



## INTRODUCTION TO GENERAL CONCEPTS OF TIMETABLING

### Notes and Activities for the Beginner Timetabler: Part 1

#### Resource Series: Effective Timetable Planning in Schools: User Manual

**This resource should be used together with:**

- [Timetable Inputs : Notes and Activities for the Beginner Timetabler: Part 2](#)
- [Developing the Timetable : Notes and Activities for the Beginner Timetabler: Part 3](#)

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Now adapted for the Thutong Education Portal by DEVED Trust.

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# CONTENTS

Topic	Page
1. <a href="#">Foreword</a>	3
2. <a href="#">Introduction</a>	4
3. <a href="#">Intended Outcomes</a>	5
4. <a href="#">Principles of Time &amp; Resource Management</a>	6
4.1 <a href="#">Where to start</a>	
4.2 <a href="#">Macro Planning</a>	8
➤ Activity 1	
➤ Activity 2	
5. <a href="#">Positive School Conditions and Environment for Timetabling</a>	11
➤ Activity 3	
6. <a href="#">Obstacles to Effective Timetabling</a> : Conditions that can Prevent Progress	14
7. <a href="#">Co-operative Planning Techniques</a>	16
8. <a href="#">Functioning &amp; Non-Functioning Schools</a>	18
9. <a href="#">Conclusion</a>	20

## 1. FOREWORD

The technological age in which we live has simplified many day to day functions previously considered time-consuming. An example of this is internet banking. We can do our banking transactions from the comfort of our homes; no racing to the bank to get in before closing time, no long queues. It's not surprising; therefore, that technology has also caught up with school timetabling. There are now a host of computerised school timetabling programmes on the market. A visit to a few schools, particularly urban schools, will inform you of the number and variety of such programmes.

Despite timetabling being computerised, there's still manual planning that has to be done before information can be fed into the computer to compute the school timetable. Bear in mind also that there are still many of our rural schools that don't have electricity, let alone a computer. This is where this step-by step series of Timetabling for the Beginner can be useful.

Knowledge is empowering. Therefore, we invite principals, educators, lecturers and students at Education Training Colleges, interested parents and other stakeholders keen to see a revival of education ethics in our schools, to become part of the process of Timetabling for the Beginner.

## 2. INTRODUCTION

**“Curriculum is only words on paper until activated through the Timetabling process”<sup>1</sup>**

**“The timetable is the facilitator of the learning process - the overriding medium through which instructional goals are achieved”<sup>2</sup>**

CHAOS or CALM? WORKING TIME or WASTED TIME? These are two distinct scenarios that unfold in schools at the start of each new school year. Each scenario is undoubtedly a reflection on the management/leadership of the school. Each scenario will also, undoubtedly, contribute negatively or positively towards creating the atmosphere for the culture of learning to thrive or die at the school. The ability to manage Time and Resources would have contributed significantly to the situation in each case.

CHAOS? Yes! In schools that after four weeks of the first term opening, learners are still wandering around in and out of the school grounds. Yes! In schools where a small group of educators is making a last ditch attempt to complete the timetable while the rest of the educators lounge about feeling quite relaxed that it's not their fault they're not teaching.

CALM? Yes! In schools that are well organised where planning and foresight has resulted in timetables being completed in November of the previous year. Yes! In schools where the commitment to the culture of teaching and learning has embedded itself in the majority of educators and produced a “kick-off” schedule from day one.

It's our belief that by reading this manual more educators will be willing, and feel confident enough, to get involved in the process of timetabling at their schools.

### 3. INTENDED OUTCOMES

- To encourage beginner timetablers to take up the challenge of becoming involved in the processes of good school administration and management
- To understand the importance of implementing Macro Planning
- To be able to identify factors that impact on the school timetable and to work at finding viable solutions
- To understand the importance of co-operative planning and implement it when timetable planning occurs

## 4. PRINCIPLES OF TIME AND RESOURCE MANAGEMENT

### 4.1 WHERE TO START?

The point of reference within which timetabling occurs is the National Department of Education Policy. Timetablers should be aware of, and adhere to the policies and procedures of the National Department of Education. The subject offerings made by different schools will have been guided by the policy of the National Department of Education.

To answer the question, "Where do I start learning about timetabling?" the clichéd response is, "At the beginning". "At the beginning", in this instance, interprets into having a good understanding of time management; what timetabling means; what timetabling is about; what the time and the resources of timetabling are.

