

Practice of Interdisciplinary Collaboration for Education of Technical Writing and Presentation

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ABSTRACT

This paper is about one practical case on applying interdisciplinary collaboration on the education of technical writing and presentation for the engineering students. There are many points for the collaboration on various stages. Points of collaboration from the literature faculty and engineering faculty are discussed. Also collaboration forms in each educational stage are discussed. Finally a practical case of applying the collaboration scheme are described based on a real class example.

Keywords: Collaboration, Interdisciplinary, Technical Writing, Presentation

I. Introduction

The purpose of this paper is on suggesting an interdisciplinary collaborative education methodologies about the education of teaching writing and presentation for the engineering students. Although writing and presentation is a pre-requisite skills for the engineering students, it is not easy to teach them effectively to the engineering students. Engineering faculty cannot cover writing class in detail by themselves, but require supports from literature faculty and vice versa. Writing and presentation education to the engineers require not only the knowledge of literature area but also that of the engineering practice to be effective. And the answer is an interdisciplinary education. Naturally there has been much efforts on how to collaborate between literature faculty and engineering faculty. But the collaboration was difficult to achieve and not many cases were reported.

Collaboration requires the understanding of each area on several stages.

This paper discusses a case of collaboration in technical writing and presentation class which was taught by both literature faculty and engineering faculty. Based on that some issues on the collaboration was investigated.

II. Focus of Collaboration in Writing and Presentation Education

1. On the Class

Main point on the collaboration is on consistency of the class between literature faculty and engineering faculty. Not only sharing time of the class, but also including the contents with two aspects at the same time. For example, when teaching a comparison, literature faculty teaches the basic concepts and purpose first, then teaches overall structure and difference on comparison are taught. After that, engineering faculty teaches a specific aspect, for example overall comparison is beneficial when explaining a certain scientific concept.

2. On the Contents

Writing class for the engineering students is different from that for the literature students on the format and on the contents.

First, with respect to the format, engineering documents include more figures, diagrams and graphs than that of literature because of the characteristics of the engineering field require experiment and statistic output.

Next, in terms of contents, the style of the document is different. In general, text contents are classified into

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categories such as narration, comparison, contrast, classification, definition, exemplification and demonstration etc. These categorization is need in all areas, specifically comparison, contrast and classification are frequently used in engineering fields. Whereas descriptive method which deals with flow of the facts or subjective and psychological emotions are more proper for humanitarian style, comparison or classification of the experimental data and objective categorization of the objects are frequently used in engineering fields.

These differences on style affects to the style of the presentation not only to that of writing. The logical sequence of input, process, output and outcome which is a prevalent way in engineering can be applied to the presentation.

III. Considerations on Collaboration

1. Stages of Collaboration

Educators consist of two faculties, one humanity professor and one engineering professor. Collaboration on technical writing can be conducted divided into three stages. Pre-class stage, on-class stage, post-class stage. On pre-class stage, two educators meet together to establish the semester plan and syllabus. Most of the expected problems are shared and discussed on this stage. Also educational contents are decided. On on-class stage, educational details are discussed and shared on each detailed week of the class. Applying home work and evaluating report etc. are the topics of collaboration. **Team**

Teaching is done on problem basis. Each educator does his own role on the specific topic. Post-class stage is focusing on evaluation and feedback. Educators collaborate each other on various points.

In our case, the construction of class was set as shown in Fig. 1.

First, in terms of faculty team teaching between literature faculty and engineering faculty becomes basic frame. Two faculty shares responsibility on the topics which are discussed before the class and those includes theory and practice. Also evaluation process is shared.

Construction of Class

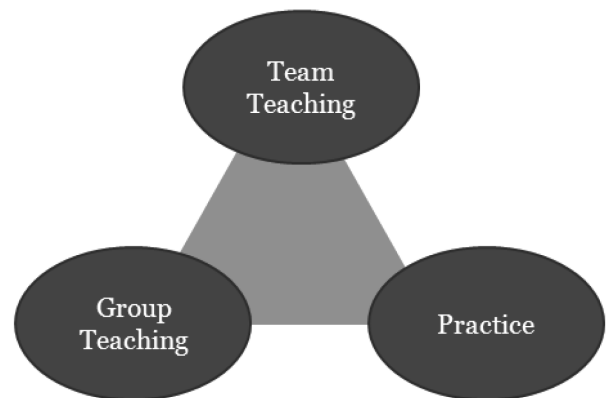


Fig. 1 Construction of Class

Next, in terms of the students group of 4 or 5 members forms ground units. The units does discussion, topic selection, material investigation, preparing presentation and presentation etc.

Finally project-based activity forms the fundamental. Small project which fits to the engineering students are derived to make a smooth fusion between engineering style and literature style.

