GENERAL THEORY OF EDUCATION

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Abstract

In this paper, the authors seek to provide a framework for the development of education policies and the analysis of existing practice. They propose that by establishing axioms that are self-evident and well-established, and by obeying the rules of logic, a general theory of education can be developed. Unlike in mathematics, in the social sciences in general and in education in particular, the list of undefined terms is endless. The authors, therefore, have made their basic assumptions or axioms explicit:

- Fundamental Axioms – students and education;
- Structural Axioms – the state and schools; and
- Functional Axioms – subsidiarity, leadership and management, the curriculum, teachers and teaching, assessment and accreditation and monitoring and evaluation.

The development of a general theory of education will have to address implicit and often contradictory value systems; for example, central control or subsidiarity. For that theory to have any policy implications, those value systems will need to be made explicit and brought into the public domain. Only then can the theory serve as a starting point for discussion and changes in policy, statutes and regulations.

Education in its broadest sense has a strong influence on almost all people throughout their lives. Depending on the source of financing, state funded educational systems can be distinguished from those provided by the private sector. This paper concentrates on state funded primary and secondary education.

The determination of educational policy is part of the public choice that each country makes. Developing a general theory of education aims to provide support for the creation of specific educational policies and should serve as a tool for efficient analysis of existing ones.

Axioms

The word comes from the Greek *axíōma* (ἀξίωμα) 'that which is thought worthy or fit' or 'that which commends itself as evident'. As defined in classical philosophy, an axiom is a statement that is so evident or well-established, that it is accepted without controversy or question. As used in modern logic, an axiom is a premise or starting point for reasoning: a statement that serves as a starting point from which other statements are logically derived. As used in mathematics, logical axioms are actually substantive assertions about the elements of the domain of a specific mathematical theory (such as geometry or arithmetic): "axiom", "postulate", and "assumption" may be used interchangeably.

To axiomatize a system of knowledge is to show that its claims can be derived from a small, well-understood set of sentences (the axioms), basic concepts/terms and the rules of logic. The axiomatic method is a way of proving the truth of a certain statement. The statement is said to be true if it follows logically from a number of statements that are in turn the logical result of other statements. At the very beginning of a proof by the axiomatic method there are certain special statements

called axioms that are taken as true without justification. In order to make arguments by the axiomatic method, there must exist something that both the writer and audience agree upon to take as true without any particular justification.

The Axiomatic Method in the Social Sciences

While in mathematics there are a few undefined terms in a particular axiomatic system and the rest are defined carefully in the course of a well-outlined series of proofs; in the social sciences, the list of undefined terms is endless simply because the social world is so large and complex. Many theories in the social sciences are like the more advanced, less formal mathematical proofs. In these proofs, the audience is assumed to have some basic knowledge about the system and the ability to draw upon knowledge of past proofs to explain how certain terms are to be used. Similarly, in the social science, there appear to be many undefined terms, but these terms are mutually agreed upon by the social scientists or defined carefully in previous work within the discipline. The axioms from which the social scientist argues a proof are rarely stated explicitly but are generally implied: axioms are not defended, they are rarely argued or even mentioned.

Structure and Organization

Table 1. The Overall Structure and Organization of the General Theory of Education

		FUNDAMENTAL AXIOMS					
		Students					
		Education					
		FUNCTIONAL AXIOMS					
		Subsidiarity	Leadership and Management	Curriculum	Teachers and Teaching	Assessment and Accreditation	Inspection
STRUCTURAL AXIOMS	**The State**	Delegate resources	A national college for school leadership	Determining the Curriculum Framework	Specifies national conditions	Ensure reliability and validity	Independent school inspection
	The School	Creates the environment	Excellent quality	Choice of the subjects	Facilitator of self-directed learning	Support learning	External validation

The Axiomatic Method in the Education domain

Undoubtedly there could be multiple ways to axiomatize the education system. In this rare case, and although they could be described as "common sense" or obvious ideas, basic assumptions about the education system have been made explicit. It is because they are never truly argued that they should be considered to be axioms.

It is assumed that the reader has some knowledge about the education system and can draw upon that experience to understand how basic terms: student, teacher, parent, school, curriculum, education, governance, assessment, inspection, leadership and management are used. Furthermore, as the basic assumptions are articulated and defended, the reader is asked to look around and observe the routine functioning of the school system (any school system in 'the real world').

The Axioms

A. The Fundamental Axioms of the education system
1. **Students** develop their knowledge, skills and understanding through a process of education and become socially adjusted individuals.
2. **Education** enables students to maximize their potential and become well-adjusted members of society.

B. The Structural Axioms of the education system
3. It is the **State's** responsibility to effectively and efficiently allocate and delegate sufficient resources to enable schools to meet the personal, social and intellectual needs of the students.
4. The **School** creates the environment, opportunity and conditions that enable students, teachers and parents to interact and achieve the objectives of education.

C. The Functional Axioms of the education system
5. **Subsidiarity** ensures that decisions about the education of students are taken at the level closest to the point of delivery.
6. Effective **Leadership and Management** of a school ensures an excellent quality of education and high standards of achievement. **Governance** is the process whereby a legally constituted team of **local partners** support and challenge the Leadership Team; helping them to fulfil their responsibility for the management of the school.
7. The **curriculum** provides sufficient breadth and balance while enabling students, as they mature, to exercise increasing choice of the subjects that they wish to study.
8. The **teacher's** role must develop as students mature; changing from the dispenser of core knowledge to the facilitator of self-directed learning.
9. The reliable and valid **assessment** of students' work provides information about the individual student's knowledge, skills and understanding; it enables them to know what they have to do to improve and ensures access to the next stage of education.
10. An effective system of **Inspection** provides an external validation of the quality of education provided and the standards of achievement of the students.

A. The Fundamental Axioms of the education system

1. Students develop their knowledge, skills and understanding through a process of education and become socially adjusted individuals.

Ken Robinson[1] suggests that there are three principles on which human life flourishes: principles which need to be acknowledged to get the best out of our schools.
- Students are naturally different and diverse.
- Curiosity makes students learn almost without further assistance.
- Students are inherently creative.

Furthermore, Robinson suggests that these principles are contradicted by the culture of schools in which most teachers have to labour and most students have to endure.

Student entitlement

Students should attend a school where everyone works together, knowing that all human beings are equal, valuable and have the right to respect, kindness and courtesy: schools in which every child matters, every day. They have the right to enjoy their learning, to feel cared for and protected and to have their achievement respected – in whatever form it takes.

The education system should promote schools that:
- value democracy and individual liberty in a culture that celebrates diversity; and
- teach about responsibilities, rights, personal integrity, duties and citizenship, through:
    - numerous opportunities to voice their opinions;
    - the promotion of resilience and self-control;
    - the achievement of the highest academic standards and levels of personal development;
    - a range of clubs and extra-curricular activities;
    - the opportunity to participate in off-site visits and trips;
    - a wide range of subject choices available;
    - the encouragement of active, healthy lifestyles and care for the environment; and
    - skilfully matching the serious and the purposeful with fun, optimism and creativity.

Students have the right to:
- an Education that gives them the freedom to
    - innovate and disagree;
    - think independently; and
    - exercise agency and choice;
- a State that that delegates sufficient resources to enable schools to run effectively and efficiently;

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[1] Ken Robinson and Lou Aronica, CREATIVE SCHOOLS – Revolutionizing Schools from the Ground Up, Penguin Books (2015)

- a School that is housed in suitable buildings with appropriately furnished classrooms and learning spaces;
- a system characterised by Subsidiarity where issues are dealt with at the level closest to them;
- Leadership and Management in their school that focuses on:
    - improving the quality of education; and
    - raising standards of attainment;
- a broad and balanced Curriculum that provides them with increasing choice of what they study as they mature;
- qualified and experienced teachers who have a deep knowledge and understanding of the subjects that they teach;
- a system of Assessment and Accreditation that provides them and their parents reliable and valid:
    - formative assessment in the middle of a module or course; and
    - summative assessment at the end of a course.
- A national system of Inspection that provides an external evaluation of:
    - the quality of education provided by the school; and
    - the standards achieved by the students.

It is in the interest of students that, through a traditional ethos and clearly set boundaries, a school values the rule of law which keeps them safe through:

- a shared understanding of a classroom and school-wide code of conduct; and
- the accountability and enthusiasm demonstrated by all the governors, teaching and support staff, parents, guardians, carers and students.

Consequences

Students deserve an education system that:

- focuses on them becoming more intellectually capable;
- enables them to work together with other people; and
- has respect for the agency of the individual;

and a school that:

- prides itself in placing a strong emphasis on the concept of the school as a family;
- recognises the importance of the individual, while at the same time is sympathetic to and understands the needs of others;
- offers a broad curriculum to develop and celebrate their various talents; and
- supports teachers in their role as learning facilitators in order that they can engage, stimulate, provoke and mentor the students while, at the same time, meeting the demands of the curriculum.

