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AN EXPLORATION OF FACTORS FACILITATING AND HINDERING CHANGE IN THE TEACHING OF BOTANY IN PRIMARY SCHOOLS

THESIS

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ABSTRACT

An exploration of factors facilitating and hindering change in the teaching of botany in primary schools.

This is a report of an analysis of a project that aimed to pilot an environmental education curriculum development process and professional development model in a rural and historically educationally and economically disadvantaged area. The research looked at the topic “plants” as the biological content in the context of developing a school garden, which was an environmental system in this instance. The school garden was considered to be a local environmental issue that each and every teacher could relate to. The intention of this research was to determine which factors facilitated and hindered change in the teaching of botany in primary schools.

The format of the research involved a preliminary study (to determine the participant’s initial environmental and plant knowledge) and then the main study, which followed the pre-post test format with interventions in between. This research is an example of a case study and the methods used to conduct the “fieldwork” were guided workshops, compiling a booklet and developing a school garden.

The main study’s starting point was that “active engagement promotes change”. Throughout this project active engagement was carried out to determine whether knowledge, skills and attitudes towards the environment could be changed by (i) the active participation of teachers in the production of a booklet on what and how to plant in a school garden and (ii) the actual development of a school garden.

The initial findings of the main study were compared to the final findings to determine whether the active interventions resulted in change, be it positive or negative. One of teacher education’s most challenging tasks is to prepare botany teachers to enable them to deliver active participation instruction. The results of the research showed that the participating teachers had not become more environmentally literate although they did improved their plant knowledge. They had given lessons in the garden and utilized some of the activities from the booklet in their teaching. They had shared these with their colleagues and when materials from the garden were used they did have a positive effect on the classroom interaction. Thus they all saw the value of planting up their school garden and the merits in using actual plant material from these gardens. The Heads of the participating schools expressed the opinion that the project had been a success and many of the participants’ colleagues said that they had also changed their teaching to outcomes-based teaching and that their learner’s attitude was now positive towards plants. Most of the student group said that they had told their



parents about the project and their parents said that they approved of them working in the garden thus learning life skills in a hands-on practical way.

The overall impression of the school gardens at the end of the programme was one of general improvement and even nine months after the project, the participants remembered the majority of planting skills that they had accomplished during the year and still found it important for students to learn these skills. Thus the research findings support the idea that active engagement promotes change.



DECLARATION

I declare that this dissertation is my own work. It is being submitted for the Degree of Doctor of Philosophy at the University of Pretoria. It has not been submitted for any degree or examination at any other university.

Dianne Edith Goodwin

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