Noob to Ninja:
The challenge of taking beginners' needs
into account when teaching LaTeX

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On the 26th of February this year, the first guest post "Confessions of a LaTeX Noob"[1] was posted on the LaTeX Ninja blog (`https://latex-ninja.com`). Quite unexpectedly, it seems that the article hit a nerve in the (LA)TeX community since we were showered with feedback and encouragement in the days that followed. Many long-standing experts told us, to our great surprise, that they were very interested in hearing the experiences of a less advanced user wanting to learn. Also, we were greeted by a community of (LA)TeX enthusiasts who felt genuinely sorry for the problems the LaTeX Noob had experienced and the feelings of not belonging which they had expressed. This is how it came that we were invited to contribute a similar essay to *TUGboat*. Since the roles of the LaTeX Ninja and the LaTeX Noob have turned out to work well to make our point, we decided to keep them.[2]

So today, we wanted to talk about how to take beginner's needs into account when teaching LaTeX or other "outreach" activities such as answering questions on StackOverflow, etc.

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[1] `latex-ninja.com/2019/02/26/` `guest-post-confessions-of-a-latex-noob/`

[2] For the purposes of getting in touch with us, we can be reached as our real life selves, Sarah Lang and Astrid Schmölzer. We are happy to be able to work as early career scholars at the University of Graz (Austria) in the field of the Humanities. For questions and comments directly regarding LaTeX, please contact us via `the.latex.ninja` (at) `gmail.com`.

Advanced users hardly remember how they felt starting out

While this would be quite the challenge in and of its own, we encounter the first problem ,which is that the needs of beginners become increasingly obscure to us the more advanced we ourselves become. Here, the only option is to enter in an active dialogue with those who are still at the beginning of their journey and listen very carefully and attentively for how they want to be helped and what they need help with.

Making learning failsafe by minimizing initial hurdles

Existing sources like `lshort` and the great books on learning LaTeX might already be too voluminous for a beginning user. Not everybody likes to read long documents. I love to read in general but the length of `lshort` would definitely be enough to deter me from trying to learn LaTeX, if I had to start from scratch again.

When I first started, my then-partner handed me their own template and helped with the start-up work of converting their technological citation style to a Humanities citation style. Then I used LaTeX for quite a while before ever reading up on it again. This practical introduction without a lot of background reading worked very well for me.

Tools like Overleaf can be part of this, since they allow the interested newbie to explore LaTeX without the hassle of having to install LaTeX under Windows. This point can't be stressed enough! New LaTeX users should only try a scary thing like installing LaTeX under Windows once they are already hooked. We don't want to lose them before they get started.

Problem: Existing sources are not geared towards the needs of beginning learners. Resources tend not to be very didactical. Many reference works exist, but few resources are fit for a beginner. Or don't lead the beginner very far. Or not accessible unless you are willing to do a lot of introductory reading.

Problem: Many tutorials exist, but most resources are a) lengthy, b) too detailed (partly the reason why they're too long) or c) only cover basic concepts. Information on how to learn advanced skills, or even what advanced skills in LaTeX might be, is hard to find even after thorough searches.

Leveraging the principle of the "minimum effective dose"

When I first taught some LaTeX basics to university students in an introductory Bachelor's class on annotation (mostly XML) in the Digital Humanities, I was surprised to find out that these new users were not at all afraid of LaTeX, as one is often led to believe.

I think, the "fear" or excessive respect regarding LaTeX is not due to the nature of LaTeX itself. So it must be some part of the community generating this reluctance.

From my own everyday life, I gather that it is often those who are not users of LaTeX themselves and feel bad about this alleged lack of knowledge on their part who tend to talk badly about LaTeX. Here, the standard arguments are that LaTeX is overly complex, difficult, a hassle, and nobody really needs it anyway. Since these people seem to be rather widespread, the (LA)TeX community should be more active in showing that the opposite is true. This can be done by providing easy introductory tutorials (like "Learn LaTeX in three minutes"[3]) which stress that LaTeX need not be complicated — since this is an impression many people get from extensive reference-like tutorials.

