CLASSROOM METHODOLOGY TO INculcate THINKING SKILLS

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ABSTRACT

Employability skills have become an important factor for graduate recruitment. It has become difficult to get hired without requisite soft skills in addition to the traditional hard skills. Institutions around the world therefore are making changes to their diet of courses to inculcate such skills in their graduating students. Traditional Teaching Methods generally do not help to nurture the development of required Soft skills. At Daffodil International University, we have developed a classroom engagement model that was applied in a workshop of some final year students before their exposure to a career fair. The primary aim of the research is to report on a workshop where the participants were engaged to share their experience and produce new ideas on a particular problem. They applied meaning to their suggested ideas which are also organized, prioritized and finally presented by them. We have named this methodology Effective Neuralistic Engagement Model (ENEM). This model explains how development of thinking skills energizes six soft skills: Team working, attention to detail, communication, organization, flexible approach and problem solving. The result of the research demonstrates two types of findings. Firstly it shows the prior knowledge and requirements of the soft skills of the participants. Secondly it shows a comparative study where the workshop attendees performed more successfully in the Career Expo than the other students.

Field of Research: Employability Skills, Graduate Recruitment, Classroom Engagement, Effective Neuralistic Engagement Model (ENEM)

1. Introduction

With the number of graduates entering the work field increasing every year, it has become crucial for employers all over the world to distinguish the candidates based on academic excellence with more emphasis on soft skills. The needs to find individuals who are capable of adapting to the ever changing environment and rise up to challenges have become requisites of any job description. Human resources are keener on skills such as attention to detail, written and verbal communication skills, team working skills, a flexible approach to work environment, problem solving skills, and organizational skills etc. which are more commonly known as employability or soft skills. According to Graduate Prospects, the trading subsidiary of the charity HECSU, “Employers are looking for vital soft skills in graduates which are obtained during study and periods of work experience, rather than degree specific knowledge”(Raybould & Sheedy, 2005).

As asked in tertiary level, most students express that their goal for perusing higher education mostly comes from the motivation of furthering career development. But if the current education system is observed, it is clearly visible that traditional classroom teaching does not leave much space for individual growth of the students. And in most cases it does not help to inculcate thinking skills in students that can further be expanded into soft skills. The students are treated as passive receptors of the teacher’s structural teaching and are somewhat discouraged to think unconventionally. “Graduates are more diverse in age, social background and motivations, while the labor market which they enter is more complex and volatile” (Raybould & Sheedy, 2005).
At Daffodil International University, a new classroom model has been established that will force students into active participation and generate their own solutions or suggestions as a response to a problem or situation. The moderator will work as a facilitator and supporter as opposed to a dictator. The responses will be categorized, sequenced and with compared existing theories. In the final step of the process, the participants will apply their own generated ideas and further enhanced model to the existing problem. This methodology will promote the development of basic thinking skills, an essential in inculcating employability skills / soft skills. We have named this methodology Effective Neuralistic Engagement Model (ENEM). In the paper, we will be presenting the problems, solutions and findings of applying the model to a group of 34 participants who are fresh graduates/ or to be graduate ready to enter the job sector. Among the 34 invited, 21 attended the workshop. The rest did not attend the workshop. But all 34 people submitted their resumes in the expo. For the sake of objective research, we divided the present candidates and absent candidates on the day of the workshop. The present candidates who attended the workshop are designated as the “Experimental Group (E group)” and the candidates absent in the workshop but present in the Career Expo are designated to be called the “Controlled group (C Group)”. An area of in-depth research is possible as we can delve into the requirement of thinking skills as prerequisite for soft skills/ employability skills and whether or not the application of ENEM can facilitate the process. The creation of meaning to interpret and communicate perceived phenomena is a fundamental trait to human intelligence. (Marsen, 2008)

2. Background

Since the Bangladeshi food processing industry is promising hence the scope of work and employability sector is increasing day by day. In order to take advantage of the growing opportunities and creating better career options for the students of Daffodil International University, the department of Nutrition & Food Engineering was established. As the competition in the today’s job sector is fierce, it was deemed necessary for students to be prepared not only with their hard skills on offering. But the integration of employability skills, otherwise known as soft skills, was seen as a necessity to become an irresistible package for the Agro based employers. Knowing that traditional classroom teaching methods are particularly focused on honing hard-skills and delivering academic excellence, the practice to promote thinking skills gets lost in the process. And without cultivation of thinking skills, it is near about impossible to create a solid base of employability skills/ soft skills. As University of Daffodil strongly believes in preparing students for successful transition from the academic to the professional, it made an effort to cross this barrier as well.

