to provide their short-term plans to headteachers or other school staff members (e.g. deputy heads, subject coordinator). Whilst this can be viewed as a method of ensuring that teachers are accountable for covering the curriculum in the time frame required, there may be some scope for improvement. Consideration could be given to providing teachers with feedback and support in relation to short term goals. This could for example include support on time management and ultimately improve the quality of their teaching. Schools may also ask groups of teachers to cooperate and prepare their long-term planning together. For example, teachers of a specific subject (i.e., Music tor Art teachers) or of a specific age group of students may be asked to develop their planning for the year at the beginning of the school year, which should be adapted at the end of each term. The teaching materials produced for each course could be free of access to all teachers of the school and include differential activities for each course for each student group which can be used by all teachers according to the needs of their class. Suggestions for improving this material could be provided throughout the school year and in this way a "bank" of educational materials is created at school for all grades, for all subjects and for all the different groups of students covering different learning needs.

Schools may also consider the announcement of the long-term planning to students and/or parents. In this way, the parents are aware of what takes place in the school and may also be encouraged to find ways to support the implementation of the planning, both inside (e.g. by providing resources to teachers) and outside of the school (e.g. by monitoring the homework or offering relevant opportunities in the trips or other events that they are organising as a family).

In some schools, the long-term planning does not only cover the curricular activities, it also refers to the extra-curricular activities which are expected to contribute to the achievement of specific

aims of the curriculum such as: a) Student conferences in which students will take part in decision-making, b) Organisation of volunteer groups for different purposes, c) Active involvement in discussions in the classroom on issues such as racism, and d) school trips and events during the school year. In this way, the long-term planning takes into account that some teaching time may be spent on extra-curricular activities and is thereby an accurate portrayal of what will eventually happen during the school year.

iii.   School policy on providing support to students with special needs

In some schools, additional time outside of school hours is allocated to children with special needs, including gifted or talented children, to support their learning in different domains (e.g. Art, Music, Physical Education, Mathematics, Language, and Science). Schools may also ensure that teachers are available during the school hours to provide support to children with special needs, in order to facilitate and promote their learning in the regular classrooms. Other schools provide relevant support outside of the classroom, yet within school hours (e.g. during school breaks). Educational provision for students with special educational needs may be implemented through a "Staged Approach". At the first stage, students with special educational needs are identified through a combination of teacher observation and informal curricular assessment. The class teacher and parents are encouraged to discuss the nature of the student's difficulties and, following this discussion, an appropriate intervention is designed. However, in some cases, teachers may not be in a position to address all the student's individual needs. Thus, at Stage 2, School Support is provided to teachers. Specifically, the class teacher will work collaboratively with additional support teachers (e.g. Learning Support/Resource), where available. This may require the involvement of outside personnel (e.g. Educational Psychologists) in the formal assessment process. An individual education plan will then be developed for the student, in collaboration with the student's parents, principal, class teacher, support teachers and relevant outside personnel. The individual education plan will provide a detailed overview of the student's individual strengths and needs and educational goals and priorities for the student for the coming school year will be identified. Announcement to students and/or parents of the school policy on providing support to students with special needs is essential. Various methods can be employed to announce such policy

(e.g. documents including the official policy can be sent to parents, the policy can be made available on the web page of the school). In this way, parents of children with special needs are informed of the opportunities offered to their children, whilst other parents can encourage the positive attitudes of their own children towards their classmates who have special needs.

C) *Quality of teaching*

Policy on quality of teaching mainly refers to the eight teacher factors included in the dynamic model: *orientation, structuring, questioning, teaching-modelling, applications, time management, teacher role in making classroom a learning environment, and classroom assessment*. Table 3 provides a brief description of these factors.

When developing school policy to improve teaching, one should pay close attention to each of these eight factors, because they have been found to be associated with student achievement gains (Creemers & Kyriakides, 2015). For example, if a teacher has not developed his/hers time management skills or does not handle misbehaviour and disorder effectively, then he/she will face disciplinary problems in the classroom and teaching time will resultantly be reduced. In contrast, if the teacher creates a business-like and supportive environment for learning, misbehaviour may become a rare occurrence and teaching aims are more likely to be achieved. Therefore, effective schools are those which develop clear, specific and concrete policy on the quality of teaching, whilst encouraging teachers to create the appropriate positive conditions for learning and instruction in the classroom. In addition, teachers who are effective in classes with students with different background characteristics (such as SES, ethnicity, initial achievement) differentiate their teaching since the use of a generalized approach for all students cannot have the same effect on the progress of a student with low SES and on the progress of a student with high SES (Brophy, 1992; Creemers & Kyriakides, 2006; Maden, 2001; Mortimore, 1999). Below our suggestions are outlined for developing school policy on the quality of teaching, in regard to the eight teacher factors included in the dynamic model.

Table 3. The main elements of each teacher factor involved in the dynamic model

Factors	Main elements
1) Orientation	a) Providing the objectives for a specific task/lesson/series of lessons; and b) challenging students to identify the reason that an activity is taking place in the lesson.
2) Structuring	a) Beginning with overviews and/or review of objectives; b) outlining the content to be covered and signalling transitions between lesson parts; and c) drawing attention to, and reviewing, main ideas.
3) Questioning	a) Raising different types of questions (i.e., process and product) at appropriate difficulty level; b) giving time for students to respond; and c) dealing with student responses.
4) Teaching modelling	a) Encouraging students to use problem-solving strategies presented by the teacher or other classmates; b) inviting students to develop strategies; and c) promoting the idea of modelling.
5) Application	a) Using seatwork or small-group tasks in order to provide necessary practice and application opportunities; and b) using application tasks as starting points for the next step in teaching and learning.
6) The classroom as a learning environment	a) Establishing on-task behaviour through the interactions it promotes (i.e., teacher-student and student-student interactions); and b) Dealing with classroom disorder and student competition by establishing rules, persuading students to respect them and using the rules.
7) Management of time	a) Organising the classroom environment; and b) Maximising engagement rates.
8) Assessment	a) Using appropriate techniques to collect data on student knowledge and skills; b) analysing data in order to identify student needs and report the results to students and parents; and c) evaluating their own practices.

The school management team should encourage teachers to undertake activities which promote quality in their teaching and therefore improve their teaching practice. Initially, teachers could be informed during staff meetings of the importance of the eight factors and their five dimensions. Subsequently an exchange of teachers' ideas and views could take place, concerning the creation of a classroom climate which is supportive for learning and stimulates positive child behaviour. It could further be determined

that certain staff meetings will not only deal with administrative issues, but will also establish a *clear and concrete policy on the quality of teaching*. In such meetings, issues concerned with the quality of teaching should be discussed, including classroom strategies for improving teaching practice, as well as methods of dealing with misbehaviour problems effectively. Further suggestions are provided below for practices that can be used to create a safe learning environment in the classroom which can promote not only quality but also equity.

Firstly, we recommend that teachers avoid the negative aspects of competition among the students in the classroom, because of the potentially negative impact on those children who come last which could extend across a range of valued classroom activities. Such feelings are likely to cause frustration and negative attitudes towards learning.

The headteacher should engage teachers in positive student-student and student-teacher interactions and mobilise them to promote those interactions actively in the classroom. Teachers should assign students cooperative activities where they can work together in small groups to achieve mutual learning goals. Such strategies can contribute to the common good, potentially through the inclusion of ethnic minority students, newcomers and different socio-ethnic groups of children. If teachers need to strengthen the interactions between their students, they should attempt to create cooperative experiences in the classroom. Such experiences can encourage the students' commitment to: a) contributing to the wellbeing of other students, b) accepting responsibility to add to their partners' work, c) displaying respect for the efforts of others, and d) behaving with integrity, compassion and an appreciation for diversity. Teachers should also manage their classroom by focusing on promoting mutual goals that require self-regulation and productive interactions.