2. Education enables students to maximize their potential and become well-adjusted members of society.

"Education should be a means to empower children and adults alike to become active participants in the transformation of their societies. Learning should also focus on the values, attitudes and behaviours which enable individuals to learn to live together in a world characterized by diversity and pluralism". UNESCO [2]

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[2] Learning to Live Together: The Role of Education. UNESCO 2017

"Why school? Is its primary purpose to benefit the individual or the collective society?
 The problems in modern pedagogy reflect a largely unrecognized philosophical opposition between the idea that education should build up of the capacity of the individual and the belief that it should train the individual to meet societal goals."
Steve Hargadon [3]

Some historical notes

Since the advent of psychology and the belief in scientific management of the mind, much of current thinking about education in the Western world, reflects a belief in the use of education to achieve social purposes, with individual capacity subsumed by the needs of society.

Who is education supposed to serve?

In contrast to Plate, Socrates thought that the ability for individuals to strengthen their own thinking is the most important part of education: when you strengthen individuals, they become more capable of working to create their own solutions.

On the other hand, in the 1920s America, the Rockefeller Foundation founded teachers' colleges with the explicit idea that there was a need to create a group of people in our society who are willing to forgo the benefits of a higher education, and who are willing to become workers. The school system was designed to create people who will fit into this vision of an industrialized economy, which again reflects this idea of managing the populace for the benefit of the system.

Historically the British, in Colonial India, needed to train managers, and also to train the rest of the people to be obedient. They didn't want people feeling that they were capable. Similarly, the Prussian school system was designed to train soldiers to go out on the battlefield and obey orders. The Prussians recognized that a feeling of individual capability does not allow for top-down control or provide the needed compliance.

In the communist countries education was entirely subdued to the party ideology based on the class struggle, dictatorship of the proletariat and removal of private property leading to communism winning over the whole world. There were such extremes as, for example, in Bulgaria in 1979 the government adopting an entire programme for reform in education, envisaging every student to have secondary education and making it mandatory to master a profession and be ready to join the lines of the proletariat. Thus the interests of the society were put entirely above the interests of the individual. Even these days, in the 21st century in Bulgaria, students moving from Grade 7 to Grade 8 go through a state controlled admission process. The state plans for every school how many students will follow each pathway/Profile. In Vocational/Technical Schools, these pathways lead to specific professions.

It is not entirely fair to the complexity of educational thinking to simplify to these examples, but they prompt basic questions.

1. What is the outcome of our current system of learning? What does it mean "outcome of system of learning"? How can we assess or measure the outcome of education?
2. Do most students leave our public education system believing they are good learners?

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[3] Steve Hargadon. Using Education to Serve the Individual. www.getacclain.com

3. Are they capable of being independent and self-sufficient? What mathematical and digital competences do they have?

How is it that almost all system of learning leaves most who go through it feeling that they are not good learners?

The education debate exists on three levels.
1. Administrative - how do we schedule classes, how do we block time, how we prepare and select the textbooks, etc.?
2. Pedagogical - what are the teaching methods, should students be self-directed, should there be project-based learning, should there be outdoor education etc.?
3. "Why school?" Is its primary purpose to benefit the individual or the collective society?

In most cases when searching for answers to different questions it should be borne in mind that a sustainable solution would be reached if we keep to the rule: the conjunction "*or*" should be replaced by the conjunction "*and*". Instead of wasting time in disputes about who is more important in education, the parent *or* the teacher, we should find a place both for the parent *and* the teacher.

"The only reason why we teach reading, writing, arithmetic, etc., is because they are common languages that enable us to create a better lived experience for humanity." Jordan Shapiro [4]

Figure 1. Teaching Styles and Student Age

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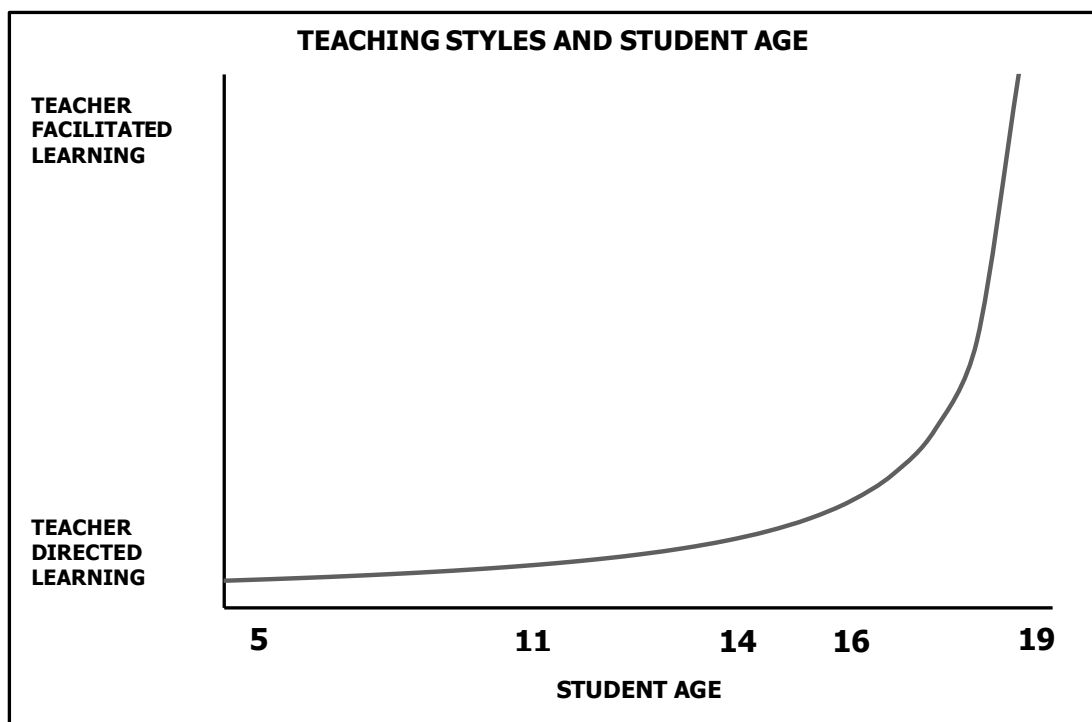
[4] Jordan Shapiro. "Using the education system to create the world we want." www.getacclaim.com

Is Shapiro saying:

- "we're going to empower the individual to become smarter, more capable of thinking clearly, and to have the tools of industry, and then they will create their own lived experiences", or
- "we need citizens with a certain set of skills so that when we tell them what we think they should do, they are able to do it"?

It can only be the former, education is not really primarily about community needs. It's about how individuals become more intellectually capable, and then are able to work together with other people and build the community. The priority of education is respect for the agency of the individual.

Consequences

Schools need to be basic structures in which freedom operates; freedom for students and teachers to innovate and disagree.

For a healthy society, students and teachers need to be able to think independently and to question predominant ideas.

If schools are really preparing students to be vibrant actors in a democratic society, there should be many more real opportunities for them to practice that democratic governance and decision-making.

Having agency and choice as a student is essential not only because every person is inherently and uniquely valuable, but also because democratic systems of governance depend on voluntary participation by thoughtful people.

In reality, for the students, the school is the embodiment of the education system which, in turn, is the embodiment of the state. As the students become older, therefore, the whole system must ensure that:

- the curriculum is structured and organized in such a way that the students have a choice of subjects and modules that they wish to study;
- parents have appropriate access to the school and detailed information about their child's progress;
- the teachers have a large array of pedagogical techniques available and:
  - play the role of facilitators; rather that
  - train the students to take tests.

B. The Structural Axioms of the education system

3. It is **The State's** responsibility to effectively and efficiently allocate and delegate sufficient resources to enable schools to meet the personal, social and intellectual needs of the students.

„The system of state education is part of the public sector and uses resources in the form of taxes, forcedly collected from the private sector. Therefore, the effectiveness of the use of funds allocated for education is an extremely important issue for public sector economics. It is important for the tax-payers to know whether their money has been spent for improvement of public well-being. They want to see not just any result, they require the optimum. On the other hand, the state should act in favour of social justice. That is why the analysis of the public sector economics, including education, is directed towards finding the balance which keeps the efficiency

of the usage of resources and at the same time creates a certain amount of social justice." [5]

Although there are exceptions, i.e. there are individuals who do not know what is in their best interest, it has to be assumed in a market economy:
- that people will think rationally; and
- that they will always strive to improve their well-being with the limited resources they have available.

Consequently, it is possible for state-funded education, or part of it, to be seen as an element of the public welfare system used by people up to a certain age.

Paradoxically, there is no *a priori* reason for the state to be involved in education at all. It has been argued[6] that state involvement in education was a 20th Century phenomenon and the move toward freedom has begun and is gaining momentum – particularly in the USA.

For many people, and certainly for the purposes of this paper, it is axiomatic that in order to:
- make sure equal educational opportunity is available to everyone;
- force parents who might otherwise neglect their children's education to send their children to school;
- make education affordable for everyone;
- ensure the preservation of democracy; and
- help create a common social fabric where all are respected and accepted

the State has to fulfil a crucial role in the education system.

