

Title: The Art of Planning Ahead: Preservice and Inservice Teachers' Curriculum Maps

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Abstract/Summary:

This study seeks to provide support for curriculum mapping as an essential part of preservice/in-service teachers' preparation in science education. During this seminar, we will distribute a selection of tools that we have used in our preservice/in-service science methods courses to support K-12 preservice/in-service teachers in developing a curriculum map that fully addresses science along with other content areas. These will be distributed and explained in an effort to encourage teacher educators to consider using these tools in their teacher preparation programs based on my research while using these tools. The format for curriculum mapping follows both Grant Wiggins' and Heidi Hayes Jacobs' approaches to planning. The objectives of this study are to:

- a. Explore the ways in which preservice/in-service teachers approach the task of planning a year depending upon their anticipated or current teaching assignment (elementary vs. middle/high school);
- b. Explore the ways in which coursework impacts preservice/in-service teachers' curriculum maps;
- c. Explore the variety of factors influencing preservice/in-service teachers' curriculum maps;
- d. Explore the ways in which preservice/in-service teachers' curriculum maps change over time; and
- e. Explore the use of curriculum mapping as a diagnostic tool to pinpoint preservice/in-service teachers' needs in their preparation.

Findings are based on preservice/in-service teachers' curriculum maps and reflections during both an elementary and middle/high school science methods course. Participants developed three drafts of their curriculum map while enrolled in the course and completed reflective assignments regarding their maps as well. The tools that will be distributed during the presentation are those that were used to describe the assignment in class. Each year new teachers face the enormous task of developing daily lesson plans in the context of longer-range plans and national, state, and local standards. Unfortunately, these inexperienced teachers fail to make long-range plans because they are so busy trying to plan for the next day. Similarities and differences between strategies that elementary and middle/high school preservice/in-service teachers use while developing a curriculum map are numerous and comments are made with respect to their benefits and weaknesses. With respect to coursework, more concrete assignments (such as developing units of lessons) were more likely to impact curriculum map development than less concrete assignments (such as course readings). Several factors influence curriculum mapping efforts, and the development of a more informed map is purported to better support student learning and needs than a map based on fewer resources. For example, opportunities for curriculum mapping allow preservice teachers to develop a year-long plan that is reflective of student needs in terms of knowledge and skills in science as well as other content areas; standards documents at the local, state, and national levels; community needs; district vision; and the teacher's interests, too. The result is a richer learning experience for the children and a more pleasant experience for the teacher in that they are better prepared to enter the classroom. Even in-service teachers benefit from the exercise of developing a year long plan of instruction, for the result is a curriculum that is

purposefully created to best serve the interests and needs of our students. Studying preservice/in-service teachers' development of curriculum maps over time reveals that curriculum maps become more detailed and inclusive of different resources while coursework continues to heavily shape mapping endeavors. Finally, the findings support the use of curriculum maps as a diagnostic tool in determining preservice/in-service teachers' needs in terms of science content and science-related skills, and the findings illustrate that curriculum mapping can be used to determine weaknesses in preparation in terms of preservice/in-service teachers' general teacher preparation such as needing more experience in using and developing a variety of assessment strategies to determine student learning of science concepts and mastery of science-related skills.