A Study of Project-Based Group Work in English for Specific Purpose Courses

Xin Wang[1,a,*], Fanxia Kong[2,b]

[1]*College of Foreign Studies, Nanjing Agricultural University, Nanjing, China*
[2]*College of Foreign Studies, Nanjing Agricultural University, Nanjing, China*
[a]*susanxinxin@njau.edu.cn,* [b]*fanxiakong@njau.edu.cn*
***Corresponding author**

Abstract: The study is to apply project-based group work for the goal of discipline/language learning in ESP classes. The results indicate project-based group work is welcomed by students, as they can obtain a chance to participate in a real situation of ESP lesson, which can improve learners' language proficiency significantly. The study also proves there are strong correlations among project-based group work and project presentation, as a result, also improve learners' competences in discipline knowledge. Group product presentation is proved to be an effective assessment, which enhance learners' cooperation consciousness with accumulating some experience for their future career.

1. Introduction

English for Specific Purposes (ESP) has currently become a new expanding research direction in higher education reform in China. Christopher(1980. p106)claims teachers should recognize new emphases frequently require to be dressed up in order to achieve discipline respectability, or in order to attract students on new-style courses. Gaffas (2019) suggests If English is the preferred medium in universities; attention should be paid to delineating the academical or professional activities in which English is to be used.

In attempt to teach and research ESP from the spring of 2018 to present, the major of Agricultural Engineering is as the one implementation of ESP curriculum redesigned. And according to the character of Agricultural Engineering, students need to learn how to master certain professional English and how to communicate with different advanced technologies in English and how to write some scientific papers. Hyland & Hamp-Lyons (2002, p2) view the specific purpose English revolves around teaching English requiring by university students to assist them in their discipline knowledge study and researches, helping them learn to communicate in English and to practice the norms of a particular professional context. So, task-based group project (TBP) in a disciplinary way are introduced into classes.

2. Literature Review

2.1. ESP based on task-based project (TBP)

Christopher(1980.p106)states "What to teach" and "How to teach one language" ? And the approaches of tasks should be considered by teachers. ESP focuses on the specialized and communicative needs and practices of an identifiable group in professional contexts through language research and instruction by comprehending the linguistics, social and cognitive requirements of the discipline in question (Hyland & Hamp-Lyons, 2002, p2). Students' discipline knowledge and language proficiency along with a range of learning contexts need to be considered in determining appropriate tasks (Youn, 2018, p95). Jordan (1997, p133) thinks ESP practitioners need to consider whether they are adequately preparing and supporting students to perform effectively within group projects in their discipline departments and on into their future employment. Smith & Thondhlana (2015, p14) recommends that ESP practitioners need to pay attention to cultivate learners the professional competencies and group dynamics both involved in complex group projects and case study projects of their disciplines and programs.

Youn (2018. p86) finds that gaining multiple perspectives is on the task-based pragmatic needs in an ESP context. Skehan (1998) views the task teaching method and cooperative teaching method will become a mainstream. Cai (2018) suggests higher universities localize project task-based approach with development based on project task for certain teaching effectiveness. So, ESP with discipline-professional or project task-based courses will be its necessary result.

2.2. Group work

Group work has been proven effectively in many ESP contexts where it has been applied and the concepts of collaboration are of the utmost significance in higher education. Cheng, Lam, & Kong (2019) investigate teaching through workplace communication is a recognizable activity within a broader professional framework of language learning. There are opportunities for students to interact with professionals' workplace while collecting information on the profession. Swales (1990) points that according to the approach of group project task, language is utilized as the medium for discipline learning, the most desirable foreign language or second language learning context can be achieved when language teaching is integrated with discipline teaching. Arno-Macia & Carmen Rueda-Ramos (2011) have a discussion on how ESP teachers and courses practice in a group study can contribute to the needs of engineering students in the 21st century. Bertrand (2017) points that group work can increase the opportunities for all students to speak language and allow them to learn from each other. Examples of typical group work activities include discussions, project work and writing tasks, whose practice is to be satisfied with the students needs in language and professional study. Moreover, some other scholars also discuss the feasibility of developing ESP courses within the framework of group task, and by doing projects in a group, students can learn how to have cooperation together, especially, in research of some projects, making products, and final team report and presentation.

