

Piano Learning Aid
(Technical Report)

Moving college to the web: the push for online higher education
(STS Research Paper)

An Undergraduate Thesis Portfolio
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Bachelor of Science in Computer Engineering

by

Ian Greene

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Preface

Automation can improve access to instruction, lower costs, and support innovative instructional techniques, but it can also deprive students of personalized human guidance, be used as an opportunity to increase student-to-instructor ratios, and displace employment.

Because piano teachers are skilled professionals, piano instruction can be expensive. Automated piano instruction could provide low-cost feedback to students and enhance engagement. Digital keyboards with instructional programs deprive students of the experience of a conventional piano; arrays of lasers to guide students on conventional pianos are expensive. The research team used a myRIO embedded device with field programmable gate array to quickly process audio with pitch identification algorithms created in labVIEW. The prototype device indicates notes for students to play while correcting errors. Future researchers could adapt the device for other instruments.

Teachers, students, educational institutions, publishers, and educational technology developers compete to influence the extent and the uses of educational technology. Like-minded participants form partnerships, market products, engage in advocacy, and promote policies to advance their agendas. Technology companies and educational institutions form partnerships; students and instructors organize.

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