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Agent of Change: Empowering Teachers and Students through Reflection

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Abstract

Freshman students begin their engineering studies at the Petroleum Institute after having met the Institute's language proficiency prerequisites. In many of their courses these engineering students are required to write in a concise form in accord with all aspects of Higher Order Thinking Skills (HOTS). In this pilot research, students produced three in-class pieces of writing at five -week intervals between the writings. After their first writing, students were exposed to Bloom's Taxonomy table. The paper is based on the reflection/observation of the teachers and students whilst and after the exposure to Bloom's taxonomy, and student focus groups in which students were asked to reflect back on their experiences of the best practices from their point of view that can be inferred that this exposure helps facilitate some level of HOTS transferability. The aim of this paper is to intensify the role teachers in teaching Higher Order Thinking Skills in a systematic way that would allow students to grasp its essence and take an active role in the redesign of its instruction.

Keywords: Higher Order thinking Skills, Reflective Writing, Bloom's Taxonomy, Project Based Learning

1. Introduction

Although teaching Higher Order Thinking Skills (HOTS) seems to be logical andis often included in language-related courses, both teachers and students often struggle with either sending or receiving its concept. We as teachers find difficult to verbalize what HOTS actually is and what it encompasses in the learning sphere. According to our observation, regardless of the tools used to explain or demonstrate HOTS, students' realization of what it means seems to be different from teachers' and their reflection does not coincide with our expectation.

This paper is an extension of a research paper titled, "Broadening the Exposure of Engineering Students to the HOTS (2014)" in which a pilot project was conducted where students produced three in-class writing at 4-5 weeks intervals between the writings in order to measure their transferability of HOTS development. However, this paper focuses only on the reflection during and after the exposure to the Bloom's Taxonomy by students and teachers.

The aim of this research is to address the challenges teachers encounter in reflective writing classes especially for engineering students as they attempt to apply cognitive processes required for their fundamental academic growth. It also aims to allow students to take a fundamental role in this process and join their teachers in what Kolb calls an 'experiential learning cycle' (see fig. 1) which goes form having a concrete experience, to reflective observation, to an abstract conceptualization and then an active experiment. A model that resembles on one hand the action research model (Maudsley & Strivens, 2000:539) for us as teachers and researcher, and on the other hand it resembles the process in which our students follow in the Communication course and the journey towards Higher Order thinking skills.

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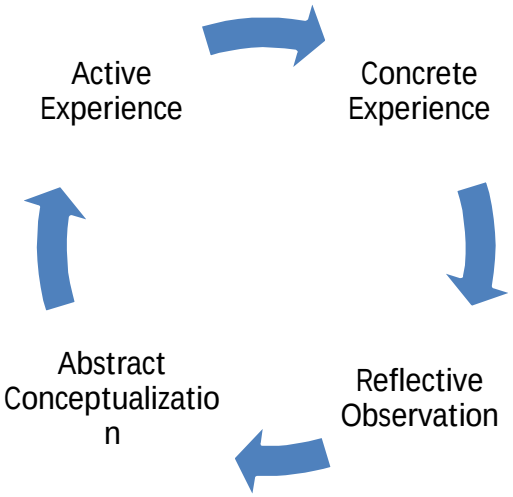

Figure 1: Kolb's Experiential Learning Cycle

2. Literature Review

2.1 Project Based Learning

This research is based on a Project Based Course/Classroom, a method that has been highly recommended for STEM courses because of it nature and positive impact on the learning process and environment. (Bilgin et al. 2015:470) Project based learning is defined as "an instructional method centered on leaners"(Marwan, 2015:29). It is also defined as "…the students' study efforts for a certain period of time to reach a specific goal or result either individually or in group through an active preparation"(Bilgin et al. 2015:470) It is considered as a constructivist approach which create by John Downey and suggested that "…individuals construct knowledge through interactions with their environment… (and) learn best when they are constructing an artefact that can be shared with others and reflected upon…" (Zafirov. 2013:299)

Such a systematic teaching method, if utilized well, it should enable student to be problem solvers, creative and critical thinkers, autonomous, in control of their learning, self-motivated and personally responsible for their own learning. (Marwan 2015, Bilgin 2015) These skills have been identified by researchers as 21st century skills.(Hovey et al., 2014: 79)

In this context, teachers' role shifts from being the source of information to a monitor or a facilitator of learning process and the progression of their students (Al-Rawahi, 2015:2) using fun and motivating strategies to "uncover content with depth and breadth." (Zafirov, 2013:301)

According to Zafirov, Project based Learning can be broken down to a number of steps:

- *The teacher-coach sets the stage for students with real-life samples of the projects they will be doing.*
- *Students take on the role of project designers, possibly establishing a forum for display or competition.*
- *Students discuss and accumulate the background information needed for their designs.*
- *The teacher-coach and students negotiate the criteria for evaluating the projects.*
- *Students accumulate the materials necessary for the project.*
- *Students create their projects.*
- *Students prepare to present their projects.*
- *Students present their projects.*
- *Students reflect on the process and evaluate the projects based on the criteria established.* (Zafirov, 2013:301)

2.2 Experiential Learning

Experiential learning as a concept is derived from Dewey's 'theory of experience' (Kolb, 2005:193), and was defined by Weil and McGill as:

"…the process whereby people individually and in association with others, engage in direct encounter and then purposefully reflect upon, validate, transform, give personal meaning and seek to integrate their different ways of knowing. Experiential learning therefore enables the discovery of possibilities that may not be evident from direct experience alone."(Weil et al. in Maudsley, 2000:538)

Ash and Clayton (2004) developed a "rigorous reflection framework that maximizes learning and helps to refine reflective skills "(Ash, 2004:140) for experiential & service learning. The three phases in this framework include "description of the experience, analysis in accordance with relevant categories of learning and articulation of learning outcomes" (Ash, 2004:140). In order for students to communicate their experiences coherently, these researchers structured the process around some guided questions that would enable students stay on track and go deeper in the description of the experience. This process 'articulated learning' entails the development of clear paths in the students' minds as they restructure their experiences into more reflective and more concrete learning opportunities.