In other words, in ensuring access to education for every student (particularly when significant responsibility, authority and accountability is delegated to the school) the state must provide:
- the appropriate conditions for individual development;
- the central determination of goals, policies, priorities, standards and accountabilities[7].

Delegation and subsidiarity can be seen to operate in two spheres of activity for which the State retains overall responsibility:
- those functions that require a national or central perspective; and
- those functions that can be delegated to the school.

Even those functions that require an overall national perspective do not necessarily demand direct political control by, for example, the Ministry of Education or its equivalent. These can be dealt with by non-ministerial departments, standing committees or working parties that report direct to parliament; for example:
- an office for qualifications, curriculum and assessment;
- an office for standards in education;
- a national college for school leadership;
- a standing committee on teachers pay and conditions;
- a standing committee on teaching standards;

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[5] Public Sector Economics; 4th Edition: C. V. Brown & P. M. Jackson Wiley-Jackson (1991}
[6] Alliance for the Separation of School and State
[7] This particularly so when significant responsibility, authority and accountability is decentralized to the school level.

- a working party on management information systems.

In education systems that are characterised by The Local Management of Schools with Local Financial Management, it is crucial that the State develops:
- the legal framework for the establishment of Governing Bodies – local partners who support and challenge Leadership Teams in the discharge of their responsibilities.
- a Scheme of Delegation that specifies the rights and responsibilities of school Leadership Teams and Governing Bodies with clearly identified financial regulations and procedures.

Consequences

Education is therefore a complex and dynamic network of schools, government departments, non-ministerial departments, parents' groups, commercial organizations and voluntary bodies. As such, the State's key function is to ensure that it complies with Bellman's Optimality Principal:[8] all of the functions delineated above must lead to the optimum development of students' personal, social and intellectual needs.

4. The **School** creates the environment, opportunity and conditions that enable students, teachers and parents to interact and achieve the objectives of education.

School attendance began to become compulsory in the 18th century. Public interest in education increased and national and local governments began to take a greater role in the direction of what had previously been considered a parochial responsibility.

Most countries now have systems of formal compulsory education - a period of education that is required of for students and is imposed by the state. Depending on the country, this education may take place at a registered school or at home. A school is an educational institution designed to provide learning spaces and learning environments for the teaching of students under the direction of teachers.

In these systems, students progress through a series of schools. The names for these schools vary by country but generally include primary schools and secondary schools. A primary school is a school in which students from the age of about five to eleven receive the first stage of formal compulsory education (Level 1)[9] and is normally available without charge. It may, however, be offered in a fee-paying independent school.

A secondary school is a school in which students from the age 11 until at least age 16 and sometimes 19, receive the second and third stages of formal compulsory education: lower (Level 2)[10] and upper (Level 3)[11] secondary education. Some secondary schools can provide both lower secondary education and upper secondary education but these can also be provided in separate schools.

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[8] Bellman's Optimality Principle: Regardless of how we have come to a state of the dynamic system, the solutions adopted from now on until the end of the process give the optimal strategy. Bellman, R.E. 1957. *Dynamic Programming*. Princeton University Press, Princeton, NJ.

[9] Level 1 on the **ISCED Scale** – The **International Standard Classification of Education** is a statistical framework for organizing information on education maintained by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
[10] Level 2 on the **ISCED Scale**.
[11] Level 3 on the **ISCED Scale**.

To meet 21st Century requirements, the schools must be organized to meet:

- the ages and stages of the students;
- the requirements of the curriculum; and (for older children)
- the requirements of the examination system

in suitable buildings with appropriately furnished classrooms and learning spaces. Some schools already go beyond the requirements of the formal curriculum and provide students with opportunities for:

- self-development;
- self-directed study;
- interactive learning; and
- distance-learning.

Developments in Information and Control Technology will provide increasing opportunities for independent learning in virtual classrooms that do not depend on the teacher's physical presence.

Tomorrow's school will be a complex, self-organizing system in a radically re-designed environment. It will have to enable people:

- with different functions;
- with different skill sets;
- of different educational backgrounds; and
- widely different ages;

to interact successfully and comply with national expectations and standards that apply to:

- the curriculum;
- teachers' pay and conditions;
- examination requirements;
- finance;
- and
- health and safety.

Tomorrow's school will have to develop a School Handbook to facilitate communication with all its stakeholders. The School Handbook must outline all national policies in addition to those school policies that apply specifically to their students. School Handbooks are one of many ways that schools can communicate effectively with parents. The School Handbook is a valuable resource for parents to help them choose a school, prepare for school or as a reference tool during school. When parents are successfully and meaningfully involved in their child's learning, and in the life of their schools, children are more successful. Good communication, relationships and information are key to successful involvement. The School Handbook should aim to support and strengthen the relationship between schools, local stakeholders and parents.

To achieve and successfully maintain a high quality of education within a cycle of continuous improvement, the school must involve all its stakeholders in School Development Planning. This must clearly state the ethos and aims of the school agreed by the stakeholders. It should also include more specific objectives for each of the following 4 to 5 years and more detail for the immediately following years. For each objective it should specify:

- goals or objectives;
- timescale;
- responsibilities;

- success criteria;
- financial implications;
- stakeholder/governor involvement.

Tomorrow's school will have to collect, process, collate, sort and disseminate vast amounts of information: it will depend on very high-level Management Information Systems. The State should not specify the platform, but should specify the requirements of any platform and fund the implementation of any MIS that will facilitate:

- the exchange of information between students, teachers and parents; and
- the exchange of information between the school, the local authority and the State.

In addition to regulating the use of the school website, cloud technologies and social networks, the school has a responsibility to ensure that the students

- can positively and confidently engage with the digital world; and
- has the skills and knowledge to effectively use digital technologies to participate in society, communicate with others and create and consume digital content.

Tomorrow's school must be an 'intelligent school' (MacGilchrist et al, 1997)[12]; "a school that is able to learn from its mistakes, by quickly detecting and removing gaps". This will require formal discussions between:

- those closely involved in the day-to-day life of the school – students, teachers and support staff; and
- those not involved in the immediate live of the school – parents, governors and other stakeholders.

Consequences

Although the State and local government have taken an increasing role, education actually takes place in hundreds of schools, and thousands of classrooms; not in the buildings of a ministry or a local authority.

The State, through non-departmental public bodies that report to the legislature and not the administration[13]; for example:

- an office for curriculum and examinations; and
- an office for standards in education;

should establish the *broad* parameters with which schools are managed.

However, the real responsibility for

- improving the quality of education; and
- raising standards of achievement

should be delegated to the governing bodies and leadership teams in the schools.

C. The Functional Axioms of the education system

5. Subsidiarity ensures that decisions about the education of students are taken at the level closest to the point of delivery.

"It does not make sense to hire smart people and tell them what to do; we hire smart people so they can tell us what to do". Steve Jobs, co-founder of Apple Inc.

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[12] MacGilchrist B, Myers K and Reed J: The intelligent School. Paul Chapman Publishing 1997.
[13] This is to remove direct political influence and control.

The *Oxford English Dictionary* defines **subsidiarity** as "the principle that a central authority should have a subsidiary function, performing only those tasks which cannot be performed at a more local level".

Subsidiarity is a principle of social organization that holds that social and political issues should be dealt with at the most immediate (or local) level that is consistent with their resolution. When applied to the structure and organisation of complex systems, it is concerned with the delegation of agency and choice to the local level.

In as much as education is ultimately for the benefit of the student, the quality of the education system depends on delegating agency and choice to the level which is closest to the student. Consequently, it is the state's responsibility to determine the structure and organisation of the education system and the levels to which agency and choice and their rights and responsibilities should be delegated.

The most powerful indicator of the principle of subsidiarity being in place is in the allocation and delegation of financial responsibility (Local Financial Management). The table below provides examples of the delegation of agency and choice to different levels in the education system. At each level; e.g.:
- the allocation of the national budget for education across local authorities – the Local Government Financial Settlement;
- the Local Authority Schools Funding Formula; and
- the allocation of the school's budget share across major categories of expenditure;

Table 2. Agency and Choice

Level in the Structure	Agency and Choice
The State	Allocating the national budget across different departments; e.g. 29% Health, 15% Education and 9% Defense. Allocating the national budget across local authorities – the Local Government Finance Settlement. Determining how much of that allocation must be spent on schools – the Dedicated Schools Grant.
The Local Authority	Determining the structure and organization of schools within the local authority – number; primary/secondary; grammar school/comprehensive. Determining the Funding Formula that will allocate resources to individual schools.
The School	Allocating the school's budget share across major categories of expenditure; e.g. 53% Teaching Staff; 24% Other Staff Costs; 6% Premises Costs and 17% Supplies and Services. Constructing the timetable and deploying the Teaching Staff.
The Department	Choosing the appropriate set of textbooks. Choosing an appropriate Examination Board. Establishing the assessment criteria and moderating teachers' assessment within the Department to improve the reliability and validity of assessment grades. Analyze the results of all assessment tasks to ensure that all students are making good progress.
The Teacher	Adopting a range of teaching methods that are appropriate to the demands of the curriculum and the needs of the students. Ensuring that all assessment tasks are properly organized and administered to comply with departmental, school and examination requirements.
The Student	Agency and Choice for the students are difficult describe unless there is already sufficient subsidiarity to give them the right to choose what they wish to study. However, if they do have the right to choose, they also have the responsibility to exercise that choice with care and consideration for their future.

the principles, the criteria and the formula for allocating resources must be:
- open, transparent and objective; and
- reflect the real costs inherent in education[14].

