A Case of Evaluation Categories on Team teaching-based Technical Writing and Presentation Class

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ABSTRACT

This paper describes the evaluation procedures which was applied to the team teaching-based technical writing and presentation class. Among the various evaluations for the class, three major cases are introduced. Self-established goal evaluation, presentation evaluation and team evaluation are those. Each evaluation is designed to promote or evaluate student activities from the class. And it was found to be effective for team-based writing class.

Keywords: Technical writing, Engineering education

I. Introduction

Technical writing and presentation class becomes more and more as it is the one of the most important class for the students as well as companies which students work in the future[1, 2]. So effective teaching of the class in multi- disciplinary way becomes more and more important. Among the several approached for the technical writing class team teaching-based technical writing and presentation class was found to be effective before. But still there are problems to be solved in many areas such as collaborating between faculties in different discipline and evaluation methods and stages etc.

In this paper we describe some points about evaluating in several levels which was applied to the actual class and suggest the most effective and systematic evaluation method. History of writing class in Korea is as long as ten years now and various methods and research examples on the adaptive way of teaching and learning method and contents has been reported. The important things for the actual technical writing class are collaboration between a faculty who can teach writing and a faculty who can teach technical writing in application area. The collaboration need not only time-sharing but also sharing of contents and methodology. The case

was introduced by Nam and Jo [3].

But more important factor in this kind of team-teaching is on finding proper evaluation way. Each faculty need to provide their own way of evaluation according to their majoring area. In presentation area, the effective way is to construct a team rather than individual preparation because mutual cross-checking procedure provides means to make better presentation in general.

In this study we are focusing on the collaborative management of a technical writing class, which is called as a team teaching-based writing class. After describing the overview of the team teaching-based technical writing class, evaluation points and results on three categories were discussed.

II. Overview of Team teaching-based Technical Writing Class

Technical writing and presentation class requires writing skills as well as technical concepts. So often one single faculty is not enough to teach a technical writing and presentation class. Team teaching-based technical writing class is run by two faculties with different background. One engineering faculty and one literature faculty. This combination can reduce some drawbacks which can be caused by the single faculty only case[3].

Total period of the semester is divided into two parts.

One part is for literature faculty, the other part is for engineering faculty. Literature faculty teaches mainly on writing principles, i.e. how to write and how to express thought in written form, correct writing way etc. Engineering faculty is more focusing on the style and practical writing, such as how to make a report in document form, how to collect materials, how to express figures and graphs in th document etc.

III. Evaluation points for each stage

1. Self-established Goal Evaluation

Self-established goal evaluation is related to raising the student's self-respect and satisfaction, also to measure the student's degree of achievement during the class. In some classes the goals of the semester is ready made and provided to the students. But those are not very much recognized to the students often. So we tried to make the students set their own goal and evaluate them at the last moment of the class. At the start of the semester, students are grouped together into number of teams which consists of 4~5 students per each team. Each team members are asked to write down and submit their own study goals and those are integrated together to generate a self- established goal of that class. To the process class syllabus was provided in advance. The goal suggested by the students are merged by NGT(nominal group technique) method. The followings are major final goals drawn.
(1) Improve writing skills
(2) Learn how to revise my writing
(3) Learn to collaborate
(4) Improve presentation skills
(5) Promote creativity
(6) Improve verbal ability

There were some minor goals which are not chosen. They are,
(1) Getting A+
(2) Practice how to write auto-biography
(3) Improve to focus on things
(4) Writing a report

Self-established goal have some pros with some cons. So these factors can be counted on analyzing the evaluation results.

Table 1 Analysis of Self-established Goal Evaluation

Goal	Very Good	Good	Normal	Poor	Very Poor
1	1	11	20	3	0
2	4	21	9	1	0
3	5	23	6	1	0
4	1	14	19	1	0
5	2	14	17	3	0
6	2	18	14	1	0

Pros:
    Give students a self-motivation
    Reminds students about the course goals
Cons:
    Sometimes student do not draw important facts →
Lecturer helps!

Evaluations are performed by asking the degree of student's satisfaction for the specific goal, which they set at the beginning of the class. 5 levels of satisfaction is checked for each goals. Then all the answer sheets are collected and statistics are computed. Based on the statistics the degree of the satisfaction from total class can be evaluated.

From the evaluation results of table1, most of the self-established goals are found to be successful. Especially students achieved better at goal number 2 and 3, which was learning how to revise my writing and how to collaborate. These mean student felt more achieved in these area. Goal number 1 and 4 were less recognized by the students and the self-achieve level was relatively low. Those were improving writing skills and improving presentation skills. To increase the self-achievement level, more feedback are required.

2. Presentation Evaluation

Presentation can be defined as a communicative way to deliver presenter's thought and opinion to the audiences accurately and effectively in the limited given time. So presentation is the transfer of the information and means of pursuation. The key factors which makes contents and form are participants, purpose, theme. Good understanding of each can lead us to good presentation. Analysis of the participants includes the analysis of presenter's ability and that of the request of audiences. Analysis of purpose includes even distribution of objective aspects and subjective aspects in current presentation. Also the theme analysis deals with

selection of the proper material and talking techniques.