3. Research and Methods

3.1 Research Areas

The ESP team plans to conduct an empirical study on the effectiveness of course practice by using both quantitative and qualitative analyses. Firstly, it takes questionnaire survey of ESP satisfaction (former two semesters' practice in 2017) and future need before the start of implement

of TBP. Then, when finish the course, the course satisfaction and the effectiveness of TBP made are surveyed. During the research, interviews are arranged for two times, one in the middle, and the other at the end of the finishing course. This study is also to demonstrate the correlations among TBP and students presentation in the course of English for Agricultural Engineering (EAE). The data of survey is collected and analyzed by the statistical software SPSS (Version 17.0) package.

(1) To test how is the effectiveness of new activities mainly including group work, project tasks and product presentation.

(2) To investigate students' competence both in English skills and discipline knowledge.

4. TBP Practice in AE

4.1 Task-based process in group work

Task-based learning is an approach to ESP context learning where students are given interactive project tasks to complete. Ellis (2003.p32) suggests tasks can be designed with a meta-cognitive focus for learner-training purpose. This can be achieved by the process of constructing tasks that help students to become aware of, reflect on, and evaluate their own learning styles at the strategies they use to learn. In order to do this, they need to have to communicate each other. Project work as a group is effective for students completing a task, and normally involves time arrangement, professional materials and actual practice a range of language and professional skills. So we set up several project-task groups in one class, and one leader selected by a group, whose work is responsible for the whole affairs, such as: organize the group discussion, product design plan, feedback to the teacher about the problems they meet. And we have great attempts according to the principles (Kennedy 2003.p161), put attachment to make students have consciousness of doing group project task in first step, mainly involves to:

• Clarify group aims and objectives
• Listen and be sensitive to others
• Freely exchange information
• Evaluate ideas or options
• Use resources effectively
• Objectively assess students' behavior/contribution
• Generate a list of ideas/options
• Criticize ideas or options constructively
• Include everyone, especially weak members
• Accept responsibility for tasks and deadlines
• Jointly solve problems and reach decision
• Undertake a variety of roles, such as leading, following, enabling and supporting.

Then the ESP team set the Fig.1 as the project tasks process; students can conduct their project tasks according to this process. The next class is as one example of ESP practice process.