Each school is a community of students with a unique mix of learning needs that calls for a range of strategies if an excellent quality of education and high standards of achievement are to be attained. Rather than centralized decisions on:
- the detail of curriculum;
- approaches to teaching; and
- the allocation of resources

schools should have the opportunity to:
- establish their own priorities to meet students' needs;
- select strategies to address these priorities;
- tailor the curriculum;
- allocate resources and select staff to ensure these strategies can be implemented;
- conduct professional development programs and in other ways help teachers acquire the knowledge and skill to deliver the preferred programs;
- monitor progress toward the achievement of targets; and
- provide incentives and reward success.

If all of these and other actions cohere and are implemented in the manner intended, there should be improvements for students and an overall contribution to school effectiveness.

Consequences

Theoretical and intuitive expectations suggest that subsidiarity ought to have a direct and positive impact on learning outcomes for students. However this requires
- specific training for the Leadership Team[15] and the teachers; and
- the involvement of local stakeholders – the Governing Body.

The principle of subsidiarity with its concomitant delegation of financial responsibility, authority and accountability[16] is the source of school autonomy. In which case, this autonomy ought to be delegated to the school level within a centrally-determined framework of goals, policies, priorities, standards and accountabilities[17]:
- clear Financial Regulations and Procedures, and the Management of Financial Risk;
- the national analysis of examination performance that measures progress, school value-added and enables the Governing Body to hold the Leadership Team to be account; and
- a national system of school inspection that will provide the Governing Body with an external evaluation of the Overall Effectiveness of the school and similarly enables them to hold the Leadership Team to account.

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[14] Staribratov I, Kunchev M & Budgell P: "The System of Delegated Budgets in Secondary Education - Fairness and Predictability" - Strategies for Policy in Science and Education, 5/2015.

[15] A National College for School Leadership that:
- develops a national professional qualification for headteachers; and
- provides continuous professional development for members of Leader and Governors.

[16] Local Financial Management

[17] The Scheme of Delegation

This Local Management of Schools (LMS), or school-based management, with its:
- clear framework for delegation; accompanied by
- a similarly clear framework for accountability;

should enable subsidiarity to be the driving force behind an improvement in the quality of education and a raising in the standards of achievement.

6. Effective **Leadership and Management** of a school ensures an excellent quality of education and high standards of achievement. **Governance** is the process whereby a legally constituted team of **local partners** support and challenge the Leadership Team; helping them to fulfil their responsibility for the management of the school.

The debate about the relationship between leadership and management is fundamental to an understanding of what makes schools effective. It is very clear that the personal priorities of leaders;
- how they schedule their time, resources and energy,

has enormous significance for the way a school works. In essence the issue of the relationship between management and leadership is the issue of:
- stasis or change;
- the status quo or transformation;
- good or great; and
- improving or transforming.

Therefore, it is central to any discussion of the nature of roles in schools.[18]
The quality of leadership is fundamental to:
- school improvement;
- school effectiveness;
- achieving high performance; and
- bringing about change and innovation.

There is a high correlation between the quality of leadership and organizational success. It is possible to establish a direct causal relationship between:
- leadership;
- organizational success;
- teacher performance; and
- student achievement.

At the same time it is important to remember that leadership needs to be balanced by effective management, the strategic perspective has to be related to the operational.

The growth in interest in the development of distributed leadership, hence middle leaders rather than middle managers, has been illustrated by Leithwood et al (2006).[19] They have stressed importance of middle leaders,

> 'The most significant results of this study……… were the indirect effects of total leadership on student learning and achievement, through its direct effects on the three dimensions of staff performance. Total leadership accounted for a quite significant 27 per cent of the variation in student achievement across schools.'

[18] West-Burnham J (2010) Understanding leadership and management. Nottingham, National College, (formerly NCSL)

[19] Leithwood K et al (2006) Seven Strong Claims about School Leadership, National College, (formerly NCSL)

The key phrase here is 'total leadership', recognising that while the work of the designated leader is important, there is substantial leadership available in the school that is not necessarily linked to organisational role or status.

> 'Ultimately, leadership that stays centred on learning and that lasts over time is deliberately distributed leadership that stretches across a school or system, is a genuinely shared responsibility, and is taken as much as it is given.' (Hargreaves and Fink, 2006)[20].

In essence, and this is the real challenge, distributed leadership means that leadership is seen as collective capacity rather than personal status.

Why distributed Leadership?
- Individual/heroic leadership is not sustainable in a complex and rapidly changing world.
- Hierarchical leadership can not be morally justified in an organisation committed to learning in a democratic society.
- Shared leadership recognises and enhances professionalism and genuine collegiality.
- A team-based approach to school organisation requires shared leadership.
- Shared leadership increases the possibility of alignment on vision and values.
- Shared leadership releases the creative capacity of everyone.
- Sustainable performance is more likely to be achieved with shared leadership.

Leadership in education is concerned with:
Principle   the moral basis of the school
Purpose   the core business of the school
People   social relationships in the school

Figure 2. The nature of leadership
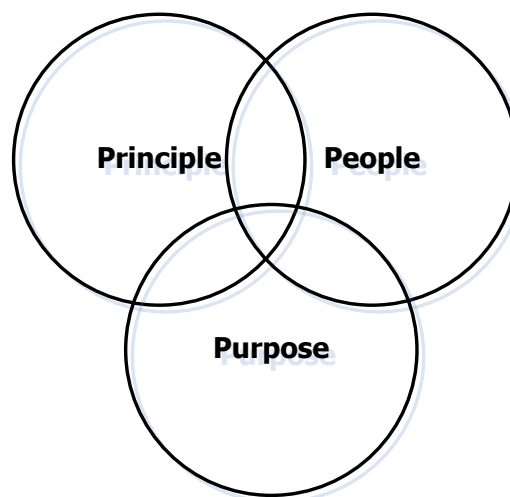
Successful leaders are those educationalists who can balance and integrate the three 'P's – so that they are balanced and mutually supportive – as shown in Figure 2.

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[20] Hargreaves A and Fink D (2006) Sustainable Leadership San Francisco, Jossey Bass

One way of understanding the relationship between leadership and management is to define their relative contributions to the way in which an organization functions. It is also worth introducing routine clerical work into the equation as it plays an important role in the life of every school.

Table 3. Leadership, Management and Administration

Leadership	Management	Administration
Doing the right things	Doing things right	Doing things
Path making	Path following	Path tidying
Complexity	Clarity	Consistency

Leadership is seen as having a responsibility for the values by which the school works. What the right things are is, of course, highly contestable and will be the product of:
- personal values;
- the prevailing moral consensus in society; and
- the dominant moral hegemony.

Management is concerned with:
- translating principles into actual practice;
- 'doing things right';
- focusing on systems, structures and delivery.

Administration is about:
- doing all the routine tasks;
- the organisational routines; and
- infrastructure.

In a national structure characterised by subsidiarity, school governing bodies are responsible for working with the Leadership Team to ensure that the school delivers:
- an excellent quality of education; with
- very high standards of achievement.

Together with the Leadership Team, who are responsible for day-to-day management, the governors set the school's aims and policies. Governors must be transparent and accountable in the recruitment of staff, governance structures and attendance at meetings and contact with parents.

The key roles of governors are to:
- ensure clarity of vision, ethos and strategic direction;
- hold the Leadership Team to account for the educational performance of the school and its students, and the performance management of staff; and
- oversee the financial performance of the school and make sure its money is well spent.

They also carry out a number of other important duties, which include:
- working effectively with the school Leadership Team to communicate the vision, ethos and strategic direction of the school and develop a culture of high achievement;
- providing a balance of challenge and support to the Leadership Team, understanding the strengths and areas needing improvement at the school;

- providing support for an effective Leadership Team because of their understanding of the issues facing the school;
- performance managing the headteacher rigorously;
- understanding the impact of teaching, learning and assessment on the progress of students currently in the school;
- ensuring that assessment information from the school leaders provides governors with sufficient and accurate information to ask probing questions about outcomes for students;
- ensuring that the school's finances are properly managed and evaluating how the school is using any additional sources of income.

Consequences

When significant responsibility, authority and accountability has been delegated, it is important that the school develops an appropriate management structure with clearly defined:
- roles and responsibilities;
- job descriptions and
- person specifications.

