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Research on the internship system
oriented Towards Nurturing Professional Design Ability
The Example of Visual Communication Design Education

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Summary – 1. Introduction – 2. Discussion of the Implementation of the Internship System – 3. Research Design and Implementation – 4. Results of the Special-Subject Internship – 5. Results of the Vacation Internship – 6. Discussion and Suggestions.

Abstract

The purpose of this research is to discuss in depth the planning and establishment of a visual communication design education internship system. Students in this field can learn practical professional design abilities and plan their future directions through internship. Utilizing the experimental method and working in the Department of Visual Communication Design of the National Yunlin University of Science and Technology, the researchers used "analysis of the literature," "questionnaires," "case studies," and "expert seminars" to understand the advantages, disadvantages and effects of this internship system.

The results of this research are as follows: (1) Students lack the "independent initiative," which can be overcome by working on practical cases. By working on these cases, students improved their ability to discover and discuss questions. In addition, this also improved their self-evaluation ability. (2) Students in the experiments though that the biggest gain was "receiving actual experience." (3) Companies that provide internship opportunities are motivated by the desire to "educate" and "establish human resources." This proves that companies who accept internship students have long-term vision. (4) Big differences exist between the evaluations of the internship companies and the students: the former thought that the students still had much room for improvement, while the latter believed that their abilities strengthened immensely.

Key words: professional design ability, design education, internship system and Visual Communication Design.

1. Introduction

1.1. *Research Motive*

In the skills training system, the most important issue is the combination of theory and practice. Therefore, the planning and establishment of a design education internship system is an important factor in development. Currently, the purpose of the Department of Visual Communication Design at the University of Technology is to "Cooperate with the demands of national economic development and train those who have visual communication planning and production abilities." Career areas for students include design or advertising companies, internet based multimedia companies, design departments of businesses, publishers, animation studios, broadcasting companies, schools, other related work, or an advanced degree. To put skills training into practice, coordination of many factors is needed, such as "internships," with the hope that students will learn practical professional design abilities and plan their future direction through experience.

Zheng-hong Li (1994) believed that "People are the most important asset of advertising companies. However, regardless of the amount of money available to these companies, many of them still suffer in this aspect." Hence, the training of human resources is undoubtedly an important priority for the design industry. The skills training system focuses now on cultivating professional designers, and implementation of an internship system will improve practical design ability in design education.

Hui-liang Liu (1994) divided the principles of vacation internships in a department of advertising into three kinds:

1. Internships should emphasize communication. Before an internship, three communications should be completed: teaching goals of teachers, students' internship intentions and expectations, and internship companies' information. Feedback is also necessary.

2. Internships stress attitude. They require that both the students and the advertisers prepare well psychologically, discover the students' intentions and then teach according to their different abilities.

3. Internship should anticipate the future. They are an opportunity to develop future designers.

Wen-xian Chou (1990) et al. conducted an "Evaluative analysis of the out-of-school internship system of students at the Min-Chi Institute of Techno-logy," and discovered that students thought the most important achievement of an out-of-school internship was to make them understand social phenomenon and real-life work. In addition, out-of-school internship students could get a job more easily; not only did 98% of them find a job within 6 months, they also stayed a long time in their positions. In fact, there are two goals for students who practice in the design business: one is for them to practice what they have learned and apply theory, and the other is for them to search for careers opportunities. Professor Yun-Tien Chau of Chu-Po University in Japan pointed out in the "1996 Taiwan-Japan Design Education Seminar" that most

students who had served as interns were readily accepted as new employees of companies. Therefore, we can see the great assistance that internship in design education gives to businesses by providing skilled human resources, and to students by helping them find jobs.

On the issue of vacation internships, Shi-hong Cheng (1995) explained why they could not work out. Firsty, "the inability of students causes a burden for companies." Due to this factor, strengthening the students' design education to improve their abilities is the first thing to be done. Furthermore, Cheng said that a "low desire to learn" is also a big concern. Therefore, he suggested that in addition to professional design ability, students must develop professional ethics as well as respect for their careers. This paper also deeply discusses this question. In conclusion, we know from the above results that an internship system can influence students in many different aspects and also build mutual communication links with the design industry.

1.2. *Purpose of Research*

The purpose of this research is to discuss the planning and establishment of a practical skills training system in visual communication design education. Through experiments, feasible methods were discovered that would benefit the business and the academia. The Department of Visual Communication Design of the National Yunlin University of Science and Technology was the subject of this study. Its purpose was to discover feasible methods for the internship system and propose plans for businesses and schools.

1.3. *Research Measures and Steps*

This research used literature analysis, case studies, and questionnaires to understand the advantages, disadvantages and feasibility of implementing internships in the Department of Visual Communication Design. The department's opinions about the internship system and its main specialized needs were also gathered. In addition, different opinions concerning on the internship system were collected by holding seminars. Please refer to Table1 for the process diagram.

1. Information Collection and Discussion.

(1) Data on all kinds of internship systems and their advantages, disadvantages and feasibility was collected.

(2) The results of research conducted by the National Science Council and related information was Collected, including "Research on a training and Education Model for Professional Designers in Taiwan."

