Chapter 1. Introduction

1-1. Background

Tsai (2000) explored 10th science classroom in Taiwan with Chinese-version of Constructivist Learning Environment Survey (CLES) Instrument and suggested that students tended to have less preference for constructivist orientated learning environment (LE) and appeared not favored in student-centred LE. The results seem to indicate that tenth grade students in Taiwan relatively do not appreciate much more student-centred setting LE in science classroom and thought that teacher-directed teaching approach can assist more in their achievement.

The class size is constantly large more than 40 at secondary school in Taiwan and not every student could adopt the whole student-centred oriented LE. Lee and Chang (*in press*) found that students tended to prefer both the student-centred and teacher-centred learning environment, which seem to be a domestically unique situation. However, in recently years, the most recent science and technology curriculum standards in Taiwan (MOE 2001) emphasize on student-centred oriented learning environment.

We need to investigate whether students preferred to (or could) adapt themselves to further student-centred oriented LE or not and what orientations of classroom LE presented in their classroom in such a unique situation. For that reason, we need to

find something balance of LE between student-centred orientations and teacher-centred orientations, and detected what orientation of classroom LE preferred and perceived by students.

1-2. Purpose of the Study

The chief purpose of this study is to explore the classroom LE at secondary school in Taiwan, includes students' preferences of classroom LE focusing on classroom LE from students' viewpoints (perceptions and fitness) and specifically dealing with student-centred and teacher-centred orientation.

In the previously study, we reported that Taiwanese tenth grade students seem to prefer both student-centred and teacher-centred oriented classroom LE, and perceived much more teacher-centred oriented classroom LE (Lee and Chang, *in press*). Fraser and Rentoul (1980) stated that person-environment fit (PEF) was important in predicting learning outcomes. However, the research about PEF and learning outcomes was limited and sparse in Taiwan. Therefore, this study has emphasized on the development and validity of the instrument which used to assess the orientations and PEF of classroom LE in Taiwan. This study also explored the initial relationship between the PEF and science learning outcomes.

1-3. Importance of the Study

Research focusing on classroom LE from students' viewpoints (perceptions and fitness) and specifically dealing with student-centred and teacher-centred orientation at the secondary school classrooms is limited and sparse in Taiwan.

The results of this research may be beneficial to educators, teachers, students, or even parents who are interested in classroom LE, and the information provided by this study may be employed to understand current science classroom LE or further apply to other discipline's classroom LE

1-4. Definition of Terms

It is obvious that common understanding and shared meanings for the "classroom learning environment", must be shared before investigating this topic. The definitions of term follow:

Classroom Learning Environment

Science teaching is conducted primarily in three types of learning environments: outdoors; laboratory; and classroom (Orion 1997).

The classroom has been described as an ecological system in which the inhabitants of that environment (students and teachers) are constantly interacting with one another and the physical environment (Besoondyal 2003).

In this study, the classroom learning environment refers to the students felt and experienced when involved in the course. The classroom learning environment is maintained and managed both by the faculties and the students involved.