In an EAE class, every group consisting of 5-6 students is usually assigned with a unit project task. For example, Unit 1 (text content chosen from the book 'English for Professional Engineering'), the task is to propose a new Research & Design(R&D) project. The work setting is designed to be the R&D department of a large manufacturing company that makes a wide variety of household products. The project task of presentation as designed the key and main line in the process of making products.
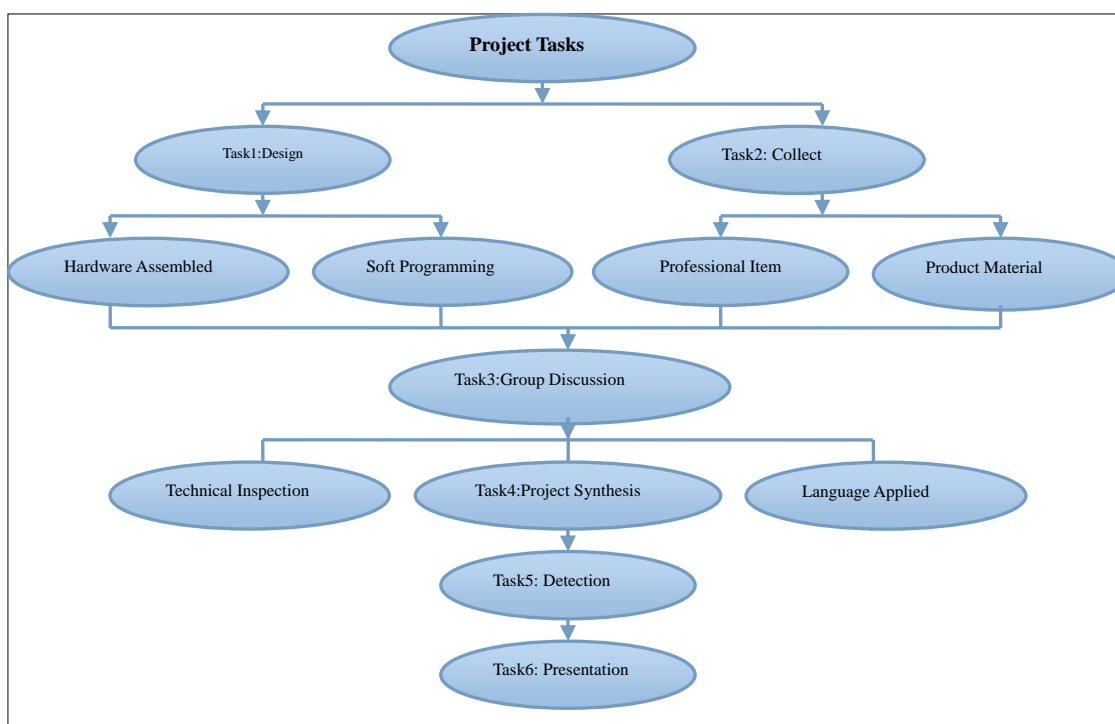
Figure 1: Task-based process

In real classroom scenario, a group of 6 majoring in Agricultural Engineering presents a project of 'self-control fan' for this fore-said unit project. They first select embedded association (a campus association), science TV program and internet as sources to generate ideas and also brainstorming and attribute listing as idea generating techniques. To brainstorm, they followed a 3-step pattern as they formerly learned in the 'demonstration' phase.

Step1. Write ideas on the post-it notes. (light-control, sound control, temperature-control, etc.);

Step2. Stick them on the whiteboard;

Step3. Review the ideas by cluster.

In these steps, students would discuss which one is more feasible concerning their major and available resources. They also designed some key questions to test those alternatives. ① Is it technically feasible? ③ Is it available to everyone? ④ Can it be put into market and make profit?

Those ideas having been screened, they decide on a sound concept for their R&D project, i.e. a self-control fan providing real-time monitoring of temperature and auto-start when the ambient temperature rises to 28℃. In this stage of presentation, the keynote speaker introduces the product by presenting each component and the function it intends to achieve respectively. Some professional terms, like 'module', 'circuit diagram', 'micro-controller unit' has been acquired incidentally by students themselves, which suggest that professional vocabulary acquisition is probably not the top priority for language teachers in those project product tasks driven ESP courses.

We also make up a cross functional project team, in which each team member is assigned job responsibility considering students' specific area of expertise and interest. And the team group leader is responsible for coordinating the member of the team. To manage the time, students learn to use some project management techniques, like CPM (critical path method) or Gantt chart to determine a timescale for the project and arrange their activities reasonably. Also, students learn to use the collocations like 'construct a diagram', instead of 'draw a diagram' or 'establish a diagram' in a professional setting.

4.2 Evaluation: 'Products' presentation as one of main evaluations

In terms of evaluation, Haines (1989) suggests that as with any piece of work a project needs to be acknowledged and evaluated. Salter-Dvorak (2016. p30) thinks that the task of structuring and delivering an oral presentation on the material provides a learning opportunity which reflects their immediate needs and eclipses that of developing students' argumentation. And it is not enough to just say 'that's great' after all the work students have put in. He uses a simple project evaluation report finally, which not only comments on aspects of the task project including content, design, language skill, and also mainly evaluates the product presentation stage of the whole process of a project task. So, emphasis on formative assessment in ESP class will be keep teaching quality and students' learning. We set the final products described in class concerns the project tasks as a research topic for presentation by students. As Fig.2 shown.

