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Exploring the Perception and Attitude of Engineering Students towards Communication Skills Course

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Abstract

This study explores the perception and attitude of engineering students in Accra Technical University towards Communication Skills as a course. Attitude towards Communication Skills is an important concept because it plays a key role in language learning, as well as career performance. However, with the ever-growing age of globalisation, international and cross-cultural communication, the need for communication skills has increased, especially among engineers who feed on ideas from local and international collaborations. It has become imperative for engineering graduates to acquire a range of skills to maintain relevance with the global setting of the new era. Communication skills is one of the vital skills recognised by academia and industry alike. This quantitative study examines students' perception and attitude towards communication skills as a course, and bring to bear some reasons for the perceived poor performance in the course. The research instruments used to collect data were questionnaires and observation. The study observed that most of the students in the first year of their study had negative perception and attitude towards communication skills, contrary to students in the final year who had positive responses towards the course.

Keywords: Communication skills, Engineering students, Globalization, Poor performance.

Introduction

Attitude is seen as the set of views a learner holds towards members of a target group and towards one's culture (Blackman et.al, 2012). Language attitude is an important concept because it plays a key role in language learning. Engineering students in Accra Technical University (henceforth ATU) seem to have a casual attitude towards the study of Communication Skills. However, with the ever-growing age of globalisation, international and cross-cultural communication has increased, especially among engineers who feed on ideas from local and international collaborations. It has become imperative for Engineering graduates to acquire a range of skills to maintain relevance with the global setting of the new era. Communication skills is one of the vital skills recognised by academia and industry alike. Communication skills focuses on the affective domain of the Bloom taxonomy (Krathwohl, 2002). Such skills are indispensable for an engineer who desires not only to carry out a professional practice in the global arena, but also to excel. Good speaking and writing skills, report writing skills, and presentation skills, are just few of the relevant skills needed to fit into the global market. There is enough evidence that graduate engineers lack the required standard of communication skills, particularly when compared to the needs of industry internationally (Jensen, et.al, 2000; Grünwald, 1999, Riemer, 2007, 2002).

Riemer (2007) identifies four sources of weakness that can significantly impact on an engineer's communication skills. These are: students' attitudes to communication; insufficient course content; deficient or inappropriate teaching methods; lack of opportunity for engineering students to practise communication skills among others. Pollack-Wahl (2000) reports that oral communication and presentation skills are critical career enhancers and the largest influencer in defining a student's job success or failure. Schulz (2008) corroborates this when he explains that soft skills complement hard skills which are the technical requirements of a job a student is trained to perform. He therefore proposes that soft skills such as communication skills, critical and structured thinking, problem solving skills, creativity, self-esteem, empathy, business management, and many other skills connected with personal traits are of great importance for every student to adequately acquire beyond academic or technical knowledge. The purpose of this

study is three- faced and include: To ascertain levels of students' interest and attitude towards the communication skills as a course; Secondly, it will investigate the reasons for the perceived poor performance in the course among engineering students, and thirdly, suggest ways of dealing with the reason identified. Significantly, this study will bring to light interest and attitude towards the communication skills as a course, as well as some reasons for perceived poor performance in the course.

Data Collection Methods/ Research Instruments

The research instruments used to collect data included observation and questionnaires. Studies by (Ani, 2019, Adentwi & Amartei, 2009; Creswell, 2003) affirm that quantitative research aids a researcher to develop new ideas and study phenomena in detail with unfolding models that occurs in natural setting and that enables the researcher to develop a level of detail from high involvement in the actual experience. The quantitative method is adopted for the study to provide the researcher with unobstructed interactive observation among students. Again, the researchers used this approach to confirm the observations on the perceived negative attitude and performance of students. Using the purposive sampling method, the total number of persons selected for the research work were thirty consisting of 10 students (five males and five females) in the three Engineering departments (Civil, Building, Electricals). These students were randomly chosen. Four first year students and six final year students were selected from each department. The sampling size of thirty was considered relevant in respect of time for collecting and organization of data.

To obtain adequate information, the researcher further observed the first-year students as they attended communication skills lectures. The students' attitudes towards the course were assessed using the Communication Skills Attitude Scale (CSAS) (Rees and Sheard, 2002; Rees and Sheard, 2003; Harlak et.al, 2008). The scale (CSAS) included 14 items as presented in Table 1, ten of them were formed as positive statements, whereas four were negative statements. Each statement is accompanied by a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The positive attitude scale (PAS) included items 1, 3, 4, 5, 7, 8, 9, 10, 12, 14, and 2, 6, 11, 13 related to negative attitudes towards communication skills such as "I don't see the point in studying communication skills". (Rees and Sheard, 2002; Rees and Sheard, 2003; Harlak et.al, 2008; Yakhforoshha et.al, 2018).

