Teacher Created Data Bases that Foster Scientific Literacy

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This paper will present the value of using a database to developing scientific literacy in an inquiry-based learning situation. The emphasis will be on presenting a model for developing databases for use in a K-12 classroom. Aspects of the presentation will include:

I. Science that can be developed using databases
   Help teachers provide an inquiry-based science program for their students
   Help teachers provide a classroom setting that will have the teacher as a guide and facilitator of student learning by providing the resource and questions
   The unifying concepts and Processes of Systems
   Content of life science: the characteristics of organisms; life cycles of organisms; organisms and their environments; populations and ecosystems;
   diversity and adaptations of organisms; behavior of organisms
   Show Students the abilities of technological design in scientific investigations
   Provide an understanding about science and technology

II. Considerations necessary for designing a database
   What information do you want to store
   What format you will retrieve information in
   Sorting features
   What population will be entering data and sorting
   Type of data, e.g. text, numerical, graphic, video, sound
   Organization of data

III. Classroom applications of databases
   Information retrieval
   Recognition of patterns and trends
   Analysis of relationships
   Testing of hypotheses
   Interpretation of data
   Critical thinking

The above issues will be illustrated with an in-depth look at eight data bases developed for use in a middle school science methods course. The content of the databases presented are: birds; plants; trees; animals; insects; fungus and marine organisms. Elements of design and classroom activities for pre- and in-service science teachers will be presented. The use of these databases in such a matter help certified teachers and public school students meet the appropriate NETS standards in a pedagogically sound manner.