(3) Other related information was Collected and discussed.

2. Case Studies.

This study proceeded by using the "Special Topics" course for seniors. The process was divided into three steps: the Preparation Phase, the Internship Phase, and the Evaluation Phase.

(1) In the preparation phase, internship locations that match the teaching goals were identified, and then assignments were made according to business needs and the students' abilities.
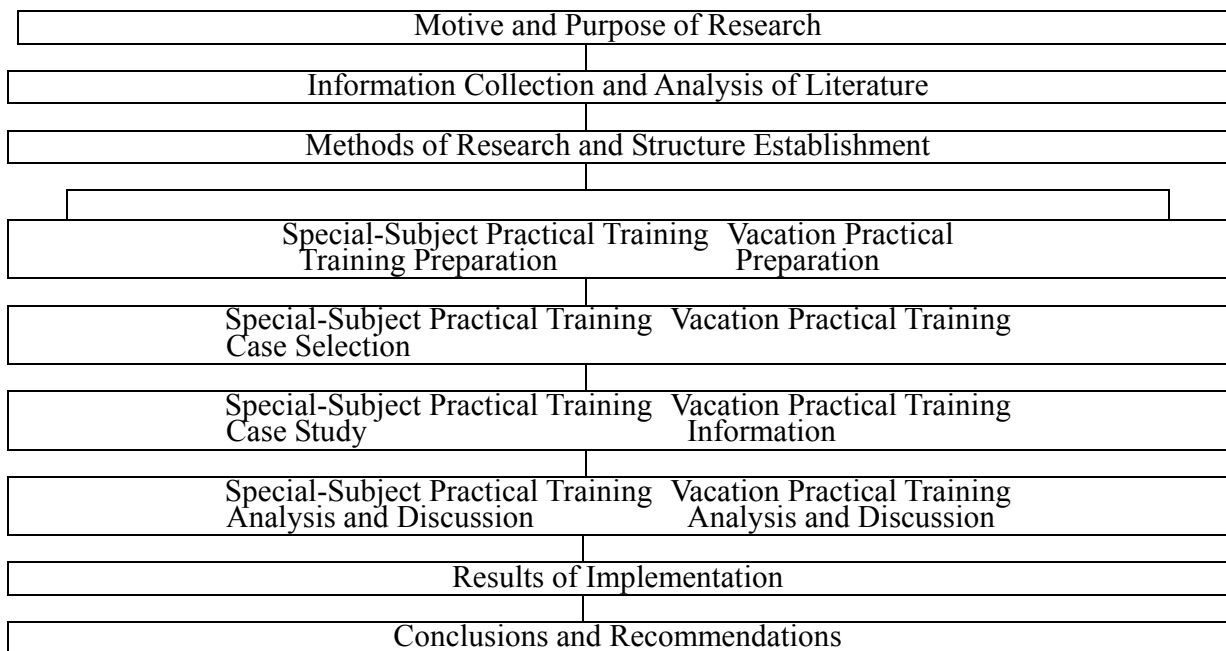
(2) The internship phase involved cooperation with periodic supervision.

(3) In the evaluation phase, the results in terms of internship achievements of the students, businesses, and teachers were evaluated.

3. Questionnaire

Questionnaires were given to students and businesses, regardless of whether they participated in the internship, to obtain their views on motives, intentions, methods and results of the vacation internship. This method allowed us to learn their opinions.

Table 1 Research Structure and Process Diagram

Motive and Purpose of Research
Information Collection and Analysis of Literature
Methods of Research and Structure Establishment

Special-Subject Practical Training Training Preparation	Vacation Practical Preparation
Special-Subject Practical Training Case Selection	Vacation Practical Training
Special-Subject Practical Training Case Study	Vacation Practical Training Information
Special-Subject Practical Training Analysis and Discussion	Vacation Practical Training Analysis and Discussion

Results of Implementation
Conclusions and Recommendations

1.4. *The scope and the limits of this research*

There are two suggested system models which are proposed by this research as references for setting up the internship system. They are the Special-Subject internship and the Vacation internship respectively. The research is based on the internship system of the Department of Visual Communication Design, National Yunlin University of Science and Technology as an example. The main objective of this research is hoping to extend its efforts in helping related departments and schools to develop their own internship system. In addition, Vacation internship is expected to carry on during the summer vacation. According to original plan, the participants

should have included 16 junior students of the department and 12 supervisors of coordinating companies in this research which has been sponsored by the R.O.C. Graphic Design Association. Due to the limited number of participants, only 16 students were allowed to participate in this research. The scope of this research has limited its efforts only to the qualitative analysis of internship practices.

2. Discussion of the Implementation of the Internship System

2.1. *Suggested Model for the Implementation of the Internship System*

According to Prof. Wen-xiong Chang and Prof. Shi-hong Cheng's research in 1995 on current design education internships, the methods of internships in Taiwan's skills system could be divided into group internships, alternating internships, staged internships, part-time internships, and out-of-school working intern-ships. In addition, Professor Cheng (1995) proposed a set of design education models which match today's social and economic environment and include:

1. Internship courses for students on regular school days.

2. Semester courses in cooperation with industry.

3. Student internships at design companies, offices, or businesses during summer or winter vacation.

4. Stays in factories or companies to learn and study.

These four models could be used to suggest projects for related departments.

