

久留米工業高等専門学校 紀 要

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教育研究報告

Raising Communicative Assertiveness and Self-Motivation Levels in Our Electrical and Electronic Engineering Department Students:

Part 1 - Needs Analysis and Evolution of the English Communications Practicum (ECP) Course

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From 2013 to the present (2017), the Department addresses specific English communicative needs of its students through its English Communications Practicum (ECP) course. The ECP has evolved to emphasize the nurturing of self-assertiveness and debating prowess, traits not only necessary to be globally-competitive engineers, but which also are recommended outcomes in the Model Core Curriculum (MCC) guidelines. Here, in Part 1, the rationale for the establishment of the ECP program is described along with its evolution over the last four years and the direction it aspires to take. Part 2 describes more in detail the structure, pedagogy and activities of the ECP curriculum, as well as its strengths, weaknesses and future.

1. Introduction

Competency in the English language is without a doubt an important asset for the global-minded Japanese engineer. But language skills alone are not enough. Studies show that basic communication skills and emotional intelligence are of even greater importance for one's career in engineering. Engineers must not only be experts in their technical field, but should be active and engaging team problem-solvers, a challenge magnified greatly when a team consists of international members (Seetha, 2012).

This engineering college offers as much English language training as the average Japanese high school through the 3rd year. But specific training to develop self-assertiveness and self-confidence "awareness" in a global communicative context is still new.

This Department initiated a global communicative competency course to try to address the needs of its students.

2. Background

2.1 Current English education curriculum for electrical and electronic engineering students at National Institute of Technology, Kurume College (NITKC)

Total number hours of English language instruction per year

The national average for total hours per year of English language instruction in Japanese high schools is about 437 hours. NITKC offers 450 hours from Year 1 through Year 3 with an additional 120 - 300 hours from Year 4 through Year 5.

Course content

Most Japanese high schools have required English courses titled "Oral Communications I & II (OC I & II)", "English I & II (英語 I & II)", "Reading (リーディング)" and "Writing (ライティング)". At NITKC, there are two types of courses from Year 1 to Year 3: "English I & II (英語 I & II)" and "English Practicum (英語演習 I, II & III)". At NITKC, elements of oral communications, reading and writing courses are condensed within the English I & II and the English Exercise courses (Table 1). Also, for Year 2 students, there is also one required English conversation course which is led and taught by a native English-speaking instructor.

Table 1: English courses at NITKC - hours (2017)

2017 English courses							
1st Semester / 2nd Semester (hours per week)							
source: H29年度・webシラバス・久留米工業高等専門学校・電気電子工学科							
Course	1st Year	2nd Year	3rd Year	4th Year	5th Year	Advanced Engineering Year 1	Advanced Engineering Year 2
英語I	4/4						
英語演習I	2/2						
英語II		2/4					
英語演習II		2/2					
英語III			2/2				
英語演習III			2/2				
英語IV				2/2			
工業英語				2/0			
英語V					2/0		
時事英語 (elective)				0/2	0/2		
実用英語 (elective)				0/2	0/2		
英語講読 (elective)				0/2	0/2		
実践英語 I						1/0	
実践英語 II						0/1	
実践英語 III							2/0
技術英語							2/0
Total hours per week	6/6	4/6	4/4	4/2-8	2/0-6		
Total hours per year (2 15-week semesters)	90/90 180	60/90 150	60/60 120	60/30-1 120 90-180	30/0-90 30-120		

2.2 Global communication needs of engineers

Global engineering education researchers surveying new engineers report that most are satisfied with engineering knowledge gained through their engineering education. However, a majority also report that they were inadequately prepared in the area of communications (Polack-Wahl, 2000; Okochi, 2010; Requena-Carrion, 2010). Employers of engineers report that there is a strong need for engineers to be proficient in English language skills, particularly in oral communication skills for:

- communications
- decision-making
- teamwork

(Illing, 2001; Klein-Gardner, 2011; Tisdell, 2017)

Oral communication and presentation skills are cited as “one of the best career enhancers and to be the single biggest factor in determining a student’s career success or failure.” (Patil, Riemer, 2004)

Other skills which engineers need to possess at a high degree include:

- problem solving skills
- interpersonal skills
- critical and independent thinking skills
- emotional intelligence (EQ)

(Seetha, 2012)

According to Klein-Gardner and Walker (2011), there are five important dimensions (two tied for fifth) of being a globally-competent engineer:

1. The ability to communicate across cultures.
2. The ability to appreciate other cultures.
3. A proficiency working in or directing a team of ethnic and cultural diversity.
4. The ability to effectively deal with ethical issues arising from cultural or national differences.
5. Possessing an understanding of cultural differences relating to product design, manufacture, and use.
5. Possessing an understanding of the implications of cultural differences of how engineering tasks might be approached.

