

## Why the School Timetabler should use a Computer Program to help construct the School Timetable?

There are a number of ways that the Timetabler has traditionally used to help them to construct the school timetable. These include paper and pencil, magnetic board, peg-board, paper and pins. There are Timetablers today who still use these methods but do not use available software to help them with the task. There are some Timetablers who will construct the timetable without using a computer and then have to spend time inputting the timetable into their Management Information System (MIS), thus taking longer to do the task.

One of the main reasons for using computer software to complete the task is the amount of time it can save. When using purely manual methods the task that takes the most time is checking that you have not put a clash into the timetable. None of the methods mentioned earlier have an automatic mechanism for checking that you have not used a teacher for two different activities at the same time, or for ensuring that you have not used a part-time teacher in their Blank time. Both of these issues are dealt with automatically by software and thus the Timetabler can think about solving the problems rather than checking information.

Using software has other advantages as well, if you tell the program some information it will not forget it. You can lock items in place on the timetable so that you cannot forget that they must be at that time. You can also set up rules to help you with timetabling, a good example being the One-per-day rule, where you don't want a class to be taught the same subject more than once in a day. Often when trying to complete the timetable, teachers get allocated to extra classes, on the computer this information is tracked so you can check that you have not given any teacher too high a teaching load. You should also be able to allocate other resources to classes to prevent overuse of them at any time. As you can see all of these are things that would have to be checked manually if you do not use a Timetable program, or if you do not use all the functions of one.

Using software also gives more versatility to the Timetabler. If they are using a peg-board then they have to do timetabling where the peg-board is. Specialised software can be loaded onto a laptop and the Timetabler can work anywhere. Also more than one person can work at finding a solution to a problem at the same time, moving items on their computer without affecting a colleague also trying to solve the same problem. The data can also be backed up so that if the original is lost or a mistake is made, the Timetabler can go back in time to recover a correct version. As the process of timetabling is underway, it should be easy for the Timetabler to print out information for Heads of Faculty to update them on progress.

One very useful function that software has is to show that either there is nothing that will fit into a particular period (in which case there is a problem to solve before continuing) or there is only one item that will fit into a particular place. This is a massive time saver in that it helps the Timetabler to address problems before they occur. It is also easy to find out which teachers are available at a particular time, or what a teacher is doing if you are looking to use them. The Timetabler can also try a solution and if it does not work then they can go back to a previously saved version.

Using software can also help to share information with other colleagues. Software should be able to show the curriculum diagram for each year, with class size information also available. This is useful in that you can check that each year has a full allocation of lessons. You should also be able to indicate which subjects a teacher can teach and how

many periods they should be teaching in total. This information can then be used for the staffing analysis to inform on recruitment. Many schools currently do this as a separate exercise in a spreadsheet, which means in order to fully use their software they are inputting the same data into two different programs. The advantage of only using the Timetable program is that when you have put the data in for analysis purposes you have also put it in to help with allocation of resources to classes and for scheduling lessons. When the timetable is finished it can be printed immediately for colleagues. Once the timetable is finished it is then easy to make minor changes or even quite major changes without having to redo the whole timetable.

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## Why doesn't the Timetabler use the available software?

I think the main reason is that Timetablers do not want to lose control and often feel that the software will do things they do not want it to do. This is partly because the programs have auto-schedule routines, but they do not need to be used. The Timetabler can use any program as they would their manual system and schedule one class or block at a time. There is also the understanding of how to set up and use the software that can cause problems if it is not done correctly, and people feel that they want to be working on the timetable not on how to get the computer to do what they want it to do. The answer here is to get advice on how to set up the system to allow as much flexibility as possible, when I started using a computer I simply used it to let me know which teachers were in use or available and then progressed through the years using more of the features.

- The computer will do something I don't want it to
  - the Timetabler can maintain total control if they only do manual scheduling
- I want to see the whole picture
  - this is one issue that is not really addressed as the view is limited by the size of the computer screen, but you can print out the timetable as you go along

Other colleagues are suspicious of computers; they need to be assured that the Timetabler is still in control and not being driven by the software. There is frustration that some things can prove difficult to do on the computer that should be simple, the answer here is that these are rare and the time saved elsewhere outweighs any time used on these issues.

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## How much time could be saved?

Traditionally Timetablers have taken about half a term to complete the school timetable. I have generally advised that once I have all the necessary information it should take about 2 weeks to create a timetable. I have once created a Secondary 11-18 school timetable in 48 hours once I had the information using Nova-T6. When manually timetabling, I thought I had found a solution to one issue only to be advised 2 days later by a colleague that it was not possible because of another issue that could have been locked if we had been using a computer.

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## Warning

Just because you have used a computer does not mean there are no mistakes. If the user has not told the computer then the computer does not know.