Currently, there are approximately three directions in the training and professional education system for design: Product design, visual communication design, and space design. This research studies the National Yunlin University of Science and Technology, focusing on visual communication design, and then moves forward to the hypothetical establishment of internship systems in related departments. Companies related to visual communication design are usually located in the major cities (Taipei, Taichung, Tainan, and Kaohsiung). Therefore, it would be difficult for schools outside of urban areas to conduct internships during the semester. Our method would allow us to develop a internship system research center at the school and overcome the obstacle of distance.

This study refers to other discussions about the internship system (e.g., the research on the curricula, case study research, and Cooperative Work Experience Education:), and proposes two internship system models: the school special-subject internship and the out-of-school vacation internship, which suits the design education internship. These will be discussed in the following paragraphs:

1. Special-Subject Internship.

Special-subject internships are a participatory internship in teaching internship. They allow the teachers and students to join together in design. From the teaching side, these cooperative

design cases allow teachers, students and company to learn and mutually communicate. This research discusses special-subject internship implementation. Major details are as follows:

(1) School internships should be responsible for outside units. In the past, we had only teachers, technical cooperating institutions or students' guidance offices. There was no professional institute to communicate with the outside. Therefore, we established a "Design Research Center" in the school to communicate with the outside. In the center, there are specialists from the design field to serve as intermediaries and also provide professional services.

(2) To coordinate with related courses, there are limits on time of cases, demands of space, and cooperation. It is necessary to have long-time contact with a business, establishing good relations in order to have stable resources, so that the students can study the internship courses in a professional environment.

(3) Teachers and students should spend more time while following this model. Therefore, we had to consider whether the size of the cases coordinate with the courses so that the original teaching purposes would not be changed and the teaching of other courses would not be affected.

2. Vacation Internship.

Vacation internships are a kind of probational internship among teaching internships. The students participate in design by interning. Teachers take the roles of consultants but do not actually join in the internship. From the teaching aspect, this can help students learn from each other, and discover and solve problems by themselves. They may also communicate with the company that is in charge of design case. The approaches are as follows:

(1) We know from the literature that out-of-school internships have existed for many years. However, many businesses provide limited internship opportunities, so we have to establish good relationships with them to maintain future contact. For example, a professional design association can cooperate or work together, so that not only can the students enrich their professional knowledge with their vacation internship, but also the businesses can obtain human resources information.

(2) Before the vacation internship, teachers should play the role of a liaison bridge between the students and the businesses. Teachers should rely on the students' course performance, attitude, attendance, and enthusiasm to evaluate whether to recommend them for an out-of-school internship. In addition, teachers should arrange companies according to the applicants' interests in order to best provide students with needed specialties.

(3) In the process, teachers have to comply with students' goals and characteristics, using the school administration as a communication bridge for students to reach their goals. After the internship, supervising teachers and businesses will conduct an evaluation to understand the effects.

2.2. *Planning the Implementation of Internship System Courses*

This research puts the internship system into practice in visual communication design department courses. Taking the National Yunlin University of Science and Technology as an example, their

teaching purpose is that "they should maintain the principle that theory cooperates with practice, and technology is as important as sociology. This principle demands building students' future career abilities and providing them with advanced resources." In addition, their developmental direction is to "actively strengthen cooperation and put the design studio internship into practice in order to promote internship design abilities."

Therefore, under the teaching principle that theory and practice are equally important, the plans of professional courses all include internship courses (e.g., advertisement design, multimedia design, webpage design, packaging design, animation, etc.), which are students' common training at school. Nevertheless, the internship courses do not provide actual experience in business and therefore lack reality, defeating the principle that practice is as important as theory. Hence, we should bring practical design cases into professional design courses in order to give students more internship professional design knowledge. We propose a few points in the visual communication design education plans for the internship system:

1. Establishment of the Design Research Center.

The school design research center should work as a front desk, arranging at-school "special-subject intern-ships" and out-of school "vacation internships." For the special-subject internships, we use the Department of Visual Communication Design at the National Yunlin University of Science and Technology as a subject. The professional design courses all include internship hours. Teachers can do the special-subject internships following school's arrangements for each grade. However, sometimes it would cause teachers and students trouble or even affect the original teaching goals and process, due to the restricted time of cases and lack of pre-arrangement in the courses. In view of this, the design research center should reorganize the courses of the three departments in the design academy and classify companies and course contents in order to properly schedule related courses when cases being conducted. One thing that has to be mentioned is that the teachers should be informed of the cases in advance so that they can incorporate them into the courses. In vacation internships, we obtained data concerning the internship companies with the assistance of the design research center or the design association.