Employers of NITKC graduates hold them in high regard for their technical expertise. However, in recent years, some have expressed concern that these new engineers, in general, have a very passive nature, particularly in the area of communications. Examples include:

- Not taking the initiative to express an opinion or viewpoint.
- Not being able to effectively advocate or defend an opinion or viewpoint.
- An unwillingness to engage in meaningful or positive debate (detrimental to team problem-solving).
- An overly introverted personality (detrimental to teamwork and team problem-solving).
- A general lack of self-confidence and self-assertiveness in social situations.

In short, these employers place high value on new recruits with effective interpersonal communication skills. Helping students to overcome the deficiencies listed above are a first step towards them developing effective interpersonal communication skills, after which they can take strong strides towards addressing their future global communication needs.

2.3 The gap between needs and curriculum

The number of general English courses offered at NITKC from Year 1 through Year 3 is on par with the number offered at the average Japanese high school. The course titles are, likewise, similar, although the general English courses take into account particular requests from the five departments to adapt the general English courses to include material which meets the special engineering needs of the students.

Although special English language needs are routinely addressed in the curriculum, the communicative development needs have not been formally addressed.

However, the main focus of these courses are on improving the students’ “English” abilities and skills with the grammar-translation method usually the main teaching modus operandi. Even though most English educators are well-aware of the need to improve the communicative abilities of the students, or specifically, to increase the students’ “willingness to communicate” (WTC), the primary goal in second language acquisition (McCroskey, Richmond, 1985, 1990; MacIntyre, et al, 1998), various curriculum and logistical constraints hinder any serious efforts.

Some of the biggest constraints to improving the willingness to communicate include:

- large class sizes of approximately 40 students
- an emphasis on preparing for English exam material such as the TOEIC and EIKEN tests
- an emphasis on preparing for university entrance exams in which the English sections test heavily on grammar knowledge
- a solidified and standardized school curriculum which allows very little room to address this need.

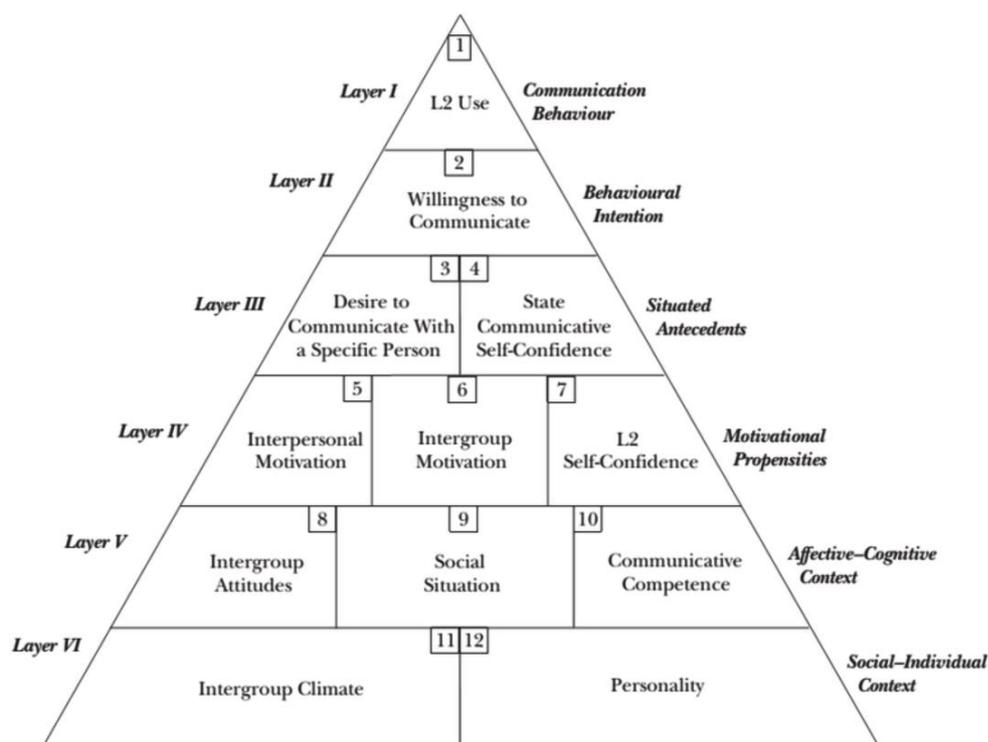


Figure 1: MacIntyre, et al's heuristic model of variables influencing WTC (1998)