On 13th July 2018, Department of Nutrition & Food Engineering(NFE), Daffodil International University organized a 2 day NFE Career Expo in collaboration with Bangladesh Agro Processor’s Association (BAPA) in order to facilitate the recruitment process. This Expo was specifically intended for the last semester students of NFE, to be graduating and entering the workforce. But before participating in the Expo, a workshop was arranged on 11 July, 2018 for the candidates where the Effective Neuralistic Engagement Model (ENEM) was applied to inculcate thinking skills that will help develop soft skills in the students. The workshop was offered to 34 students, two days before the career expo. It focused on the basic skills that are required and expected of fresh graduates entering the job sector, especially the ever changing and growing processed food industry. Apart from respectable/acceptable academic qualifications, the employers were keener on certain skill sets. Attention to detail, written and verbal communication skills, team working skills, a flexible approach to work environment, problem solving skills, organizational skills were selected because thinking skills trigger these soft skills. Even though, there are various soft skills, but the importance of these 6 softs skills are particularly important for the NFE students and the model can be modified to be accommodated for any discipline. If the situations and requirements are further changed, the model will still be eligible for use. Most students were unaware of the vitality of soft thinking skills, during the work-shop they were at first caught off-guard. As the ENEM promotes and encourages unrestrained and systematic thinking
skills, the students soon got over the initial discomfort. Soon, they were able to respond to the activities planned to promote thinking skills by which the base for the 6 soft skills could be laid. Among the 34 invited for the workshop, 21 attended the program. And the rest, despite not attending the workshop, submitted their CVs at the expo. In order to fully understand the effectiveness and universality of the model, we named the group present at the workshop as the experimental group (E group) and the absent ones as the controlled group (C group) to compare the data to understand the difference and changes that both groups show.

3. Literature Review

Many recent researchers and academicians have developed classroom engagement models to nourish the thinking skills of students. Wason & Southall (2016) published a case study that illustrates how in-class debates, backed up by reflective writing, have been integrated within an innovative teaching and assessment intervention called “The Big Debate”. It focuses on defining critical thinking by using active learning techniques such as debating. A scaffold approach was developed which slowly reduces the amount of support given to students regarding the process of debating and allows practice before assessment.

S A Hadi, E Susantini, and R Agustini Faculty of Mathematics and Natural Science, Universitas Negeri Surabaya, Indonesia (2018) conducted a training where they implemented a modified free inquiry learning model researched on this in July 2016. It was a pre-experimental research with one group pretest-posttest design. This research was conducted for 3 weeks starting from 17th to 29th of May 2017. The learning materials were applied to train the students’ critical thinking skills. The research instrument used to measure the students’ critical thinking skills was an essay test instrument consist of 5 items. The test was said to be sensitive to differentiate the students’ ability before and after receiving the learning process. A improvement of the students’ score of critical thinking skills was analyzed by using N-Gain equation. The results of the analysis of the increase in the score of critical thinking skills (N-Gain), The level of critical thinking skills of students after the application of learning tools developed, put the students at critical level.

“Designing the Widget: A Group Decision and Negotiation Task,” by Lisa A. Delise and Abby L. Mello, mirrors a realistic product design task in which students develop interpersonal skills in group negotiation, including information sharing, conflict management, communication, and development of trust; it is suitable for courses that address these and related organizational behavior topics.

The article, “Teaching Leaders to Lead Themselves: An Emerging Leader Exercise,” by Carolyn I. Chavez, Claudia Gomez, Marcus Valenzuela, and Yasanthi B. Perera, aims to develop students’ self-awareness of how others perceive them vis-à-vis preconceived notions of leadership behaviors. The authors suggest that it may be more appropriate for more mature students, such as those who are near graduation or in graduate-level courses in leadership and organizational behavior (Schmidt-Wilk & Lovelace, 2017).

So, there are several established or experimented models or researches that inculcated thinking skills. But maximum of them were for students of specific discipline or specific purpose: like the training module of employers institutions and Classroom Model of Academicians are different. Moreover, the researchers established hypothesis directly on soft skills training without integrating this with thinking skills. In that situation, an integrated generic classroom engagement model can expand a new horizon of exploring.
4. Research Question

❖ **General Question:** Would the *Effective Neuralistic Engagement Model (ENEM)* be able to inculcate thinking process of the students that will help to develop the required soft skills?