Another aspect that the school management team should consider is the lack of direct teaching skills some teachers possess. Such teachers are considered insufficient when observed to lack skills of the direct teaching approach, such as: classroom management skills, application, management of time, structuring of the lesson, monitoring students behaviour, organisation of activities (e.g. preparation, distribution of materials) and discipline. Therefore, the school management team could identify teaching needs for professional development and support teachers in order to upgrade their skills.

It is very important to note that since this project will take place in schools with high percentages of low SES students who may struggle in school, teachers should focus especially on improving their skills on structuring and on application tasks. Structuring in a lesson such as beginning with overviews, outlining the content to be covered and signalling transitions between lesson parts, calling attention to main ideas, and reviewing main ideas at the end, will reinforce the learning of major points and will help these students understand the main concepts of a lesson/unit about and how they are related with the previous lessons/units. However, each teacher should be in a position to differentiate his/her teaching tasks. Students with low SES need more guidance about what to do in each activity and more encouragement (Brophy, 1986). On the other hand, the more able students do not benefit from a guided learning, but instead can work effectively in independent learning environments by following their own learning pace (Kyriakides, 2007; Snow & Lohman, 1984). So, teachers need to adapt their approach in teaching in order to give clear instructions of what to do at each stage of the lesson and to continually provide feedback to the less able students.

Effective teachers also use seatwork or small group tasks since they provide needed practice and application opportunities. Application is linked to the direct teaching approach, which emphasises immediate exercise of topics taught during the lesson and direct feedback provided by the teacher either at an individual or group level. Teachers should give more opportunities for application to students who need them (e.g., low-achievers, students with low self-esteem). They should also give more opportunities to students of low SES, since these students might not have the opportunity to practice at home under effective supervision and/or to students whose parents may not know how to help them. Teachers are also expected to monitor, supervise, and give corrective feedback during application activities to all students. Therefore, once the students are released to work independently teachers should circulate to monitor progress and provide help and feedback. However, effective teachers are expected to provide encouragement more frequently to low-achieving students for their efforts and praise for their successes. Additionally, application tasks could be divided into smaller parts.

Questioning techniques are also an essential part of effective teaching, particularly in classes with students from different socio-ethnic groups. Muijs & Reynolds (2000) indicate that effective teachers ask a lot of questions and attempt to involve students in class discussion. But since the

developmental level of students defines, to a large extent, optimal question difficulty, this should also vary with context. For example, basic skills instruction requires a great deal of drill and practice and, thus, requires frequent fast-paced review in which most questions are answered rapidly and correctly. However, when teaching complex cognitive content or trying to get students to generalize, evaluate, or apply their learning, teachers should usually raise questions that few students can answer correctly or that have no single correct answer at all. Teachers should also provide more time to low-achievers to think of the answer and try to incorporate a mix of product questions (i.e., expecting a single response from students) and process questions (i.e., expecting students to provide explanations). Teachers could also direct questions to specific students or take answers from specific students (e.g., introverts). Effective teachers take into account the goals of each lesson for each level of students, when asking questions. For example, sometimes may begin with a higher level question and then proceed with several lower level follow-up questions since this was found to be an appropriate approach for some objectives (e.g., asking students to suggest an application of an idea and then probing for details). A different objective (e.g., stimulating students to integrate certain facts and draw a conclusion from them) may require a series of lower level questions (to call attention to the relevant facts) followed by higher level questions.

In regard to the classroom assessment, it should be is seen as an integral part of teaching; formative assessment is especially one of the most important factors associated with effectiveness at all levels, especially at the classroom level (de Jong et al., 2004). Information gathered from student assessment should enable teachers to identify their students' needs as well as to evaluate their own teaching practice. Teachers should use different techniques for measuring student needs and/or different ways to provide feedback to different groups of students by taking into account their background and personal characteristics. It also is considered important for teachers to take into account the fact that students' perceptions of the importance of testing may vary due to differences in their background characteristics, and this variation in perceptions may explain variation in achievement. In addition, ability and achievement tests that assume a high need for achievement may result in underestimates for such groups of students. Initial evaluation is a very important aspect of classroom assessment to specify each student's abilities and needs. Continuous and final evaluation should take place by using different

types of assessment tools and their results should be announced to parents and students giving them a clear understanding of the areas that need to be improved.

Some schools may also offer common non-teaching time to a group of teachers (e.g. teachers of the same subject or teachers of the same age group of students). In addition they may encourage each group of teachers to visit other classrooms and provide feedback to help each other to improve his/ her teaching skills.

It is finally important that school policy for the quality of teaching is clearly communicated to the teachers (either described in documents or placed on notice boards). The policy may refer to factors related to generic teaching skills and support should also be provided to ensure that each teacher can improve their skills. Research is clear that school policy on quality of teaching can have an effect on student achievement (in respect to quality and equity) if this is implemented consistently by the teachers in their classrooms and discussed and evaluated during staff meetings.

Designing strategies and actions to improve school policy for creating a learning environment at school

In this part, suggestions regarding the four aspects of the second overarching factor can be found, which are concerned with the school policy on the SLE and actions taken to improve the SLE (see Chapter 2). The four aspects of this domain concern: *a) student behaviour outside the classroom*, *b) collaboration and interaction between teachers*, *c) partnership policy* and *d) provision of sufficient learning resources to students and teachers.*

A) *Student behaviour outside of the classroom*

With the development of a clear policy on student behaviour outside of the classroom, valuable information about student-student interactions that may promote or hinder learning can be collected and used for the development of action plans. Regarding student behaviour outside of the classroom, all school personnel (not only teachers, but also bus drivers, coaches, and after-school programme supervisors) have to be informed about the school policy and should be trained to implement those aspects that are relevant to their roles. For example, bus drivers should be aware of how to deal with

misbehaviour and how to motivate and reinforce positive interactions among students. For instances of misbehaviour, they should also be informed of the appropriate staff members' contact details, or even those of the parents' of misbehaving students. Similarly, after-school programme supervisors may encourage students to make good use of the time that they stay at school, such as spending it on homework. In addition, some students may provide support to others who are facing difficulties with their homework, although supervisors will monitor this support to avoid homework being completed by others or copying to take place without any understanding involved.

For this reason, some specific suggestions on the content of the policy are provided below, which take into account that different activities can be undertaken in the different time periods that students are outside of the classroom (i.e. *student behaviour in break time, student behaviour before the lesson starts, student behaviour after school hours/after lessons finish*). Also, specific suggestions are provided for the *behaviour code* that the school should develop, in order to avoid negative and encourage positive interactions among students.

i. *Student behaviour in break time*

Schools should develop a policy concerning the effective supervision of their students during the break sessions. Increased monitoring of student behaviour *during break times* can help to identify and intervene when bullying and/or other types of misbehaviour occur. A carefully organised supervision plan can help reduce the bullying phenomenon, especially when focused in the areas of the school where the majority of bullying incidents have been observed. Especially in schools with high percentages of students with different ethnic groups and socioeconomic backgrounds, the phenomenon of bullying is more likely to appear and teachers have to be in a position to identify the "bullies" and the "victims" and provide the appropriate support to them.

Although a list of the teachers responsible for supervision is usually determined in most schools, the role of each person involved and the areas each teacher is expected to supervise must also be stated. In regard to the role of teachers, the school management team may recommend that whilst supervising, the teachers should try to encourage students to interact with each other. They can also conduct informal interviews with students in which questions are open-ended and asked in a neutral

way. This should create conditions under which students feel free to openly express their feelings about schooling. In this way, interactions between teachers and students are encouraged and teachers may use the opportunity to provide direct support to learning difficulties that students may face.

Teachers should also be visible and vigilant in such common areas as hallways, stairwells, gym and other 'hot spots' where student misbehaviour may occur. Additional supervision may also be required in school bathrooms, as vandalism, disorder and mess are likely to occur. This can be dealt with by addressing students with specific directions (e.g. throw away any rubbish properly and keep the place tidy). Such tasks can aid students in developing positive attitudes towards the school and encourage desirable behaviour that can be characterised as respectful, reliable and responsible.