Table 2: ECP needs analysis results

Needs analysis results	
1	to be an assertive and self-confident communicator
2	a mastery of basic survival English expressions and clarification skills
3	a curious and inquisitive mind
4	impromptu speaking skills
5	question and answering skills (Q&A skills)
6	note-taking skills
7	impressionable self-introduction skills
8	the ability to present one's self confidently (conveying a positive self-image through non-verbal communication)
9	mastery of technical English vocabulary and expressions related to the students' expertise
10	the ability to give and follow clear instructions, as well as describe processes / procedures
11	the ability to summarize information
12	the ability to describe a problem
13	mastery of the basics of argumentation (claim, data, warrant or CDW)
14	debating skills competency
15	a strong problem-solving mindset
16	good team leadership and followership skills
17	effective group discussion and decision-making skills
18	effective team presentation skills

Thus, within the framework of MacIntyre et.al's WTC heuristic model (Figure 1), English courses taught at the Japanese high school level address only the tip of the WTC pyramid below (Layer 1) with limited resources to address the deeper layers.

2.4 Needs Analysis results

Before the 2nd Semester of 2016, an informal needs analysis was undertaken. Based on instructor experience and an understanding of the current gap, student surveys, potential employers' suggestions, and research on the global communication needs of engineers in the near future (Marzano, Heflebower, 2012), a list of needs was derived (Table 2).

3. Our efforts to address the gap

3.1 Our approach

The Department has taken several quasi-curricular measures to address the unique English language and communication needs of the students. Such measures include:

- Mandating a vocabulary self-study plan over the course of five years to ensure that the students are exposed to the most frequently used academic words and expressions. Various Department courses may test the students knowledge of the mandated vocabulary textbook (currently Database 4500, 4th edition, Pearson-Kirihara, 2013).
- Supplementing technical course content with corresponding authentic English text material to provide exposure to the English language terms of the technical vocabulary and concepts the students learn in Japanese.
- Whenever possible, during factory or company tours, exposing students to the English language version of these visits intended for international visitors for reinforcement of the idea of the importance of being proficient at English.
- Depending on the supervisor professor, requiring 5th Year and/or Advanced Engineering students to give an English language version of their research paper abstracts and/ or presentation summaries/ presentations.
- Establishing a school-wide English debating seminar/ workshop, separate from the English Speaking Society (ESS club), which meets for one hour each week to provide additional instruction and practice for interested students.

In addition to the above, since 2013, the Department has implemented in the Department's curriculum a specially-designed "English Communications" sub-course within the Department's "Practicum Seminar" courses for 1st and 2nd Year students.

The focus of this paper describes the intentions, evolution, approach, highlights and results of our sub-course "English Communications Practicum", or ECP.

3.2 Our curriculum design priorities and approach

The founding premise of the entire program is to help learners develop a strong self-awareness of their own WTC (Figure 2). The regular use of self-reflection logs serves to stress to learners that keeping their communicative motivational levels consistent and high is the basic mindset of a communicatively competent person. Learners reflect on their individual performance and interpersonal interactions in relation to the level of their individual WTC level. The goal is to have students build a strong self-awareness of their motivation levels and compare that not only with the positive feedback and reinforcement they themselves receive, but also with that of their peers'.



Figure 2: ECP curriculum design priorities

Second, we target raising their sense of self-esteem so that they can grow comfortable being an assertive and self-confident communicators. This is done by creating a fun and safe learning environment in which the students are encouraged to venture outside their comfort zones and take risks. Failure is highly encouraged and feedback is immediate, but gentle and positive. The goal here is not only to make failure fun, but also to ensure that each failing experience translates into a valuable learning one. Their sense of self-esteem grows as they become more emboldened, realizing all failures offer an as opportunity for skill growth.

