



Word vs. LaTeX

Writing longer scientific documents requires more from the text processing software than common writing tasks. For us scientists its worth thinking about which piece of software will give us the best results in the least amount of time. Speed usually comes with routine, in most cases that would be *Microsoft Word*. But in some cases it might actually save us time and produce better text documents if we use *LaTeX*, even if you still have to learn. The table below may help you to make a decision which piece of software is most appropriate for your task at hand.

Comparison of Word and Latex

	MS Word	LaTeX
area		
speed small docs	★★★ The strength of Word is in writing short, relatively simple documents, since you immediately see how what you wrote looks like (WYSIWYG).	★★★ Writing raw LaTeX is somewhat slower, because you first write the contents only and then you generate an output file with layout in a separate step. LyX is an exception here.
speed big docs w graphics	★★★ Word becomes slow when handling either very large texts or texts with large graphics. The sporadic (automatic) saves and type setting processes will force writing breaks while you are waiting for the programme to complete its task.	★★★ Here LaTeX is faster because you write down only the contents and software wastes no time thinking about layout. The separate type setting steps are only done at the end, which saves you time.
ease of use	★★★ Basic Word features are very easy to use and everybody can produce a simple document with reasonable layout. Using advanced features like automatic numbering, links, and citations require a comparable learning time to LaTeX.	★★★ You will have to initially invest some hours to learn LaTeX without being able to immediately produce text. Depending on how you write LaTeX, you may need to learn some simple commandos, like <code>\cite{}</code> , but you will only need a few. Ultimately, you will be faster typing than clicking through Word icons and menus.
layout quality	★★★ Word type setting quality is ok for most purposes but its far from professional. Plus, you will only be able to reach good quality if you know Word well, which is not the case for the average users. Details	★★★ LaTeX, on the other hand, provides you with professional layout out of the box. If you want to get into the nitty gritty, you can adapt the default to your own taste but the standard is already very high without any

		customisations.
scientific features	☆☆☆ Here the main shortcoming is that Word does not include a citation utility. You will need to purchase additional software to fill the gap. Bibliography programmes come with their own price, learning curve, and disadvantages. Esp. Endnote on the Mac is poor despite being widespread.	☆☆☆ Since LaTeX is open source many generations of scientists have written the extensions they needed. You will be able to find all commonly and most rarely used features. References are handled by BibTeX and a database front end like BiBDesk but unlike in Word integration is seamless and the extensions are free.
price + availability	☆☆☆ This is obvious. You have to pay for Word and Referencing software. Your lab may do this for you, but how do you know the next one will and you won't end up with an Endnote database and the next place only uses Reference Manager forcing you to convert or pay up yourself.	☆☆☆ LaTeX is free of charge. So are most text editors, like TeXShop , and citation managers, like BiBDesk . Therefore, you can rest assured that you will have access to the software and won't experience lock-in typical for commercial software.
compatibility	☆☆☆ MS Word developers make almost no effort to facilitate exchange with foreign programmes. You may not experience that, because Word is so widespread. But even between flavours of Word there are compatibility problems, e.g. WinWord vs. MacWord or latest version to older version.	☆☆☆ This is not the case with LaTeX. The main output format is PDF, which is the same over all OSs. LaTeX editors exist for all types of systems and are highly compatible. You will also see that many programmes allow import and export. BibDesk can read Endnote, for example, but not the other way round. Still, the PDF is not editable and your collaborator might not know LaTeX.
total	13 out of 21	18 out of 21

Conclusions

Bottom line: If you need to write a *short* letter, a cover page, or a report to the administration, who thinks LaTeX is something kinky, you are best of writing in *Word*. For simple documents, you don't need fancy layout. So, you can save time by writing with a WYSIWYG editor like Word. If you are writing a *long document* like a master/PhD thesis, an article, or a review, you are better of with *LaTeX*. If you have never used it before, you will have to invest some time before you can get cracking on the actual task. But with Word the you will probably need a similar amount of time at the end to get the formatting right, move figures, and iron out layout glitches. So, LaTeX on big documents will be slower at the start and faster at the end, probably overtaking Word during the last rounds since the automatic figure positioning routines, automated numbering, indexing, TOC generation will save you plenty of work. Here, it's advisable to use a template and adapt it.