2. Internship Course Planning.

According to the 1996 research of Professor Xin-zhu Ho and other professors on existing design education course models, the design learning group, which could be divided into basic co-design courses, bearing courses, required courses and selected courses, has an axis-bearing course structure and common basic co-design courses. According to the aforementioned four categories, basic co-design courses stress basic know-ledge and technology training, and so have a lower demand for internship cases. For all aspects of the internship, the students could absorb practical design experience from the design cases by using the special-subject internship and arranging to take bearing and required courses. Taking the visual communication design department as an example, the senior students all have to take the courses "Degree Project" and "Design Studio Workshop." The characteristics of these courses are that the student conducts deep research on a subject of interest, obtaining practical design experience and cooperating with people outside of the school through the teacher's guidance. Therefore, this research used "Degree Project" and "Design Studio Workshop." as the courses of internship.

3. The Arrangement of the Internship Grades.

Professor Xin-Zhu Ho performed research on the country's current design education courses and pointed out that the progression of the design group courses is as follows: freshmen take the common basic design courses, sophomores take professional courses of interest or change their majors, juniors take selected professional courses, and seniors take special subject and selected professional courses. In addition, the arrangement of the "Special Subject Internship" complies with the content of the design courses. Usually, in the first two years, the content consists of mostly basic design education, and in the third and fourth year, professional design education. Therefore, it's better to have the internship courses in the third and fourth year. On the other hand, for the scheduling of the "Vacation Internship," it would be better if it took place during the summer vacation after the third year, since the required professional courses are mostly in the first three years. Then, during the summer after the third year, students would have a chance to practice most of the professional design knowledge and technology. If they could practice out of school, they have the chance to link professional knowledge of design with internship experience. For the reasons stated above, this study took the third year as the time of the out-of-school internship.

3. Research Design and Implementation

3.1. *Case Studies*

Case studies investigated the feasibility, advantages, and disadvantages of "internship models for the school's special subject design." This study model is purely original and does not base on any previos theory. Therefore, this research takes the method of experiments first, and then makes conclusions. This kind of method requires many implementing measures. We selected the "case study" method. According to the explanation of Henwood and Pidyeon in 1993, the purpose of a case study is to reflect the truth, but not to explain the truth. The formation of concepts in the case study comes from real information, not from trying to confirm a theory.

This study selected design cases of the Department of Visual Communication Design at National Yunlin University of Science and Technology ordered by businesses as the topic of teaching and also our study subjects. We used Professor Shi-hong Cheng's proposed problems of the school internship system (1995) as our judging guidelines:

1. Purposes and effects of teaching.

2. Purposes and effects of business, activities.

3. Cooperation of the internship supervision.

4. Reaction of teachers and students.

5. Reaction of company.

The methods used to obtain the information were: 1. Interview teachers, students and companies about the internship. 2. Evaluate the results of the design case interns of teaching directions and business internship orientations.

3.2. *Questionnaire*

The feasibility, advantages and disadvantages of the "out-of-school vacation internship model" were investigated by means of a questionnaire.

1. Research Subject

The subjects of this research consisted of two groups. Students, the subjects, who either attended or did not attend the internship, were all students of the junior and senior class of the Department of Visual Communication Design at National Yunlin University of Science and Technology.

(1) The Group Who Took Part in the Internship.

This research took the students who participated in the vacation internship and the executives at the internship companies as subjects. One group consisted of 16 junior students of the Visual Communication Design Department,

Among those students who have participated vacation internship, 9 students (56.20%) have worked as webpage design assistants 4 students (25.00%) worked as computer graphic assistant, and the other 3 were doing something else at their free choices.

The other consisted of executive of different departments at 12 design companies. (There were 4 companies providing 2 internship opportunities.) There were 28 respondents in total.

The statistic has showed that 6 students (37.50%) were accepted as intern by those companies whose business were webpage design, 3 students (18.75%) worked in packaging design business, 3 (18.75%) for advertisement design, 3 (18.75%) for image design business and only one (6.25%) student was in business of computer graphics.

(2) The Group Who Did Not Take Part in the Internship.

One part consisted of a total of 125 junior and senior students who were in the 2-year and 4-year programs of the Department of Visual Communication Design. The rest of the sample consisted of companies that are related to visual communication design. We received 34 valid questionnaires from the companies and used all types of measures in the internship system as our references for evaluation.

2. Contents of the Questionnaire.

There were two parts to the questionnaire: one for students who attended the internship and one for those who did not.

(1) For those who attended the internship, there were two questionnaires: questionnaire A and questionnaire B. Questionnaire A was for students who attended the vacation internship, and questionnaire B for companies that participated in the vacation internship.

The first part of questionnaire A asked for basic information including sex, features of the internship companies, and positions of internship, etc. The second part asked for the student's views of the results of the vacation internship and the actual investigation. We used a 5-point Likert scale to assign points, ranging from 5 (agree very much) to 1 (absolutely don't agree).

The results of investigation has consisted of the most rewarding experience, the main causes of poor results during the intern practices, the willingness to work in the internship companies after graduation, the expected benefits which possibly provided by the internship companies, and the gaining of practical design experience.

The first part of questionnaire B asked for basic information including sex, features of the internship companies, and internship positions, etc. The second part asked for the company's opinion of the results of the vacation internship and actual investigation. We used a 5-point Likert scale to assign points, ranging from 5 (agree very much) to 1 (absolutely don't agree).

