

Abstract

The main purpose of this research was to investigate the planning connotation, the effectiveness on implementing, and the predicament faced for implementing sustainable campus of junior schools in five counties and cities of Northern Taiwan. The research methods are based on the questionnaire and survey. Interview method is also used to assist in developing the research. 14 junior high schools in five counties and cities of Northern Taiwan, which joined Taiwan Sustainable Campus Project subsidized by the Ministry of Education from 2002 to 2006, are the research objects. 14 copies of the survey and 490 copies of the research questionnaire are distributed to the 14 schools. Out of the 14 surveys and the 490 research questionnaires, 14 surveys and 362 questionnaires are valid. The retrieval rates are 100% and 78.4% respectively. There are 5 interviewees who are responsible for sustainable school environment planning. Finally, the conclusions of the study have been made by analyzing the literature review, the survey, the questionnaire, and the interview's results. Some findings are described as below:

1. The main motivations that junior high schools in five counties and cities of Northern Taiwan joined Taiwan Sustainable Campus Project are striving for funds to improve school environment, and developing school characteristics to implement the concepts of sustainable development education.
2. The main projects of the application for Taiwan Sustainable Campus Project in junior high schools in five counties and cities of Northern Taiwan are “ ecological pond, ” “ the multi-layers ecological green-making, ” and “ rainwater retrieving. ”
3. There is high identification and evaluation in the sustainable campus environmental facilities among most of the teachers. However, teachers

who are school administrators, who participate in sustainable campus planning, who teach science and technology subject, and who belong to small scale schools have higher identification than general teachers.

4. The main motivations that teachers incorporate sustainable campus environmental facilities into teaching are cooperating to schools' policies, promoting the concepts of environmental and ecological education among students, and building the model of sustainable development education.
5. The main projects that teacher incorporate sustainable school environmental facilities into teaching are "ecological pond," "the multi-layers ecological green-making," and "agricultural garden for teaching." Facilities that teachers use most frequently are "ecological pond, " " the multi-layers ecological green-making, " and "agricultural garden for teaching." Moreover, they are in good condition.
6. The main projects that teacher design lesson plans and materials due to sustainable school environmental planning are "ecological pond," "agricultural garden for teaching," and "the multi-layers ecological green-making." The main teaching methods that teachers adopt are "campus observing," "lecture," and "activity-designed."
7. The main predicaments for implementing sustainable campus are planners' insufficient professional knowledge, teachers' low participation, too much time consuming, lack of experts' assistance, and insufficient funds. The main predicaments for maintaining sustainable campus facilities are shortage of the manpower for specific responsibility for maintaining, insufficient professional knowledge in administrators, insufficient expenses of maintaining, and inappropriate design of the

facilities. The main predicaments that teachers incorporate sustainable campus environmental facilities into teaching are teachers' insufficient professional knowledge and common consensus, schools' insufficient environmental resources, and not easily planned curriculum. The other main predicaments are problems of developing schools' characteristics, problems of the resource integrated in schools' strategic alliance, problems of personnel frequent replacement, and problems of heavy work burden.

According to the results of the study, some suggestions are offered to the educational authorities, junior schools, and those who go further studies.

Key words: sustainable campus