Project Research Topic for Presentation

Logical
Lateral
Brainstorming
Project Research
Sources
Primary
Secondary
Written
Oral
Various Media
Evidence
valid?
Objective?
Reliable？

Figure 2: Project Research Topic for Presentation

Effective planning and preparing for project presentation will guarantee success. Planning and preparation involve careful thought about the key presentation issues, such as, identifying aims and objectives, providing structure, re-gearing the audience, especially, project researching topic, which does increase the likelihood of the presentation being effective.

Before having preparation for project product presentation, the teachers of ESP team always ask the students to focus on some points as to reach an effective presentation. Important aspects of effective presentation include the followings, so we ask students make clear and master the skills (Kennedy 2003.p164):
• clarification of aims and objectives
• identification of the skills required
• effective research
• a clear structure
• considering the audience
• effective time management
• sound planning and preparation
• anticipating potential problems.

As Kennedy (2003.p167)points that students also can have their presentations in different ways. Some may think them purely as a means of gaining academic achievements and regard them as an ordeal, while others, such as those who are in attending group tasks, recognize the value of presentations can enhance subject knowledge and skills in language. Moreover, making certain crucial transferable personal skills, such as:

• making a project research verbally
• appearing credible to others
• projecting confidence
• using no-verbal behaviour positively
• anticipating and overcoming negative responses
• using different media (such as diagrams and charts)
• dealing with questions

According to above principles of presentation and text materials, the ESP teaching team also sets the project presentation requirements for students of AEAE in detail. The project presentations are supposed to include the following points:

(1) decision making---present how you decide on this subject for your R&D project.
(2) product introduction---give a brief introduction of the project.
(3) job description---assign work in your team.
(4) time management---make a time schedule for your project.
(5) sources of funding---find possible sponsors for your project.
(6) R&D planning---make a budget of your project with graphs.

After project product presentation, the teachers comment meaningfully on the extent to which the students have effectively interpreted the results and findings of their own and others' research studies, knowledge of the subject matter is required. Certainly, Januin & Stephen (2015) have a view that teachers should have a sound understanding of the discourse competence knowledge that relates to disciplinary oral presentations for their students to develop and excise discourse competence.

5. Results and Discussion

After practice of TBP, the ESP teams do the investigations. The 657 questionnaires is collected all together, whose 636 is valid, and the team has tested its reliability statistics before analyzing the date, and the result is the 23 items with Cronbach's Alpha .996, which means the 636 questionnaires being valid and reliable First, the 23 items related to the group-work and project task are all analyzed by the descriptive statistics, the results, then, we mainly tested the correlations among the ESP practice of group work, project task and presentation, the results find the three has strong correlations as shown in Table 1, Sig=.000<.005, it proves the significance is meaning and effective, the correlations project task, product presentation with group work are respectively.968>.8, and .961>.8, which means the correlations with group work are enough high, which proves the three has high correlations and the new methods in teaching ESP are effective.The finding proves EAE basically has reached the goals of ESP curriculum, from teaching method, designing activities and project tasks, which almost has realized language indulged. The group cooperation and cooperative learning are encouraged by students as to understand and discuss the basic concepts of the agricultural, electrical engineering discipline. It is found that students working in groups can provide valuable ESP learning experiences. Li & Ruan (2015) think that content relevant to discipline subjects taught in ESP class, and extracurricular activities, such as tasks will strengthen ESP learners' belief. Usually, groups work have advantages over individual methods, such as knowledge, language skills and expertise of each member can be combined; and students'

capabilities in solving problems and making decisions also can be improved greatly. Saliu & Hajrullai (2016) state that in the course of cooperation, new ideas and some working methods are more readily accepted, as a result, individual confidence and self-respect of students can be increased largely, and finally, a common sense of learning purpose can improve students' moral and motivation.

