

Extreme Learning Process XLP: Digitized Reinforcement Mechanisms for Learning Institutions”

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Abstract:

The Extreme Learning Process (XLP) is an attempt to build the digital infrastructure for educational institutions to support its collective experience at transferring and transforming knowledge.

In the last 10 years, Tsinghua has been executing a series of educational experiments that invite students and instructors from various disciplinary boundaries to co-create learning eco-systems using open-source tools and communities of practices. A number of credit-bearing courses and required orientation programs have been conducted to examine student-centric learning mechanisms with the emphasis of using digital publishing workflow (DPW). Students are asked to use a set of DPW tools to create complex engineering products, learning constitutions and operational manuals.

After conducting many XLP experiments with different age groups and disciplinary participants, we argue that this digital process can effectively assess students' learning aptitude by collecting both learning process data (formative assessment), and assess learning results (summative assessment) using existing open-source DPW tools. It also suggests that students' digital literacy, such as the ability to use Online Collaboration Tools, and knowledge management tools such as MediaWiki, is highly correlated with the quality and quantity of learning results.

The current plan is to adopt software engineering's notion of Continuous Integration/Continuous Deployment (CI/CD) to redesign the curriculum as a national standard.