A STUDY ON THE TEACHING ENVIRONMENT PERCEPTION FOR COLLEGE STUDENTS

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Abstract**-----***Learning, in a broad sense, is an endlessly interactive process between the learner and environment. Whether the learning environment is appropriate or not plays an important role during the learning process. As educators and administrators in school, we are responsible for providing the most desirable environment both for teachers and students. Unlike other research focused on evaluation from schools, this paper aims to discover student's viewpoints toward learning environment through a well-designed inventory. The Inventory is divided into two categories: students' background and graduation plan. In students' background, individual differences such as their identifications will be taken into account. The test results conclude that no matter students choose to study or work in the future; the stage from junior to senior year is a turning point. Moreover, those students are satisfied with civil engineering department and its teaching environment as well as other facilities. Students' occupational interests in civil engineering will help establish positive mutual relationship between students and school.*

INTRODUCTION

Human beings are the center of learning. The purpose of education is to induce students' learning motivations so as to make the most of themselves. As for a developing self, school becomes the momentous media providing the necessary environment. This media also plays an important role together with students' performances. Therefore, learning in a broad sense, is considered an interactive process between individual characteristic and learning environment. Since there are complicated reasons involved with this process, the educators have to understand students' characteristics and learning conditions. They must provide students with suitable learning environment to obtain excellent learning results. From this point of view, the learning environment in school indeed affects students' learning results greatly.

In general, there are three main categories of teaching-learning environment in school: material environment, scholarly environment, and mental environment. (Ku, 1968) Ku's idea presents a preliminary understanding about schools' teaching-learning environment. Later, Tsai further pointed out several directions to the learning environment in school (1982):

1. material environment: the building and design in school
2. teaching environment: the curriculum, teaching methods, teaching materials, and media in school
3. social environment: the interactive relationship between teachers and students, including the classroom, school, and community.

Department of Technological and Vocational Education in Ministry of Education divided learning environment

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specifically into five areas:

1. ordinary problems in school: management of people, stuff and objects on campus as well as construction equipment.
2. curriculum: including course structure, and fitness of teaching materials and methods.
3. internship: the equipment, safety, working rules of internship factory.
4. teacher-student relationship
5. peer relation

What these different classifications have in common is that the hardware and software of teaching-learning environment are equally important. Besides, different categories in different times also show the developing trend of teaching environment measurement. Not only does the school provide objective measurement of facilities and teachers, but also students' subjective perceptions toward school are important indices. Because the former measurement information can be drawn from school's annual evaluation, this research intends to emphasize on the latter indices. On one hand, the results can make up to the shortness of school's evaluation. On the other hand, the educators can understand students' different points of views in teaching-learning environment. As there are individual differences between students, their awareness toward learning environment are varied because of different backgrounds. Therefore, the purpose of this research begins with students' subjective awareness and discovers civil engineering students' viewpoints of teaching-learning environment. Whether students' different points of view are varied due to their backgrounds will also be discussed.

RESEARCH METHOD

The objects of this research are two educational systems--both two-year and five-year program--from civil engineering department in Sze-Hai Institute of Technology and Commerce. Of all collected questionnaire from students, those incomplete and repeated are omitted and the effective questionnaires are 1121.

This research tool "Inventory of Teaching-Learning Environment" is based on "Satisfactory inquiry of learning environment" by Han (1989) and "Questionnaire of school life quality" by Hsu and Chuang (1984) and other related literature. The inventory is revised on behalf of vocational college and several full-time teachers in Civil Engineering Department in June 1997. It is divided into two parts: student background and graduation plan. In terms of student background, there are two different educational systems: two-year or five-year, grade, gender, group (traffical engineering or constructional engineering) and students' identification. The identification category includes those students who go back to school after prolonged absence for different reasons, aboriginal students, transferring students (from other schools), transferring students (from other departments in campus) and the rest students not belonging to the above conditions. The second part graduation plan is defined as the possible career direction students may choose after they graduate. The plan contains three sub-groups: those entering a higher school, getting a job or the undecided. Whether they study or work in related or non-related fields will be discussed too. The purpose of graduation plan is to understand students' discrepancy of different status in teaching-learning environment.