**TIME:** what 'time' is it that's referred to here?

**RESOURCES:** who/what are the resources?

**TIME**, educationally speaking, has reference to what educators accomplish on two levels:

1. In the formal teaching time of 35 hours per school week as stated in the National Education Policy Act, (1996)
2. In the contact teaching time of:
  - 2.1 22 hours 30 minutes for Grade R, Grades 1 and 2
  - 2.2 25 hours for Grade 3
  - 2.3 26 hours 30 minutes for Grades 4, 5, 6 and 7

- 
- 2.4 27 hours 30 minutes for Grades 8, 9 and the Senior certificate programme
- 2.5 29 hours 30 minutes for the new FETC (General)

Time is about minutes, hours, lost minutes or hours, sharing minutes or hours with others in a time-efficient way; it's about how to use wisely the 1440 minutes given to each of us in each 24 hour day.

How effectively this time is broken down in a school into periods, days, cycles, and how efficiently it's utilized brings us to the core of TIME MANAGEMENT.

RESOURCES. Human resources, the most valued, are the educators: permanent and temporary, remedial educators, volunteer educators, substitute educators, therapists. Other resources include specialist teaching rooms, general classrooms, laboratories, libraries/media centres, arts & crafts rooms, workshops for technical subjects, Home Economic centres, computer rooms, OHPs, TV sets, videos, screens and other items used as aids to teaching.

How effectively, in particular, the **human resources** in the school are distributed within the allotted time is core to Time and Human Resource Management.

## 4.2 MACRO PLANNING

To have a good understanding of what 'Time' means and what 'Resources' means is important, but the school timetable isn't dictated to only by these. There's a bigger picture; there'll always be a number of variables that impact on the school timetable.

All the possible variables have to be examined when still at the planning stage. The following diagram explores the variables at the macro planning stage:

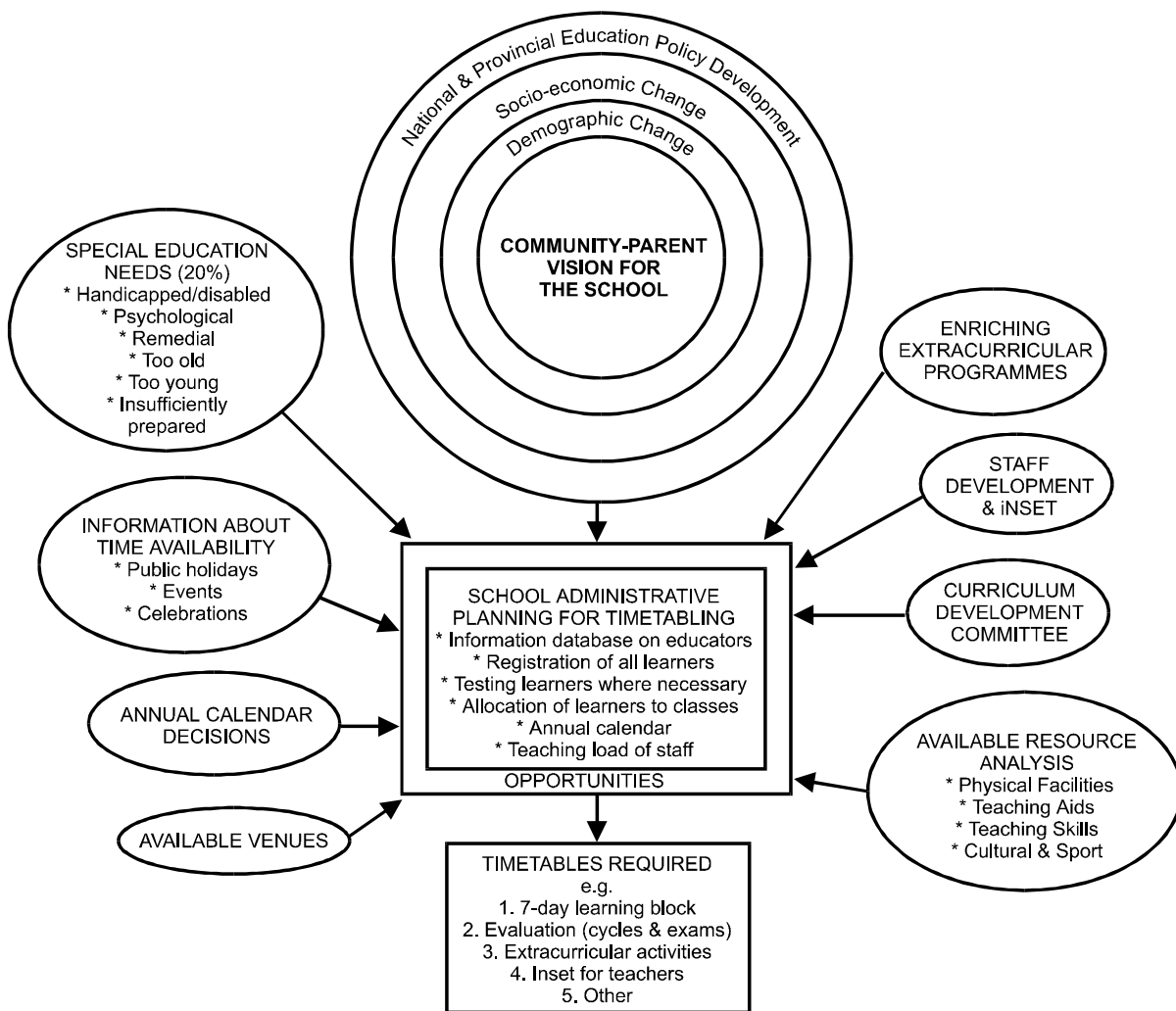


FIGURE 1: PROCESSES IMPACTING ON PLANNING EFFECTIVE TIMETABLES



Figure 1 concludes that by the end of the planning stage impacting variables have been narrowed down to identified needs. These needs will be translated into “a programme of time design bringing learners, educators, curriculum, evaluation, extra curricula, inset for teachers, materials and space into a systematic arrangement for the purpose of creating an optimal learning climate”<sup>3</sup>

## ACTIVITY 1

1.1 **The Aim** of the activity is to inculcate the need for macro planning when school timetabling is done.

1.2 Consider the area and the community your school services. What factors will impact on your timetable? Discuss in groups, record your findings and report back

1.3 Suggested Time Allocation:

Group Discussion:	20 minutes
Plenary:	3 minutes per group (e.g. 5 groups x 3 min = 15 min)
Total Time:	35 minutes

## ACTIVITY 2

2.1 **The Aim** of the activity is to foster the idea of collective working towards viable solutions to common problems

2.2 Imagine that your school is on a mine and the learners have to be bussed in and out at scheduled times each day. Sport is an extracurricular activity, but cannot be done

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after hours due to the transport schedule. Explore, and discuss, in your groups, a practical timetabling solution to this.

### 2.3 Suggested Time Allocation:

Group Discussion:	30 minutes
Plenary:	3 minutes per group (e.g. 5 groups × 3 min = 15 min)
Total Time:	45 minutes

## 5 POSITIVE SCHOOL CONDITIONS AND ENVIRONMENT FOR TIMETABLING

This section discusses conditions necessary at a school to facilitate a positive environment for timetabling.



Figure 2 lists some of the ingredients necessary to create a positive environment for timetabling

Harnessing the power of ideas contributed by all members of the staff can go a long way to creating the positive environment necessary to develop a meaningful timetable. As Head

of the school, the principal should invite educators to become part of the process of timetabling. Many schools, particularly primary schools, state that their processes are consultative, involving all staff members. This process leaves educators satisfied that their input has been recognised, their grievances voiced and addressed, and all staff work towards an agreed end.

Yet other schools stated that they had Timetabling Committees responsible for this task. Where Timetable Committees do exist certain criteria should be established to ensure that the composition of the committee reflects the ethos of the school.

<b>WHAT CRITERIA COULD BE USED TO SELECT A TIMETABLING COMMITTEE?</b>	
<b>LOOK AT THE FOLLOWING:</b>	
<b>PERSON</b>	<b>QUALITIES</b>
<b>1</b>	<b>A person in management, preferably the principal, who can make decisions on behalf of the school</b>
<b>2</b>	<b>A person who will look at the needs of the school and give input to meet these needs</b>
<b>3</b>	<b>A person who knows the availability of physical resources of the school</b>
<b>4</b>	<b>A person who has an understanding of figures/numbers/ mathematics</b>
<b>5</b>	<b>A person who is a negotiator in order to negotiate allocations with staff</b>
<b>6</b>	<b>A person who has staying power and commitment to the completion of any given task</b>

National Policy norms regarding educator provisioning play a key role in contributing to the positive environment for timetabling. Educator provisioning has a direct impact on school timetabling, learners, class sizes and teaching workloads. Schools sometimes find that

they carry one or more educators too short or one or more educators in excess. Either way this situation isn't conducive to creating a positive environment for timetabling.