Finally, we engage the students via meaningful active learning (AL), exposing them to essential English language and communication skills, particularly those necessary for "debating competency". Here too, to ensure that students are meeting the objectives of the activities, self-reflection is required followed with positive feedback from the instructor.

3.3 Our mission: Debating competency

Our ultimate mission is for our students to achieve (or recognize the need to have) a high degree of assertiveness and self-confidence to engage in meaningful debate.

Several experts (Klopf, Kawashima, 1977; Huston, 1985; Hury, 1986; Scannapieco, 1997; Kinjo, 2011; Hamouda, Tarlochan, 2015) have pointed out the overall positive effect practicing debate has on learners including:

- Improved critical thinking skills
- Greater self confidence in communications
- Improved social skills essential for working with colleagues and competing against others
- Greater sophistication in the use of spoken English
- Improved leadership communication and team problem-solving skills

Although there are some formal debating activities which the students will experience in the program, the mission is not to train them for formal debate competition. Rather, our definition of “debating competency” includes being able to effectively: listen to reasoning of others; take notes of key points; clarify; assert an opinion; give relevant support to an assertion; critically analyze assertions; attack arguments; defend against attacks; refute; and admit when wrong or when one’s viewpoint is inferior ... in the context of team-problem solving, and in a manner which allows for the best possible outcome for the team.

This “debating competency”, as a culminating communicative skill in our program, has much utility for our students both in future job-hunting and in their work as engineers in teams. In addition, competency in debating would impart the intercultural communicative confidence needed to be effective in a global context.

3.4 What we hope to accomplish

Our ideal of a communicatively-competent global engineer

Similar to how the International Baccalaureate curriculum has its “IB Learner Profile” to idealize the define what kind of characteristics for its students (Wells, 2011), we have delineated the following traits (Table 3) which we anticipate our communications program will nurture in our students to become communicatively-competent global engineers:

Having these ideals in mind has been useful in our selection and design of our activities and program.

Synergistic, interdepartmental collaboration

This communication program project has taken on momentum, starting as just a supplementary course to

Table 3: Communicatively-competent global engineer ideals

Communicatively-competent global engineer ideals	
1	Self-assertive
2	Positive-projecting
3	Inquisitive (strong curiosity)
4	Local- & global-minded
5	Debating-competent
6	Self-motivated
7	Teamwork leadership and followership competent
8	Reflective with a growth-mindset (lifelong learner)

allow a chance to practice communicative activities to becoming, at present, a more formalized, debating-centric course garnering attention from other departments and schools.

This momentum is propelling the program towards becoming a prototype course which could be beneficial not just for this department, but others as well.

Thus, we seek feedback, as well as formal collaboration to continue improving the project so that it can be replicated and used for the benefit all students.

4. The evolution of the ECP curriculum

When the ECP course was first envisioned, there were two main goals: 1) to give the Department students an opportunity to practice the English skills they learned in junior high school in practical communication situations for engineers; and 2) to teach the fundamentals of logical argumentation, specifically the relationship between “claims”, “data” and “warrant” or CDW.

The 1st Year students would be given an opportunity to undertake the first goal, but only during the 1st Semester. From 2013 through 2015, commercial junior high school English refresher material was used, allowing the students to activate their passive understanding of English skills through practical communication activities.

Because of the relative complexity of the second goal, it was decided that it should be offered over two semesters and that the target learners for that portion of the practicum would be the 2nd Year students who had a year of studies behind them in the engineering school and, thus, would understand logical concepts more readily.

As there was no commercially-available material for teaching logical argumentation targeting the Department’s 2nd Year students, the instructor selected material from various sources and adapted it to the level of the learners.

In addition to learning and practicing debate, the learners also worked to improve listening skills through active learning activities such as reproducing words and expressions on the whiteboard after listening to a talk in English on CD without the script on hand. Another