The investigation has also included the motives of offering students internship opportunity, the propagated difficulties of internship system in design education, the priority for intern students entering the internship company as an employee, the willingness of internship companies to increase vacant positions regularly, which short-term pre-job training program would be provided, the possible benefits for intern students, and the effectiveness of internship.

(2) The questions for those who did not attend the internship were basically the same as those on questionnaires A and B. There were only some differences in the basic information part, such as sex, expected features of the internship companies, and expected positions of internship, etc. Our hope was mainly to understand the respondents' views and use the same evaluation methods as described above.

3. Questionnaire and Information Processing.

There were two parts to the questionnaire, one for students who participated in the internship and one for the internship companies. The internship ended in September 1996. Afterwards, we had a basic understanding of the students' conditions of learning. We faxed out the questionnaires in October 1996, tracked by telephone, and successfully received the questionnaires back in November 1996. We received 2 questionnaires from the internship companies and 16 from the internship students.

In addition, in the case of the students who did not participate, we received back 125 questionnaires from juniors and seniors in the Department of Visual Communication Design. To investigate the related design companies, we mailed out 120 questionnaires in November 1996 and received them back in groups, with a total of 39 questionnaires received to December 1996. After review, we rejected 5 questionnaires and kept 34. The return rate was 28.33%.

After receiving the questionnaires, we used a computer SPSS system to process the information and statistics. A list of statistic is given in the following paragraphs:

(1) Basic Description Statistics

These is for calculating basic information and the numbers or times of investigation of actual conditions. In addition, they are for calculating the Mean (M) and Standard Deviation (SD) of the effects of the internship.

(2) ANALYSIS of Variance (ANOVA)

This is for calculating graphs of internship effects to learn the differences in opinion between the internship students and their superiors at internship companies.

4. Results of the Special-Subject Internship

4.1. *Opinions and Reactions to the Design Case*

1. Reactions of the Teachers toward the Design Case.

In the design case, supervising teachers took roles as creativity consultants as well as mediators, communicating and guiding the students to create and design. The following paragraphs are the teachers' opinions:

(1) The environment visual plan and design involved a huge domain. By investigating management and market, we could improve the special topic if there are other related courses to accompany it.

(2) After the design, manufacturing cost controls such as printing price evaluation, learning of related materials and ways of communicating design quality with the print factories could all be included in the courses.

(3) The implementation of the design plans, though done through the design center, still consumes much time in making administrative business contacts and distributing duties. In addition, the fact that the company owners are far away, could affect the teachers' and the students' conduct of the courses.

(4) When there are conflicts between the demands of clients and professional design judgment, consulting teachers should help meet the clients' demands, raising students' professional level. The teachers could also use the opportunity to inform the students of the importance of the work.

2. Students' Reactions to the Implementation of the

Design Case

Students had positive reactions toward the implementation of this design case. Here are their achievements and views concerning the learning process:

(1) They learned how to handle an entire project during the design case. In the past, the process emphasized personal styles and expression, but in this case, they learned to participate in team design.

(2) Since they lacked experience and were too nervous, the students could not express their design intentions completely during their first meeting with the company owners, and this affected their later designs.

(3) During the process of design, because of the teachers' guidance, the company's demands, and the students' own design plans, the students often felt quite pressured.

(4) From this design case, they not only learned relevant design information and knowledge, but also acquired methods of collecting, analyzing and organizing information from one another.

(5) In the self-evaluation, there were some distance between ideals and reality. The students need to improve their ability to understand the owners' attitudes and thoughts and the ability to communicate.

(6) There were not enough information or signals from the companies telling the students that they could not handle the tasks.

(7) The students hoped that different kinds of design cases would be provided to increase their practical design experience.

3. Business Owners' Reactions concerning the Implementation of the Design Case

Business owners gave some advice concerning this design case:

(1) They thought that the plans of the students' final case proposals were quite complete. However, the printing cost was too high, so they had to re-evaluate the feasibility.

(2) The students from the design department were more self-conscious and needed to adjust their communication skills and styles, with more emphasis on team spirit and the ultimate goal. They should not focus on personal expression that would lead to impractical designs.

(3) Students' cost calculation ability costs should be improved so that they can take the printing costs into consideration.

(4) This design case took a lot of effort and spirit, so the students deserve high marks and positive feedback for the hard work and spirit of the plan.

4.2. *Evaluation of the Implementation of the Special-Subject Internship*

Evaluation of the Design Case Implementation from the Point of View of Teaching

A good business image design is not simply the surface visual design. The points of the plan should include the spirit of the business, an understanding of its image inside and outside, the trends of current visual design, and collected recent market information. In addition to professional design knowledge, they should obtain other related knowledge and combine theory with practice. Using teamwork, we should train students to discover questions, increase their opportunities to talk with business owners, and improve their communication skills. In this implementation, we used "cultivating teaching" and "peer teaching" to stimulate students to learn and cooperate, so that they are able to improve their design quality. Fully incorporating the described features, we have the teaching achievements of the design case implementation:

(1) This internship pointed out and helped students' ability to plan a complete design project, catch business features and business demands, communicate, one-to-one, and research design trends. It also sought to increase students' skill at analyzing organizations and managing plans.