With the rapid development of information technology and computer-based learning; schools should consider, for example, appointing a senior leader who is responsible for the development of *educational technologies* in order to:
- promote the use of different teaching methods;
- support the teachers to develop good practices; and
- share experiences.

This must be accompanied by a performance management structure against which those holding posts of responsibility can be held to account.

The leadership team must work closely with the governors to ensure their;
- effectiveness in discharging their core statutory function of holding them to account; and
- commitment to they are to their own development as governors in order to improve their performance.

In order to fulfil their role, governors must be committed to their own development: working with the Leadership Team to ensure that they understand the implications any changes in employment law, the regulations for examinations and the funding of schools.

As a consequence of the school being inspected the governors, together with the Leadership Team, are responsible for receiving the report of the inspection and developing the action plan necessary to address the key issues raised by the inspection.

7. The **curriculum** provides sufficient breadth and balance while enabling students, as they mature, to exercise increasing choice of the subjects that they wish to study.

Requirements for the school curriculum

All students are entitled to a curriculum which:
- is balanced and broadly based;
- promotes the spiritual, emotional, moral, cultural, intellectual and physical development of pupils at the school and of society;

- prepares pupils for the opportunities, responsibilities and experiences of life by equipping them with appropriate knowledge, understanding and skills; and
- empowers young people to achieve their potential and to make informed and responsible decisions throughout their lives.

The curriculum should be specified in terms of:
- an overarching curriculum aim;
- curriculum objectives;
- areas of learning and subject strands (contributory subjects);
- cross-curricular skills;
- thinking skills and personal capabilities;
- learning experiences which students must be given opportunities to access; and
- attitudes and dispositions which learners must be given the opportunity to develop.

Figure 3. Student choice in the subjects they study
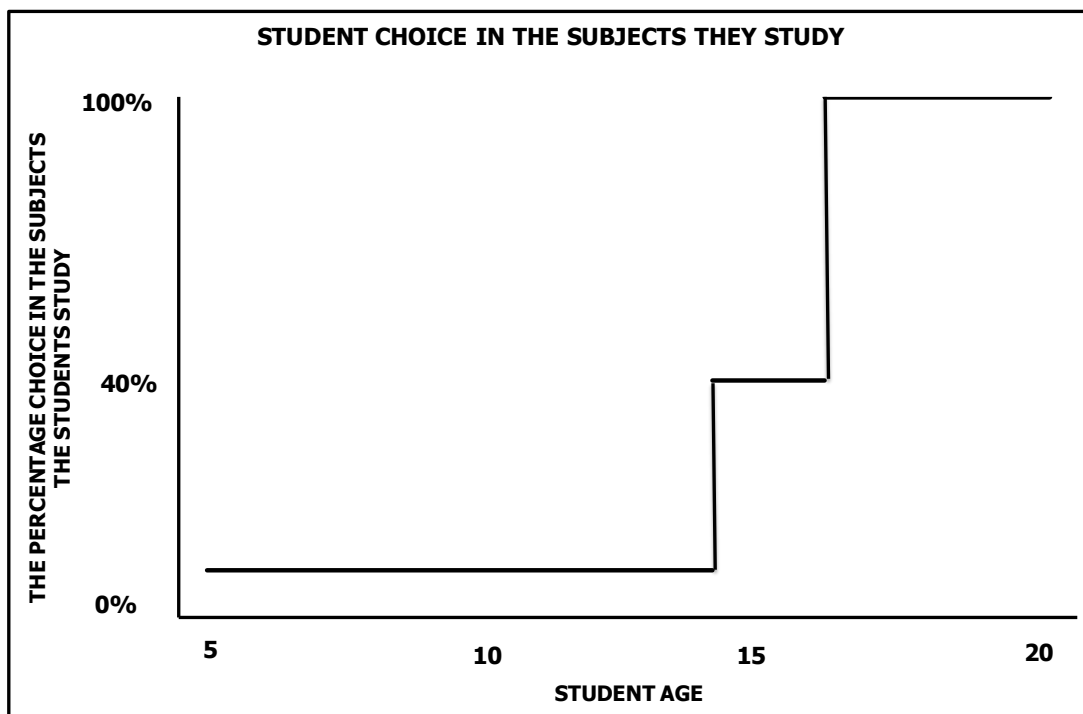
The curriculum for all students, irrespective of age, should include:
- areas of learning and subject strands:
  - native language;
  - modern foreign languages;
  - mathematics;
  - science and technology;
  - information and communication technology;
  - the humanities;
  - the arts;
  - physical education and sport, and
  - social and civic literacy.
- Cross-curricular skills:
  - communication

- using mathematics
- using ICT.
- Thinking skills and personal capabilities:
    - managing information
    - thinking, problem-solving and decision-making
    - being creative
    - working with others
    - initiative and entrepreneurship
    - self-management.

Planning and organisation of the curriculum

There should be three levels of planning and organising the curriculum.

1. The state should determine the structure and organisation of the curriculum framework that will provide students with the opportunity to choose the subjects that they which to study as they mature.
2. Because the curriculum for older students is driven by external qualifications, the state should specify in detail the content and assessment requirements of all subjects taught in schools.
3. Within the school, the teachers need to plan in detail how and when they are going to organise the content, the teaching and the assessment of the curriculum in their subject.

The school is then responsible for:

- informing the Governors, parents and students, in detail, about the structure and organisation of curriculum; and
- presenting to Governors, parents and students the results of any evaluation of the students' performance in internal and external examinations.

The State's role in determining the Curriculum Framework

The structure and organisation of the curriculum framework that will provide students with the opportunity to choose the subjects that they wish to study as they mature, needs to be determined at a national level. However, this should not be determined directly by the Ministry of Education. The State should establish a non-ministerial department – an office for qualifications, curriculum and assessment – that reports directly to Parliament.

The role and function of such a non-departmental office in determining the overall pattern of educational provision can be so different that it leads to fundamentally different approaches. Those differences can be characterised, particularly, in terms of freedom of choice for the students.

The two Frameworks illustrated below indicate the philosophical opposition[21] between:

- **Framework A**, the belief that it should train the individual to meet societal goals; and
- **Framework B**, the idea that education should build up of the capacity of the individual.

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[21] Steve Hargadon. Using Education to Serve the Individual. www.getacclain.com

In **Framework A**, there is a unified curriculum until the end of Grade 7 (14 years old) that all students must follow. After the age of 14 there are distinct pathways called Profiles. The curriculum within these pathways/Profiles is, however, determined by the State.

This inflexible interpretation of the "belief that education should train the individual to meet societal goals" where students are channelled into pathways chosen by the State leads to real conflicts with **Framework A**.
1. The immediate conflict between the maturing students' goals and the structures introduced by the State to meet societal goals; and
2. A deep conflict between the society's real needs and those same structures introduced because they are perceived to meet society's needs.

In **Framework B**, there is an analogous unified curriculum until the end of Year 9 (14 years old) that all students must follow. For two years after the age of 14, the students can choose some of the subjects that they wish to study. The State determines the number of hours teaching there should be during the week.

At the end of Year 11, the students take their first public examinations in the 8 subjects they have chosen from the list above. After these public examinations at the age of 16, students in Years 12 and 13 in Framework B specialise in 3 or 4 subjects. They then take a second set of advanced public examinations at the end of Year 13 when they are 18. Midway through Year 11, therefore, the schools must tell their students which subjects can be studied in Years 12 and 13. They are free to *choose* which subjects to study. Neither the Ministry of Education nor the municipality stipulates which subjects the students study after the age of 16. It depends on the subjects that the teachers are deemed experienced or qualified enough to teach to an advanced level and on the students' *choice*.

The State's role in determining Curriculum Content
Because the curriculum for older students is driven by external qualifications, an office for qualifications, curriculum and assessment should specify in detail the **content** and **assessment** requirements of all subjects taught in schools**.**

Because they fulfil two purposes, the office for qualifications, curriculum and assessment must ensure that the subject conditions and requirements:
• specify in detail the content of the subjects being studied; and
• form an effective introduction to university education in that subject.

Teachers' planning of the content, teaching and assessment of the curriculum
One specific model has proved useful in curriculum planning - the Spiral Curriculum, based on Bruner's theory of cognitive growth. Bruner's (1960)[22] hypothesis is that „any subject can be taught in an intellectually honest form to any child at any stage of development", this can be accomplished through what he has called the spiral curriculum:

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[22] Bruner, J. (1960). *The Process of Education*. Cambridge, MA

- students revisit a topic, theme, or subject several times throughout their school career;
- the complexity of the topic or theme increases with each revisit; and
- new learning has a relationship with old learning and is put in context with the old information.

The Spiral Curriculum is an approach to education that introduces key concepts to students at a young age and covers these concepts repeatedly, with increasing degrees of complexity. This approach is also known as also known as a, spaced' or .distributed' approach. It contrasts with, blocked' or, massed' curricula, which do not introduce difficult concepts until the student has reached a higher level of education.