❖ **Specific Question:**
  ❖ Which soft skills are more necessary for training to make them ready for the job market after graduation?
  ❖ How much the performance of the required soft skills were developed in the students to whom the model was applied than the others?

5. Theoretical Framework

Classifying an object according to selected criteria, attaching value to it, and judging its aesthetic appeal, are all mental operation that, in one way or another, give meaning to the phenomenal world (Marsen, 2008). This mental function is very crucial for brain engagement in a classroom. A new model named ENEM is developed to show a different approach to engage the students in utilizing their brain and thinking power to develop six soft skills:

   i) Attention to Detail Skill  
   ii) Communication Skill  
   iii) Team Working Skill  
   iv) Flexible Approach Skill  
   v) Problem Solving Skill  
   vi) Organization Skill

They are selected from generic perspective. The following Table 1 shows the theoretical design of the research where the first and second columns show the activities and the third and fourth show the assumed hypothesis. There are 7 stages in this model and it takes 120 minutes to finish all the stages.

**Table 1: Effective Neuralistic Engagement Model (ENEM) Table**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities</th>
<th>How to Inculcate Thinking Skill</th>
<th>Required Soft Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired &amp;asked</td>
<td>Initial communication starts</td>
<td>Stimulate brain</td>
<td>a flexible approach</td>
</tr>
<tr>
<td>“What is the difference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>between you and a monkey?”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask: What are the qualities</td>
<td>Discuss and share ideas for searching the answer</td>
<td>Brainstorming &amp; linking with schema</td>
<td>problem-solving skills</td>
</tr>
<tr>
<td>you would look for while</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hiring an employee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write idea cards</td>
<td>Produce ideas in deduction process</td>
<td>Applying meaning to existing</td>
<td>Attention to detail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>knowledge</td>
<td></td>
</tr>
<tr>
<td>Categorize cards</td>
<td>Scanning &amp; skimming</td>
<td>Induction process</td>
<td>organizational skills &amp; communication</td>
</tr>
<tr>
<td>according to similarities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write title cards</td>
<td>Discussion &amp; finalizing title</td>
<td>Deduction process</td>
<td>problem-solving skills &amp; attention to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>detail</td>
</tr>
</tbody>
</table>
In this model, two questions, embedded to human intelligence and perception are used in the first two stages. In addition, the first three stages require one skill for each. From the fourth stage, each activity includes two skills and the last stage includes all the six skills.

6. Methodology

An ideal class of 34 students was used for application of this methodology. In the first half, the participants are paired 1:1. The facilitator started with the “monkey-human difference” question as an ice breaking and stimulates the brain. He begins with a gripping narrative of a comparison between a monkey and a human. He asks the crowd if a monkey and a human were present in a class, what would be the differentiation between the monkey and a student when hearing the lecture. The students said the humans would understand the lecture as it is a human and the monkey will not as it is an animal. But sir then elaborates that Monkey are genetically the closest species to human beings. In terms of physique and neural structure. Then why when both are hearing the lecture, only the human understands? The crowd is unable to respond as this unconventional question was not presented with an immediate answer to them. Sensing the silence the facilitator reveals that the only difference between the monkey and human is that upon hearing the lecture the human is able to apply meaning to the words and is able to draw out his own information/conclusion. Whereas the inability to apply meaning to the words makes the monkey nearly inanimate. After that, they are given the question “WHAT ARE THE QUALITIES YOU WOULD LOOK FOR WHILE HIRING AN EMPLOYEE?” and are asked to discuss among themselves. While they are engaged in the conversation and exchange ideas, the participants are provided with idea cards (blank cards) to write their ideas or points based on their own logical deduction. After all the participants are done writing on their cards, all the cards are then collected and pasted on the board for all to see. Then all the participants are asked to reorganize the cards according to similarity. After the cards are rearranged, they are then asked to categorize, name the categories and write it on “title cards” and tag the rearranged categories. After all the title cards are placed on the categories, the participants are asked to rearrange the categories according to priority.