(2) The group design process strengthened students' ability to work in group, developed each student's special talents and completely harmonized personal differences. Moreover, it organized the entire design and increased the group power by discussion.

(3) Students learned to handle the design process and correctly deal with the management, communication, design, proposal, mutual relations and interaction, advanced proposal skills, media selection and operating, and temporary implementation abilities.

(4) The students still lacked "independence." The students could be trained to have independent judgement and thinking ability through the internship, which encouraged students to address problems, find problems, discuss problems, and increase their self-evaluation abilities.

2. Evaluation of the Design Case Implementation from the Company's Point of View

Here we evaluated the results according to: time, feasibility and practice:

(1) Time: In terms of scheduling, students had other courses so that it was difficult to coordinate the times. In addition, the participating companies were located in Taipei, which made communication inconvenient. Therefore, for businesses, the demands were less urgent and less flexible.

(2) Feasibility: The investigation of companies and the review of sites was not complete, and this caused some loss.

(3) Practice: Management is business goals and the students' lack of practical design and business cost abilities needed to be communicated better.

Evaluation of the Internship Implementation from the Point of View of Supervision

Evaluation of the internship implementation from the Supervision point of view took into consideration student interactions and variables facing clients.

(1) For the interactions, communication with business owners while addressing all aspects of design allowed students to understand the demands of design. This will help improve the students' over-idealized designs.

(2) For the variables, business owners may change their demands for different reasons. Therefore, students learned how to manage the changes and train themselves to adapt and react immediately.

(3) This internship also helped students learn about appraisement of costs and actually understand business cooperation.

5. Results of the Vacation Internship

Questionnaires were used to discuss the reaction of students and businesses toward the implementation of the "vacation internship." We discovered several points concerning the implementation of the "vacation internship":

5.1. *From the Internship Students' Point of View:*

1. 87.5% of responding internship students felt the vacation internship, had positive value.

2. The responding students believed that "practical design experience" was the most rewarding form of learning.

3. The students believed that "incomplete preparation" was the main cause of poor results.

4. About 50.0% of the attending students hoped that the salary would correspond to "working time."

5.About 43.8% of the students would be willing to work in the internship companies.

6.As for internship benefits, internship students believed that the internship was of high value because of "the adaptation to a new working environment" and "the ability to perform professional practical design."

5.2. *From the Point of View of the Internship Companies*

1. 81.8% of the internship companies believed that the motives for providing internship were "education" and "the establishment of human resources data," showing that internship will be accepted in the future.

2. The tested companies believed that the "government lacks encouragement and incentive measures" is the main factor discouraging internships.

3. All the internship companies would accept employees who participated as internship students first to work for their companies.

4.91.6% of the companies have a high intention to provide internship opportunities again.

5. About 75.0% of the tested companies use the method of "teaching when needed on-the-job" to instruct the internship students.

6. As for the results of the internship, internship companies believed that after internship, internship students learned to have better "responsible spirit" and "teamwork skills." However, internship companies believed that the students still lacked "independence" and "the ability to make plans."

5.3. *From the Non-Participating Students' Point of View*

1. The responding students believed that "obtaining practical design experience" was the major motive for internship.

2. The students believed that "businesses' low intention to teach" would be the main reason for poor internship results.

3. 52.8% of the students hoped that the salary would correspond to "working time."

4. 81.6% of the students would be willing to include the vacation internship credits among elective credits.

5. As for the benefits of internship, the tested students believed that ability to "adapt to a new environment" and "professional design ability" could be improved.

5.4. *From the Point of View of the Interviewed Non-Participating Internship Companies*

1. 53.0% of the interviewed companies believed that the motives for providing internship are "education" and "the establishment of human resources data." However, others believed that "the filling of a temporary deficiency" is the motive.

2. The companies believed that "government lacks encouragement and incentive measures" is the main factor discouraging internships.

3. 67.6% of the companies have high intentions of providing participating students the first chance to work for the company.

4. About 67.6% of the companies would be willing to provide internship opportunities.

5. About 67.6% of the companies used the measure of "teaching when needed on-the-job."

6. As for the benefits of learning, the companies assessed positively the students' "teamwork ability" and "future employment potential" after internship. However, their assessment of the students' "independence" and "management ability" was lower.

5.5. *Discrepancies in the Views of Different Respondents*

1. Except for "future employment potential," "teamwork ability" and "responsible spirit," the internship students and the superiors of internship companies had quite different opinions on the results of internship. In addition, they had a very different evaluation of "independence." From the above, it shows that there is a big discrepancy between the opinions of the internship students and the internship companies. The students believed that they had improved their abilities after internship, while the companies believed that much still needed to be strengthened.

2. The participating students and non-participating students did not differ much in their opinions.

3. Superiors of internship companies and the tested non-participating vacation internship companies shared similar opinions. They agree that "responsible spirit" (4.17 average points) increased after internship. However, the non-participating companies had a more moderate opinion concerning "responsible spirit"(3.45 average points). Therefore, they differ on their views towards "responsible spirit."

