

---

**Learning L<sup>A</sup>T<sub>E</sub>X (and other languages) online**

Jonathan Fine

Online education is suddenly more important, from primary schools to research. This talk focuses on beginners learning L<sup>A</sup>T<sub>E</sub>X. We learn from what's already been done for other computer languages.

First I survey how to provide online L<sup>A</sup>T<sub>E</sub>X typesetting via a web browser. They are:

1. L<sup>A</sup>T<sub>E</sub>X as a cloud service
2. L<sup>A</sup>T<sub>E</sub>X running in the browser
3. MathJax running in the browser

Next, what to teach the student, and how. To learn and teach is not the same as to read and write a reference manual. It requires identifying the core concepts, and presenting them in a helpful manner and order. Students need to test their understanding, and perhaps explore, before moving on. We consider L<sup>A</sup>T<sub>E</sub>X from this point of view.

At the school level, the Raspberry Pi Foundation (RPF) is one of the leaders. They offer many projects in HTML, CSS, JavaScript and Python. They have strong connections with students and teachers. They partner with Code Club and Future Learn. They provide many free resources. They run education research seminars. And they design and produce the Raspberry Pi.

Finally, we blend the experience of the RPF with the task of learning and teaching L<sup>A</sup>T<sub>E</sub>X, and conclude with some problems, opportunities and challenges.

For more information see my website.

◇ Jonathan Fine  
United Kingdom  
[jfine2358@gmail.com](mailto:jfine2358@gmail.com)  
<https://jfine2358.github.io>