Experiential learning would facilitate the reflective thinking processes of students by providing the personal experience that they need to write effectively.(Maudsley, 2000:539) Through this practice, students can reflect on the details of the shared experience using good reasoning and argumentation style of writing that demonstrate their grasp of the knowledge and certainly be able to retain more information. We believe experiential learning is one of mechanism that could facilitate the development of reflective thinking procedures for engineering students who are already more inclined to use templates and formulas.

2.3 Reflective Thinking

Most teachers agree with Bard (2014) definition of reflecting as, "the act of thinking about something while seeking a deeper level of understanding" (Bard, 2014:.1). The challenge remains on making the connection between the theoretical definitions with the applications of the practice. Bard argues that one of the reasons behind this apprehension might be in the belief that it is time consuming. Granted the practice of reflective thinking requires a lot of time until it becomes natural for teachers to make as part of pedagogical practices.

Choy and Oo (2012) conducted a qualitative study that was based on the reflective thinking traits, "a) reflection as retrospective analysis; b) reflection as problem solving; c) critical reflection of self, and d) reflection on beliefs about self and self-efficacy" (Choy et al., 2012:168) which were an amalgamations of theoretical frameworks. In this study teachers' level of perceived reflective thinking uses was compared to their actual practices. The main findings showed that teachers were more concerned about "how they were assessed by their students and superiors although there was ambiguity towards the value of feedback from students" (Choy et al., 2012:180).

2.4 Writing & Culture

Both culture and style are embedded elements in language; and we can see as teachers their impact in students' writing. ESL students tend to write using the style preferred in their native language. (Kubota, 1998:72) While others believe that students' second language writing is a "…combination of exposure, experience and linguistic skills in the target language than transfer of culturally preferred rhetorical patterns." (Kubota, 1998:73) In addition to a transfer to students' cognitive ability (ibid), which intersects with this research.

Another aspect that might impact students writing is their writing skills in L1 (Kubota, 73) and the stylistic norms of writing in L1 which are usually transferred to their 2nd language. One of the apparent stylistic differences between Arabic and English is demonstrated through their synthesis or reference to other scholarly work. In an article titled: "Rhetorical properties of Arabic research article introduction", Fakhari investigated student's treatment of previous research, and he concluded that references in Arabic research articles were:

- *Often vague and rather casual…*
- *Fail to explicitly and precisely cite any of the writings and analyses (the write) alludes to…*
- *No indication of the precise identity of their holders*
- *Rather than evaluating previous research… challenge it, and pointing out its limitations, the authors simply summarize it and integrate it throughout the development of their article.* (Fakhri, 2004:1129)

Researchers attribute the absence of a critical evaluation to culture, which may not value or perceive argumentation and criticism in a similar way.In collectivist cultures such as the East Asian and Middles eastern group memberships and needs of the group is more valuable than their own, and maintaining this membership and the interest of the group reflect the individuals' value to their own identity.(Nelson, 1997: 78-79).

In such cultures, individuals "…will generally work towards maintaining group harmony and mutual face-saving to maintain a state of cohesion." Nelson adds that "loss of face occurs when one's set of claims is called into question by another" and that "'Constructive criticism' is not translatable into Arabic and that criticism, by its very nature, is perceived as personal and destructive.".(Nelson, 1997: 81)

In fact, authors in this culture may even go beyond that, "…not only avoid criticism of others' scholarship but even explicitly admit the modesty of their research and its' limitations." (Fakhri. 2004:1129) This brands the Arabic discourse community as a knowledge-telling community that simply involves presenting the information retrieved from other resources, rather than being knowledge transforming and include "…more reflection and critical evaluation and creativity."(Fakhri. 2004:1130)

3. Methodology

The study follows an action research[3] framework as an appropriate methodology since it attempts to find systematic solutions that would expand the repertoire of students' writing skills. Most of the steps will be based on the pilot study conducted in fall 2013 by the researchers as demonstrated below:

1. This step will be divided in two phases (pre-intervention and intervention)

a) Phase one (exposure): Students will be given the Academic Language Functions (ALF) table (Clyne 2006) and asked to reflect and recall if they have considered any of the questions/points given in the table when writing their Individual Writing one (IW#1). They will have the option to highlight or circle all of the questions they used, and then submit their completed tables.

b) Phase two (students' reflection): Students will be invited to discuss with the faculty and give their opinions about their experience from the exposure. Teachers' observation notes will be included. Students will be asked open ended questions to reflect on the following:

- Their experience using ALF
- Their suggestions on when and how to introduce the ALFs as an intervention.
- Their evaluation of the usefulness of this intervention

c) Phase Three (teachers' reflection): Teachers will conduct a self-reflection in which they will examine their own limitations, visualization of what needs to be taught, methods and processes that may follow, and the effect of a missing blue print on teaching ALF.