Therefore, as for the current professional training education design models of human resource development, design education is given higher value through special-subject internships and vacation internships. If, during the process, we could receive the complete cooperation of businesses, students, and the government, the internship system would definitely be more complete in practice.

6. Discussion and Suggestions

6.1. *Problems and Discussion of the Internship System*

1. Concerning the "Special-Subject" Internship:

According to the above research, we propose the following suggestions for teachers, students, and appointed businesses:

(1) For companies, the implementation of the design case involves much human resources, knowledge, and research cost. Therefore, they would like to increase the internships. Moreover, students can absorb practical design experiences because they have strong intention to participate in the design cases.

(2) This design case was a medium design case in terms of design and time control, but there are still some discrepancies from the speed demands of businesses. In addition, the coordination of courses and the application of manpower also deserve a second thought. Therefore, a better cooperative model is required for the employment of students, instructors and relevant courses and for the difficulty control of each designed case, in order to discover a more effective way for handling this case study.

We should further consider the coordination of courses and the distribution of human resources. We should establish thorough the World Wide Web a system to operate, learning to control the design case within for the future cooperation of students, teachers, and related courses.

(3) The difference between company and school is that the company is more practical, directed by commercial interests. On the other hand, the school focuses on the "entire" picture. Besides meeting the practical training demands of design, it also stresses the value of research, academia, and education. Consequently, some distance still exists between the two sides.

(4) The purpose of the internship is to have the students understand the techniques and processes of practical design through a design case. In the expert seminars for this study, Professor Pan-song Lin from the Department of Fine Arts of National Taiwan Normal University pointed out that an important purpose of the design internship system is to "judge value and develop students' professional morality and ability to evaluate." It's quite important to develop students' ability to evaluate in a internship. In the process, they are not solely dependent on teachers' judgments and suggestions, and the students need to learn how to judge by themselves and establish the ability to evaluate through participating in a design case.

2. Concerning the "Vacation" Internship:

According to the above research, we propose the following suggestions for teachers, students, and internship companies:

(1) Internships need more cooperation from internship companies, teachers, and students. Internship companies need greater participation by and guidance of students for the students to

obtain more practical design experience, instead of using the students to temporarily meet a shortage of employees.

(2) Before the internship, if relevant units such as schools, teachers, or internship companies did not provide enough preparation and communication, the students could not acquire the proposed learning achievement and content.

(3) After the internship, the students should exchange their internship opinions, perhaps using seminars to find out advantages and disadvantages through bilateral communication. Then they should discover the current problems of vacation internship, and solve and correct them.

(4) When relevant units such as schools apply for internships, the companies could hold interviews to evaluate the students' abilities. This way, both sides could meet their needs and avoid some problems if the students did not have the required skills.

(5) The process of vacation internship depends mostly on the teachers' ability and the business-school cooperation. Thus, if schools have a unit to perform liaison, more complete internship company data could be established, and the unit could periodically make long-term contacts and set up a system according to the number of participants, the internship opportunities, the scheduling of internship time, the cooperation of internship courses, the guidance of supervising teachers, and the distribution and utilization of human resources.

(6) In our interview with experts, the Magic Media Company pointed out that: Taking into consideration interests and benefits, we should instruct the students that this work is just an opportunity before starting his/her career. Usually, students have high expectations and demands during internship, and sometimes, this causes a burden for the design companies. We should let the students know that the main purpose of internship is to learn through internship, and is not to make money by working during the summer vacation.

6.2. *Suggestions for the Internship System*

The following are suggestions for the four aspects of internship preparation courses, school units (design centers), design companies, and businesses.

1. Suggestions for Internship Preparation Courses:

(1) The course for the special-subject internship is the "making of a special-subject." However, the selected design cases are very diverse and they usually need different media, so it is difficult to fit them in just one course. As a result, the establishment of a mutual connection between internship courses could facilitate the completeness of diverse design cases and allow students to learn more about whole-design. We suggest that in the scheduling of courses, we should consider the coordination of related courses (e.g., packaging design and computer graphics), classify these cases at the beginning of the semester, and coordinating the relevant courses. Moreover, the courses of related departments (e.g., departments of industry, visual communication, and space design) could collaborate, which would allow the students to learn the concept of whole-design through internships.

(2) For the overall situation, we should not only arrange special-subject vacation in internships the major courses and required courses, but also cooperate with outside units, which would allow students to obtain practical design experience.

(3) In this research, we found that most students desire to include the vacation internship among elective credits. Therefore, we suggest that the relevant design school could consider including the internship among elective credits after the internship system is set up.

(4) From the above questionnaires, we know that the internship companies provided teaching only when it was needed, and none offers training before employment. The reason is that businesses are quite busy. Teachers could make up for lack of pre-employment training and teach the courses before the internship. On the one hand, this would inform the students of the purpose, goal, and content of the internship. On the other hand, the students would learn better internship attitudes.