Table 1: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1 (Constant)	.120	.023		5.183	.000	.074	.165			
Project task	.600	.040	.625	14.821	.000	.520	.679	.968	.508	.140
Product presentation	.321	.038	.353	8.366	.000	.245	.396	.961	.316	.079

a. Dependent Variable: Group work

Then, the ESP team also investigates the effectiveness of the project product presentation on students, the finding is that it is the best welcomed and effective and value task for them. As Table2 shown that about 80.2% students agree the product presentation is one of effective activities in ESP learning.

Table 2: Frequencies Statistics of Presentation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	97	15.3	15.3	15.3
	Agree	413	64.9	64.9	80.2
	Not Sure	24	3.8	3.8	84.0
	Disagree	71	11.2	11.2	95.1
	Strongly Disagree	31	4.9	4.9	100.0
	Total	636	100.0	100.0	

This is because group product presentation involves providing students with an experience and language key skills including reading, speaking, listening and writing, which will powerfully immerse them in practicing discipline-professional project product presentation, using professional vocabulary, and will, as a result, requirement their competencies in English language. As Smith & Thondhlana (2015) states that making product is as a purposeful activity consisting of using various strategies (including communicative ones) rather than looking at a finished product without understanding how it came to be. Januin & Stephen (2015) think that the types of discourse competence in academic oral presentations need to be recognized in order to understand the complex demands inherent in academic presentations. And Januin & Stephen view that the importance is put on developing students' ability to exercise discourse competence and enable them to present their product process and findings more accurately and appropriately. At last, it promotes students to gain the discipline-professional success, which in turn enhances the motivation of self-esteem for students. The emotions between group and individual within a class also can be improved by this kind of attention, further more to provide students a better environment for

studying.

It is of evident that there is practical significance to adopt a TBP approach to in ESP courses. First of all, in a content-based course, it can ensure that language educators devise coherent curricula to facilitate both content and language learning (Stoller & Graber 1997. pp78-94). Moreover, this method can be widely applied to ESP courses. In fact, ESP courses based on project tasks not only include the tasks that students have to complete in the target environment, but emphasize the improvement of language competence driven by task activities, which ensures that language teachers play a participating not a dominant role in ESP courses. These activities are very motivational and students really enjoy discovering the applicability of their discipline knowledge. Therefore, guidance in developing research skills, writing project product report or presentation skills should be an essential part of the ESP curriculum. Consequently, the primary goal of any ESP courses for engineers is to teach professional communicative competence in a professional way, more exactly to communicate in English according to the situation, purpose, and specific roles of the participants.

Ibrahim & Ali (2012. p153)point that it is of the necessity for students to begin as early as possible to have some idea their research works relevant to their discipline, albeit in a less sophisticated. Dudley-Evans & St-John (1998) think that language teaching in which all decisions related to content and method is based on students' reasons for learning. Brown (1995) states that curriculum development refers to the range of planning and implementation processes, and when design one curriculum, it should include needs analysis, objectives, materials, teaching, and evaluation in the same line with this outline of curriculum design. Ellis (2003) suggests strengthening language lessons through task-based teaching, which directs students' attention to the meaning instead of the form and requires them to complete related tasks by using the target language.

6. Conclusion

The TBP approach have been practiced in EAE course for the six resent semesters in NAU, and the ESP team, according to the feedback obtained from students, makes the questionnaire investigation, interviewing with language and discipline teachers and students; finding problems and correct mismatched methods or activities, even materials in class, with discussing the results of advantages or disadvantages for deep evaluating TBP approach. Indeed, In the process of applying TBP approach, it is actually meeting different dilemmas in various stages, which needs to be ready to adjust or revise the plan by ESP team to meet students' demands from different disciplines. Certainly, after practice, the ESP team believes that making project products by the group can help students learn ESP curriculum actively, but not passively like before; group work can make them more confident than before, as well as enhance them to study their own discipline. The product presentation skills are also extremely useful for students engaging in discipline Agricultural Engineering; and it is a true process of preparing for a project task on a discipline-professional participatory experience for students working in groups, with explaining engineering technology and their products developments, as a result, their discipline- professional recognition is improved greatly, and their English language skills as well.