Table 1. Questionnaire on communication skills attitudes

No.	Item
1.	I need to have good communication skills if I intend to become a successful engineer.
2.	I don't see the point in studying communication skills.
3.	Communication skills (soft skills) are as important as technical skills (hard skills).
4.	My self-esteem has increased after attending the course.
5.	My presentation skills have significantly improved after the completion of the course.
6.	I don't have enough time to study communication skills.
7.	The Communication skills course is very interesting.
8.	I am aware of my communication skills.
9.	I pay more attention to my body language after the completion of the course.
10.	I pay more attention to fillers in my speech after the completion of the course.
11.	Business students should study communication skills, not engineers.
12.	It is difficult for me to admit my own communication problems.
13.	Communication skills is an unnecessary course.
14.	Communication skills can be mastered through formal instruction.

The questionnaire was administered to the students at the end of the first and sixth semester and the students were coached on how to complete the questionnaire. The duration for completion of the questionnaire was approximately fifteen minutes.

Theoretical Framework

Swanson (2017, 2013) explains theoretical framework as the structure that supports a theory of research study, and it is indispensable in any research to assist situate the study in context. The study adopts the Community of Practice (COP) theory proposed by Wenger (1998). According to Wenger (1998:3), the theory aims to present a conceptual framework where learning is placed "in the context of our lived experience of participation in the world." The theory involves people who share a passion or a concern, and deepen their knowledge by interacting about it on an ongoing basis (Li, et.al, 2009). It explores the intersection of community, practice, identity, and meaning as integral components of learning. COP

is a model that strongly connects the learning process with the negotiation of meaning and changing identities implies that the learner shifts from being a passive recipient to an active participant in a process that is interactive and is based on participation in shared practice. The theory provides five critical functions. These are to:

1. **Educate** by collecting and sharing information related to questions and issues of practice
2. **Support** by organizing interactions and collaboration among members
3. **Cultivate** by assisting groups to start and sustain their learning
4. **Encourage** by promoting the work of members through discussion and sharing
5. **Integrate** by encouraging members to use their new knowledge for real change in their own work.

Mortier (2020) further identifies community of practice a as model for higher education. Among others, she observed that "communities of practice (a) provide an alternative to traditional top-down innovation in education, (b) allow working with uncertainty and trust, (c) close the gap between espoused theory in use and theory in use, and (d) dilute the effects of power relations and competing priorities (Mortier, 2020, p. 4)". She further indicates that aside from providing a strong sociological rationale for inclusive education, other related studies demonstrate community of practice inure to positive effects for students and peers with respect to academic achievement, social connections and communication, quality instruction, and improvement of adaptive behaviour and functional skills (Mortier, 2020). COP is suitable for this study because it connects students who might not otherwise have the opportunity to interact, either as frequently or at all; provides a shared context for people to communicate and share information, stories and personal experiences in a way that builds understanding and insight; enable dialogue between people who come together to explore new possibilities, solve challenging problems, and create new, mutually beneficial opportunities, and simulate learning by serving as a vehicle for authentic communication, mentoring, coaching, and self-reflection.

Results and discussion

The means and standard deviations (SD) related to the students in the first and final years (30 of them in all) concerning both positive and negative attitude items are presented in Table 2. As can be seen, the students in the final year have a higher mean value of the positive attitude items (5. 072 vs 4.275), as well as a lower value of the negative ones (1.653 vs 2.034). The data are from the same population and, consequently, the differences between the sample means arise only by chance, or the differences occur because the data are taken from different target groups.

Table 2. Means and standard deviations of the groups

	First year students		**Final year students**	
	Mean	**SD**	**Mean**	**SD**
Positive attitude items	4. 275	1.017	5.072	0.997
Negative attitude items	2.034	0.841	1.653	0.776

The table shows noteworthy variances for both the positive and the negative attitude items. Understandably, the students in the final year, during their study have gained an additional awareness regarding the significance of communication skills. Some of them, through their industrial attachments, and industrial visits, have witnessed the significance of communication skills in their career development. A deeper insight into the differences related to each item can be obtained through corresponding item analysis. The means and the standard deviations relating to each item are shown in Table 3.