The second part of the questionnaire is the inventory questions. The main structure is divided into organizational equipment, scholarly environment, and spiritual environment. The organizational equipment includes experiment equipment and management systems. Scholarly environment includes teachers' professions, professional recognition, scholastic document and teaching

materials. Spiritual environment includes teacher-student relationship, peer relations, department recognition, learning attitude and occupational interests. Then the inventory is pre-tested through item analysis and the questions with correlation coefficient under .35 are deleted. There are total 44 questions and the score is counted on Likert four point scale: least disagree to most agree with point one to four. The higher the score, the more positive awareness students have toward learning environment. The test reliability of this inventory, including total inventory's and sub-inventory's Cronbach á is between .78 to .86.

RESULT

First, from the outcome of Chi-Square testing, there isn't significant difference between biennial students in graduation plan. (X^2=10.79 *p<.01) while among five-year students, there is significant difference (X^2=60.86 ***p<.001) those who plan to advance a higher degree gradually increased from freshman year (40%) to the climax in junior year (58%). (Figure 1) Then the number declined in senior year from 46% to 34%. On the contrary, those who decide to get a job declined from 12% to 10% in freshman and went to the lowest point in junior year (7.5%). Then, it slowly went up from 26% to 34% in senior years. Hence, no matter students choose to pursue further study or work directly; the stage from junior to senior year is a turning point in their graduation plan.

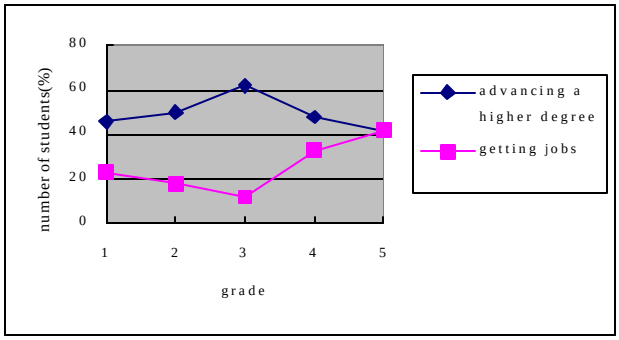

FIGURE. 1

Graduation Plan Curve For Students Advancing a Higher Degree or Getting Jobs

Second, in graduation plan, those who continue study or work in related fields increase gradually from freshman (33.1%) to the highest in fourth grader (50.3%). Later, the number went down in fifth grader to (39.3%). As for those in non-related fields, there wasn't obvious fluctuation as those shown in related fields. The percentage from freshman to the fourth grader maintained from 18% to 21% till it suddenly went up during the fifth year. Almost 29% students choose to study or work in non-related fields. (Figure 2)

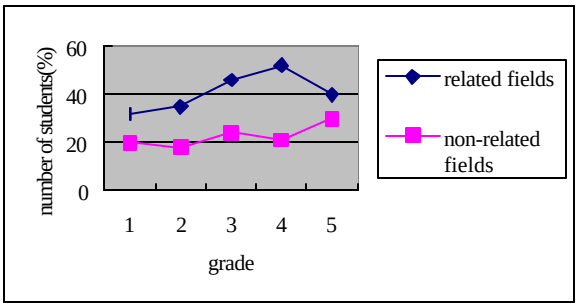

FIGURE 2

Graduation Plan Curve In Related Or Non-related Fields

Third, most freshmen score "undecided" in career plan scale. That is probably because they just entered school and were not sure what to do in the future. This uncertainty gradually declined year after year until it finally

mildly went up in the fifth year. It shows students become clearer in mind about future plan as they become senior and get professional training at the same time. (Figure 3)