Table 4: Evolution of ECP course elements

Key elements of the course (instructor)						
		2013	2014	2015	2016	2017
1st Year program	1st term	English manga-style communications textbook (Hirakawa)	JHS English review textbook for univ. students (Hirakawa)	JHS English review; listening / shadowing practice; CDW (Ikeda)	JHS English review; listening / shadowing practice; CDW (Ikeda)	Q&A skills; Communication & interpersonal skills (Ikeda / FT 1)
	2nd term	[not offered]			Q&A skills; Communication & Interpersonal skills (Koshiji / FT 1)	Fluency skills; technical communications (Ikeda / FT 1)
2nd Year program	1st term	CDW / debate; English-only; active learning using JHS English; listening / shadowing practice (Ikeda)	CDW / debate; English-only; active learning using JHS English; listening / shadowing practice (Ikeda)	Communicative games; pronunciation; debate (Ikeda / PT1)	English conversation skills (Ikeda / PT 2)	Debate; Q&A skills; Communication & Interpersonal skills (Ikeda / FT 1)
	2nd term	CDW / debate; English-only; active learning using JHS English; listening / shadowing practice (Ikeda)	Communicative games; pronunciation; debate (Ikeda / PT1)	English conversation skills; argumentation skills (Ikeda / PT 2)	Debate; Q&A skills; Communication & Interpersonal skills (Ikeda / FT 1)	Debate; Team discussion & problem solving; team presentations (Ikeda / FT 1)
PT1 = part-time assistant instructor (Australia) PT2 = part-time lead instructor (UK) FT1 = full-time lead instructor (USA)						

listening and speaking skill improvement activity which the learners did was shadowing practice.

Based on feedback the instructors received from learners at the end of each semester, the course content quickly evolved. It was decided that a native English instructor would assist from the 2nd Semester of 2014, mainly because the School did not employ assistant language teachers (ALTs) like other high schools had. ALTs mainly assist English instructors with the lessons and are seen as a good motivator for students to learn English. In addition, ALTs offer cultural insights and advice on language usage, pronunciation and other practical communication tips.

A part-time native English-speaking English teacher (NESET) from Australia was hired and assisted the Department Subject Matter Expert (an Electrical and Electronic Department professor), or DSME, for two semesters from the 2nd Semester of 2014 through the 1st Semester of 2015. That NESET had a background in teaching English to young learners so her style of teaching was to induce a fun learning environment through communicative games and other low-stress learning activities. Pronunciation practice, particularly challenging sounds for Japanese learners, was emphasized. Debate was also practiced. Feedback from the learners at the end of each of the two semesters was very positive, but since she could not continue after the 1st Semester of 2015, the Department searched for another NESET for the following semester.

The second part-time NESET was from the UK and was employed from the 2nd Semester of 2015 through the 1st Semester of 2016. He initiated a program of activities for the 2nd Year class. His background was as an English conversation school instructor so his lessons emphasized practical conversations through role-plays and skits. He, like the first NESET, also gave a lot of pronunciation practice. He also exposed the learners to emphatic communications, or how the delivery of an utterance, through voice inflection and body language,

can change the meaning or emphasize different things. Debating practice was touched on lightly.

From the 2nd Semester of 2016, a full-time native English-speaking instructor from the USA was employed. He led instruction for both the 1st and 2nd Year ECP courses, in addition to taking on other English- and communications-related duties in the Department. With the advice of the DSMEs, he co-developed the curriculum for both years. Based on a needs analysis and an understanding of the direction the Department wanted the ECP course to go, the instructor developed a 16 module program spanning four semesters. Table 4 gives an overview of the ECP's course development.

5. Other highlights of our efforts

The Debating Workshop

A debating workshop was established during the 2nd Semester of 2016 to provide more debating practice and English discussion not just the Department's students, but also students from the other departments. The Workshop is not affiliated with the English Speaking Society club (ESS) already established on campus. The Workshop meets once a week for an hour, and activities include:

- 1-on-1 debating practice
- Team debating competitions
- Presentations and Q&A practice
- Problem-solving games and activities

The number of regular members is still small at five members after one semester (2nd Semester, 2016), but the Workshop hopes to establish a strong following and to create regular, open debating competitions on campus.

Advanced Engineering (ESP)

- English Technology course (技術英語): In this course, the Advanced Engineering 2nd Year students are taught the fundamentals of delivering academic-level English presentations, as well as being effective during Q&A sessions, both as question-asker and question-answerer. The full-time native English-speaking instructor assists with the course.
- Preparations for English presentations: Advanced Engineering students are encouraged to participate in international conferences and give presentations in English. Students' presentation slides are proofread, and presentation deliveries are practiced and evaluated.
- English papers and abstracts: Advanced Engineering students are also encouraged to write and submit research in English, as well as write abstracts and summaries of their research topic in English.