4. Results & Discussion

4.1 Phase One (Exposure):

In this phase students were asked to highlight the questions that they actually asked themselves while writing their IW#1. Students were not prepared for this exercise as our aim was to measure their first response. The teachers encouraged the students to respond spontaneously to make sure that they would not self-doubt their practices.
Students' perceptions corresponded with our observation; according to the students, their perception of the Lower Order Thinking Skills (LOTS) usage was higher than HOTS. (See fig. 2) Although according to the figure the variation between the two was minimal which did not correspond with the teachers' expectations.

[3] This action research focuses on finding appropriate solutions to localized issues which corresponds to Springer's (2014) definition of action research.

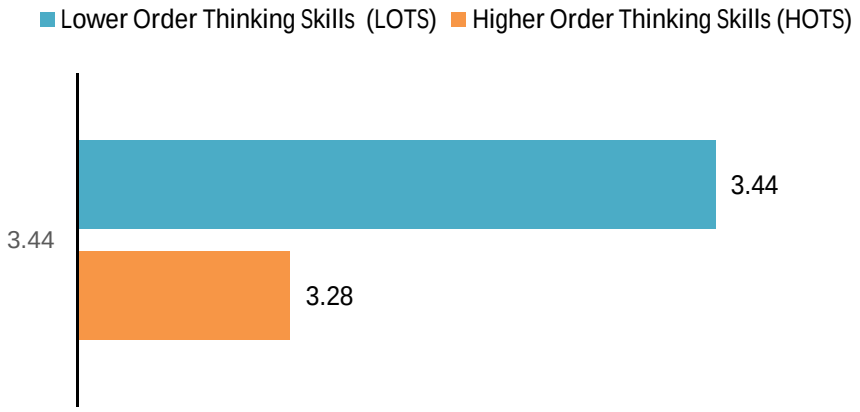

Figure 2: Students' Perceptions: Lots Vs. Hots

In looking more closely at the questions highlighted, we noticed that all LOTS were within the same range except for *seek information* (4.6) and *analyze* (4.2)[4], which is expected since we think the current education system in the UAE reinforces the teaching/learning of the LOTS. (UAE Ministry of Education and Youth, 2000: 87)

On the other hand, students' perception of HOTS varied to reveal a huge gap between *infer* (5.1) and *justify* (4.8) on one hand, and *solve problems* (1.8), *synthesize* (2.3) and *evaluate* (2.4) on the other hand. We may credit the fact they identified *infer* and *justify* to be their highest skills required for the TOEFL preparation most of them received before entering freshman year (see fig.3). Based on our observation the TOEFL test emphasizes, especially in the reading and listening sections, *inferences*, *justification* and *persuasion*, which also might be attributed to their language development of receptive skills. This again relates to the UAE educational system and the exposure of the paper-based TOEFL test.

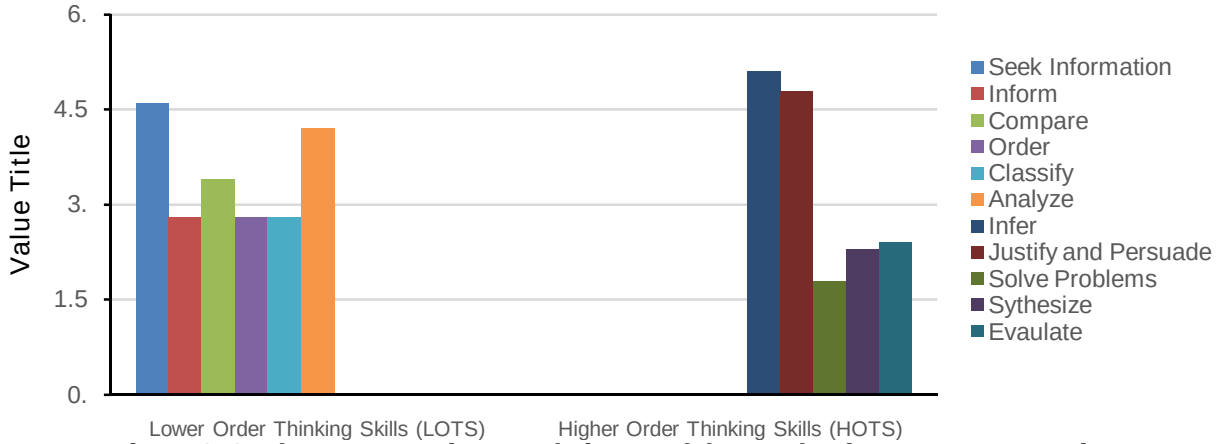

Figure 3: Students' Perception on Their Use of the Academic Language Functions

Surprisingly students identified problem solving function as their weakest skill among all the academic language functions despite the fact that this is one of the most essential skills that an engineer needs to perform many of the required tasks. Students at this stage don't yet seem to have been able to see the importance of this skill and its impact on their engineering education. This opportunity for them to reflect on these functions may have created a confluence that brought them in direct contact with these skills to absorb, develop and apply.

[4]These figures were calculated from the total number of usage of the highlighted questions divided by the total number of questions in each function.

Although students identified three weak functions which are all HOTS, we still believe that due to the fact that we have high achievers, all engineering majors would fare better in both LOTS and HOTS in comparison with the general population of first year students.

