

# Educational Narrative-Based Environment to Teach Ethics

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**Abstract.** This paper presents AEINS, an educational system to teach ethics using the Socratic Method pedagogy [1]. AEINS is based on an architecture that marries interactive narrative and intelligent tutoring. The idea is centered around involving students in different moral dilemmas (teaching moments). AEINS provides individualized story-paths and a personalized learning process. AEINS early evaluation shows promising results.

**Keywords.** Intelligent tutoring, interactive narrative, ethics

## 1. Introduction

Ethics is an important ill-defined domain; the development of skills of participation and responsible action is a fundamental part of the citizenship curriculum. Although some computer-based educational systems has been developed in ill-defined domains, so far there has been no computer-based educational system that supports young children in developing their ethical reasoning. Existing educational systems exhibit some shortcomings, for example narrative limitations as in ELECT BILATE [2], absence of a student model as in Crystal Island [3], or the unclear effect of the learner's actions on the learning process as in Mimesis [4]. An educational system AEINS has been developed to tackle the above shortcomings.

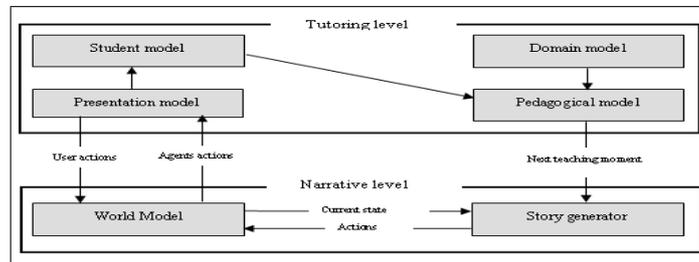
## 2. Methodology

The proposed work integrates narrative technique and intelligent tutoring that makes use of a student model to teach in the ethics domain, see *Fig.1*. The narrative uses graph planned narrative in the generation of the teaching moments, and dynamic generated narrative to connect the teaching moments in one long coherent story.

The domain model contains the ethical values and a repertoire of teaching moments designed for 8 to 11 year old children. The teaching moments (TMs) are based on the interpretation of conflicting ethical principles, where the learner has to take a decision when he is confronted by one. Each TM has certain prerequisites that must be fulfilled

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**Figure 1.** AEINS architecture

before its presentation. The teaching pedagogy is the Socratic Method that is weaved in the TM narrative. The student model is currently a simple form of the overlay model represented in the form of rules associated by confidence factors that quantify the degree of confidence in the rule. It is used to record the learner's acquired skills and other skills still need practicing. Based on this knowledge, the pedagogical model adapts instruction following a model of human tutoring expertise. Finally, the presentation model monitors the interaction between the learner and the system and vice versa through a GUI [5]. The world model contains all the information about characters and objects in the game world. It mainly tracks and saves all the student's and agents' actions to update the world state and to be used later by the planner. Finally, the story generator uses a STRIPS-like planning algorithm that selects a story event to be executed based on a set of authored story actions.

### 3. Conclusion

An educational system (AEINS) has been developed in order to teach basic ethical skills to children. AEINS combines two kinds of narrative in order to confront with learner's freedom from one side and preserving the desired educational goals from the other side. Due to the presence of a student model, AEINS is able to provide an adaptive learning process. AEINS early evaluation results indicates its ability to engage the learners. Post discussions showed development of some new and deeper ideas at the learners.

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