

# Domain-Independent Support for Computer-Based Education of Argumentation Skills

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## Abstract

Argumentation is an essential skill in many aspects of life - in private as well as in business. Nevertheless, many people struggle to engage in reasonable argumentation. Classic teaching methods fail to promote argumentation skills and, hence, independent knowledge acquisition by means of argumentation. An approach to deal with this issue is the use of computer tools to scaffold the education of argumentation abilities.

This thesis evaluates the underlying concepts of computer-supported argumentation in various domains that are highly dependent on argumentation such as science, the law and ethics. Based on an extensive review of existing computer-based approaches to teach argumentation skills, successful and promising concepts are identified. In addition, potential domain-specific differences in argumentation and how existing tools deal with them are highlighted. The review is extended by the results of a survey among argumentation experts in order to get further insights into the motivation and potential problems of existing approaches.

Together, this motivates the design of a generic argumentation framework called LASAD which is capable of dealing with existing problems in computer-based argumentation teaching and research. In order to enable even inexperienced users to benefit from the framework's flexibility an authoring tool is introduced and evaluated.

Finally, this thesis provides evidence for the suitability of the general concept following a two-level approach. On the one hand, this thesis evaluates the yet unclear role of ontology and collaboration on the outcomes of computer-support argumentation by means of the framework. On the other hand, the thesis closes with a summary of external applications of the framework in research and teaching.