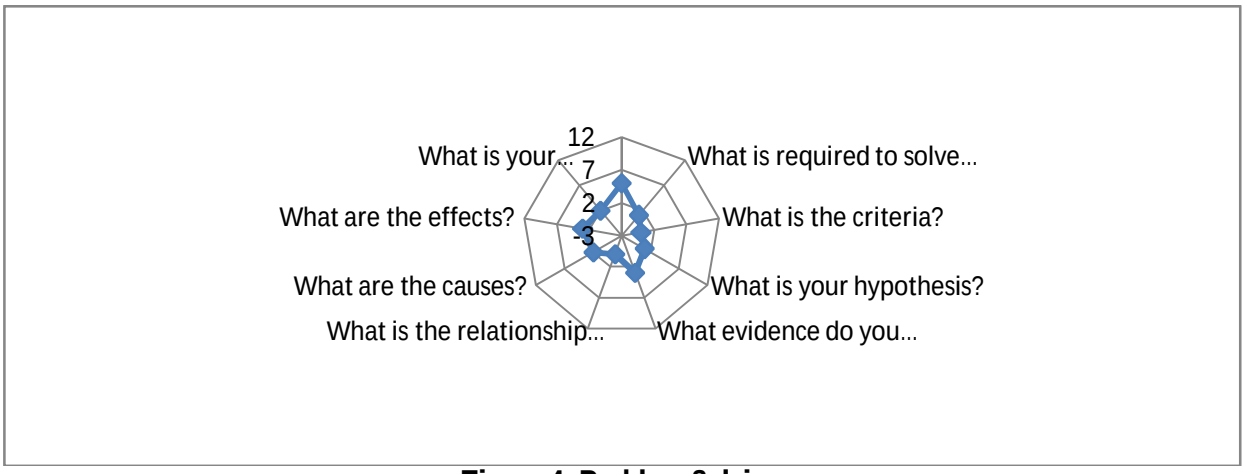

Figure 4: Problem Solving

Looking closely at the specific questions identified both problem solving and infer, made us realize that students are struggling with some of these questions. In problem solving the majority of students highlighted only two questions: "What is the process to solve this problem, and what evidence do you have to support your hypothesis?" and the main words here are 'processes and 'evidence'. While things like 'cause and effect', 'relationship', 'criteria', 'interpretation' which may seem predictable and acquired earlier in their studies were almost nonexistent to this group of students. (See fig. 4)

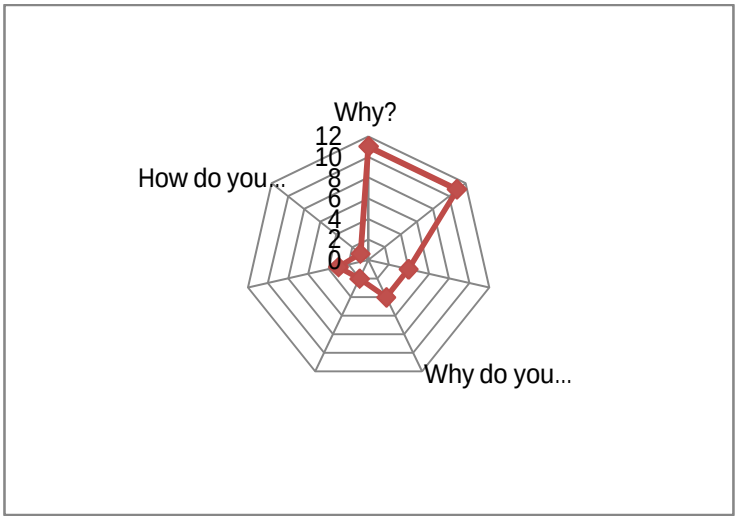

Figure 5: Infer

Whereas in the infer category, there are a few questions that received higher frequency, these are: "why? And why did that happen?" and the lowest is "how do you know that", which can be linked to 'evidence'. The way the questions are formed might have contributed to the higher responses; all of these questions can be easily linked to mental processes, and the students might have had limited terminology which would have made it simpler to absorb. (See fig. 5)

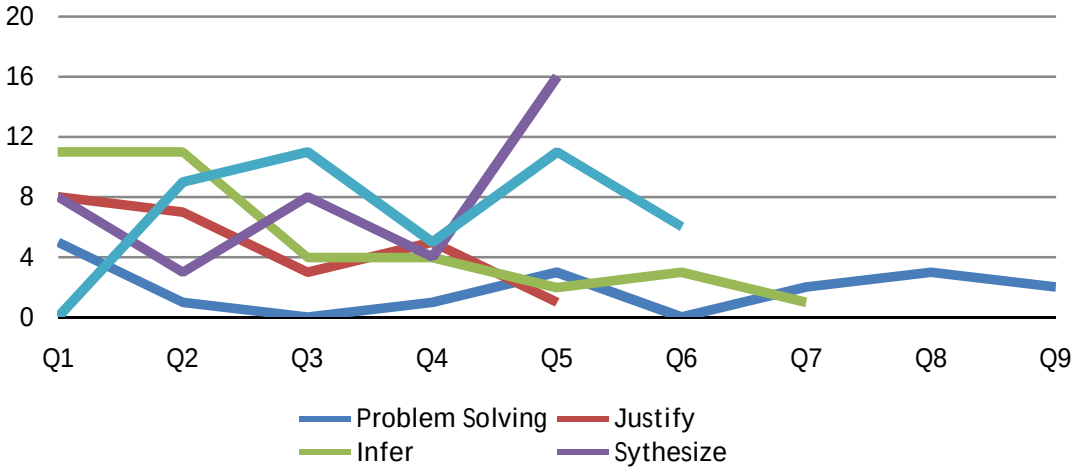

Figure 6: Students' Perceptions across Hots

Looking at the students' overall responses we can determine that there is a huge fluctuation with very few discernible patterns. There is more frequency in their choices of the first few questions and as the questions become more specific, their responses deteriorate which clearly is demonstrated in *infer*, *justify* and *problem solving*. Whereas synthesis and evaluation are the only two that do not follow the same pattern as the other functions, the fluctuation across these two categories is considerably higher and do not start necessarily with a high frequency. Surprisingly their last two questions which are very specifics as the others, the students' responses are the highest. (See fig. 6)

