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Pre-service Teacher Preparation in Environmental Education: A Current View

To increase environmental education (EE) in our schools, teachers must be confident and willing to incorporate EE programs in their classrooms. Recent studies on the scope and effectiveness of teacher preparation programs in EE reveal the extent to which current practices achieve this goal, and recommendations for improvement.

The Benefits of EE Teacher Training

Lane, et. al. (1995) demonstrated that teachers in Wisconsin perceived competencies in, attitudes toward, and amount of class time devoted to EE was positively correlated to the EE training they received. The teachers indicated more positive response means regarding these areas when exposed to EE training. Pre-service training, when institutionalized and incorporated holistically (McKeown-Ice 2000) can encourage and increase EE in the K-12 classroom. Some states (e.g. Wisconsin, Pennsylvania, and Washington) have even begun to mandate EE as a component of pre-service teacher training. With EE training, teachers can become aware of teaching strategies for cognitive, affective, and behavioral goals of EE and can help their students in attaining environmental literacy.

Current Problems Facing EE Teacher

Training

Though studies indicate there are many benefits to incorporating EE into pre-service teacher training, the current extent to which it is incorporated is low. In a National survey of 715 teacher education institutions, McKeown-Ice (2000) found only half of the surveyed students in pre-service programs received exposure to EE. Lack of EE faculty and EE certification requirements were cited as major factors contributing to the lack of programming. Furthermore, when pre-service EE training is implemented, the treatment of EE is often shallow (McKeown-Ice 2000, Lane and Wilke 1995). Often EE will only be introduced to teachers specializing in science education. Additionally, teachers have reported a lack of confidence in their pre-service training for developing knowledge and skill in affective education methods and environmental action strategies. These situations are contrary to the current trends in EE that place importance on holistic, multi-disciplinary EE infusion, with an emphasis on citizen action.

Recommendations

Grace (2000) states that the “immediate task faced by teacher training partnerships is to ensure that teachers enter the profession with the ability to deliver EE as effectively

as possible within the curriculum frameworks of their own schools". In response to the problems that current studies have revealed in pre-service EE training, recommendations for more effective programming have been made.

A first step is to institutionalize EE programming into pre-service programs. Recommendations point towards the hiring of more faculty with background and specializations in EE. These instructors would be focused on improving the environmental education components of the teacher preparation programs. This would most effectively be done through infusion of EE into all areas of instruction for the K-12 teacher, and not by focusing on science or a separate EE course (McKeown-Ice 2000). In conjunction, academic advisor's awareness must be increased so that they would "understand that courses of study other than science and science methods are appropriate to prepare future educators about the environment" (McKeown-Ice 2000).

At the same time that EE programming must be established and institutionalized, so too must the nature of the programming improve. Teacher education institutions are charged with ensuring that all components of environmental literacy are addressed. "Given that values and participation are crucial aspects of environmental education, improving preparation in affective education methods and environmental action skills is especially important" (Lane and Wilke 1995). Programming must also ensure that a diversity of teaching methods is presented.

Since positive experiences with EE teacher training leads to more complete instruction in the classroom (Lane and Wilke, 2000), the teachers' own recommendations for these programs should be assessed and incorporated. Grace (2000) conducted such

a study and makes specific recommendations to eliminate the gap that often exists between the rhetoric and ideas of EE scholars and the reality of EE instruction. For example, the study shows that "there is a feeling that aspects such as personal responsibility for the environment, local environmental issues, and involvement with local community issues should be given more prominence than exists at present". By assessing the opinions of the instructors, EE programs can focus on the content and approaches to EE that are viewed most positively.

Finally, continual assessment and research into the programs themselves and the practices they promote are necessary to continually improve EE training.

EE Teacher Training Resources

The following resources can be located on the databases of ERIC and ENC. Access to these databases is available at local libraries, universities and online. Internet access to these resources is available through Educational Resources Information Center (ERIC) and Eisenhower National Clearinghouse (ENC) collections. Their web addresses are <http://www.ericse.com> and <http://www.enc.org>, respectively. Some of the available resources are identified below.

From ERIC

McKeown-Ice, Rosalyn, (2000)
Environmental Education in the United States: A Survey of Preservice Teacher Education Programs. *The Journal of Environmental Education*, 32:1.
(EJ 618813)

This paper explores the fact that the status of the environmental education component of preservice teacher education programs is unknown nationally. The study found that

most schools have few requirements related to environmental education, and in the majority of schools environmental education is not institutionalized.

Grace Marcus, (2000) Exploring the Actual and Potential Rhetoric-reality Gaps in Environmental Education and their Implications for Pre-service Teacher Training. *Environmental Education Research*, 6:1. (AN 3861530)

This document acknowledges the mismatch between the advocated views of theorists and the teaching realities in school environmental education. It explores current practices and teachers' views on selected components of environmental education. The investigation reveals that although most schools lack a written policy on environmental education, most have a positive attitude towards the large majority of selected components and these are usually addressed in school.

Lane, Jennie; Wilke, Rick; Sivek, Daniel; Champeau, Randy, (1995) Strengths and weaknesses of teacher environmental education preparation in Wisconsin. *Journal of Environmental Education*, 27:1. (EJ 528323)

This article discusses the results from a survey conducted to assess teachers' perceived competencies in, attitudes toward, and amount of class time devoted to teaching about the environment. The survey included questions on whether or not teachers received training in environmental education (EE) and how teachers felt about their preparation in environmental education. Analysis of the results suggests that preparation in EE teaching methods contributes to teachers' perceived competencies in teaching about the environment.

From ENC

Teacher leadership in mathematics and science: casebook and facilitator's guide

Date: 2000 Grade: K-12 ENC# 019231
Synopsis: A professional development book that contains seven case studies, which explore teacher leadership in mathematics and science education. Teacher leadership themes include developing expertise, negotiating new relationships, and securing resources and policy support.

TE-MAT Teacher Education Materials project: a database for K-12 mathematics and science professional development providers

Date: 2001 Grade: K-12 ENC# 019000
Synopsis: This website offers a collection of reviews to help professional development providers more readily select materials appropriate for their program goals. In addition to providing the title, author and publisher, each review includes a description of the material and discussions about its purpose and audience and its content and quality. These reviews also contain the reviewers' ideas for using the materials and their cautions and other comments.

Teacher evaluation to enhance professional practice

Date: 2000 Grade: K-12 ENC# 019307
Synopsis: This book, written for administrators and educators, provides a road map for a teacher evaluation system that combines quality and assurance with professional development. Divided into two main sections, in the first section the book presents the background to justify the need for and the shape of new designs for teacher evaluation systems. In the second section, the book provides the framework of a teacher evaluation model.

Developing teacher leaders: professional development in science and mathematics

Date: 2001 Grade: Pre-kindergarten-Post-secondary ENC# 019238

Synopsis: This book presents a way to bring science and math reform movements to schools and classrooms through the development of teachers who act as reform leaders. Leaders influence other teachers within the school by presenting workshops, organizing materials, and observing other teachers and providing feedback to them.

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