Table 3. Means and standard deviations for each item

Item number	**First semester students**		**Sixth semester students**	
	Mean	**SD**	**Mean**	**SD**
1.	2.548	0.925	2.226	0.921
2.	3.871	1.088	4.290	0.6923
3.	3.065	1.063	3.774	0.845
4.	3.839	0.688	4.000	0.633
5.	4.194	0.703	4.452	0.624
6.	4.129	0.670	4.677	0.475
7.	4.097	0.539	3.968	0.752
8.	3.839	0.779	4.452	0.624
9.	1.839	0.638	1.355	0.486

10.	3.774	1.023	4.161	0.820
11.	1.581	0.672	1.387	0.495
12.	2.129	0.806	1.645	0.798
13.	4.258	0.729	4.258	0.893
14.	2.194	0.833	2.129	0.922

Sampled response like "*I need to have good communication skills if I intend to become a successful engineer*", and "*Communication skills (soft skills) are as important as technical skills (hard skills)*" have been recognized by the students in the final year. One final year student also says "*I'm very much aware of the need for good communication skills now".* This confirms (Kovac and Sirkovic, 2017) observation that because they are almost completing their undergraduate education, and have already faced many situations where they had to demonstration good communication skills in teamwork, formal communication with their lectures, and oral presentations, they appreciate the need for good communication skills. Additionally, some of them are already hunting the job market which requires specific communication skills. On the contrary, the students in the first semester have just commenced their tertiary education and are more pre-occupied with technical courses than to think of what follows afterwards. Arguably, they are still trying to settle in to courses requiring good knowledge of technical skills. This is supported by the following statements: *"I don't see the point in studying communication skills"*. Understandably, their primary concern is with passing "difficult" exams, and trying to overcome difficulties connected with technical courses (Ihmeideh et.al., 2010).

Most of the respondents in the final year, noted *I pay more attention to my speech, and use less fillers* than students in the first semester. Obviously, the final semester students already know how imperative it is to have fluent and flawless speech, and the negative effect of fillers on their overall performance when it comes to evaluating presentations and oral exams. Older and more mature students are aware of the necessity of flawless speech and good communication skills in general. (Ihmeideh et.al., 2010). Sampled views from the data collected illustrate the perception among some students that writing and speaking tasks are not engineering tasks. One student remark *I wonder when we will get to the real work of engineering. I want us to stop all this grammar stuff.* Another says, *Let us do more real learning.* Another also says, *the writing and speaking lectures is time wasting, I want to quickly get over this and start proper studies.* These

comments suggest that students perceive writing and speaking instruction, which is aspects of communication skills as interfering with their "real" study of engineering. These responses showed that balancing content and communication tasks proved challenging for students who did not perceive that the content and the communication were mutually reinforcing (Vampola et.al., 2010).

Conclusion

The study has accentuated the fact good communication skills is pertinent to engineering students as they prepare for the demanding and competitive job market. Though the study reveals that some students have negative attitude and perception towards communication skills, it also showed significant positive responses. The study observed that most of the negative responses emanate from students in the first year of their study, while most of the positive responses were from students in the final year. The study further showed that negative attitudes such as *"I don't see the point in studying communication skills",* featured more from first year students. Interestingly, that is when communication skills course is taught. As noted in the study, the first-year students are in the genesis of their tertiary education, and still trying to settle in with the technical skill courses. This explains why most of them are apathetic towards the communication skills as a course. Obviously, the students at that level have no knowledge of the relevance of the course, compared to students in the final year, who through practice and observation, have seen the relevance of communication skills to the success of their career. The authors therefore suggest that Universities, especially, the technical universities, should create more awareness to the importance of communication skills to the success of the technical courses. In addition to raising awareness about the importance of communication skills among students, it is recommended that the universities should reconsider the level in their education when communication skills is taught as a course to reap the maximum benefit.

References

Adentwi, K., & Amartei, M. A. (2009). A practical approach to doing educational research.

Ani, E. I. (2019). The question of social conformity in Wiredu's consensual democracy. *African Studies*, *78*(4), 496-509.

Blackman, S., Conrad, D., & Brown, L. (2012). The Attitude of Barbadian and Trinidadian Teachers to Integration. *International Journal of Special Education*, *27*(3), 158-168.

Blackman, S., Conrad, D., & Brown, L. (2012). The Attitude of Barbadian and Trinidadian Teachers to Integration. *International Journal of Special Education*, *27*(3), 158-168

Creswell, J. W. (2003). A framework for design. *Research design: Qualitative, quantitative, and mixed methods approaches*, 9-11.

Deanna P. Dannels, Chris M. Anson, Lisa Bullard & Steven Peretti (2003) Challenges in Learning Communication Skills in Chemical Engineering, *Communication Education*, 52:1, 50-56, DOI: 10.1080/03634520302454

Diaz-Santos, G. (2000). Technothrillers and English for science and technology. *English for Specific Purposes*, *19*(3), 221-236. *Engng. and Technology Educ.*, Sydney, Australia, 371-374 (1999).