In the synthesis function the questions were:

1. What would your plan be for…?
3. How would you re-write this? (clean up indents)
5. How do they relate to each other? (See fig. 7)

While the evaluation questions were:

2. How does this impact…?
3. How and why is this significant?
5. How or why is this useful? (See fig. 8)

The questions highlighted tend to have simpler lexicons. For example, one of the students asked for the difference in meaning between 'significant' and 'valuable' that appeared in questions 3 & 4.

The second reason might be that we have very few items carried from LOTS such as the plan, re-write, and relate which we argue was taught at the school level. Lastly, this fluctuation might be a sign of confusion from their part as they recalled their perception of synthesis and evaluation which are embedded in our curriculum and was previously taught in this same course while doing their literature review, proposal, and preparation for their first individual writing. As we know learning occurs in different stages from the literature, it is possible that they have passed the awareness level which made these questions more familiar.

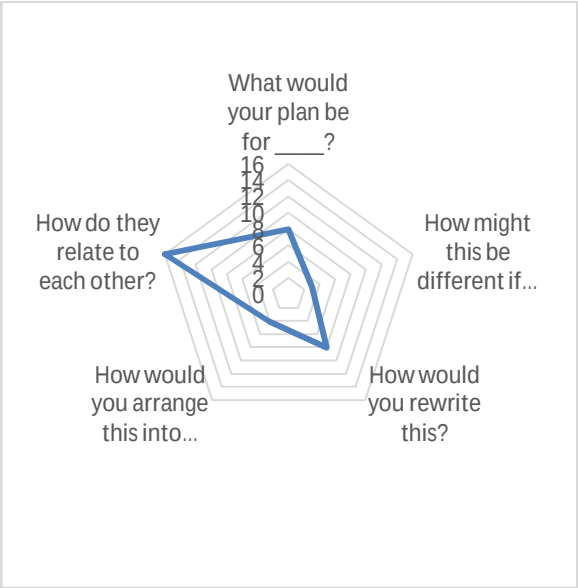

Figure 7: Synthesize

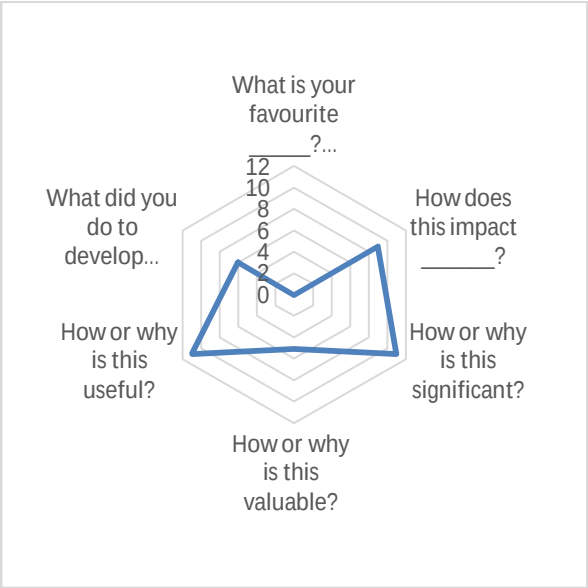

Figure 8: Evaluate

4.2 Phase Two (Students' reflection):

A majority of the students were surprised and gave strong reactions regarding their use of persuasion and problem solving as academic language functions. They stated that they did not attempt to take these concepts further; according to them, they were 'floating', and although they have been using many of the academic language functions mentioned on Bloom's taxonomy they did not attempt to go more into depth in any of these functions; i.e. answer questions like 'how', 'why' and 'when'. It was clear (based on the looks) on their faces that this exposure created a moment of realization, which was also verbalized by some of the students. Other students wished they had been exposed to Bloom's taxonomy at an earlier stage, or at the beginning of the semester. From their perspective, such exposure might have clarified what was required of them in the course.

Some other students appeared puzzled and continued to question the teacher, raising questions related to writing strategies which they had been taught throughout the years. They were not sure whether following this mental process would contradict the traditional pre-taught template of including an introduction, body and conclusion, and were not sure how they would connect or even reconcile this abstract mental model with the traditional template. In fact, this group asked their teacher explicitly to package it or re-format this new concept to a familiar template or pattern. This phenomena can be justified by the fact that student were asked to unleash not only their creativity, but also their thinking process into a zone of proximal development (ZPD)[5]and beyond. This also can be related to the students' perceptions of the teachers' role, wherein teacher are expected to provide clear guidelines that include specific descriptions of all components entailed in the task of what is considered to be a good piece of writing. This reflects the students need/ trust for a formula for the writing task, just like chemistry, math or science would do. These students could not see their role go beyond the teachers' aid or guidance. On the other hand, it was also observed that the weak group did not participate at all, despite the instructor's encouragement. It is possible that they were not able to verbally express the process they used or did not use, since their language proficiency was limited.