Often, people just want to know "How can I get started right now?" and not after three hours of introductory reading plus supplemental Internet research. They don't care that they were not taught all the details. They are grateful for a concise introduction. So the question of "What does one need to know to start using LaTeX" is not "What will an average user need to know in total" but rather "What is the (absolute) minimum amount of knowledge I need to have to get started".

Tim Ferriss calls this the "minimum effective dose". This is so effective and fail-safe because it requires minimal effort while at the same time limiting choices — and thus common sources of failure — to a minimum. As he explains in *The 4-Hour Chef*, he suggests employing two principles to successfully leverage the minimum effective dose (MED), "failure points" and a "margin of safety". In his case, "failure points" are a collection of reasons why people give up on cooking. Most of them revolve around too many things you need to have, know or do, as well as overall excess complexity. Assessing the "margin of safety" means "How badly can you do something and still get incredible results (relative to 'normal standards')?"

In the case of learning LaTeX this translates to: How few elements do I need to know to reap some benefits of transitioning to LaTeX? How can I reduce complexity to prevent chaos resulting from lack of experience? I usually recommend not installing LaTeX

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[3] `latex-ninja.com/2018/12/11/` `jumpstarting-learn-latex-in-3-minutes/` Not to say that the Ninja blogs are didactically perfect, they just serve as examples and starting points for the endeavour of creating a curriculum to learn LaTeX, especially for people who don't have a background in technology.

Sarah Lang and Astrid Schmölzer

on your own machine yet, to minimize the initial hurdles. When just starting out, tools like Overleaf will suffice. You don't need to have everything installed on your computer at first. Another problem is that common reference-style tutorials seldom respect didactical principles like didactical reduction, the art of hiding unnecessary detail. Hiding details is generally not something computer people approve of. But it is absolutely necessary for good teaching to hide (currently) irrelevant detail from the learner until they are ready.

Challenges and remedies

Problem: Getting help can be tricky; you don't want to look like an idiot and, especially as someone from a non-technical background, you constantly have to defend your choice to use LaTeX (to users and non-users alike). "Why would a Humanities person want to use LaTeX anyway? You don't need it and you're not up for it" are the most common insults a Humanities person might have to endure after choosing LaTeX.

My friend who agreed to play the part of the LaTeX Noob is an archaeologist and can speak from experience. She writes her thesis in LaTeX since archaeologists, while still largely narrative-based Humanists, need a lot of image evidence, and this can result in a notorious set of problems typically encountered when creating 300-page-long, image-rich documents in MS Word. So she has as much of a valid reason for wanting to use LaTeX as any mathematician. After all, LaTeX has more to offer than math mode.

She is not a new user either, but she still feels like a Noob. And not in a good way but with the connotation of being an incompetent idiot and the fear she might never escape this unpleasant state of limbo. This is, however, not due to the fact of her actually being a hopeless idiot — she is quite adept with a lot of technical and even some programming matters — but much rather due to the way newbies tend to get treated on the Internet.[4]

Problem: Noob doesn't speak "nerd talk". Tutors need to understand the people they teach. Mediators are needed between technical and non-technical people (kind of like Digital Humanists). Tech talk is not understandable to a newbie — this extends to the content as well as the way of speaking.

Problem: The constant demand to justify your choice to use LaTeX can stop newbies from asking for help. And if they don't succeed with their own experiments, they quit their experiments. It's only a matter of time until they quit LaTeX completely. Often, the "Why would you want to use LaTeX anyway?", coming from users and non-users alike, bears the tone of accusation and aggression. Often, it is the answer new users receive when they ask a question, instead of the answer to the actual question they had asked.

Problem: Confusion generated by "insider knowledge" which can be quite hard to come by (like understanding what a float does). Noobs aren't even aware there might be problems with that, and thus don't know where to find help or look when trying to locate a bug.

Problem: After they have overcome their difficulties and proudly share their code comes the next letdown, from being ridiculed for non-perfect, but still working, code which took hours to write. Not helpful. Good style is like good fashion sense: It's nice to have but a luxury not everybody can afford.

Problem: People promise to follow up on a question by sending a code example but they never do. No follow-ups, no real intention to help? These promises might leave a newbie waiting for an email which never comes. They feel: "If you just want to show me how good you are, fine. But I really wanted your help, otherwise, I would not have asked."