By the above design and practice, all aspects of product research and development can be shown in a more comprehensive and coherent way. The discipline subject knowledge can be effectively promoted by this kind of designing idea, meanwhile, more opportunities can be provided for students to exchange in English. At the same time, Berman & Cheng (2001) think because students language abilities in the discourse have been improved, interest in learning will also be kept developing. With the development of a new round of college English reform, ESP courses based on

different educational theories and ideas will be localized and individualized in every discipline and college in NAU. So how to design a scientific, systematic and individualized ESP teaching syllabus and plan based on the characteristics of its own college, the top priority is to understand the demands of students, teachers and educators.

Acknowledgements

References

[1] Afshar, H. S,. & Movassagh, H. (2016). EAP education in Iran: Where does the problem lie? Where are we heading? Journal of English for Academic Purposes, Vol. 22.(6). (pp.132-151).

[2] Arno-Macia, E., & Rueda-Ramos, C. (2011). Promoting reflection on science, technology, and society among engineering students through an EAP online learning environment. Vol.10, Issue 1, March. (pp.19-31).

[3] Berman, R. & Cheng. L. (2001). English academic language skills: perceived difficulties by undergraduate and graduate students, and their academic achievement. Canadian Journal of Applied Linguistics 4/1–2: (pp.25–39).

[4] Bertrand, J. (2017). https://www.teachingenglish.org.uk/article/working-pairs-groups.

[5] Brown, J. D. (1995).The elements of language curriculum: A systematic approach to program development. Boston: Heinle & Heinle Publishers.

[6] Cai, J.G. (2018). Significance of Implementing Special & Academic English Baed on Subjects of High University in China. Technology Enhanced Foreign Language Education.1.(pp.40-47).

[7] Cheng, W., Lam, P.W.Y., & Kong, K.C.C. (2019). Learning English Through Workplace Communication: Linguistic devices for interpersonal meaning in textbooks in Hong Kong. English for Specific Purposes 55. (pp.28–39).

[8] Christopher, J. B.(1980). Problems and Principles in English Teaching. Oxford: Pergamon Press. (pp.106-110)

[9] Craft, A., Jeffrey, B,. & Leibling, M,. (2001). Creativity in Education. Continuum. Biddles Ltd, (pp.33-35). www.biddles.co.uk.

[10] Dubin, F. & Olshtain, E. (1990). Course Design: Development Programs and Materials for Language Learning. Cambridge: Cambridge University Press. (p.43).

[11] Dudley-Evans, T., & St-John, M. (1998). Developments in ESP: A multi-disciplinary approach. Cambridge: Cambridge University Press.

[12] Ellis, R. (2003). Task-based language Learning and Teaching. Oxford: Oxford University Press.(pp.79-101)

[13] Evans. S. & Morrison, B. (2011). The first term at university: implications for EAP. ELT Journal Volume 65/4 October. (pp.387-397).

[14] Gaffas. Z. M. (2019). Students' perceptions of the impact of EGP and ESP courses on their English language development: Voices from Saudi Arabia. Journal of English for Academic Purposes 42 (2019) 100797.

[15] Haines S. (1989). Projects for the EFL classroom. London: Nelson.

[16] Howatt, A. (1974). The Background to Course Design in J.P.B. Allen and S. Pit Corder, eds., Techniques in Applied Linguistics. The Edinburgh Course in Applied Linguistics, Vol.3 (London: Oxford University Press. (p.7)

[17] Hu, G.(2018). Disciplinary Knowledge Making and Academic Discourse. Reconceptualizing English language teaching and learning in the 21st century (pp.553-573). Taipei, Crane Publishing.