Additionally, a carefully organized monitoring plan can be a useful tool for promoting equity in a school. Teachers should be encouraged to look out for any *isolated students* at break times. For example, an isolated student sitting in front of the teachers' office at break time may be attempting to convey a message, which can be interpreted by the supervising teachers if they not only see, but observe and interpret the situation. A possible explanation could be that other students are bullying him/her and in order to obtain some kind of protection, he/she chooses a very visible place considered to be safe and secure, due to the increased teacher supervision there. Another explanation is that he/she may be facing some difficulties communicating with other students because of the language. The next step for the teacher should be to discuss with the isolated child and provide support, yet any conclusions drawn should not be arbitrary, rather they should relate to the discussion and reception of appropriate information. For example, the child in the previous case may merely be sitting outside the office, because he/she resting from a game or prefers to enjoy his/hers meal in silence.

During break time, *playground activities such as playing in cooperative groups* can be organised. These activities may promote learning, for example *table games* can be organised to keep students occupied and entertained during the break time. These games may also demonstrate how the lessons taught at school can be applied to real life situations. Specific directions usually have to be given to students (e.g. include others in the game, follow the rules and return equipment when done). Another example would be the organisation of a *science fair*, which provides an opportunity for students to see and take part in experiments, being educated of science whilst doing so. It is important to note that the

playground activities could provide to low achievers the chance to interact with other students, use different words (in word games) and take more responsibilities (by exchanging roles in game).

Rewarding good behaviour not only in the classroom but outside of it can be very beneficial. Schools can develop a motivation system for the improvement of the social environment of the school, by taking actions to emphasise the maintenance of the behaviour code and the promotion of appropriate and positive behaviours outside the classroom.

ii.   *Student behaviour before the lesson starts*

The school should find ways to be aware of students' behaviour on buses and on the way to and from school for students who walk or ride bikes. A possible way could be by obtaining information with the cooperation of the additional staff (not educational). For example, the bus driver and the school traffic warden can provide information for any bullying incidents or any other disturbing behaviour. It can also be arranged for a teacher or other educational staff every day to be in the school's entrance and welcome the students and their parents. For example, students with parents from lower socioeconomic backgrounds cannot afford to arrive late to their work which usually starts early in the morning (e.g., constructors, employees in factories) and are often forced to bring their children to school very early in the morning. Accordingly, in a school that supports parents and students should be a staff member (preferably a qualified teacher) to welcome these students in the morning and keep them busy until other students and teachers arrive at school. The person selected for this work will be required to have specific qualifications and communication skills. She/he can be encouraged to interact with children and support them.

In order to avoid disciplinary problems before the bell rings, the teachers can go to class as soon as they arrive to school. Another measure should be to make clear to students that as soon as they put their bag to their seats, they have to get outside the classroom. Supervision of the students should not cover only the playground and external areas but also the classrooms' area. In addition, a document should be sent at home stating to parents the exact time that all the students should be at school in order to avoid disciplinary problems and misbehaviour after the bell rings. A further reason that the school

requests orderliness in the time of arrival is because when the students present to their classroom latish, they miss precious learning time and therefore the quantity of teaching is affected negatively.

Lastly, special attention should be given to providing instructions to children about their arrival-entry to school. More specifically, the school can define specific expectations concerning students' arrival-entry to the school that will be announced to all students in simple and clear wording so that everyone could read and understand them:

- walk and not run,

- enter the school quickly and quietly,

- minimize chatting,

- arrive to class on time,

- put your bag in classroom and go to the playground,

- respect materials (e.g., posters in the hallways),

- avoid interaction with persons that you do not know outside the school and

- do not bring valuable items into school.

iii. *Student behaviour after school hours/after lessons finish*

It has to be made clear to the parents that they have to arrange to take their children from school as soon as lessons finish. For the children who are supervised in school after school hours, a professional person (preferably a qualified teacher) registering the school's requirements should be appointed and not any adult without any basic qualifications on how to deal with children (e.g., a secretary or a parent). This is very important especially in schools where parents do not have the opportunity to pick children up as soon as the lessons finish, since they have to work until late afternoon. As above, special attention should be given to provide instructions to children about their exit from classroom and school. More specifically the school can define specific expectations concerning students' exit from school that will be announced to all students:

- leave the school quickly and quietly,

- minimize chatting,

- remember to take all your belongings from class, and

- when you are outside the school waiting for your parents to take you, avoid interaction with persons that you do not know.

iv. *Behaviour code determined by the school (with cooperation of students, teachers and parents) concerning student behaviour outside the classroom.*

Rules should be brief and clear, stating the immediate consequences for aggressive behaviour and the immediate rewards for inclusive behaviour. The behaviour code should reinforce the values of *empathy, care, respect, fairness, and personal responsibility*, and must *clearly define unacceptable behaviour, expected behaviour and values, and consequences for violations*. In addition, the code should, a) apply to adults and students, b) use age-appropriate language, c) use simple and concrete language to be easily understood by all students and parents, and d) be prominently placed throughout the school.

In order to ensure that positive behaviour will be sustainable, *weekly meetings* to communicate with students may be arranged. Through these meetings, teachers can motivate their students to follow the rules of the behaviour code.

In support of the suggestions provided in the paragraph above, especially with regards to "values of *empathy, care, respect, fairness"*, it is expected that these will be reflected in the behaviour code which will consequently be adopted by the whole school community. What teachers could do is plan two lessons to present these values to the children of their class. Students' active participation in this process is highly important as this will hopefully make them feel they have ownership of the behaviour code, in addition to empowering them. The lessons could be organized as follows: Teachers could explain the aim of the lesson (with reference to the behaviour code) and initiate a discussion about the definition of each value. Students may also be asked to think of examples of behaviour that demonstrate the value/s (e.g. How does one show empathy? By asking his/her classmate if they need any help when they see him/her falling down). Students could also discuss about their own experience when they themselves had displayed these behaviours or when someone had displayed empathy, respect etc. towards them. At this point, the teacher could introduce examples of positive role models (real people or children's favourite cartoon heroes - those appropriate to be used in such an activity) or

alternatively ask students to name themselves one person whose behaviour is characterized by empathy, respect etc. The teacher can contribute to this discussion by perhaps referring to and praising verbally particular students who have adopted in their behaviour and thus displayed the desirable values. Students can also be asked to suggest ways of how they can incorporate these behaviours in their everyday life at school and their home.

All the work that has been created should be kept and/or be displayed on a designated area in each class. Besides this, an exhibition could be organized at school level with the theme being "Behaviour code values" (it can be named anything that pleases students and teachers alike). Teaching aids for this/these lesson/s could be books (fairy tales, stories), CDs/DVDs, drawing-craft material and musical instruments.

Finally, exemplary behaviour could be praised at the morning assembly (e.g., the headteacher could identify the student and the particular behaviour, linking it to the corresponding value and consequently praising the student). In this respect, the school could organize an "Ethos Celebration Day" (either on an afternoon or on the weekend) for the whole school community preferably at the beginning of the school year. During this event, play activities and games would take place aiming at promoting the above values through specific behaviours. It is not necessary to have the code displayed in text form. The school may choose to highlight the five most important behavioural rules that the school community wishes to promote. These could, for example, be depicted through pictures/cartoons with accompanying explanatory text which details the relevant behaviour/value. For example, there could be a picture of a group of children forming a circle and holding hands. The corresponding value could be "care". It is critical, nonetheless that consensus be reached across the school as to which pictures could be used for each value, so that a consistent behaviour code is adopted by the school. Both adults and children participating in the formulation of the code could work in groups to choose from a range of pictures that the teachers would have provided and identify the most suitable picture for each value. Then, those selected will be displayed in prominent places around the school. The behaviour code in text could be displayed on the school notice board inside the staff room, outside the assembly hall and uploaded on the school's webpage.

