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Recommendations for Authoring, Instructional Strategies and Analysis for Intelligent Tutoring Systems (ITS): Towards the Development of a Generalized Intelligent Framework for Tutoring (GIFT)

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https://gifttutoring.org/news/14

Preface

This workshop provides the AIED community with an in-depth exploration of the Army Research Laboratory's effort to develop tools, methods and standards for Intelligent Tutoring Systems (ITS) as part of their Generalized Intelligent Framework for Tutoring (GIFT) research project. GIFT is a modular, service-oriented architecture developed to address authoring, instructional strategies, and analysis constraints currently limiting the use and reuse of ITS today. Such constraints include high development costs; lack of standards; and inadequate adaptability to support tailored needs of the learner. GIFT's three primary objectives are to provide: (1) authoring tools for developing new ITS, ITS components (e.g., learner models, pedagogical models, user interfaces, sensor interfaces), tools, and methods based on authoring standards that support reuse and leverage external training environments; (2) an instructional manager that encompasses best tutoring principles, strategies, and tactics for use in ITS; and (3) an experimental testbed for analyzing the effect of ITS components, tools, and methods. GIFT is based on a learner-centric approach with the goal of improving linkages in the adaptive tutoring learning effect chain in Figure 1.

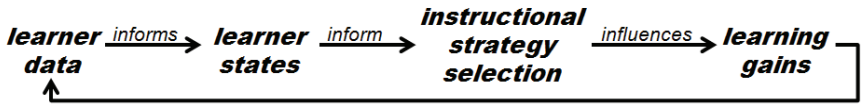

Figure 1: Adaptive Tutoring Learning Effect Chain

The goal of GIFT is to make ITS affordable, effective, usable by the masses, and provide equivalent (or better) instruction than expert human tutors in one-to-one and one-to-many educational and training domains. GIFT's modular design and standard messaging provides a largely domain-independent approach to tutoring where domain-dependent information is concentrated in the one module making most of its components, tools and methods reusable across training domains. More information about GIFT can be found at **www.GIFTtutoring.org**.

The workshop is divided into five themes: **(1)** *Fundamentals of GIFT* (includes a tutorial on GIFT and a detailed demonstration of the latest release); **(2)** *Authoring ITS using the GIFT Authoring Construct*; **(3)** *Adapting Instructional Strategies and Tactics using GIFT*; **(4)** *Analyzing Effect using GIFT*; and **(5)** *Learner Modeling*. Themes include presentations from GIFT users regarding their experiences within the respective areas and their recommendations of design enhancements for future GIFT releases. Theme 5 is dedicated to discussing the outcomes of the learner modeling advisory board meeting conducted at the University of Memphis Meeting in September 2012.

July, 2013
Robert Sottilare, Heather Holden.

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