Considering the fact that we are dealing with STEM students and the selectivity of the admission process at this institution makes us believe that some of these weak students have used all or some of the ALFs in their L1 but failed to transfer them to L2.

[5] "A concept developed by the Russian psychologist Lev Vygotsky (1896–1934) to describe the point where a child (or adult) is most able to learn. From the educator's point of view, this suggests giving the child materials/tasks that are carefully selected to enable the child to advance without overwhelming them. Put another way, this notion refers to tasks that the child is capable of learning and performing (often initially with guidance) before these become fully independent activities" (Volkmar, 2013:3421).

Students revealed some of their cultural beliefs and expectations which prevented them from challenging other writers' authority or points of view. While one of the PI's Communication 151 course outcomes is to encourage critical thinking and argumentation, students believe that challenging any text would not be a desired option. In fact, they resist the idea and believe that their participation should be limited to contributing to the existing text rather than challenging it. Looking at the cultural context of our students, we can easily relate this concept to the Middle Eastern culture in which debates, exchanges of thoughts or critical evaluations are not a common practice; in fact this type of practice might be considered a personal attack instead of being a simple exchange of thought or knowledge.

4.3 Phase Three (teachers' reflection)

As mentioned earlier, this exposure / intervention created a moment of realization which reflected clearly on most of their responses. And although the motive behind such an experiment was to assist teachers to improve the students' writing, its successes and the students' immediate reactions raised a number of questions, such as:

- Can teachers verbalize what they mean by HOTS
- Are we as teacher asking our students for too much: i.e. abandon their comfort zone and manage/deal with the transition of ideas between L1 and L2
- When language learning / acquisition is happening versus what is the ideal time to introduce HOTS? Is it happening when it is safe, predetermined and natural situation, or is it happening when there is more risk, more authentic situation?
- Do teachers find it difficult to evaluate HOTS? If so, where does the problem lie?Is it the rubric, or our own selectivity or interpretation of the rubric?
- Do we as teachers have a real understanding of our roles in a Project Based Learning (PBL) classroom?

The first question to reflect upon is "do teachers find it difficult to verbalize what we mean by critical thinking, synthesis and evaluation?" We all may agree that this is a mental exercise; this means that it may not be by default within the expertise of language or writing teachers. We also agree that encouraging HOTS is something that we as teachers seek, regardless of our discipline, but the question remains to who is responsible for teaching or training the students. We believe that this responsibility lies upon all teachers, including language and writing teachers. This compels us as teachers to learn how to describe the different components of HOTS. The need goes beyond professional development opportunities and in this era it's a core necessity, especially when we think about preparing 21st century engineering students.

On the other hand, we do know that at that abstract level it is challenging to transfer these concepts from an abstract level to a concrete one. Our inability to verbalize HOTs seems evident through the course task specification, which mentions all the elements of HOTS, but does not go beyond the dictionary interpretation of each concept. In this case, the alternative for us as teachers is to find a tool, like the Bloom's taxonomy and turn it from an abstract model to a 'thinking behavior' (MILVAIN, 2008, 8) which with practice turns into a habit. The second question is, "are we trying to ask students to abandon their comfort zone, i.e. the traditional template, structural framework of writing that we as teachers have been using for so long? We are trying to get our students to let go of their reliance/ constant need for these templates without prior preparation, and to trust us as their teachers at that specific point to make this transition to this new mental writing level. Our educational system tends to promote a formulaic curriculum, especially when it comes to writing in both L1 and L2. And despite the fact that the current education system is under review[6], we as teachers know that when we are introducing HOTS, we are expecting them to take a leap of faith that would allow them to implement HOTS.

Which, from their prospective might lead to the desired grade, but not necessarily guarantee them continuous success in other courses, keeping in mind that students are grade oriented. (Burt: 2004:8,9) This perception could hinder the opportunity for transferability in other disciplines, therefore a minimal horizontal and vertical transferability happening throughout their studies.

[6] UAE Vision 2020 states: "Radical change in teaching/learning concepts, practices, means and styles will be effected…The focus will shift from teaching to learning, from the teacher to the learner, from memorization to creativity, reflection, imagination and innovation: To attain this objective, continuous training for teachers and supervisors will be provided to change the traditional roles they play into more effective roles to promote, develop and instill the culture of innovation which is a societal ambition." (UAE Ministry of Education and Youth, 2000: 87)

The teacher's intention was intended to help them make the connection of the skills taught during the intervention. However the students immediately regressed and chose to be within the safe area of predefined tasks, thus not taking any risks.

This argument raises another question which is, "when is language learning / acquisition happening versus the ideal time to introduce HOTS?" Is it happening when it is safe and predetermined and in a natural situation, or is it happening when there is more risk, when there is a more authentic situation? Since our communication course is not an English course per se, it uses English as a medium of instruction; therefore there will always be a certain (not sure what certain means here) progress in L2. However, we are certain that the students have met the proficiency requirement before coming to the freshmen year, which means that we are expecting our students not to be restricted to safe parameters, and to be more willing to take risks. We as teachers and curriculum developers tend to make the assumption that this is the ideal period to immerse students in HOTS through L2 instead of imbedding it in small doses during their L2 language training.