Another aspect of the behaviour code to be determined is the nature of *students' arrival and exit from the school* (see the previous parts above). Special attention must be given to the behaviour of students that travel to and from school by bus. Specific expectations concerning the students' behaviour code in the bus must be announced to all students:

- be ready when the bus arrives

- be polite to the bus driver and other students

- follow the driver's rules and instructions

- remain seated

- speak in a quiet voice

- carry all personal belongings onto the bus

- be prepared to share seating in the bus.

Last but not least, the desired behaviour during *school assemblies* has to be defined. This firstly comprises that students follow their line into assembly, with the younger students taking their places first. The time of the school assembly should also be foresighted and arranged to take place in morning hours when the students are not likely to be tired or upset. Also, the school has to limit the time of assemblies and make their content as brief as possible. If the assembly is expected to take more than 15 minutes, then arrangements should be made for students to be seated: otherwise students are likely to misbehave. Beyond each class's teacher, a general supervisor (not class teacher) must be appointed for each assembly.

In sum, previous research indicates that more effective schools have clear policies on codes of behaviour that are consistently applied and understood by all involved. Core to these policies are respect, dignity, self-discipline and care for others in the school community. Your intervention as part of DASI it may involve a re-examination of the behaviour code to identify how it is working or any additional elements that need to be applied in line with some of the suggestions above.

B) *Collaboration and interaction between teachers*

Collaboration and interaction between the teachers is particularly important because it can contribute to improving teachers' teaching skills and their everyday practice. It therefore has a positive effect on

learning outcomes (cognitive and affective). In effective schools, teachers interact on issues associated with learning and teaching, in order to create a business-like environment which can promote students' learning and knowledge. This can subsequently lead to the achievement of cognitive and affective outcomes in education. What is more, since provision of equal educational opportunities to students is regarded as a challenge in the present project and since effective schools are also those who managed to reduce the initial differences between students with different SES, the teachers of your school could work together not only to improve their teaching quality and achieve better learning outcomes (quality dimension), but also to work together and exchange ideas and practices on how to reduce the differences between their pupils' outcomes (equity dimension).

Some schools are characterised by teacher collaboration only at the level of personal and social interaction, without also involving cooperation on the tasks that are expected to be undertaken. For those schools, it is considered important that teachers have good relations but they do not necessarily expect them to interact on issues associated with their teaching practice. Nevertheless, interaction and collaboration among teachers can only be beneficial if focused on the tasks teachers undertake, which could boost quality in the school learning environment. This active interaction on issues associated with teaching is also needed for teacher professional development purposes.

In order to encourage teacher collaboration, in the development of the timetable, attention is given to provide to groups of teachers *common non-teaching* time that provides opportunities for such interactions. The collaboration may refer to the short or long term planning, the use of specific teaching aids/handouts/materials for delivering an aspect of the curriculum or the design of a common assessment instrument.

Teachers may also be encouraged to exchange visits to each other's classrooms. During such visits, the observation of teaching by using specific observation instruments, in line with the policy on quality of teaching, could be promoted. The results from observing their colleagues can be discussed and help teachers learn from each other. This activity is very useful especially in the case that the teachers need to differentiate their activities in the classroom due to the fact they have students coming from different socio-ethnic backgrounds. Information from other teachers experiencing the same

challenges in their classrooms on how to organise their application tasks and use their teaching time effectively, could be valuable.

In addition, some activities such as supervising students during break time can be appointed to not just one teacher but to *pairs of teachers*. By working collaboratively, teachers can discuss what they observe, exchange opinions and workout solutions, presenting to the whole faculty the efforts that they found as more effective. In this way, teachers have access to appropriate professional development opportunities that develop and refresh their skills, enabling them to promote learning both inside and outside the classroom.

Also, a very useful strategy in this domain is the development of a *system of mentors* (more experienced teachers). More experienced teachers and/or the head teachers can provide support to younger teachers on how to improve their teaching skills. For example, for the purposes of the present project, the school management team could organize a program with mentors (i.e. teachers who have previous experience in participating in relevant projects) supporting the other teachers to implement the proposed strategies and action plans.

Teachers' collaboration may also be enriched by targeted teamwork training. To develop an effective team, training consisting of team-building exercises may be organised. The school may arrange for workshops and/or seminars which will focus on supporting and encouraging each team member to reflect upon and value diversity, to recognise other people's contributions and, consequently, to help resolve potential conflict. Teamwork among teaching staff may also profit from their participation in instructional consultation groups. These groups, which deal with individual cases of students whose learning difficulties have proved particularly challenging for the counsellor and consultee, may be led by a group leader (usually a school/educational psychologist) with participating representatives from all school stakeholders.

Furthermore, in the development of the school policy, attention should be given to provision of support and facilitations to groups of teachers that face more problems in their classrooms due the increased number of ethnic minority students and/or students from low socioeconomic backgrounds. For example, those teachers should have a smaller number of students in their classroom in order to have the opportunity to deal with the "problems" occurring effectively. Moreover, a second person-

assistant in class (when needed) can help them to manage effectively their classroom and their teaching time.

Finally, teachers could collaborate on how they can support parents of students with low SES and on how they can provide them with the appropriate information in order to support their students at home. Also, they should cooperate on how to organize any extra learning activities for students at school who do not have the opportunity to be engaged with any learning material at home.

C) *Partnership policy (i.e. the relations of school with community, parents, and advisors)*

Research evidence shows that this factor is one of the most important factors strongly associated with the effectiveness status of the school (Fan & Chen, 2001; Kyriakides et al., 2010; Waterman & Walker, 2009) and needs to be carefully nurtured and attended to. Involvement of the wider community in school improvement projects is promoted by DASI and can be achieved by establishing a committee that involves the school head teacher, representatives from parent councils, teachers, other school staff, and students. By including staff, students, and parents in the creation and implementation of the improvement project, the school management team receives valuable input from all those that are able to influence learning. By establishing good relations with the parents and the school community and encouraging them to be actively involved in the implementation of school policy, we make use of all available human and other learning resources to not only achieve learning aims (cognitive and affective) but also to deal with various challenges that the school will have to face in order to promote equity as well. Moreover, since students' motivation and expectations affect learning outcomes, teachers should try to convince parents to take actions at home to reduce drop out and increase their interest on specific subjects (through a focused partnership policy for the specific group of parents).

School cooperation with parents of all students is crucial as said above, but if you do not take into account the *dimension of differentiation* then the differences between students may grow rather than diminish. Since in a school appear groups of students from different backgrounds and ethnic groups, then you need to differentiate your partnership policy according to their needs and abilities. For example, information to parents (e.g., information letters about the school policy, regulations, excursions, activities, etc.) should be available to them in different ways such as written in their mother

tongue language (if they are not familiar with the English/Greek language), orally through telephone communication, and online by email. At the same time, you should keep in mind that you need to be flexible with parent meetings and that you may need to adjust the hours of meetings with some groups of parents. Often the parents of students with low SES, struggle to come to school in the morning to talk with teachers about the progress of their child, due to their working hours. Therefore, the school could arrange some evening meetings between teachers and parents to facilitate the cooperation with them. If the school policy on partnership is not differentiated to take into account the special needs of some groups of parents, then these parents will not be able to participate in any of the school meetings and only the parents of students who do not have particular learning problems or who may already have high performance will be actively involved in the school policy, and therefore the achievement differences between students will not be reduced.

Also, establishing mechanisms of regular communication-either by calling or texting the parent weekly or fortnightly, for example- may prove quite effective. Telephone contact with a parent is preferable since it offers the opportunity of a live and direct communication. However, if this is not feasible for whatever reasons (e.g. the parent cannot be reached on the phone), a text could be sent instead. During this communication, the teacher should first and foremost, discuss the student's positive achievements and contributions. Following this the teacher can raise any other issues that need to be addressed. Communication strategies such as these should be consistent and regular, and not dependent upon the emergence of a particular crisis or problem. By discussing a child's success, parents are empowered to reflect upon what has been working well at home and examine what has contributed to their child's success at school.