Consequences

It is crucial that governing bodies, Leadership Teams and teachers:
- know the design and intent of their curriculum;
- know how the curriculum is being implemented;
- use methods of teaching and communicating with pupils that correspond to the content and objectives of the curriculum; and
- know what impact their curriculum is having on pupils' knowledge and understanding.

8. The **teacher's** role must develop as students mature; changing from the dispenser of core knowledge to the facilitator of self-directed learning.

The State, in the role of a standing committee on teachers' pay and conditions, must ensure that the national conditions under which teachers are employed and their remuneration are clearly specified. The Governing Body and the Leadership Team must ensure that the school complies with these national conditions.

At the same time teachers must comply with the national standards establish by a standing committee on teachers' standards. Teachers must make the education of their pupils their first concern, and are accountable for achieving the highest possible standards in work and conduct. Teachers must act with honesty and integrity; have strong subject knowledge, keep their knowledge and skills as teachers up-to-date and are self-critical; forge positive professional relationships; and work with parents in the best interests of their pupils.

A teacher is expected to demonstrate consistently high standards of personal and professional conduct. Teachers uphold public trust in the profession and maintain high standards of ethics and behaviour, within and outside school, by:
- treating pupils with dignity, building relationships rooted in mutual respect, and at all times observing proper boundaries appropriate to a teacher's professional position
- having regard for the need to safeguard pupils' well-being, in accordance with statutory provisions o showing tolerance of and respect for the rights of others
- not undermining fundamental values, including democracy, the rule of law, individual liberty and mutual respect, and tolerance of those with different faiths and beliefs
- ensuring that personal beliefs are not expressed in ways which exploit pupils' vulnerability or might lead them to break the law.

- Teachers must have proper and professional regard for the ethos, policies and practices of the school in which they teach, and maintain high standards in their own attendance and punctuality.
- Teachers must have an understanding of, and always act within, the statutory frameworks which set out their professional duties and responsibilities.

Teachers need to see themselves as members of a Professional Learning Community[23] (PLC) that is committed to:
- ensuring that students learn;
- a culture of collaboration;
- focussing on results; and
- hard work and commitment.

Good teachers love their students. They accept their differences and develop their curiosity and creativity. Teachers must own the responsibility to identify and develop the positive qualities in each student. While they value each and every student individually, they also encourage teamwork.

Good teachers must be determined that students achieve well. They need to encourage students to try hard, recognise their efforts and ensure that students take pride in all aspects of their work. Good teachers have consistently high expectations of all students' attitudes to learning.

Teachers must have a deep knowledge and understanding of the subjects they teach. They must use questioning effectively and demonstrate a clear understanding of the ways students think about subject content. They must identify students' common misconceptions and act to ensure they are corrected. Teachers need to plan lessons very effectively, making maximum use of lesson time and coordinating lesson resources well. They manage students' behaviour highly effectively with clear rules that are consistently enforced.

When teachers are confident they should promote **inquiry-based learning**[24]; that is to say that the students can:
- learn actively;
- learn to provide interesting answers to problems; and
- learn to explore situations, communicate their results and give reasons for their ways of proceeding.

In order to embed the students' knowledge, understanding and skills securely, teachers should provide adequate time for practice. They need to introduce subject content progressively and constantly demand more of students. Teachers must identify and support any student who is falling behind, and enable almost all to catch up.

When the teaching is good, students are eager to know how to improve their learning. They capitalise on opportunities to use feedback, written or oral, to improve. Consequently, teachers need to check students' understanding systematically and effectively in lessons, offering clearly directed and timely support. This enables teachers to provide students with incisive feedback, in line with the school's assessment policy, about what students can do to improve their knowledge, understanding and skills.

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[23] Dufour R, (2004) Educational Leadership. Schools as Learning Communities
[24] See Promoting Inquiry-based Learning in Mathematics and Science http://www.primas-project.eu .

Teachers should set challenging homework, in line with the school's policy and as appropriate for the age and stage of students, that consolidates learning, deepens understanding and prepares students very well for work to come.

When teaching is good, students will love the challenge of learning and will be resilient to failure. They will be curious, interested learners who seek out and use new information to develop, consolidate and deepen their knowledge, understanding and skills. Students thrive in good lessons and also regularly take up opportunities to learn through extra-curricular activities.

Parents should be provided with clear and timely information on how well their child is progressing and how well their child is doing in relation to the standards expected. Parents should be given guidance about how to support their child to improve.

Consequences

The outcomes of teachers' work depend on their qualifications, motivation and the conditions in which they work. Teachers are their qualifications: enhancing qualifications is a driving force behind:

- improving the quality of education;
- raising the standards of achievement.

Good teaching is a key component of the quality of education provided by the school. Consequently, the Leadership Team needs to ensure that there is a schedule of classroom observation that enables them to be secure in their beliefs about the quality of teaching.

Table 4. Teacher Qualifications and Teacher Motivation

Teacher Qualifications and Experience			
	High	Moderate learning outcomes	High learning outcomes
	Low	Poor learning outcomes	Good learning outcomes
		Low	High
		Teacher Motivation and Application	

9. The reliable and valid **assessment** of students' work provides information about the individual student's knowledge, skills and understanding; it enables them, their teachers and their parents to know what they have to do to improve and it ensures access to the next stage of education.

The development of the national perspective on assessment should be the final responsibility of an office for qualifications, curriculum and assessment. From a stage when it referred simply to the marking of their work by their teacher, the assessment

of students' progress and standards of achievement has become the focus of educational, political and even international research.[25] It is important therefore to see assessment from the perspective of:

    a) the students;
    b) the teachers;
    c) the parents;
    d) the school;
    e) the state; and
    f) the international community.

Before going on to look at assessment from these different perspectives, however, it is also important to address two other issues:

    a) the distinction between formative and summative assessment; and
    b) the problems of reliability and validity.

Formative assessment is undertaken in the middle of a module or course. Its function is to:

- provide both the student, the teacher and parents with an idea about the progress the student is making; and
- provide the student with clear guidance on how to improve their work.

Summative assessment, on the other hand, is undertaken at the end of a module or course, and is there to evaluate the attainments of the student when judged against the standards delineated in the course requirements.

All forms of assessment are beset by problems of **reliability** and **validity.**

- The reliability of a test is a measure of its consistency;
    - if the student took the test the next day would they get the same result, or
    - if the test was marked by a different examiner would the student get the same result.
- The validity of a test is a measure of its accuracy;
    - does the test really assess the students knowledge, skills and understanding of the content specified in the curriculum.

Balancing the requirements for summative assessment to be both reliable and valid has always been problematic. However, more recently some states have used aggregated standards of achievement to:

- construct league tables of schools, in the belief that this will drive up standards; and hence
- to demonstrate the effectiveness of government policy in improving the quality of education.

But this has been a function too far; reliability and validity have been compromised and this has resulted in **grade inflation**. Standards of achievement appear to have gone up but there is no real evidence of any improvement in the quality of education.

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[25] PISA: The Programme for International Student Assessment developed by The Organisation for Economic Co-operation and Development.

The quality of the assessment procedures in a school is a crucial component in the quality of education provided. Assessment is there to support learning and raise standards of achievement; it is an important element in the educational systems of all countries. There may be a common understanding of the necessity for and goals of assessment, but the detail of the grading systems varies from country to country.

Table 5. National Grading Systems

Bulgaria		United States			England	
Scale	Grade Description	Percentage	Letter Grade	Grade Point Average	GCSE Grades (16+)	GCE A Levels (18+)
6	Excellent	90 – 100%	A	4	9	A*
5	Very Good	80 – 89%	B	3	8/9	B/A
4	Good	70 – 79%	C	2	5/6	C
3	Sufficient	60 – 69%	D	1	3/4	D
2	Poor	0 – 59%	E	0	1/2	E

However, the real differences are in:
- the assessment of knowledge, skills and understanding;
- the systems of assessment; and
- the analysis of the results of assessment.

Formative assessment should, of course, be important and useful for the students. In order for students to understand that it helps and supports their learning, formative assessment must provide them with accurate information about their knowledge, skills and understanding. When accompanied by developmental marking[26], it can motivate them to raise their standards of achievement. Recent developments in on-line self-assessment may help students to know what they do not know, cannot do and do not understand and to remove the gaps.

The majority of the assessment undertaken by the teacher takes place during the course or module. It can provide a source of very important feedback for the teacher. The successful teacher uses this formative assessment to:
- change the organization and pace of their work;
- pay attention to individual or groups of students making similar mistakes;

and when used in combination with specific, detailed advice for the students:
- can motivate the students to raise their standards of achievement.

The summative assessment undertaken at the end of the module, course, year or school can provide:
- a measure of the students' standards of achievement set against the standards and requirements for the subject;
- the teacher with an indication of any weak areas in the quality of their teaching; and
- the Leadership Team with an early indication of any teacher who is beginning to fail in the classroom.

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[26] Specific, detailed advice to help students progress.