6. Discussion

6.1 Student survey results

End-of-course surveys (Table 5) pertaining to the English Communications sub-course were routinely conducted in order to improve the content and delivery of the course. Three stages of surveys were given:

1. Start-up surveys (2013, 1st Semester ~ 2014, 1st Semester): During this stage, the DSMEs instructed the ECP courses alone, using the surveys to determine whether initial objectives were being met.
2. Surveys relating to team-teaching with part-time native English-speaking instructors (2014, 2nd Semester ~ 2016, 1st Semester): This was the period when a part-time instructor teamed with the DSME to deliver the course. Only 2nd Year class survey responses were obtained.
3. Surveys devised by the full-time native English-speaking instructor (2016, 2nd Semester ~ 2017, 2nd Semester): This is the period when a full-time instructor teamed with the DSME to deliver the course. The survey was devised by the native English-speaking instructor, and both 1st Year and 2nd Year class survey responses were obtained.

Survey result conclusions

- The students' ability to logically make claims and give explanations IMPROVED (2014.1 ~ 2016.1)
 - Factors:

- Teaching methods and material improved through experimentation and feedback over the period.
- The students' ability to express themselves in English IMPROVED (2014.1 ~ 2016.1)
 - Factors:
 - Teaching methods and material improved through experimentation and feedback over the period.
 - The students' ability to logically make claims and give explanations IMPROVED over the course of two terms (2014.1 ~ 2016.1)
 - Factors:
 - Teaching methods and material improved through experimentation and feedback over the period.
 - The students' debating confidence level IMPROVED (2016.2 ~ 2017.1)
 - Factors:
 - Attention was paid to providing positive feedback and reinforcement.
 - Many opportunities were provided for debating practice and reflection.

Notes on the surveys used:

The main purpose of the surveys were for course and program improvement over a particular period rather than for research purposes, thus survey questions vary over the different phases of the program and only selected questions were used here.

The program is vastly different from when it first began four years ago. The changes reflect insights drawn from these informal surveys.

However, in the discussion section, recommendations are made for standardized surveying methods and measures for future, longer-term research of the program.

6.2 Measuring the gap between the global communicative needs of the learners and the ECP curriculum

The current needs analysis results were derived from a mixture of various inputs, using both formal and informal methodology.

The top three needs of "self-assertiveness", "positive projecting" and "inquisitiveness" at this time can hardly be scrutinized for scientific validity. Research on assessing the "global communicative needs for engineers" is still sparse, and in that sense, places the ECP initiative in ground-breaking territory.

These top traits have been intuitively derived from what the authors know about the learners and the global situations they might face as engineers. This intuitive knowledge draws not only from the collective experiences of the Department and from the established disciplines of English as a Foreign Language (EFL),