Consequently, all of the above points should be taken into account in the implementation of partnership policy in the steps described below. At the beginning of the school year, it is important for the school to *communicate* to parents the school policy on teaching and on the SLE, to analyse it and ask them to provide feedback and suggestions. At the initial stages of these efforts, the school has to raise parents' awareness and provide all the information for the action plan. The school community has to *convince* parents that the programme is going to work and that they are able to make a difference. During the implementation of the improvement project, *specific positive feedback* to parents about

raising standards helps the school continue its efforts to implement its improvement strategies and action plans. Parents also need to be given accurate information on how they can help their children achieve their learning aims (e.g. on how to monitor homework), along with encouragement to contact the school if they are not sure how to support their children.

Usually schools offer some lectures/sessions to parents. In some schools the topics that are covered are not related to the role that parents play in supporting the learning of their children. The school management team must be careful to select appropriate topics and invite speakers who are aware as to how to give practical suggestions and present their messages in a clear way, appreciating that some parents may have a low educational background.

The school should help parents find roles within the framework of the school's intervention and give credit where due. Parents can also be invited to suggest improvements to the intervention ("What would you like us to do next time?") rather than potential defensive reaction to criticism of the strategies that have already been designed.

School can develop its policy in order to explain to parents *when they can meet* the teachers and be informed about the progress and the behaviour of their children. Where there are regular issues between parents and the school, meeting with parents regularly (not just when there is a crisis) can strengthen working relationships. The school has to assure parents that they can share all of their concerns with their child's teachers. If they do not want to involve the teacher for any reason, they can ask for the school counsellor to become involved or the coordinator.

Because there is always difficulty in accommodating parents' schedules, a *procedure with details for contacting the appropriate staff members must be developed*. This procedure should refer to convenient ways of contacting the teachers, the school management team or the school coordinator, in order to be informed of the progress that their children make. For example, parents who have set working hours and cannot leave their job and be present at school before the time teachers leave, should be notified that they can contact the school by phone or by email.

The school may also invite parents (and especially those whose child is not making enough progress) to *visit the classrooms of their children* or the school more often and observe teaching in order to find out how to support their children. Meetings at the classroom level help build connections among

parents and teachers. In this way, the parents can learn how to support the efforts of the school and what is expected from them so that they may effectively help their child. The teachers may also invite parents to take an *active role*. For example, some schools may invite parents and/or other members of the school community to help teachers organise the teaching of a specific unit for which they have special expertise. For example, a coach of the volleyball team in the school community may be invited to help the Physical Education teacher to teach volleyball to his/her students. Some schools may invite advisors to provide guidelines for helping them to deal with specific problems (e.g. bullying) or to help them design/implement a research action plan. Moreover, teachers could collaborate with the Parents' Association in their attempt to increase parental involvement. They could, for example, organise festivals for the whole family. These could lead to developing a sense of community and solidarity, thus facilitating the establishment of closer links between parents and school. They could also organise Parent Training Programmes, aimed at enhancing parenting competencies and advancing parent involvement in children's school experiences. In so doing, parents are made aware of their critical role in the promotion of their children's academic, social and emotional skills. This could be arranged in consultation with the school psychologist/educational psychologist or other professionals trained to deliver such a programme.

In respect of the current financial climate, teachers and parents should bear in mind the impact of the economic crisis on children as well as adults. Anxiety, uncertainty, fear, insecurity may be experienced, by both grown-ups and children. Since 2008, child poverty rate has increased by 50% (http://www.unicef.org/media/media_76447.html) in Ireland, Greece, Croatia, Latvia and Iceland. Schools are very aware that a lot of families struggle to make ends meet. In response, they may choose to formulate specific action plans aimed at two distinct aspects of this problem - the emotional and the practical. At the emotional level, they could organise a session in class with their students and informally discuss the economic crisis in general (what students know about it, how it has affected people they know etc). They could also ask students to draw what it means to them, or how it makes them feel. With this latter task, they should aim at picking up difficult emotions expressed by a student either verbally or by their drawing. In case of concerns, they should discuss the arising issue of the

particular student with his/her parents and preferably a school psychologist. If there is not one available, they may discuss it with the headteacher and take appropriate action.

D) *Provision of sufficient learning resources to students and teachers*

The availability and especially the good use of learning resources in schools have an effect on student learning (cognitive and affective outcomes). For example, a computer with access to the internet as an educational tool in teaching a specific unit may be useful for all students in achieving particular aims, especially for those who do not have one at home (i.e. low SES students). However, if there is only one such computer and there are twenty or more students, fighting may occur. This implies that teachers should organise their classroom learning environment and offer tasks that can be achieved by students using the available resources without any practical difficulties. The above example shows that the provision of learning resources and the good use of resources by the teachers, prevent misbehaviour in the classroom and on similar occasions in school when whole school projects or extra-curricular activities are undertaken. Additionally, learning resources from other organizations such as charity organizations and/or the church and community could be also provided to students with low SES through their school in order to help them gain the appropriate tools that they need to be involved in different activities. Below, some general recommendations on the establishment of a policy on the proper use of learning resources are provided.

In order to improve students' learning, schools must develop a policy for the use of visual material and technological equipment in teaching. Teachers should also be strongly encouraged by the school management team to use the available resources in an appropriate way, by taking into account how these resources help students successfully undertake tasks and achieve specific learning aims. A plan must be designed for the fair allocation of the resources between the teachers (and in some cases among students of different age groups).

The use of the school library could also be promoted. Records on the use of library and other resources can be kept by the school management team. Analysing the data on the use of resources can also help teachers to set targets on how to maximise the appropriate use of resources for promoting learning. Moreover, it should also be taken into account that some students might not have any reading

material at home (i.e., low SES students) and therefore the school could include in its policy the opportunity for these students to take some books at home to read and then return them back to school as well as any other actions that may help them to get their own books such as fund raising by the community.

Schools should also develop a policy on how to identify appropriate teaching aids such as computer software that can be bought by the school to help improve the teaching of specific subjects. Parents and the whole school community can also contribute to the enrichment of teaching aids.

A point to remember in the development of policy on the provision of learning resources is that educational resources include the use of human resources. Some schools may decide to appoint extra personnel for supporting their needs and helping them (e.g. appoint an expert to help teachers dealing with children who have learning difficulties) or encourage parents to visit schools and work with the teacher (see the section on partnership policy). It is also important to note that schools (especially those in socially disadvantaged areas with high percentages of students with low SES) could ask for support by the church or charity organizations to provide them with clothes, books, and/or breakfast/lunch for their students whose parents are facing difficult economic problems.

Monitoring the implementation and action plans

School evaluation is seen as one of the most important factors for improving the effectiveness of schools (Kyriakides et al., 2010; Scheerens, Seidel, Witziers, Hendriks, & Doornekamp, 2005). Specifically, effective schools have to develop continuous evaluation mechanisms that measure the effects of their strategies and actions on student learning and use these results (for formative rather than summative reasons) to further improve their actions and strategies on teaching and the school learning environment. In fact, the development of formative evaluation mechanisms at the school level will also help school stakeholders identify areas for improvement. Effective schools also review the impact of their strategies and actions and identify any errors that occur (see step E of Figure 4 in Chapter 2). In this way, they can define new actions and strategies, as well as modify and redesign their action plans for improvement.

The main aim of the school evaluation process is to identify general trends associated with the strengths and weaknesses of the school policy for improving teaching and the school learning environment. In order to collect valid and reliable data on the impact of school policy on improving teaching and the SLE more than one source of evaluation data is needed. This is because one cannot 'trust' a single source of data or rely only on the stakeholders' opinions. The use of systematic observations should also be considered, since using different sources of data enables one to test the internal validity of the school evaluation data.