Problem: Then there is the issue of having to keep your debugging sessions and LaTeX problems secret from non-LaTeX-using colleagues. "Why waste your time?", they ask reproachfully. "Shouldn't you be focusing on finishing your PhD thesis?" And maybe, one day, the Noob will come to the conclusion that yes, they need to focus on their PhD. Perhaps LaTeX just wasn't for them.

An atmosphere needs to be created where new and progressing users are actively included in the community rather than seeing them as noobs who are not "real users". Nobody has to prove themselves in order to be a "valid member" of the (LA)TeX community. They just need to be passionate about (LA)TeX and if this is the case, a learning process will ensue anyway.

Problem: Often, advanced users trying to help newbies don't even see what the actual problems are. Those could be confusion about which editor to choose, what in the world a "minimal working example" or "Lorem Ipsum" might mean or how to correctly ask a question on StackOverflow. Or things that might be deemed self-evident, something way more basic than expected. If the Noobs are lucky, they find the explanations on the Internet.

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[4] We summed up and expanded the main arguments of the original blog post in the following text, trying to isolate problems and offer solutions. For the personal account of her experiences, please consult the original blog post.

A glossary of these basics might be of help, like a "TEXnical literacy 101" worksheet. It might also help raise awareness as to what the "blank slate" consists of that a new user starts out with. Not all Noobs come from the field of technology where a basic knowledge of "digital literacy" is the norm. And it is not their fault that they don't. The definition of a Digital Humanist basically is someone with knowledge of the technical and Humanities' worlds simultaneously who can act as an interpreter. A technician might need a mediator in order to communicate effectively with completely non-technical folk.

Being tutored is a lot like women in relationships. Often, you just want to be heard and feel seen. Getting a ready-made solution is not what's wanted. It's more about being acknowledged with and validated in your needs and problems. For LATEX Noobs this might translate to feeling that your struggle is okay and valid and being reassured that you can do it and that people are there to help. A newbie does not expect you to do the work for them (at least most newbies don't), but rather that you will enable them to find their own way. And that you are okay with whatever way works for them, even though this might not be the way you would choose yourself.

Let's help Noobs to help themselves rather than lecture them on what's good for them without explaining why. They want to know the facts so they can decide for themselves.

Ways to rise to the challenge — A manifesto

1. Be nice to new users.

Don't tolerate other people's bad behaviour towards Noobs. Noob should not be a curse word anymore. This is also why we kept the name for the persona in the blog. Noob just means newbie and we don't see anything wrong with that. If anything, the (LA)TEX community is enriched by every new user, no matter how little knowledge they might have. To the contrary, we invite all to step forward and ask for help. Starting to learn a new skill is a great new opportunity and we would like to see many more new users becoming confident in their LATEX skills. Let's actively discourage fellow commentators when they are being rude. They might not realize this since Internet communities often encourage rough behaviour among "nerds". But your silence will make the newbie feel like everyone thinks that way. Speaking up is all that's needed to at least minimize bad experiences like the ones from the "Confessions of a LATEX Noob" post.

2. Create tutorials according to the real-life use case of the new user.

Rather than offering tons of (probably irrelevant) information in a reference to the newbie who is not yet at the stage where they can make effective use of references, offer tutorials which explain something they might want to do. Like "minimal skills to write a Humanities' seminar paper" which can be learned in 10 minutes. The newbie might be ready to create their first document and do some basic things. But they most certainly are not yet at the point where they can write up a whole workflow according to their needs. This is fine if they have no special needs. But most users probably actively turn away from WYSIWYG editors like Word precisely because they have a special need they hope transitioning to LATEX will meet.

Existing tutorials often show generic snippets of how certain effects can be achieved. But it might be too much to ask of a new user to look everything up on their own and assemble it together in one document. Sadly, many common use cases, like creating (personalized) transformations from Word to LATEX, are not represented in tutorials so much. These are the skills I talk about when I ask for more teaching on Advanced LATEX. It might not seem advanced technically, but it is advanced in the way that you need to stitch a whole workflow together, plan your project and need to know where to find certain bits of information, etc. The first step from beginner to intermediate/advanced user is learning how to independently realize a project like this and create a document which matches your needs in a specialized use case.