### ACTIVITY 3

3.1 **The Aim** of the activity is to explore your ability to select a timetabling committee that should reflect the ethos of your school

3.2 Use the grid below to enter the names of educators and to complete the required information for each column.

NAME	THINGS GOOD AT	INTERESTS & HOBBIES

The activity forces one to focus on person's strengths. With a list like this it is easier to identify the best person for the task.

3.3 Suggested Time Allocation:

Exercise: 45 minutes

## 6 OBSTACLES TO EFFECTIVE TIMETABLING: CONDITIONS THAT CAN PREVENT PROGRESS

The word "obstacle(s)" is described in the *Concise Oxford Dictionary* as "a person or thing that obstructs progress", and in the world of timetabling there're many of these.

### PERSONS AS OBSTACLES

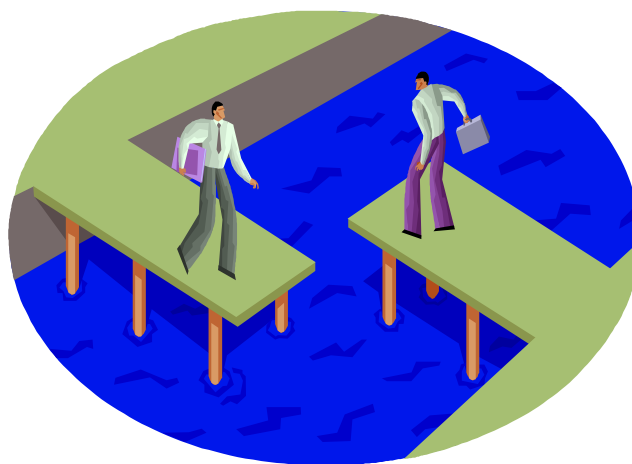
1. The composition of the timetabling committee: it's a sad indictment, but nevertheless, a true indictment, that many an educator on this committee approaches the task of timetabling with hidden agendas. Their preferences/pleasures supercede the needs of the school. An example of preferences could be mathematics teachers claiming priority for teaching times; usually early in the day, definitely not after a strenuous physical education lesson.
2. Lack of consultation by Timetabling Committee: the following scenario should graphically explain this:

An educator at a specific high school was tasked with running the school tuckshop, which she willingly accepted. However, when she was presented with her timetable she found that all her periods before first break (when she would need time to set up the tuckshop) were filled, and with her matric classes.

This school ended up without the extra income from the tuck shop.

Clearly, the lack of consideration, co-operation and consensual planning became evident.

3. Fragmentation within schools: a school that has three or four staffrooms whether as a result of cultural differences, racial differences, party political differences, teacher union membership or personality clashes. At breaks, and at lunch, staff fragments into their particular lobbying cell. Each group pulls in a different direction. There's little dialogue between members of staff.



## THINGS AS OBSTACLES

1. The Lack of Basic Facilities: by facility is meant the space or building required for any meaningful teaching to take place. Other basic needs include electricity, proper toilet facilities, and instruction areas for specialised subjects, e. g Science subjects. All these factors have time and space management implications and affect the timetabling process. Imagine planning a Home Economics cooking lesson in a school with no electricity and no reticulated water!

2. **The Lack of Basic Resources:** by resources is meant the support material that could help in the teaching and learning process; such as books, charts, science equipment, globes, OHPs, and so on.

## 7 CO-OPERATIVE PLANNING TECHNIQUES

The saying, "the strength of a team is greater than the sum of its parts" is particularly pertinent to co-operative planning. The very word 'co-operate' means team work. An open invitation should stand so that all educators who wish to learn about the processes of timetabling are welcomed. Even today, in too many schools, timetabling is still in the hands of a select few. In some instances they are jokingly referred to as, "The Mafia".

Teams must have a shared vision and there should be a spirit of confident purpose driving the process of timetabling at schools.





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## WHAT ARE SOME OF THE TECHNIQUES USEFUL TO CO-OPERATIVE PLANNING?

### 1. INFORMATION GATHERING:

This is the "Information Age". Never before has there been so much information about so many topics available to so many people. Educators have to make choices. What information is relevant and suitable to them as professional practitioners? The ability to be selective, to be able to collect, sort and select the core information needed to progress in the timetabling process is a technique that needs to be developed.