School stakeholders should also decide how many times during the school year they need to collect evaluation data concerning their policy for teaching, the SLE and the actions taken for improving teaching and the SLE. The need to establish continuous formative evaluation mechanisms should be taken into account. These mechanisms are expected to help the school modify its strategies and actions according to the circumstances and specific needs of different groups of the school population.

In addition, the quality of the instruments used to collect data should be evaluated (i.e. questionnaires, observation instruments). Special attention should be given to investigating the validity (the extent to which a measurement instrument or a test accurately measures what it is supposed to measure) of these instruments. Obviously, schools are not expected to use advanced statistical techniques to test the validity of their instruments, but the use of triangulation (i.e. searching for the extent to which different instruments provide similar data) is recommended.

Moreover, the purposes for which the evaluation data are collected should be explained to all stakeholders. The stakeholders should also be aware that the school evaluation is done for formative and not for summative reasons. This implies that evaluation is a natural part of the improvement efforts that the school tries to develop. The school management team should guarantee that the school will make use of the information gathered from evaluation, in order to meet their students' and teachers' needs and thereby give more emphasis to the formative purpose of evaluation.

Moreover, all participants involved (schools, parents, children) should be informed that confidentiality will be maintained throughout the procedure. To achieve this, the teachers responsible for the school evaluation must use specific software with restricted access, so as to prevent unwanted entry to the data files. Code numbers will also be assigned to students, teachers and schools to ensure

confidentiality. Repeated efforts should be made to convince all stakeholders of the confidentiality of the evaluation process and the anonymity of the answers. At the same time, the school management team should make explicit to all stakeholders that in addition to openly reflecting upon the current policy, they should also give suggestions on how school policy can be redefined. In this way, a climate of openness is gradually developed in the school, while each stakeholder is encouraged to be actively involved in the design of strategies and action plans for school improvement.

At all stages and especially in developing your action plans, members of our research team will also be invited to support your effort to develop your action plans. Since decisions about the monitoring of the implementation have to be taken in advance, in Table 4, you can find a sample of an action plan that you can use to help you develop, implement and evaluate the strategies that will take place in your school. You may use the structure of the sample given or you are free to choose any other way of keeping records of your activities, but please try to include in any of your log-book the main headings of the example.

Table 4. Sample of action plan to develop strategies at schools aiming to promote quality and equity

ACTION PLAN TO DEVELOP STRATEGIES AIMING TO PROMOTE QUALITY AND EQUITY AT MY SCHOOL	
School Name: **Coordinator Name:** **Time Period:**	
A. Focus of Strategies (put an X):	
Policy for creating the school learning environment (SLE) and actions taken for improving the SLE	
▪ Student behaviour outside the classroom	
▪ Collaboration and interaction between teachers	
▪ Partnership policy (i.e., relations of school with community, parents, and advisors)	
▪ Provision of sufficient learning resources to students and teachers	
School policy for teaching and actions taken for improving teaching practice	
▪ Quantity of teaching (time on task)	
▪ Provision of learning opportunities	
▪ Quality of teaching	
B. Action Plan (describe briefly the following):	
PLAN	**DEVELOP A PLAN**
	a) Brief description of the priority your school has chosen/strategy your school is developing or will develop (in general):
ACT	**IMPLEMENT THE PLAN**
	b) Specifically, at what stage are you concerning your strategy/priority? c) Who is involved at this stage? o in your school (besides yourself): o from outside/from the community (e.g., parents, in-service trainer, counsellors etc.): d) What is your time frame for this?
CHECK	**EVALUATE THE EFFECT OF THE PLAN**
	e) When and how will you evaluate your priority/strategy? o periodically (i.e. once a month): o at the end of the project/school year:
IMPROVE	**CONTINUE OR ADJUST THE PLAN**
	f) As a result of the evaluation, and if it is the case, what needs to be adjusted?

In your action plan, it is important not only to *specify activities* that can be taken but also to indicate *who is supposed to do it*, what the *time-schedule* is and what *resources* are needed. In order to specify activities that will take place, you can make use of the suggestions provided in this chapter and also identify further suggestions if you like by looking at the ***Extra Supporting Material*** section at the end of this handbook.

In order to have success and achieve your goals except for undertaking a significant number of actions, you should also bear in mind that these actions have to be well allocated in time and provided throughout the year. The actions/strategies need to take place over a long time period in order to have results. Also consistency and flexibility in redefining the school policy and in the implementation of your actions is needed (stage dimension). For example, many schools when developing their policy undertake a lot of their actions during the beginning of the year (e.g., October, November) when there is an openness for the intervention. However, this does not have a long lasting impact and the efforts will end up in failure because the actions were constrained in a small period. Achievement of your aim to promote quality and equity partly depends on the extent to which activities associated with each school factor mentioned above are provided *throughout the school year*.

Moreover, during designing your school policy and actions, you have to keep a balance between those actions that are too specific and those that are too general. General instructions to the parents or the teachers can help them undertake initiates, but when the problem is serious and they are not ready to face it, we have to be more specific on what they can do to solve this problem. Our activities, actions, and strategies should not always be either too specific or too general but sometimes give the opportunity to teachers and the other stakeholders to design their own actions whereas in other cases specific suggestions addressing a serious problem should be given (focus dimension).

Additionally, you have to be flexible and modify your actions according to the specific needs of each student/teacher and each stakeholder. For instance, activities do not need to be implemented in the same way for all the teachers involved. For example, some teachers may need support to confront misbehaviour, whereas other teachers are able to handle it by themselves. In addition if you find out that some parents instead of helping the school to implement its policy, their behaviour to their children is problematic (e.g., violence at home) most of the suggestions given in the section on partnership policy

are not appropriate for this group of parents and we should treat them in a completely different way, for example by asking the support of social services and/or of a school psychologist. It is expected that adaptation to the specific needs of each school stakeholder will increase the successful implementation of your strategies and actions to promote quality and equity in your school (differentiation dimension).

Finally, through monitoring the implementation of your intervention, it is very likely that you will identify practical difficulties and probably weaknesses in your action plans. It is essential that *immediate actions are taken to improve and redefine* your action plans in order to achieve your goals. You will find out that in some cases you have to make changes in your plans even four times during the school year. This does not necessarily imply that your original action plans were insufficient but merely that they are not fit for long time periods. On the contrary, we will be surprised to experience that a specific action plan developed at a certain period of time can remain the same over a long period of time. If this is the case, it might be an indication that the monitoring system does not provide you with valid data (e.g., everybody likes to please you by indicating that all the actions are implemented sufficiently and major progress is made). The timely changing of your action plans will contribute to achieving your aims and reduce the chance to find out at the end of the school year that no progress was made due to the fact that your action plans were either not implemented properly or could not contribute to the promotion of quality and/or equity. The above procedure stresses the importance of a share responsibility of the whole school community in developing and implementing strategies and actions to improve the effectiveness of your school. However, it should also be acknowledged that the role of teachers and their active involvement is crucial for the success of this intervention. Therefore, we like to recognise that the successful implementation of this project depends on the *active involvement of teachers* and their contribution in designing the action plans by bringing their knowledge and experiences.

Main conclusions emerging from the handbook

In this handbook we have described the rationale of our project and presented its main phases (Chapter 1). We have then provided an overview of a dynamic theory on educational effectiveness which will be used to conduct a European study and search for ways of promoting quality and equity in education. Beyond describing the main assumptions and the factors of the dynamic model, it is pointed out that the model has received sufficient evidence to support its validity. In this handbook, it was also argued that the dynamic model can also help to improve educational practice. Thus, an evidence-based and theory driven approach to school improvement was recommended (DASI) (see Chapter 2). Finally, in Chapter 3 we provided practical suggestions to schools on how DASI can be implemented. Specifically, we offered guidelines to schools on how to establish school self-evaluation (SSE) mechanisms to identify their improvement priorities and we provided them with guidelines on how to develop strategies and actions to address these improvement priorities in order to improve their school policy for teaching and the home and school learning environment.