2. Topics of Collaboration

Topics are divided into three big categories, basic writing skills, technical writing, basic presentation skill. Basic writing skill includes fundamental writing education which includes collecting materials, correct writing and writing autobiography etc.

Technical writing is focusing on more practical aspects. Describing things, writing technical notes, preparing proposals and reports are some of them. Basic presentation skill is about how to speak and present themselves to the audiences.

Finally students are given chance to do research and prepare their own topics, present them and evaluate each other. For those collaborative course Nam, Kyoung-won, Jo, Cheolwoo (2012:14) suggested an example contents according to the sub-topics. Table1 shows a task-based contents on technical writing and presentation. The key-point for the collaboration is on the presentation part.

Table 1 Task-based contents of technical writing and presentation

	Task	Collaborative Contents	Collaboraton
1	Auto-biography	Basic writing education Link of contents and style Inclusion of specific activities	Content-based
2	Technical Report Writing	Correct writing method Components of technical documents	Content-based
3	Manual Writing	Comparison, Contrast, Classification Report for CECO exhibition visit	Content-based & Co-evaluation
4	Presentation Script	Basics of presentation scripts Preparing contents and graphic informations Logical structure of PPT slides	Content-based & Co-evaluation
5	Presentation	Basics of natural speaking on presentation Presentation for CECO exhibition visit	Content-based & Co-evaluation

IV. Practice and Discussions

In this chapter, as an example of collaborative teaching presentation of CECO exhibition visit and discussions of them are described here. Topic of the visit is any thing about the any of the specific exhibits from CECO (Changwon Exhibition and Convention Center). Student groups are asked to visit any of the exhibits at any time and write a report and give presentation on that visit later.

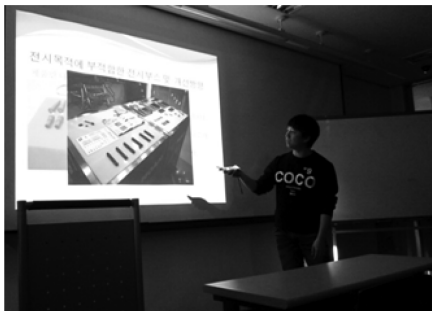
When preparing topics members of the student group participate to choose a proper topic before the visit.

From actual teaching experience, several problems are noticed.

Time assignment for each side (literature and engineering) is one of them. Deciding which percentage of time have to be assigned and which rate is proper is a problem and

it have to be investigated for future cases. Also topic selection is another issue. For limited time of a semester not many of the necessary topics can be dealt with. So proper choice of the topic have to be chosen according to the students who participate to the class. Next, the amount of homeworks are one problem. Because writing and presentation class aims at practical class, many practical homework will be beneficial to the students, but engineering students tent to have more stress on writing class compared to their majoring subjects. So proper amount of homework have to be decided based on the experience of this year's work. Collaboration during the class is another issue. Two different faculties have to meet as many times as possible to communicate and to promote the ideas. But actual situation was not. Meeting chances during the class were limited due to the lecture burden. So efficient way of interacting each other to collaborate for the class have to be devised.

Presentation on CECO visit

**Fig. 2 Student Presentation View**

IV. Conclusions

Teaching writing and presentation in engineering class need inter-disciplinary way. According to the teaching environment the details of inter-disciplicity can be altered. In this paper we have investigated a case of collaborative technical writing and presentation class.

With two faculty members from different disciplines, it is thought to be an effective way of teaching. But still there are some points to draw more collaboration and negotiations on designing specific class structure in ef-

fective way. It is required more diverse approaches need to be applied in multi-disciplinary way for teaching writing and presentation class in engineering field.

References

1. Kim, Se-ryoung, (2010), The Study on the Instruction Operation Program for Writing Education in ABEEK Accreditation, *Eomun Yeon-Gu*, 38(2): 321-349.
2. Lee, Yang-sook, (2010), A Study on The New Status of the <Engineering Writing>, *Eomun Yeon-Gu*, 38(3): 489-510.
3. Jin-sook, Nam-Pyeong-jeon, Lee, (2010), Team teaching class and its practice of using sample sentence and practice problems for 'writing of natural sciences and engineering, *Korean Thought and Culture*, 53: 335-357.
4. Nam, Kyoung-woan, (2011), A Study on the Management way of University Writing Class, *Sarim-Eomun Yeon-Gu*, 21: 149-170.
5. Nam, Kyoung-woan-Jo, Cheolwoo, (2012), Team Teaching as an Approach to Writing Education for the Engineering Students, *Journal of Engineering Education Reserch* 15(1): 9-17.
6. Shelton, James H. (1994), *Handbook for Technical Writing*, NTC Business books.
7. Alley, Michael, (1996), *The Craft of Scientific Writing*, Third edition, Springer.
8. Beer, David, McMurray David, (1997), *A Guide to Writing as an Engineer*, Wiley.



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