Reliable and valid formative assessment allows parents to follow their children's progress and to be aware of their standards of achievement. It should provide them with the information they need to:

- support or challenge their children, if there is evidence that they are underachieving, and
- challenge the Leadership Team, if it is the teacher who is failing to meet the necessary standards.

Reliable and valid summative assessment, if it is analyzed and presented effectively, should provide parents with appropriate information about:

- the strengths and weaknesses of the children; and
- the strengths and weaknesses of schools or universities;

and enable them to make the best choice of the pathway that their children should follow.

Figure 4. The Relationship between Entrance Examinations and Diploma Scores
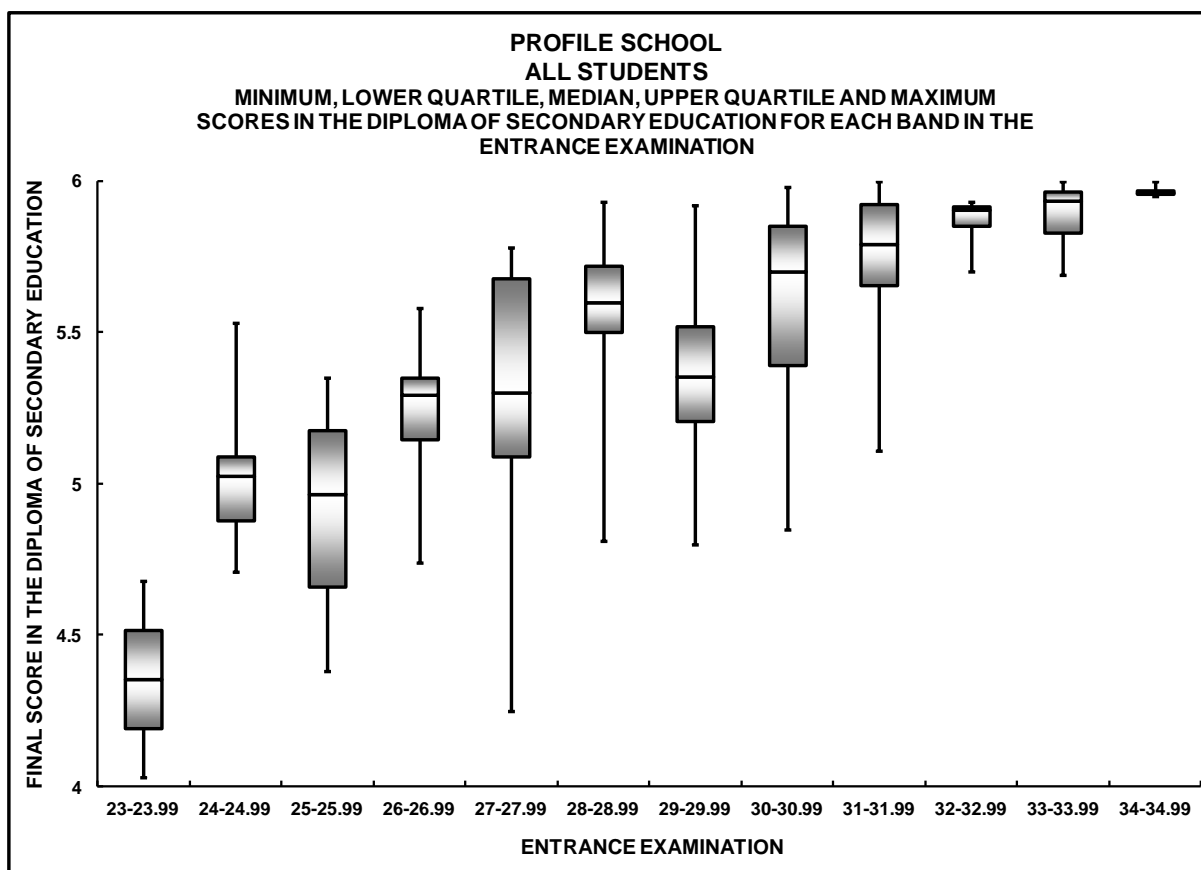
When significant responsibility, authority and accountability are delegated to the school, the role of summative assessment[27] undertaken at the end of school is particularly important. The parents have to be able to determine the contribution of

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[27] In this case the national examinations.

the school to the progress made and standards achieved by every individual student[28] and to hold the leadership team and the governors accountable.

In order that the national (state) exams can fulfill the following functions:
- they must accredit the knowledge, skill and understanding of the students in a particular field, subject or profession;
- they must allow students to be awarded a diploma, degree or qualification that acknowledges the level attained by the students;
- they must function as an 'entry ticket' to the next stage of education.

It is obvious that the information that they provide must be both reliable and valid. Furthermore, in such a system of delegated responsibility, authority and accountability, it is crucial that the national examination system and the analysis of the results provides reliable and valid information because they provide:
- a measure of the overall standards of achievement of the individual school; and therefore
- an indication of the quality of leadership and management in the school; and therefore
- information that will enable the Leadership Team and the governors to be held to account by the state.

The State is responsible for the effective and efficient allocation and delegation of resources. As the agent of the tax-payer, therefore, the state has the right and the responsibility to assess:
- the results of that investment in education; and therefore
- the quality of leadership and management at local level.

The results in the national examinations can be aggregated to school, town, region and state level. Appropriate Management Information Systems can provide:
- an open and transparent analysis of the effectiveness of government policy over time and across the state;
- proof of good practice; and
- an indication of any changes that need to be made.

For any state joining the European Union, those examinations that provide their student with the 'entry ticket' to university education in their own country also provide the 'entry ticket' to universities across the EU. Similarly, students across the EU have an 'entry ticket' to universities in the new accession state. Consequently, the reliability and validity of the new accession state's national examinations become of interest to the international community.

At the same time, on joining the EU, new accession states are encouraged to join the The Programme for International Student Assessment (better known by its initials PISA). This frequently provides the first external evaluation of standards of achievement in the new accession state.

Consequences

Membership of the international community, has indicated that there is great diversity in the exams, systems, goals and scope of the assessment procedures.

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[28] See: M. Kunchev and P. Budgell Analysis of the Results of the Educational Process and the Management of the School, 43-th Spring Conference of the Union of Bulgarian Mathematicians "Mathematics and mathematical Education", 2014, ISSN 1313-3330.

Consequently, there must be a much clearer specification of the requirements of systems of assessment:
- the common assessment goals;
- the assessment objectives;
- the organization of exam tests; and
- the presentation of results.

The state has to publicly present in a suitable way reliable and valid data about the results of the educational process in individual schools, towns, regions and at a national level. The results of an individual school must be comparable to other schools, to the average results for the town, region and on a national level. On the basis of such information it is easier to take decisions about improving the quality of education and raising standards of achievement.

Because teachers are responsible for:
- the individual progress of the students; and
- for informing parents;

the training of teachers must include the knowledge, skills and understanding of:
- formative assessment and developmental marking;
- summative assessment; and
- the analysis of the results.

Schools need to appoint an assessment manager: a middle manager with the assessment of students' work as their specific management responsibility.
1. Their responsibility is not to undertake all the assessments of students work themselves but to develop a school assessment policy and ensure that the procedures adopted across departments meet that school policy: procedures that will introduce moderation processes within departments and ensure that teacher assessments are both reliable and valid.
2. They would also be responsible for the longitudinal analysis of assessment data which maps the progress of individual students across time and across subjects; particularly the analysis of students' performance in national examinations. This will enable the Leadership Team to demonstrate the standards of achievement attained by the students.
3. They would be responsible to guarantee in front of the parents that the assessment of their children is a reliable and valid indicator for their progress in the subjects through the years.

10. An effective system of **Inspection** provides an external validation of the quality of education provided and the standards of achievement of the students.

There are at least three reasons for organizing the inspections of schools.
1. State education is financed by tax-payers. Therefore, it is the state's responsibility to provide reliable and comprehensive information about the efficient and effective deployment of those financial resources.
2. On the principle of subsidiarity, schools have substantial autonomy and must therefore be fully accountable for the results of their activity: this can only be achieved when there are periodic inspections.

3. Inspections give an idea of the extent to which each school has achieved its goals: this should motivate the school to search for ways to improve their outcomes.

What is the purpose of a National Framework for the Inspection of Schools?

In addition to the analysis of the students' performance in external examinations, the inspection of a school provides an independent external evaluation of its effectiveness and a diagnosis of what it should do to improve, based upon a range of evidence including that from first-hand observation. School inspection reports present a written commentary on the outcomes achieved and the quality of a school's provision (especially the quality of teaching and its impact on learning), the effectiveness of leadership and management and the school's capacity to improve.

What are the legal requirements for the inspection of schools?

An Education Act that specifies that schools are required to be inspected at prescribed intervals and that inspectors must report on:

- the quality of the education provided in the school;
- how far the education meets the needs of the range of pupils at the school;
- the educational standards achieved in the school;
- the quality of the leadership in and management of the school, including whether the financial resources made available to the school are managed effectively;
- the spiritual, moral, social and cultural development of the pupils at the school;
- the contribution made by the school to the well-being of those pupils; and
- the contribution made by the school to community cohesion.