In our case, after giving students the general principles of the presentation, actual presentation was conducted as follows.

Purpose: learning and practicing a logical and effective construction of the materials and nourishing effective spoken language communication ability

Theme: considering engineering background, students are asked to visit CECO(Changwon Exhibition Center) and prepare presentation for the visit. In CECO there are frequent exhibitions majorly related to engineering. Those can provide the students chances to experience the industry and meet peoples from the industry. They also draw interests of the students and students can have fun during the procedures and it is good place to make their own story for the technical writing class.

Table 2. Table for Presentation Evaluation Criteria

	Evaluation Factors	standard in details
Form of Presentation	Time	Keeping time limit, Usage of time
	Material	Legibility, Visual Effect, Component
	Presenter	Speaking rate & volume, Non-verbal communication, Role allocation
Contents of Presentation	Organizing	Adequacy of title, Introduction and conclusion
	Logicality	Table of contents, Stability of structure, Consistency of content
	Comprehension	Quantity & quality of materials, High-lighting, Q & A
	Creativity	Materails, Manner, Content

Base on the detailed standard of evaluation, we evaluated the presentations of the class on the second semester of 2013. The results are as on table 3.

Table 3. Result of presentation evaluation

	Evaluation Factors	Good	Normal	Poor
Form of Presentation	Time	10	0	0
	Material	3	5	2
	Presenter	6	3	1
Contents of Presentation	Organizing	3	5	2
	Logicality	3	5	2
	Comprehension	4	6	0
	Creativity	5	5	0

From the table the most prominent factor was presenter's ability in the point of presentation form. In th content of presentation organizing and locality was the part. Considering that presentation is the process of verbal communication process, it is an expected result that presenter's ability works the most important distinctive factor. Also in terms of the contents it was shown that education for the logical composition need to be enforced more.

Presentation schedule: time 15 minuites, 4 team members – total number of team 10.

From the final presentation, student's are asked to present their report in written and verbal form. This is the chance which is good to evaluate the student's achievement through the class. Faculty review and peer review was conducted.

The overall structure of presentation evaluation divided into form and contents. In terms of the form, factors of time, materials, speaker are considered. These mean the evaluation of presentation duration, visual material and talking ability of presenter. In terms of the content, organization, logicality, comprehension and creativity are evaluated. These include factors on evaluating the presenter's ability to construct the contents effectively, the ability to build the logical structure, the ability to understand the theme, the ability to create his or her own ideas. Those criteria are described in table

3. Team Evaluation

Because this class was run by team unit. The contributions of each member are different according to the member's efforts and knowledge etc. So to evaluate the student's participation and contribution exactly, we evaluated the team activity into two classes, i.e. peer evaluation and faculty evaluation. By doing so we could expect the satisfaction from the student who is participating eagerly as well as a team's subjective activity level. Also mindmap was used to promote the student's participation. Students are asked to draw a mindmap for the each taught class. The mind maps are used to check the understanding and attendance of the team members. Mindmap was not scored and used just to estimate the attendance and the level of understanding of the team.

The evaluation procedures are as follows:

(1) Each member of a team evaluate the other members in terms of several check points

(2) A poll sheet is given to each of the team members (at the end of the semester)

(3) Team give 100 points to other members

(4) Students are asked to write the reasons for giving that point

(5) Give weight of 100% for maximum points, 90% for

middle points, 80% for minimum points

Some check points in the sheet are,

(1) Degree of contribution, which means who contirubuted more to the team activities.

(2) Respect other members, which means who had given more efforts to integrate the team.

(3) Well-preparedness, which means who is more prepared for the specific class.

These evaluation points are important for team-based class running. This method is also useful to give the active participants motivation and encouraging less oriented students. The total points per each team member are added and total acquired points per member is computed.

Based on the statistics from the poll, we also found some drawbacks of this method.

(1) There are tendencies that some students share the even points and receives the same weights across the team members.

(2) Some students feel uncomfortable for this process. But most of the students are clever to praise the hard worker.

4. Conclusions

In this paper three levels of evaluation procedures which was applied to the team teaching-based technical writing and presentation class. Self-established goal evaluation was effective to motivate the students. Team evaluation was good to draw the collaboration inside the team. Presentation evaluation was the integrated one. By presentation evaluation we could evaluate many aspects of writing ability in text including verbal ability.

According to the evaluation results, suggested evaluation methods are found to be effective to judge the students' activity and degree of participation to the class. Some drawbacks of the evaluation process was time to perform the evaluation. To perform this kind of evaluation correctly, we will need the help of teaching assistant to process the data if the size of the class is big. It takes much time. To

relate the evaluation results to student's participation to the class, some evaluation need to be done during the class, not at the end of the class. By doing so, we can give the students feedback to correct their behaviour and give them time to do something for the remaining part of the class. But further development and adjustments in terms of the questionair and evaluation factors are required for the future.

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