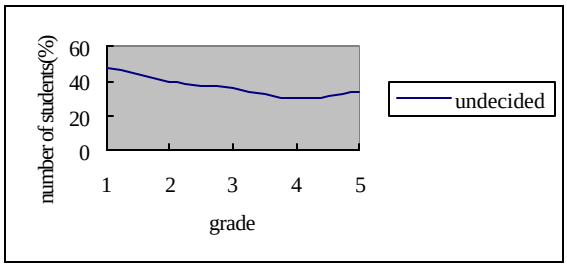

FIGURE 3

Graduation Plan Curve For Undecided Students

As for two-year program, students only stay in school for two years. Because of time limit, it's more difficult to observe students compared to the five-year one. What they have in common is during their senior year, the number of students choose career or undecided all went up.

DISCUSSION

Analysis of Students in "Inventory of teaching-learning environment"

In this inventory, students score high in the value of professional certificates. That's probably because the department has made long-term efforts not only declaring the importance of all certificates but also encouraging students to take those qualification tests. Besides, civil engineering students are most satisfied with the following items listing by order: the peer relations, scholarly information provided by the department, department recognition, teachers' attitudes in class, teachers' professional abilities and concern for students' studies. What students consider "not satisfied" from the department are the lack of licensed software in the computer lab and equipment in the material experiment lab.

Analysis of students' graduation plan

As for different educational systems in school: students who plan to advance a higher degree in the five-year program are more than those from two-year program. On the contrary, students who plan to work right after they graduate from five-year program are less than those from two-year program. As far as related fields are concerned, more two-year program students either go further study or pursue a career compared to five-year program students. About non-related fields, five-year program students will outnumber two-year program students. Overall, most civil engineering students plan to advance a higher degree after graduation. The majority of those students will continue studying in related fields. This common career plan shows students all hope to extend what they are learning now in the future.

Analysis of students' different identifications

As we look at students' different identifications, in scholarly environment, transferring students from other departments are more satisfied with curriculum than those transferring students from other schools. In mental environment, except transferring students, most students think highly of teachers and have nice peer relationships in school. As for students who go back to school after prolonged absence for different reasons, they all lack of interactions with peer groups in school. While aboriginal students hold negative learning attitudes. All observations above bring out some questions: first, transferring students from other schools not only have to adapt to a totally different learning environment, but also attend a class where other classmates and teachers are already familiar

with each other. No wonder they feel somewhat isolated. As to students who go back to school after prolonged absence, though they are used to school environment and teachers, yet they feel different from other classmates because of age and past experiences. Thus they have difficulty getting along with other students in class.

Differential analysis of students with different graduation plans

In scholastic environment, students who continue studying or working in related fields in the future all regard highly of civil engineering department and its teacher's professions, professional recognitions, scholarly information and curriculum. Especially in the area of professional recognition and curriculum, even students who score "undecided" appreciate greatly than those students in non-related fields. It has the same result in mental environment. That is, students who advance a higher degree in related fields have the highest score, followed by undecided students and students in non-related fields.

CONCLUSION

Besides expanding facilities such as lab experiment in school, the research results show that most students are short of positive attitudes in collecting information. On one hand, the school should provide a furnished and well-designed library for students to do research. On the other hand, teachers can help students inhabit positive attitude in class rather than just lectured.

From the research result, more than one-third students are undecided about their career plan. Those students need proper career counseling from school and help understand their aptitude. Teachers not only should pay attention to students' adaptation to school life but also encourage students to participate in extracurricular activities. Also, group counseling or designed support groups can help students develop peer relation network on campus and in class.

To sum up, students who choose to further study or work in related fields feel confident in civil engineering department and its teaching environment as well as other facilities. Therefore, how to ignite students' occupational interests in civil engineering and help them either pursue a higher degree or work in related fields are key factors to establish positive mutual relationship between students and school.

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