2. Suggestions for School Units (Design Research Center):

(1) The design research center needs the collection of complete human resources data and the detailed plans of teachers' specialization so that different design projects would have sufficient information on assistance. In addition, we should encourage the providers of design cases to enrich and diversify the design cases, which will increase the students' internship opportunities and the completeness of the arrangement of courses.

(2) School units should cooperate with professional design associations (e.g., The R.O.C. Graphic Design Association, Advertisement Association, etc.).Through mutual cooperation of the "Academic Extension Group" and the associations, we could establish a formal internship conduit for students and help the industry set up human resources data. This would benefit both parties.

(3) We should use the school design research center as a "single window" to deal with the establishment of an internship system. The design research center must arrange the courses of three departments, classify the design business and course contents, and formulate arrangement for offering the relevant courses.

3. Recommendation for the Design Companies:

(1) Shu-hua Chen (1995) pointed out in the article "Search for the Advertising Successor" that in order to ease the shortage of human resources, more and more advertising companies have established a department of human resources, which is responsible for cultivating and training manpower. They hope to use properly human resources and solve this long-existing problem of the advertising industry. We could alleviate this problem in two ways. One is to devise the human resources development plans, and the other is to establish human resources data through cooperation with schools or internships. Therefore, we suggest that design companies should take advantage of the long-term benefits of internships. The internship students may cause the companies' some inconveniences, but it is also a good chance for the design companies to establish human resources data.

(2) Although the learning activity of vacation internships is probation internship, the effects of learning and absorbing practical design experience completely are quite slow. Though the internship companies have many limits on human resources, they help students more through

proper teaching. In addition, we have discovered from this research that most design companies have the teaching approach of "teaching only when necessary." Therefore, we suggest that design companies should teach depending on different working situations and allow students to learn the points of practical design.

4. Suggestions for the Business Industry:

(1) Usually the selected design cases at businesses have time limitations or very rushed deadlines. Therefore, there will be some difficulties in arranging the courses in coordination with other relevant matters. In implementation, we suggest that the business propose the cases as soon as possible, so that the arrangement of courses can be more flexible and not affect regular courses.

(2) The company should respect the profession of design while cooperating with the schools' handling of the design case. In the selected design cases, the teachers should usually lead the students participating in the design. The students' design pieces are usually idealized and lack practice, and their professional skills and creativity are not polished. In the end, we hope that businesses should evaluate from the practical training point of view and give suggestions.

References

Chang,C .S. & Lin,C. S. (1983). *Educational psychology* (pp.375-381).Taipei: Tung-Hwa Publishing Company.

Chen, S. H. (1995). *Search for the Advertising Successor*, Advertising Age, 41,40-41.

Chen, J. H. (1996). *Research on a training and educational model for professional designers in Taiwan-design educated by the ability of the professional practical design : A study of the Cooperative Work Experience Education: Experiment in Model.* Final report for NSC-84-2512-S-224-006.(pp.7-11).Yunlin, Taiwan: National Science Council, R.O.C.

Cheng, S. H. (1995). *Research on a training and educational model for professional designers in Taiwan-design educated by the ability of the professional practical design : Research on the practice system.* Final report for NSC-83-0111-S-224-007. (pp.59-73). Yunlin, Taiwan: National Science Council, R.O.C.

Chou, W. X. (1990). *Evaluative analysis of the out-of-school internship system of students at the Min-Chi Institute of Technology, Paper collections of the 1990 Conference on Technology and Education*, (pp.4-35~4-42). Taipei,: The Min-Chi Institute of Technology.

Ho, X. Z. (1995). *Research on a training and educational model for professional designers in Taiwan-design educated by the ability of the professional practical design: Research on design curricula*. Final report for NSC-83-0111-S-224-003. (pp.47-49). Yunlin, Taiwan: National Science Council, R.O.C.

Ho, X. Z. (1996). *Research on a training and educational model for professional designers in Taiwan-design educated by the ability of the professional practical design: Research on Curriculum implementation.* Final report for NSC-84-2512-S-224-007.(pp.73-75). Yunlin, Taiwan: National Science Council, R.O.C.

Li , C. L. (1996). *J seed planning*, Advertising Age, 61,42.

Li, Z. H. (1994). *Manpower resources in Taiwan advertising*, R.O.C Advertising Yearbook '93-'94,6,145-150

Liu, H. L. (1994). *The suggested project and bottlenecks for the summer internship of the students of the Department of Advertising*, R.O.C Advertising Yearbook '93-'94, 6, 158-161.

The Department of Industrial Design of the National Yunlin Institute of Technology. (1996). Paper collections of the 1996 Conference on Taiwan-Japan Design Education, (pp.21-22). Yunlin,Taiwan:National Yunlin Institute of Technology.

The Office of Academic Affairs of The National Yunlin Institute of Technology. (1996). *Introduction to National Yunlin Institute of Technology*,(pp.371-388). Yunlin, Taiwan: National Yunlin Institute of Technology.

Wen, Y. C. (1996). *Research on a training and educational model for professional designers in Taiwan-design educated by the ability of the professional practical design: The internship system based on practical design(Design Center)*. Final report for NSC-84-2512-S-224-005.(pp.1-7).Yunlin, *Taiwan: National Science Council*, R.O.C.