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Following Principles of UDL When Authoring Electronic Textbooks and Auto-Graded Assessments

Providing students with multiple means of acquiring information agrees with the principles of Universal Design for Learning (UDL). One way this can be achieved is by developing electronic textbooks in addition to standard PDF course notes or physical textbooks. We present two such electronic textbooks created for Introduction to Proofs and Linear Algebra I courses at the University of Waterloo. Developed with Mobius courseware delivery tool, these textbooks contain narrated slideshows in accessible format, interactive exercises, as well as algorithmic concept check questions with instant feedback. We also discuss how auto-graded assessments assembled from such algorithmic questions can be used in large classes so to reduce the marking load and provide students with more opportunity to practice core concepts.