Table 5: Student survey result highlights

To what degree were you able to use English to logically make claims or give explanations?*								
*(The phrase "with the native English-speaking instructor" is added to this question from 2014.2 ~ 2016.1)								
Year/ Term	situation	# of responses	Very difficult	Difficult	Just right	Easy	Too easy	
1	2014.1	DSME alone	39	2.60%	25.60%	61.50%	7.70%	2.60%
	2014.2	DSME (lead) + PT NESET	38	2.60%	25.60%	59%	10.30%	0%
	2015.1	DSME (lead) + PT NESET	36	19.40%	41.70%	30.60%	5.60%	2.80%
	2015.2	DSME with PT NESET (lead)	39	10.30%	48.70%	35.90%	5.10%	0%
	2016.1	DSME with PT NESET (lead)	42	2.40%	19.00%	69.00%	4.80%	4.80%
	2017.1	DSME with FT NESET (lead)	41	14.60%	51.20%	34.10%	0.00%	0.00%
	To what degree were you able to express your opinions in English?							
Year/ Term	situation	# of responses	Very difficult	Difficult	Just right	Easy	Too easy	
2	2014.2	DSME (lead) + PT NESET	38	2.60%	74.40%	17.90%	2.60%	0%
	2015.1	DSME (lead) + PT NESET	36	30.60%	44.40%	13.90%	8.30%	2.80%
	2015.2	DSME with PT NESET (lead)	39	23.10%	48.70%	25.60%	2.60%	0%
	2016.1	DSME with PT NESET (lead)	42	7.10%	50.00%	38.10%	4.80%	0%
	2017.1	DSME with FT NESET (lead)	41	39.00%	56.10%	4.90%	0.00%	0%
	Over the course of the year (two terms), to what degree were you able to improve your ability to logically make claims and give explanations?							
Year/ Term	situation	# of responses	Great improvement	Good improvement	Marginal improvement	Not much improvement	No improvement	
3	2014.2	DSME (lead) + PT NESET	38	2.60%	43.60%	23.10%	25.60%	5.10%
	2015.1	DSME (lead) + PT NESET	36	5.60%	47.20%	27.80%	19.40%	0%
	2015.2	DSME with PT NESET (lead)	39	7.70%	46.20%	25.60%	20.50%	0%
	2016.1	DSME with PT NESET (lead)	43	2.30%	37.20%	39.50%	20.90%	0%
	2017.1	DSME with FT NESET (lead)	41	2.40%	53.70%	22.00%	22.00%	0%
	Rate your debating confidence (1 = poor, 2 = so-so, 3 = good, 4 = great)							
Year/ Term	situation	# of responses	Taken BEFORE the start of the sub-course (pre-course survey)	Taken AFTER the completion of the sub-course (4-meetings)	change			
4	2016.2	DSME with FT NESET (lead)	13	1.9	3.1	63.20%		
	2017.1	DSME with FT NESET (lead)	42	2.3	3.3	43.50%		
	2017.2	DSME with FT NESET (lead)	[not yet conducted]					
Acronyms								
DSME = Department Subject Matter Expert Teacher NESET = Native English-speaking English Teacher PT = part-time FT = full-time								

English language education, and communications, but also from areas such as psychology, sociology, philosophy, kinesiology and management.

Although this holistic approach may try to justify the ECP initiative as still being in its self-discovery stage, the authors are considering ways to measure the programs validity and reliability.

For instance, while researching ways to measure “self-assertiveness” and “communicative confidence” in the context of global communications for engineers, the authors found little research in the area of formal measures.

In considering the design of a useful measure, the authors might do pre- and post-assessments of learners’ impromptu performances in: pair-work conversations; role-plays; debating; brainstorming; and small team problem-solving. Data from instructor observation and

from learner self-evaluations would be compared and analyzed. Stress levels measures such as heart rate/ breathing / muscle tension analysis could also be used.

The same type of assessments would be given to engineers already working in a global context, and that data would be used for comparison to find the relative gap between where the students are and where they will need to be.

6.3 The future

Sustainability of the ECP program

The ECP continues to evolve and as the gap between the ever-changing communicative needs of the learners and the ECP curriculum narrows, ECP may become a useful template for other institutions with a need for supporting the global communicative competency needs of its learners.

In order for the program to successfully evolve, recognition of the program via research, cooperation, collaboration and support is sought.

Longitudinal Studies

The Department hopes to measure long-term effects the ECP program has on the participants after their 2nd Year, particularly in the pre- and post-graduation intervals.

A hope for greater interdepartmental cooperation and collaboration in meeting the global communicative needs of our respective Departments’ students

Each department has been attempting to address their students’ particular communicative needs in their own way. Unfortunately, channels or forums to share curriculum concerns and advice are random at best or closed at worst despite everyone working towards a similar goal of making our students more communicatively competent.

The Department seeks greater interdepartmental cooperation and collaboration of ideas, advice and suggestions to help improve each other’s communicative development efforts. The Department hopes that School-wide acceptance of the ECP program can lead to the establishment of a solid forum where ideas and concerns can be shared department-wide and for the benefit of all the School’s learners.

A hope for institutional acceptance and support

If the ECP can develop enough acceptance and momentum to positively influence and in some respect standardize School-wide efforts to improve communicative competency in learners, then the next step would be to promote ECP-like efforts for the benefit of all NIT students.

7. Conclusion

In order to raise the global communicative competency of our Department's engineering students, the Department took steps to identify the gap between what their current communicative skills and what global communicative skill requirements await them in their future. The Department then initiated an English communications practicum intensive sub-course spanning the students' first two years. With a theme of improving learners' debating skills, this course evolved into the ECP curriculum. The ECP continues to be refined, and the Department hopes for collaborative efforts from other interested parties to improve and expand ECP so that it may serve as a template for other departments and institutions to help improve the global communicative needs of more engineering students.

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