The inspections of schools perform five essential functions:

- providing parents with information; this informs their choices and preferences about the effectiveness of the schools their children attend or may attend in the future;
- keeping the Minister of Education informed about the work of schools which provides assurance that minimum standards are being met;
- providing confidence in the use of public money;
- assisting accountability; and
- promoting the improvement of individual schools, and the education system as a whole.

An office for standards and quality in education

A **state** wishing to introduce a system of independent school inspections must first establish a non-ministerial department that is **independent** of the Ministry of Education and reports directly to Parliament.

It must be **Parliament** that appoints the Chief Inspector of Schools who will be directly and indirectly responsible for evaluating and reporting on the work of the Ministry of Education. The Chief Inspector of Schools must therefore be **independent**, and be seen to be independent, of the Minister of Education.

In a process of open and transparent negotiation, the Chief Inspector of Schools will be responsible for:

- the development of a national framework for the inspection of schools;
- the appointment of a team of highly qualified and experienced inspectors;

- the development of a comprehensive training programme to ensure that the inspectors are properly equipped to fulfil the role; and
- establish internal procedures to ensure the quality of any published reports.

An office for standards and quality in education will carry out inspections and regulatory visits throughout the state and publish the results online. Their goal must be to achieve excellence in education and skills for learners of all ages and it will be responsible for:

- inspecting maintained schools, some independent schools, and many other educational institutions;
- publishing reports of their findings so they can be used to improve the overall quality of education and training; and
- reporting to Parliament on the effectiveness of these services.

Consequences

The inspection process provides and evaluation of:

- the overall effectiveness of the school - the quality of education and the standards achieved by the students;
- the effectiveness of leadership and management;
- the quality of teaching, learning and assessment;
- the students' personal development, behavior and welfare; and
- the outcomes for the students - examination results, diploma scores and participation in the next stage of education.

The inspection process may give rise to satisfaction with a job well done or key issues for improvement.

The Leadership Team must, therefore, make sure that all members of staff know what to expect and are confident that they are properly prepared for the inspection.

The Leadership Team and the Governors:

- must be familiar with the role and function of school inspections and the content of the national framework for the inspection of schools;
- must be secure in their role and confident that they can manage the process of inspection; working with the inspection team; and
- must be sure of their role in receiving the report and preparing an Action Plan to address any serious issues raised in the report.

A Framework for the Evaluation of National Education Systems

The General Theory of Education can be adapted to form:

1. a Framework for the Evaluation of National Education Systems; and
2. Guidance Notes to accompany the Framework.

This Framework should then be of interest, for example, to:

- parliamentary select committees;
- the ministry of education (or its equivalent); or
- the ministry of finance;

who might decide to undertake an internal self-evaluation of the national education system;

- the office for standards in education;
- non-governmental organisations; and
- independent contract research organisations;

who might be contracted by the ministry of finance, for example, to undertake an external evaluation or might conduct their own independent evaluation of the national education system; or

- university departments of education;
- a national college for school leadership;
- school principals; or
- teachers' professional organisations;

who might use the Framework in their professional qualifications or in-service programmes.

The Framework and Guidance Notes will not be exhaustive; users will need their own development programme in order that they can interpret grade descriptors in relation to aspects of the education system they are evaluating.

Key Judgements

Key judgements must be made in the following areas:

- the overall effectiveness of the education system
- the extent to which the system is characterised by subsidiarity
- the extent to which leadership clearly focussed on
  - improving the quality of education, and
  - raising standards of achievement?
- the breadth and balance of the curriculum, the extent to which it provides students with increasing choice as they mature?
- the qualifications, experience of the teachers and their depth of knowledge of the subjects that they teach?
- the system of assessment and accreditation, the extent to which it provides reliable and valid information about the students' knowledge, skills and understanding?
- the national system of inspection, does it that provide an external evaluation of
  - the quality of education provided, and
  - the standards achieved by the students?

Overall effectiveness

The judgement of the overall effectiveness of the education system is derived from the extent to which the system meets the criteria below.

Subsidiarity

For those functions that require a national perspective, the following non-ministerial departments have been established that are not subject to direct political influence:

- an office for qualifications, curriculum and assessment;
- an office for standards in education;
- a national college for school leadership;
- a standing committee on teachers' pay and conditions;
- a standing committee on teaching standards; and
- a working party on management information systems.

The local management of schools and local financial management

- there is a legal framework for the establishment of governing bodies; and
- there is a scheme of delegation that specifies the legal responsibilities of governing bodies.

Leadership and Management

A national college for school leadership has established:

- a national professional qualification for headteachers that is requirement for all experienced teachers applying for a post as headteacher;
- an induction programme for all newly appointed headteacher facilitated by consultant headteachers; and
- a training programme for experienced headteachers to enable them to become consultant headteachers.

The Curriculum

An office for qualifications, curriculum and assessment has

- established a curriculum framework that provides students with greater choice in the subjects they study as they mature;
- specified the knowledge, skills and understanding required in every subject in terms their purpose, aims and objectives, overarching themes and detailed content; and
- left opportunity for the teachers to plan in detail how they are going to organize the content and the teaching of their subject.

Teachers and Teaching

The standing committee on teachers' pay and conditions has specified in detail the national standards which govern the conditions under which teachers are employed their remuneration.

The standing committee on teaching standards has specified the professional standards that are expected of every teacher.

Assessment and Accreditation

An office for qualifications, curriculum and assessment has ensured that national examinations:

- accredit the knowledge, skills and understanding of the students in all the subjects that they study
- allow students to be awarded a diploma, degree or qualification that
  – acknowledges the standard that they have reached; and
  – functions as the entry requirements for the next stage in education.

An office for qualifications, curriculum and assessment has ensured that the specification for any management information system permits the analysis of student performance at student, school, local and national level that provides reliable and valid information about:

- the quality of education; and
- the standards of achievement of the students.

Monitoring and Evaluation

A chief inspector of schools has been appointed who is independent of the ministry of education and reports direct to parliament.

The office for standards in education has:

- established a framework for the inspection of schools;
- appointed a team of highly qualified and experienced inspectors;

- developed a training programme that ensures that inspectors are properly equipped to fulfil their role; and
- established internal procedures to ensure the quality of published reports.

The office for standards in education is fit for purpose and provides an independent evaluation of the effectiveness of individual schools and what they should do to improve.

The following four-point scale should be used to make all judgements:
- Grade 1 – Outstanding
- Grade 2 – Good
- Grade 3 – Requires improvement
- Grade 4 – Inadequate

Table 6 provides examples of criterion referenced judgements that should be used in evaluating the education system. This is only to exemplify the process, it would be more comprehensively addressed in the Guidance Notes.

Table 6. Examples of Criterion Referenced Judgements

	Grade 1: Outstanding	Grade 2: Good	Grade 3: Requires improvement	Grade 4: Inadequate
Overall Effectiveness	The recent re-organisation of school places has significantly improved efficiency and effectiveness.	Secondary school places will be re-organised to ensure breadth and balance in the curriculum.	National government is aware of falling roles, but does not provide a capital programme to address to issue.	The significant problem of falling roles has not been addressed. The system is inefficient and ineffective.
Subsidiarity	Long established governing bodies are successfully providing support and challenge to leadership teams.	The recently published scheme of delegation has clearly defined governors' roles and responsibilities.	Without a published scheme of delegation, school governors are not clear of their roles and responsibilities.	The education system operates as a top-down command economy. Headteachers are only administrators.
Leadership and Management	There is a long established college of school leadership, that it responsible for all leadership training.	The national college has developed a professional qualification that will be a national requirement.	The in-service programme for school leaders is organised by the teacher unions, not a national college.	Here is no professional qualification for headteachers and no in-service training and development.
The Curriculum	The curriculum is organised so that students have increasing choice and in what they study.	There is a non-departmental agency for qualifications, curriculum and assessment.	Older students follow pathways determined by the ministry with little or no choice within the pathways	There is a unified curriculum determined by the ministry of education for all students.
Teachers and Teaching	There is an upper pay scale for classroom teachers; access to which depends on exceptional teaching.	Classroom observation is the responsibility of school leaders and forms one basis for school improvement.	There are national standards in place for teachers, but no system of classroom observation.	There are no nationally agreed conditions of service and no national standards for teachers.
Assessment and Accreditation	There is a high level MIS that analyses the standards achieved and the progress made by the students.	The assessment of knowledge, skills and understanding is derived from external examinations.	Given the lack of any national systems some schools set up internal processes to improve reliability and validity.	The accreditation of the standards reached by the students depends on un-moderated teacher assessment.
Monitoring and Evaluation	The chief inspector is independent of the ministry; there is framework for the inspections of schools.	The framework for inspection is in place and the programme for training inspectors is in place.	Inspection is the responsibility of the ministry and only focusses on compliance.	There is no framework for the inspections of school and no chief inspector independent of the ministry.

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