[18] Hutchinson, T., & Waters. A. (1987). English for Specific Purposes. Cambridge: Cambridge University Press. (pp.3-57).

[19] Hyland, K. (2006). Discourses, communities and cultures. In English for academic purposes: An advanced resource book (pp. 38-45). London and New York: Routledge.

[20] Hyland, K. (2008). Disciplinary differences: Language variation in academic discourse. In K. Hyland & M. Bondi (Eds.), Academic discourse across disciplines: Peter Lang.

[21] Hyland, K., & Hamp-Lyons, L. (2002). EAP: Issues and directions. Journal of English for Academic Purposes, 1(1), (pp.1-12).

[22] Januin, J,. & Stephen, J. (2015). Exploring discourse competence elements in EAP class presentations through document and ethnographic analysis. Procedia-Social and Behavioral Sciences 208(2015).(pp.157-166). 3rd International Conference on Linguistics, Literature and Culture (ICLLIC 2014).

[23] Jordan, R.R. (1997). English for Academic Purposes: A guide and resource book for teachers. Cambridge: Cambridge University Press. (pp.89-95)

[24] Johns, T. F. & Dudley-Evans, A.(1980). An Experiment in Team-teaching of Overseas Postgraduate Students of

Transportation and Plant Biology. selected from "Team Teaching in ESP".(pp.6-22). The British Council. Produced in England by The British Council, Printing and Publishing Department, London.

[25] Kennedy, J. (2003). Study Skills Maximise your time to pass exams. (pp.161-169). Published by Studymates.

[26] Li, Ch.L,. & Ruan, Zh.L. (2015). Changes in beliefs about language learning among Chinese EAP learners in an EMI context in Chinese Mainland: A socio-cultural perspective. Journal of System. Vol.55. (pp.43-52).

[27] Millrood, R. (2014). Teaching English to Engineers at a Tertiary Level in Russia, Procedia-Social and Behavioral Sciences 154. (pp.199–203).

[28] Monbec, L. (2020). Systemic Functional Linguistics for the EGAP module: Revisiting the common core. Journal of English for Academic Purposes 43. 100794.

[29] Nesi, H., & Gardner, S. (2012). Genres across the Disciplines: student writing in higher education. Cambridge: Cambridge University Press. (p.89).

[30] Nunan, D. (1992). Research methods in language learning. Cambridge: Cambridge University Press. (pp.57-62).

[31] Saliu, B. & Hajrullai.H. (2016). Best Practices in the English for Specific Purpose Classes at the Language Center. Procedia-Social and Behavioral Sciences 232. (pp.745–749).

[32] Salter-Dvorak, H. (2016). Learning to argue in EAP: Evaluating a curriculum innovation from the inside. Journal of English for Academic Purposes.22. (pp.19-31).

[33] Skehan, P. (1998). A cognitive approach to language learning. Oxford: Oxford University Press.

[34] Smith, A. F.V,. & Thondhlana, J. (2015). The EAP competencies in a group case study project as revealed by a task analysis. Journal of English for Academic Purposes. 20. (pp.14-27).

[35] Starfield, S. (1994). Language, Cognition, and ESL Literacy. Cummins, EAP, and Academic Literacy. Tesol Quarterly, 28(1), (pp.176-179).

[36] Stoller, F. L,. & Grabe, W. (1997). A Six-T's approach to content-based instruction. Selected from 'The content-based classroom: Perspectives on integrating language and content'. New Jersey: Addison-Wesley Educational Publishers Inc. (pp.78-94).

[37] Swales, J. (1990). Genre analysis: English in academic and research settings. Cambridge: Cambridge University Press. (pp.38-54).

[38] Youn, S.J. (2018). Task-based needs analysis of L2 pragmatics in an EAP context. Journal of English for Academic Purposes 36. (pp.86-98).