3. Don't ask them to plunge into cold water and completely move away from their previous WYSIWYG editors.

Don't stop helping them only because they wish to also still use MS Word. They might only want to use LATEX sparingly and selectively. Even if you don't understand this, try to understand them. Help them achieve what their old tool could do in LATEX if you feel the need to convince them. Often, seasoned LATEX users who don't take part in more common ways of typesetting anymore (LATEX is, after all, still a specialist thing), don't see why a transitioning user might want their LATEX document to look like the Word output they were used to. But be tolerant: This might also be due to pressure of their own community. In the Humanities, handing in documents in `.docx` formats is practically unavoidable. Try to be understanding or else the newbie in transition might just go back to their old ways.

Sarah Lang and Astrid Schmölzer

4. Help new users in a way they want to be helped, not in the way you think they should do things.

This is probably the most crucial point people tend to misunderstand about empowerment. Trying to "forcefully lift people up from a seemingly superior way of doing things" is not empowerment.[5] Helping someone make their own choices by showing them all the options available is! Do your utmost to try to avoid coming across as arrogant and exclusive. Formulate explanations in a way to encourage questions rather than leaving people humiliated about their lack of knowing better.

When spelled out like this, it sounds a little insulting, but I feel that we often don't realize we act in those ways. Becoming aware of this will probably be enough to change the behaviour for good. It is only too easy to make a newbie feel stupid or to sound condescending over the Internet. And nobody's perfect. But it is well worth trying to make an effort. Help given should be empowering, mentor-like and not patronizing. You are talking to adults, after all (or at least, mostly). They can make their own choices.

5. Long-term: Build curriculum so new users can acquire "the LaTeX skill" more conveniently.

Decide criteria of what one should know before offering LaTeX-based services. Show new users how using LaTeX will not only prettify their documents (which, we agree, is very important, of course) but also how mastery of LaTeX can be an asset in one's CV and which kinds of services one could offer. If the community was able to offer a more systematic way of "initiation" to the community, this might encourage new users to start LaTeX.

Conclusion: Not all Noobs are made equal

If you're doing technology or maths, nobody will question your choice to use LaTeX. If you don't, everybody will. Not all Noobs are made equal. A Noob from technology already comes with the ability to understand "tech-talk", "nerd speech", basic workings of StackOverflow and the like. A Noob from the humanities does not. People from these two different fields will have completely different needs.

Resources are needed to serve as mediators, facilitating the early stages of learning for those without a technical background. Extra care for Noobs without a technical background is all the more pressing for the LaTeX community because they will probably already get discouraged from using LaTeX by basically everyone else around them. It is therefore crucial that teachers, helpers and teaching materials do their very best to encourage them. We have (pro-)actively to make up for all the unsolicited discouragement they are already receiving if we don't want to lose these new users.[6]

Offering detailed tutorials for subjects typically needed by a non-technical newbie, also explaining seemingly 'obvious' bits of information someone without a technical background might not have heard about — and coming up with a set of good reasons why LaTeX is a great tool for non-technical people as well — would be a step in the right direction. These reasons, however, should not be the same ones generally aimed to convince tech-savvy newbies ("formula support"). If we reuse the same arguments, it is likely newbies will feel that they don't apply to them.

Of course, the general reason of "superior typesetting" is a main argument for LaTeX. But it is also one likely to only be convincing to those who are already convinced of the importance of good typesetting. So this argument, while good at heart, will not convince anyone who is not already convinced. After all, learning to handle LaTeX is a lot of work for a newbie, so the reasons should be a lot more pragmatic. If we can show Humanities people how they can do their everyday tasks better using LaTeX, this would be a great improvement. Also, the more visible the LaTeX community becomes in the non-technical world, the less non-technical newbies will have to justify themselves for wanting to use LaTeX. Therefore, promote LaTeX!

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[5] Of course, this is formulated in a polemical way and I don't assume that you, dear reader, are this way. I merely wanted to stress it a little more than necessary to get the importance of the point across. Too often, we get caught up in our own opinions and forget that other people might think differently and that it is their good right to do so.

[6] Editor's note: The TUGboat editorial wish list, tug.org/TUGboat/wish.html, has long had the item: More tutorials and expository material, particularly for new users and users who aren't intending to become TeX wizards. Submissions welcome!