### 2. INFORMATION SHARING:

Some information is common to all; some information is only immediately available to a few. We have to learn to share and communicate this information so that others can have the opportunity of being informed. The information should also be made accessible; easily available, easy to read, easy to understand and easy to pass on to others. It also implies another vitally important skill - the skill of effective networking. It's impossible to hold all the information oneself. Educators need to be good 'networkers': educators are essentially facilitators or brokers of information regarding their discipline. They must know how, where, and when to find information through their network of contacts.

### 3. SYSTEMS IN USE:

A system is a method of filing or storing information of a particular type in an orderly manner. People use a number of different systems as they are involved with different types of information.

An educator may require different systems to keep track of:

- When the individual is teaching (effective timetabling system)

- Whom the individual is teaching (effective administrative system)
- What the individual is teaching (effective learning area/subject teaching preparation system)
- How learners are progressing (effective evaluation /recording system)

So too, should all educators, or those on the Timetabling Committee, be knowledgeable about the system of timetabling decided on by the school.

## 8 FUNCTIONING & NON-FUNCTIONING SCHOOLS

The two extracts below come from an article written by Servaas van der Berg, economics professor at Stellenbosch University and published in the Sunday Times, 4 July 2004:

*"If teachers don't know their subject, ... or operate in a school so badly run that nobody knows where they are supposed to be or to whom they are responsible, ..."*

and

*"The school principal is the single most powerful factor determining how well a school functions, especially now that there is no longer an effective system of inspectors. In fact, without inspectors, principals have almost unchecked power - for good or ill. This is especially true for schools where parents' committees are weak."*

These extracts tie in nicely with what we term Functioning & Non-Functioning schools. They're also statements of situations which we hope the introduction of the Integrated

Quality Management System (IQMS) informed by Schedule 1 of the Employment of Educators Act, No. 76 of 1998 will be able to address.

We'd like you to read through the five scenarios below and assess how your school is functioning. If your school is weak in one of the five, then prepare a basic effective timetable:

Put a cross in the appropriate box		Scenario	Outcome
<input type="checkbox"/> YES	<input type="checkbox"/> NO	Is every learner allocated to an educator every period, every day, for the complete timetable?	If there are any individual learners or classes of learners not allocated - they have free, unsupervised periods - you have a problem with your timetabling
<input type="checkbox"/> YES	<input type="checkbox"/> NO	Is the teaching load fair for every member of staff? Where subject teaching predominates, is there an equitable period distribution among all educators?	If these ground rules do not exist in your school, teaching loads should be re-negotiated and a new timetable constructed.
<input type="checkbox"/> YES	<input type="checkbox"/> NO	Do subject educators have to prepare two, or at the most, three different lessons per day?	If any subject educators have four or more different, in-depth subject lessons to prepare a day, they usually do not prepare any thoroughly. Trimming the number of preparations per day to three or less and re-timetabling could help.
<input type="checkbox"/> YES	<input type="checkbox"/> NO	Does the learning and teaching day extend for the required number of hours so that the required minimum number of class teaching hours is fulfilled every week?	If teaching starts late on Monday mornings because of the weekend and/or school closes early on Wednesdays because it is Sports Day, and/or teaching stops early on Fridays in anticipation of the weekend it is unlikely that a culture of learning will be established at the school.
<input type="checkbox"/> YES	<input type="checkbox"/> NO	If classes move to other classrooms for the next period, do learners take more than 4 minutes, or do educators take more than 3 minutes to move to the next class?	If learners or educators take more than 5 minutes to change classrooms, there is a problem. (5 minutes x 10 periods = 50 minutes of lost time per day, 4 hours 10 minutes lost time per week, and over 145 hours of lost time in a year of 35 teaching weeks per teacher!)

If one of these circumstances applies to your school, consider the facts required to ensure a more effective basic timetable which are discussed in Part 2.

## 9 CONCLUSION

Have you made notes of the first steps towards timetabling? A quick review of these is:

- Have a good, clear understanding of what time and resources, central to timetabling, are
- Have a full picture of all the variables that can impact on the school timetable
- Have possible solutions on hand to resolve these variables
- Harness the ideas of all members of staff to create a sense of inclusiveness
- Elect Timetabling Committee members who match the suggested criteria
- Adhere to the principle of co-operative planning
- Observe whether your school falls into Functioning or Non- Functioning category