Higher Order thinking skills are thinking processes regardless of its relation to language learning, (Zohar at al. 2003: 147) and to the increase pressure placed on students through immersing them in HOTS and expect them to produce following this thinking process in one semester or even a year is challenging for both teachers and students. We believe that HOTS as a thinking process is not as well promoted as it should be during a child's development Although at early stages of child development we as a society and educators do a good job in promoting LOTS, we un-intentionally suppress its progression that could have led into HOTS. The other question that was raised is whether we find it difficult to evaluate HOTS, and where the problem lies, is it the rubric or our own selectivity or interpretation of the rubric?

We think that teachers prefer to be on the safe side where there are fewer errors and more predetermined boundaries that define each task separately. This enables them to have a clear check list of what they are looking for in each piece of writing, to remind themselves of what is required. When it comes to HOTS it becomes harder to interpret what it is, and therefore it becomes harder to explain or identify. On the other hand, the rubric does not seem to clearly specify HOTS and what it entails, which puts more pressure on the teachers to fill in the gaps and rely more on their interpretation, which may vary from teacher to teacher. In COMM151, students are provided with task specifications for each graded assignment, including the Individual writing, (Appendix B) which states clearly many of the components of HOTS which cannot be measured using the rubric. In other words, teachers starting point is to revisit the classroom rubric, and that should improve teachers' understanding of the specific element of HOTS and would unify their roles as agents of change.

This discussion leads us to the final question; do we as teachers have a real understanding of our roles in a PBL classroom? In PBL environment the teacher's role might be problematic. The classroom's dynamics are closely dictated by the content of the curriculum, while teachers and students may find themselves unsure about their roles along during the course. This could put students in an additional transition from the traditional teacher- centered classroom to a completely different experience, in which teachers are taking a step back to monitor students and would step in only when necessary. (Al-Rawahi, 2015:2)

One possibility to resolve this issue might be through introducing the concept of constructivism theory of learning through project based learning prior to the beginning of the semester. Students receive an academic article that gives an overview of PBL and constructivism theory. This should reduce the impact of this transition from school to college and clarify the role of the teacher versus theirs. A discussion should be initiated in class during the first week based on this reading.

5. Conclusion

Many questions and reflections have been raised regarding the reasons behind the imbalance between teachers' and students' perceptions of the reflection. We believe that among the possibilities, students' failure to depart from that 'safe box' in the LOTS, which they have mastered through school and experience years.

Another possibility is that HOTS tends to be too abstract for language learners, which might have hindered their ability to progress mentally and linguistically in the academic language functions. It may be a total cultural paradigm shift that inhibits them from going outside of the box.

Also, this paper reveals the vulnerability of teachers, and the need for teachers to trust each other and their students to realize that having gaps in the thinking processes should not be seen as questioning their competence. This uncertainty should not exist for two reasons. First, teachers have to realize that leading students to HOTS, which is the highest abstract thinking level, is not an easy task. In order for teachers to teach HOTS, we found ourselves while doing this research that abandoning the language and focusing on cognitive thinking process is the only path available in the classroom. Language alone cannot instigate the change we are seeking. The impact of HOTS is cross-disciplinary and not just related to language per se which justifies the limited competence level of teachers. Second, the autonomy nature of our profession allows teachers to remain in silos and isolation instead of exchanging challenges, successes and experience of their teaching with colleagues. Thus, providing a good opportunity for professional development would be imminent.

Finally this research raised a critical need to develop hands-on language related activities that will instigate, promote and maintain the cognitive level development in order to create a bi-directional growth and relationship between language on one hand, and HOTS on the other which will have a greater multi-disciplinary impact. It also made us realize that teachers are not solely responsible for creating these bi-directional experiences and those students should be part of the creation of the content of the activities that infuses HOTS.

References

Al-Rawahi, L., Al-Mekhlafi, A.. (2015). The Effect of Online Collaborative Project-Based Learning on English as a Foreign Language Learners' Language Performance and Attitudes, *Learning and Teaching in Higher Education: Gulf Perspectives*, 12, 2, 1-18.

Ash, S., Clayton, P. (2004). The Articulated Learning: An Approach to Guided Reflection and Assessment, *Innovative Higher Education*, 29, 2, 137-154.

Bard, R. (2014). Focus on Learning: Reflective Learners and Feedback, *The Electronic Journal for English as a Second Language*, 18, 3, 1-18. [Online]. Available: http://tesl-ej.org/pdf/ej71/int.pdf

Bilgin, I., Karakuyu Y., AyY. (2015). The Effect of Project Based Learning on Undergraduate Students' Achievement and Self-Efficacy Beliefs Towards Science Teaching, *Eurasia Journal of Mathematics, Science & Technology Education*, 11, 3, 469-477.

Burt, J. (2004). Impact of Active Learning on Performance and Motivation in Female Emirati Students, *Learning & Teaching in Higher Education: Gulf Perspectives*,1, 1-8.

Choy, S., Oo, P. (2012). Reflective Thinking and Teaching Practices: A Precursor for Incorporating Critical Thinking into the Classroom?, *International Journal of Instruction,* 5, 1, 167-182.

Clyne, S. (2006). Academic Language Functions. [Online]. Available: https://www.binghamton.edu/gse/teacher-education/pre-service/edtpa/webcast-1005-academic-language.pdf

Fakhri, A. (2004). Rhetorical Properties of Arabic Research Article Introductions, *Journal of Pragmatics*, 36, 1119-1138.