We hope your school will make use of these guidelines to improve the functioning of the factors that they will choose in order to also enhance students' achievement gains (quality) and reduce the gap in learning outcomes between students with different SES (equity).

Next to the contribution to the theory and research on educational effectiveness and improving schools, which is our core focus, we hope that our dynamic approach could promote the improvement of education because that is, at the end, the aim we all share.

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Extra Supporting Material

Our project's web-page: http://ucy.ac.cy/promqe

Web-pages of relevant research projects in which the DASI has been used:

http://ucy.ac.cy/equality

http://ucy.ac.cy/esf

http://ucy.ac.cy/jls

Other relevant web-pages:

http://w3.unisa.edu.au/creew/

http://www.education.manchester.ac.uk/research/centres/cee/

http://www.oecd.org/education/preschoolandschool/overcomingschoolfailurepoliciesthatwork.htm

http://www.rand.org/topics/educational-equity.html

http://www.schoolsforequity.org/

http://www.tc.columbia.edu/equitycampaign/

http://www.tdsb.on.ca/_site/viewitem.asp?siteid=15&menuid=8796&pageid=7696

The impact of student background factors on student achievement: Implications for promoting equity

This section provides a description of the factors of the model situated at the *student* level. Specifically, it is stressed that student background characteristics should be taken into account because they explain to a large extent the difference between students in learning and achievement. The dynamic model refers to three categories of these background factors (see Figure 5):

a) Sociocultural and economical background variables emerged from the sociological perspective of EER.

b) Background variables emerged from the psychological perspective of EER.

c) Variables related to specific learning tasks emerged from the psychological perspective of EER.

Figure 5 shows that a distinction is made among the student-level factors by referring to factors which are unlikely to change (e.g., gender, SES, ethnicity, personality) and factors that may change over time (e.g., subject motivation and thinking styles). For example, subject motivation may be related with student achievement gains, but it is also likely to change due to the teacher behaviour (Bamburg, 1994). Helping children to increase their motivation could be considered as an affective outcome of schooling (Van der Werf, Opdenakker, & Kuyper, 2008). Especially in the case of students with low SES, where they have less opportunities to be motivated at home, teachers could adapt their teaching practice to the specific learning needs of this group of students and try to increase their motivations.
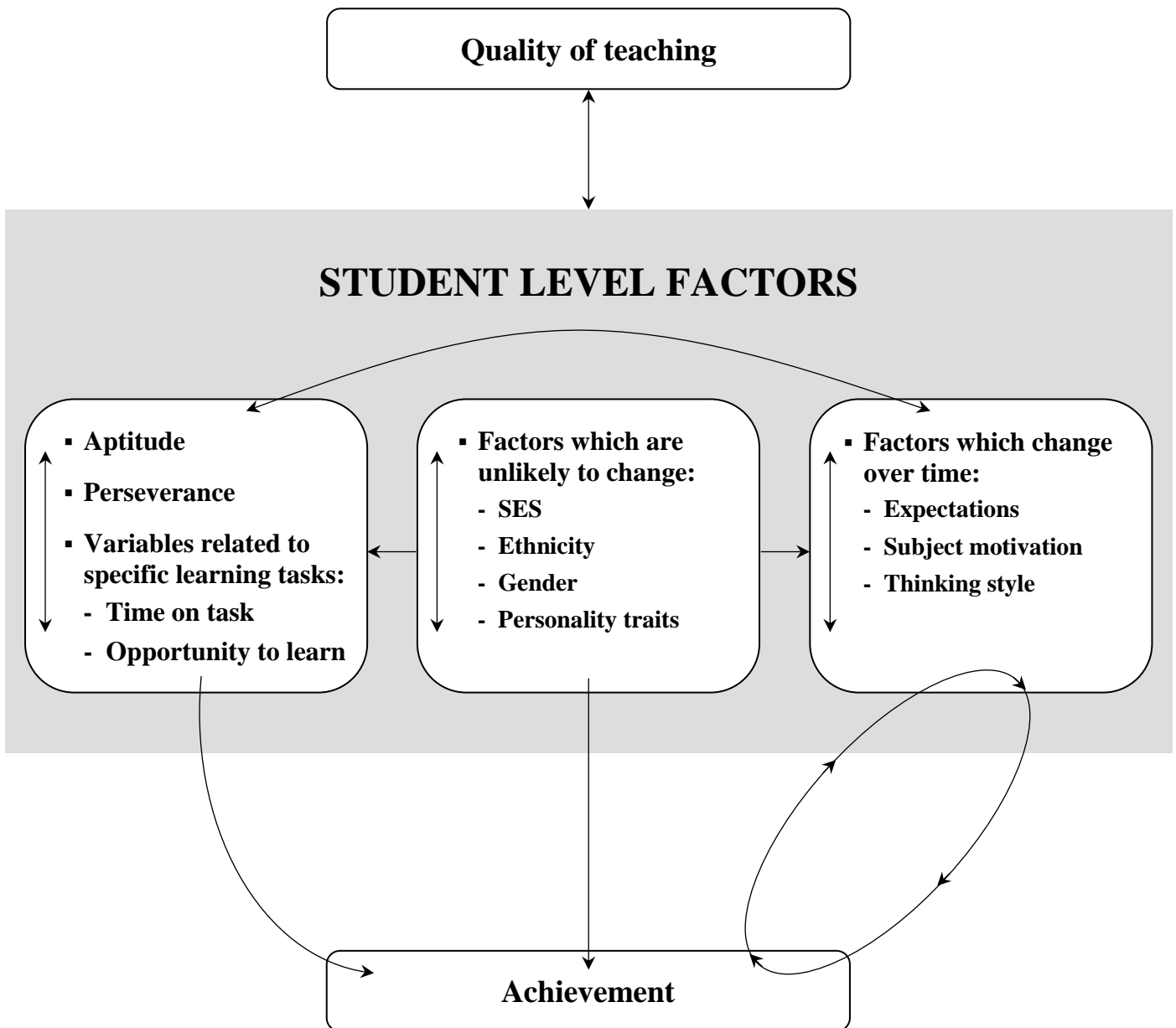
Figure 5. Factors of the dynamic model operating at the student level

a) *Sociocultural and economic background factors*

The first group of student level factors refers to the sociocultural and economic background characteristics of students, such as SES, ethnicity and gender. Many studies showed that a large percentage of variance in student outcomes could be explained by student background characteristics like the ones mentioned above (Opdenakker & van Damme, 2006; Sirin, 2005). *Thus, these variables are not only treated as student level factors but also highlight the importance of investigating school effectiveness in terms of the equity dimension.* For example, the evaluation of any policy promoting

equal opportunities could be based on investigating its impact on promoting educational progress of socially disadvantaged students and on reducing unjustifiable differences at the school level (Lamb, 1996).

Additionally, it is important to acknowledge that at the level of the classroom, students should be treated as individuals rather than as representing stereotypical groupings, so that the promotion of learning for all students is encouraged. However, at the level of the school or the system, if groups of students are systematically being disadvantaged in their rate of learning in comparison to other groups, as some effectiveness studies in different countries have shown (Beaton et al., 1996; Gorard, Rees, & Salisbury, 2001; Gray, Peng, Steward, & Thomas, 2004; Harskamp, 1988; Kelly, 2012; Kyriakides, 2004; Strand, 2010), interventions for promoting equity both at the school and the system level should be developed.

