

Teachers and ICTs – time and time again

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There is a notion that teachers and technology is all about place, or rather about an absence of a *place*, demanding Information and Communication Technologies, ICTs. This paper takes the standpoint that social *time* dimensions can be equally important for understanding and designing ICTs in education.

We argue that, from the first classrooms in Sumer 3000 BC until today, ICTs was largely about decreasing information friction. This includes many recent developments as video conferencing, LMSs, simulations and hybrid solutions: Learning content is being socially processed in a designed shift of synchronous and asynchronous interactions. Time provides useful dimensions for analysis and design of ICTs in education: timescapes, time scarcity, -distribution, -pacing, -modality, etc.

We can see how the role of the teacher in education develops with ICTs through history in an interesting way, using time as perspective. Teachers have often through history reacted to educational use of new ICTs as they seemed to threaten the teaching profession. Writing was once opposed, as well as print and student notetaking. Other teachers have adopted new ICTs and the trial and error, and have sometimes come out as winners, improving teaching by redistributing time.

However, while digital ICTs are reducing information friction in a radical way and enabling many new teaching solutions as under the present pandemic, information processing is reasonably what is characteristic with *digital* ICTs. Information processing capabilities power many other sectors of society, but not much so yet in education.

Today such more characteristically *digital* ICTs are showing up; learning analytics, adaptive learning, automatic essay grading, etc. AI-powered ICTs are now offered to help teachers to manage pedagogical time, but new questions arise: about time in the profession once more and how AI can help reorganise social learning time. Pedagogical dream or nightmare?