Hovey, K & Ferguson,S. (2014). Teacher Perspective and Experiences: Using Project-Based Learning with Exceptional and Diverse Students, *Curriculum and Teaching Dialogue*, 16, 1& 2, 77-90.

Kolb, A. & Kolb,D.(2005). Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education, *Academy of Management Learning and Education*, 4, 2, 193-212.

Kubota, R. (1998). An Investigation of L1-L2 Transfer in Writing among Japanese University Students: Implications for Contrastive Rhetoric, *Journal of Second Language Writing,* 7, 1, 69-100.

Marwan, A. (2015), Empowering English through Project-Based Learning with ICT, *TOJET: The Turkish Online Journal of Educational Technology*, 14, 4, 28-37.

Maudsley, G. & Strivens, J. (2000). Promoting Professional Knowledge, experiential Learning and Critical Thinking for Medical Students, *Medical Education*, 34, 535-544.

Nelson, G. (1997). How Cultural Differences Affect Written and Oral Communication: The Case of Peer Response Group, *New Directions for Teaching and Learning,* 70, 77-84.

Rogers, R. (2001). Reflection in higher education: A concept analysis, *Innovative Higher Education*, 26, 37–57.

Smith, M. (2011). Donald Schön: learning, reflection and change, *The Encyclopedia of Informal Education.* [Online]. Available: www.infed.org/thinkers/et-schon.htm.
Springer, E. (2014). *Action Research*. London: Sage Publications
UAE Ministry of Education and Youth, (2000). *Vision 2020*.
Volkmar, F. (2013). Zone of Proximal Development (ZPD), *Encyclopedia of Autism Spectrum Disorders*, 3421, Springer: New York.
Zafirov, C. (2013). New Challenges for the Project Based Learning in the Digital Age, *Trakia Journal of Science*, 3, 298-203.
Zohar, A. & Y. Dori. (2003). Higher Order Thinking Skills and Low-Achieving Students: Are They Mutually Exclusive?,*The Journal of Learning Sciences*, 12, no. 2, 145-181.

Appendices

Appendix A: Individual Writing Task Specifications

Individual Writing – Reflective Writing

The individual writing tasks require you to read annotates and take notes from the text on the seminar topic ready to discuss it in the class seminar. The aim is to identify the most important concepts or ideas in the text. These concepts will later be used to reflect on your own experiences in and outside of the classes at PI. Either before or after the seminar, you should use search engines available in the library (such as EBSCO) to identify another text on the same topic. You should read, annotate and take notes for this text too to prepare for the individual writing task. This will be done in class, but you may bring with you the two annotated texts and your notes. You will be asked to reflect on your own experiences in relation to the important concepts/skills identified in the seminar texts so it will be useful to read the description for 'reflective writing' below.

The second individual writing task and the final exam will require you to reflect on your own experience in relation to two different seminar topics (inter- and intra-personal communication for individual writing 2, and intercultural communication with one other topic of your choice in the final exam). In these more advanced tasks you will need to compare and contrast the skills and concepts discussed in one or more text on each of two topics before reflecting on your own experience in relation to two seminar topics.

Reflecting on Experience

Reflective writing helps us make sense of our own experience and aims at making the next experience more successful. Look at the reflective cycle at the link below and the ppt provided as this might help you structure your critical reflection, but you may also choose to plan your essay differently depending on the type of experience you are reflecting on and the wording of the question.

Typically a critical reflection starts with a description of the experience you are asked to reflect on. This should be a summary rather than a full description. If we believe learning is also about feelings and motivation (sometimes we refer to 'emotional intelligence'), it is also important to describe your feelings about the experience in question. This descriptive stage provides you with the 'data' for the evaluation and analysis that follow.

Evaluation in academic writing often means working out the extent to which something is true. You could therefore try to evaluate the evidence available to you about your own experience and work out how 'true' or reliable your description of what happened and especially your feelings about the experience were. In the case of a reflection it can also refer to what was positive or negative, good or bad, right or wrong, fair or unfair etc. about the experience. This stage could also involve using concepts from our reading on a topic to help you interpret what is significant about your experience.

Analysis often involvesbreaking a complicated situation, issue or a problem down into manageable parts in order to understand it better and, in the case of a problem, to solve it. It can also mean identifying your own opinions, arguments or claims or separating facts from opinions. (You may prefer to adjust Gibb's cycle and do this before an evaluation.)

After the previous stages you may now be ready to come to a well-balanced, honest conclusion about your experience, your own and other people's role in it and what you have discovered though reflection. From what you have learnt, you could then finish by **looking ahead.** How would you approach a similar situation, task or problem in the future? What would you do differently?

[Based on Gibb's reflective cycle available at http://www.brookes.ac.uk/services/upgrade/study-skills/reflective-writing.html]

Table 1 Summary of some useful ways of supporting reflective thinking

Critical Thinking Concepts	Skills
Identifying and summarizing relevant information	Selecting relevant information and concepts from different texts
Advanced Synthesis	Synthesizing information from two or more different but related texts
Analysis	Breaking down complex arguments into manageable parts Identifying one's opinions, arguments or claims or separating facts from opinions.
Evaluation	Evaluation of critical incidents from own experience (FYE) (positive and negative) based on communication concepts identified in two or more different reading texts.
Interpretation	Working out what is most significant about your own experience
Argumentation	Developing and supporting one's own argumentation with literature support Drawing conclusions based on analysis, evaluation and interpretation of experience
Improvement	Remember the purpose of reflecting is to improve the next experience