Graf, J., Loda, T., Zipfel, S., Wosnik, A., Mohr, D., & Herrmann-Werner, A. (2020). Communication skills of medical students: survey of self-and external perception in a longitudinally based trend study. *BMC medical education*, *20*(1), 1-10.

Grünwald, N., 1999. Quo vadis German engineering education. *Proc. 2nd Asia-Pacific Forum*

Harlak, H., Gemalmaz, A., Gurel, F. S., Dereboy, C., & Ertekin, K. (2008). Communication skills training: effects on attitudes toward communication skills and empathic tendency. *Education for Health*, *21*(2), 62.

Ihmeideh, F. M., Al-Omari, A. A., & Al-Dababneh, K. A. (2010). Attitudes toward communication skills among students'-teachers' in Jordanian public universities. *Australian Journal of Teacher Education*, *35*(4), 1-11.

Jensen, B. F., Gulbrandsen, P., Dahl, F. A., Krupat, E., Frankel, R. M., & Finset, A. (2011). Effectiveness of a short course in clinical communication skills for hospital doctors: results of a crossover randomized controlled trial (ISRCTN22153332). *Patient education and counseling*, *84*(2), 163-169.

Kovac, M. M., & Sirkovic, N. (2017). Attitudes towards Communication Skills among Engineering Students. *English Language Teaching*, *10*(3), 111-117.

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into practice*, *41*(4), 212-218.

Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., & Graham, I. D. (2009). Evolution of Wenger's concept of community of practice. *Implementation science*, *4*(1), 1-8.

Mortier, K. (2020). Communities of practice: A conceptual framework for inclusion of students with significant disabilities. *International Journal of Inclusive Education*, *24*(3), 329-340.

Pollack-Wahl, J. A. (2000). It is time to stand up and communicate. *Proceedings 30th ASEE/IEEE Frontiers in Education Conference,* Kansas City, USA, FIG-16-FIG-21.

Rees C, Sheard C, Davies S. (2002) The development of a scale to measure medical students' attitudes towards communication skills learning: the Communication Skills Attitude Scale (CSAS) *Med Educ*. 36(2):141–7.

Rees C, Sheard C. (2003). Evaluating first-year medical students' attitudes to learning communication skills before and after a communication skills course. *Med Teach. 25(3):302–7.*

Rees, C., & Garrud, P. (2001). Identifying undergraduate medical students' attitudes toward communication skills learning: A pilot study. *Medical Teacher*, 23(4), 400-406. https://doi.org/10.1080/01421590120057067

Rees, C., & Sheard, C. (2003). Evaluating first-year medical students' attitudes to learning communication skills before and after a communication skills course. *Medical Teacher, 25(3), 302-307. https://doi.org/10.1080/01421590 31000100409*

Rees, C.,& Sheard, C. (2002). *Medical Education,* 36(11), 1017-1027. https://doi.org/ 10.1046/j.1365-2923.2002.01333.x

Riemer, M. J. (2002). English and communication skills for the global engineer. *Global J. of Engng. Educ*, *6*(1), 91-100.

Riemer, M. J. (2007). Communication skills for the 21st century engineer. *Global J. of Engng. Educ*, *11*(1), 89-100.

Sageev, P., & Romanowski, C. J. (2001). A message from recent engineering graduates in the workplace: Results of a survey on technical communication skills. *Journal of Engineering Education*, *90*(4), 685-693.

Schulz, B. (2008). The importance of soft skills: Education beyond academic knowledge. *Journal of Language and Communication,* 2(1), 145-154.

Swanson, K. K., & DeVereaux, C. (2017). A theoretical framework for sustaining culture: Culturally sustainable entrepreneurship. *Annals of Tourism Research*, *62*, 78-88.

Swanson, R. A., & Chermack, T. J. (2013). *Theory building in applied disciplines*. Berrett-Koehler Publishers.

Vampola, D., Eichhorn, K., Thomson, C., Messere, F., & Manseur, R. (2010). Infused communication skills in an engineering curriculum. In *2010 IEEE Frontiers in Education Conference (FIE)* (pp. F1F-1). IEEE.

Wenger, E. (2010). Conceptual tools for CoPs as social learning systems: Boundaries, identity, trajectories and participation. In *Social learning systems and communities of practice* (pp. 125-143). Springer, London.

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems thinker*, *9*(5), 2-3.

Yakhforoshha, A., Shirazi, M., Yousefzadeh, N., Ghanbarnejad, A., Cheraghi, M., Mojtahedzadeh, R., & Emami, S. A. H. (2018). Psychometric properties of the communication skills attitude scale (CSAS) measure in a sample of Iranian medical students. *Journal of Advances in Medical Education & Professionalism*, *6*(1), 14