Executive Summary

The basic theme of this proposal is capitalizing on positive aspects of online education while preserving the traditional in-class instructor-student interaction. Making use of modern research in databases and online learning tools can improve the learning outcome and enhance the student instructor interaction while saving effort, time and resources. We propose an online homework system with knowledge tracking feature built into it to guide students to overcome their weaknesses in certain topics and build their confidence. The online system referred to as online teaching assistant, uses statistical metrics to pinpoint specific deficiency by tracking the knowledge level of each student. The system tracks activities of students, records their responses to set of carefully selected sample questions to assess their knowledge levels.

A prototype package of the proposed online system has been implemented and tested on small scale as part of an RPG project. We propose to adapt it to be used as an online teaching assistant for handling online homework assignments. We will also evaluate its effectiveness on helping the students improve their ability to complete their assigned homework.