It is also important to acknowledge that a variety of different indicators were used in the past to measure SES. Traditional indicators of occupation, education, and income were found to be frequently taken into account in defining SES. Nevertheless, frequent references to factors such as size of family, educational aspirations, ethnicity, mobility, and presence of reading materials in the home were also made (White, 1982). One could therefore claim that although SES has been at the core of a very active field of research, there seems to be an ongoing dispute about its conceptual meaning and empirical measurement (Caro, Sandoval-Hernández, & Lüdtke, 2014). Sirin (2005) referred to three other components of SES (i.e., home resources, neighbourhood, and being entitled to free or reduced price meal), but these were not used as often as the traditional ones mentioned above. This meta-analysis (Sirin, 2005) also revealed that the type of SES measure changed the relationship between SES and academic achievement. Finally, this meta-analysis revealed that the effect of SES was not equally strong for different groups of students. For example, Sirin (2005) pointed out that one of the main findings of his review was that for minorities, SES did not seem to be as strongly related to academic achievement as it was for their White peers. This finding reveals the importance of searching for the effect of SES in different contexts.

b) *Background variables that emerged from the psychological perspective of EER*

The dynamic model also refers to five background variables emerged from the psychological perspective of EER which were found to be related with student achievement: aptitude, motivation, expectations, personality, and thinking style (e.g., Bamburg, 1994; Bandura, 1996, 1997; Marsh, 2008; Marsh & Parker, 1984; Pajares, 1999; Walberg, 1986). Aptitude, for example, is seen as one of the most critical background variables associated with student achievement. Aptitude embraces general intelligence and prior learning and is one of the best predictors of performance. Similarly motivation and expectations were found to be related with student achievement and are very important in projects (such as the present one) attempting to improve the quality and equity of education (Baumert & Demmerich, 2001; Kuyper, Dijkstra, Buunk, & van der Werf, 2011; Wehrens, Kuyper, Dijkstra, Buunk, & van der Werf, 2010).

When referring to "motivation", perseverance and subject motivation, are included since those concepts were found to be related with student achievement gains. It is taken into account that subject motivation may also be related to students' perceptions about the teacher who is offering the subject. Moreover, teacher behaviour in the classroom is likely to influence positively or negatively subject motivation (Baumert & Demmrich, 2001). Expectations can be measured by asking students to indicate the extent to which they believe that it is important to do well in the subject under consideration. The expectations that students believe that significant others (e.g., parents and friends) have for them could also be taken into account. This could be seen as a kind of external pressure that significant others may impose on students, in their perceptions. Given that there are individual differences in respect to prior achievement, teachers should be aware that this factor implies that they should hold different types of expectations from each student. Moreover, the concept of expectations should be seen as a dynamic in nature. For example, as soon as a student makes progress his/her expectations may become higher. At the same time the demands of a series of lessons may induce different types of expectations to different students. It is therefore important to make sure that realistic expectation for and by each student should be generated. Realistic expectations could also include higher expectations for the disadvantaged students, since their parents might expect less from them. This can be seen as part of the contribution of the school to raise the self-esteem of those students and to show them that they are able to succeed.

Finally, personality characteristics of students (i.e., personality traits and thinking styles) have recently been a particular area of focus since recent effectiveness studies have highlighted these variables as predictors of student achievement (Kyriakides, 2005a, 2007). Personality traits may be taken as the different modes of relating with the environment. Many scholars (e.g., Goldberg, 1993; Taylor & MacDonald, 1999) have argued that the Big Five personality traits model accounts for a large amount of the variability in personality. According to this model, the factors of personality are as follows: *extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience*. Extraverts are sociable, active, and uninhibited, as contrasted to introverts, who are withdrawn, shy, and inhibited. Agreeable individuals are soft-hearted, generous, forgiving, and warm as contrasted to individuals low in agreeableness, who are suspicious, headstrong, argumentative, and aggressive. Conscientious individuals are organised, energetic, and reliable as contrasted to individuals low in conscientiousness, who are lazy, careless, and immature. Neurotic individuals are nervous, anxious, tense, and self-centred as contrasted to individuals low in neuroticism, who are emotionally stable, alert, and content. Finally, individuals who are open to experience are curious, original, imaginative, and have wide interests, whereas individuals who are not open to experience are conservative and cautious.

They have also been linked to ways of adapting teaching and assessment approaches to the needs of specific groups of students. For example, teachers may find out that some students managed to perform better in a written test than during the normal teaching lessons and may attribute this result to cheating. However, these students may be introverted and consequently not like to express their ideas publicly and this is not because they don't have something to say but due to the fact that they tend to be shy, and inhibited. In such case, teachers may consider the possibility to address those students to answer a question or express their ideas even if they did not call for attention.

As far as the importance of treating measures of thinking style as a predictor of student achievement is concerned, it is important to note that in the search for variables that contribute to school achievement, psychologists have devoted considerable attention to the so-called stylistic aspects of cognition. The idea of a style reflecting a person's typical or habitual mode of problem solving, thinking, perceiving, and remembering was initially introduced by Allport (1937). There are at least three reasons for not only treating personality traits, but also styles associated with the theory of mental self-

government (Sternberg, 1988), as student level factors. First, there are many studies which reveal that measures of thinking styles associated with this theory explain individual differences in performance not attributable to abilities (e.g., Grigorenko & Sternberg, 1997; Zhang & Sternberg, 1998). Second, it has been shown that the thinking styles and personality overlap is limited (Messick, 1996; Sternberg, 1994; Zhang, 2002). This implies that not only intelligence and personality traits, but also thinking styles, should be taken into account in order to explain differences in student achievement. Third, according to the theory of mental self-government, thinking styles are seen as processes, which can be built on and used to compensate for or to remediate weaknesses. In this interpretation, styles are seen as dynamic. Therefore, teachers are expected to help students find or develop "optimal" styles for particular situations in order to improve their achievement. Thus, the student-level factor concerned with the thinking style of students belongs to the category of the factors which change over time, and an important aim of education is to help students develop "optimal" styles for particular situations.

c) *Variables related to specific learning tasks emerged from the psychological perspective of EER*

Time on task (time students are really involved in learning tasks)

The impact of time on task on student achievement is taken into account. The variable time on task refers to the time students are willing to spend on learning and on educational tasks. It is determined not only by motivation and expectations, but also by the time provided by the school/teacher and by processes at the school and classroom levels. It is important to note that time on task refers to the time in which students are really involved in learning (provided that this time is filled with opportunities to learn). Therefore, there are several reasons that, in the dynamic model, the variables *time on task* and *opportunity to learn* belong in the same category. An obvious reason is concerned with the fact that both variables refer to specific learning tasks that define the criteria for measuring effectiveness. In addition, these variables belong to the same category because they are not only determined by student background factors but also influence learning directly. Elements of education at the classroom level, such as the ability of teacher to manage the classroom time, can contribute in an increase in time on task (assuming they are effective) (Kumar, 1991).

Opportunity to learn

The variable *opportunity to learn* refers to the fact that in order to achieve educational outcomes, students should at least have some opportunity to acquire knowledge and skills (Creemers, 1994). Providing learning opportunities for students is a very important aspect to offer equal educational opportunities and to promote simultaneously quality in learning. The development of this aspect gives the opportunity to students who are unable to be engaged in educational activities in their home learning environment (e.g. students with low SES), to enrich their knowledge by reducing the differences that they have with students with high performance. Some international studies (e.g., de Jong, Westerhof, & Kruiter, 2004; Isac, Maslowski, & van der Werf, 2011; Kyriakides, 2005a; Kyriakides, Campbell, & Gagatsis, 2000) suggest that time spent doing homework and time spent on private tuition could also be seen as measures of the 'opportunity to learn' factor. These measures of the opportunity factor were also found to be closely related with student achievement (e.g., Trautwein, Koller, Schmitz, & Baumert, 2002). However, it has to be acknowledged that the amount of time students spend voluntarily on specific learning tasks (e.g., mathematics, music, physical education) may not only be seen as a measure of opportunity to learn but may also be an indicator of students' interests and motivation about the subject associated with these tasks. Spending additional time on private tuition or on homework does not necessarily mean that the students make use of this extra time for learning purposes (Kyriakides & Tsangaridou, 2008). Therefore, a distinction is made between learning opportunities offered in the instructional process during and/or after the school time and the actual use of these opportunities that each student makes. Practical implications for the design of effective school policies are drawn in Chapter 3.