Peerawut Pimrod 2010: Development of Knowledgebase on Chemistry for the Upper Secondary Level. Doctor of Philosophy (Curriculum and Instruction), Major Field: Curriculum and Instruction, Department of Education. Thesis Advisor: Associate Professor Nataya Pilanthananond, Ph.D. 192 pages.

The objectives of this research were to 1) survey the teaching and learning problems and the needs concerning of chemistry knowledgebase for the high school chemistry teachers. 2) develop the chemistry knowledgebase for high school level and 3) study the opinions and satisfaction of the high school chemistry teachers about using the chemistry knowledgebase. The research procedures consisted of three phases which were 1) the development of chemistry knowledgebase for the chemistry teachers at the high school level. 2) the designs and development of the chemistry knowledgebase for high school level and 3) study of using the chemistry knowledgebase. Two sample groups used in this study were: one group for surveying teaching and learning problems and studying needs of using chemistry knowledgebase for high school level, consisted of 26 high school chemistry teachers selected by purposive random sampling, and the other group for studying the usage and satisfaction of chemistry knowledgebase, consisted of 15 high school chemistry teachers selected by purposive random sampling. The research instruments were two sets of questionnaires: 1) asking about the problems of teaching and learning chemistry in the high school level and the needs of chemistry knowledgebase for the high school level and 2) asking about the usage and satisfaction of the knowledgebase. The frequency, percentage and mean were used to analyze the data.

The findings were as follows: 1) obtaining the chemistry knowledgebase for high school level after that using the processing of analyzing and researching information needed, designing and organizing the structure of the scripts, storyboard and the websites were used. 2) the results of the study usage and satisfaction that were using by teachers as self-study resources in order to review modify, and add up the resources in their teaching plan activities; using inside the classroom as the supplementary resources and examples given to the students for further study and using outside the classroom for suggesting or advising the students to study by their own additional research or assign them to work outside the class, and finding the high satisfaction of high school chemistry teachers in all aspects: content, teaching and learning models and the presentation model.

_____ _____ ___ / ___ / ___

Student's signature Thesis Advisor's signature