In the second half of the class, the participants are banded into groups of 6-8. And they are asked to design a plan on how to acquire the qualities that they have pointed out. After they have made their plan, they will be provided with posters on which they will write down their plan and present it in front of the whole class.

6.1 Sample and data collection method

Around 34 students from the last semester of NFE department were selected as the sample. Among them, 21 students attended the workshop and 12 students didn’t attend the workshop. The students who attended the workshop are the Experimental Group (E Group) and the ones who did not attend are a part of the Controlled Group (C Group). After the workshop, feedback was taken in the form of 7 questions through Google Form. The questions were structured as Checkboxes and short answer.
6.2 Instrumentation

In the workshop, students used pen, paper, blank cards, marker, white board, art paper. Scotch tape as the tools. The required classroom should be spacious with movable chairs and comfortable environment. It will help the communication and overall thinking process.

7. Results & discussion

The questions that were asked to the students can be divided into two sections.

7.1. Section 1:

Here the students of both groups are asked about their prior knowledge of the six soft skills. From figure 1, we can see that, among 34 students, 15 students or, 44.1% of the total answered “yes”, 8 students or, 23.5% of the total answered “no” and 11 students or, 32.4% of them answered “some of it”. So, it means, maximum students were acquainted with the soft skills.

![Figure 1: Percentage of Students on their idea of soft skills](image1.png)

![Figure 2: Ratio of students on their prior knowledge on soft skills](image2.png)
The initial findings from figure 2 represents that from their 4 years graduation study they developed more in the “team working skill” and they have great lacking in the “flexible approach” skill. It looks ironical from the surface meaning but the underlined meaning is that students can work in team with their fellow mates but it is quite challenging in a new environment.

Figure 3 reveals students’ emphasize on almost all of the soft skills whereas the most demanded skills are attention to detail and communication skill and the least one is again “team working skill”. Almost 10 students responded its demand in their training.

7.2. Section 2:

Here the statistics show some comparative studies between the two groups: E Group and C Group. Here they were asked with three questions. All of them try to measure their performance in the Career Expo that was held two days after the workshop on ENEM Model. The first question was focusing on the number of CV they sent to different employers in the fair. The data measured not the number of CVs but the number of students who sent them. The second question was focused on the response of the CV and the third one was on their successful and meaningful counselling with the employers.

![Figure 3: Ration of students on their demand of training on soft skills](image)

![Figure 4: CV Submission](image)

Figure 4 represents that, from the E group, 10 people submitted CVs in the career expo. So the percentage is 47.6%. From the C group, 7 students sent CVs to the Career Expo. So the percentage is
53.4 %. The total number of CVs submitted in the Career Expo is 33 from the E group and 31 from the C group.

But interestingly, from figure 5, it is clear that 1 student from E group received a call from an employer after the Career Expo but none from the C group received any call-backs.

We asked the students of both groups whether they could counsel or communicate successfully with the employer in the career expo. From figure 6, we can see that, the E group, 8 Students’ answer was “Yes”. 6 students response was “No” and 7 students response was “Almost”. So from the E group, 38 % of the students communicated successfully with the employer and 28.5 % students couldn’t communicate. On the other hand, from the C group, 2 students answer was “Yes”, 6 students answer was “No” and 4 students answer was “almost”. So, it is evident that 16.6 % of the students from the students could communicate successfully, whereas 50% of them couldn’t do that. From E group, 7 students and from C group, 2 students answered “almost” in the aforementioned question. Here we can see that the percentage is same, which is 33.3 %, in both groups.
8. Limitations

The result of the current study would have been extended or improved if we could have used a mixed method of both qualitative and quantitative analysis. If the employers’ perspective could be integrated into this study, it would ensure more trustworthiness. Moreover, the questionnaire could remove the ambiguity if any personal interview were added to the research. Overall, this requires further investigations as well as implementation.

9. Conclusion and Recommendation

Since traditional classroom teachings put more stress on hard skills, the students are often not prepared when they enter the work-field that can become too demanding for graduates who are not oriented properly with the need and cultivation of soft skills needed to thrive in a new environment. With the collaboration of traditional classroom teaching with soft skills, the chances of fresh graduates having communication skills and flexible attitude to any challenge on hand would increase the chances of successful employability drastically. Such teaching practices will also give the employers opportunities to recruit graduate without the hesitation or concern over the quality of work and will be helpful in establishing a stable connection between the specific skills the employees have to offer.

In conclusion, the research has revealed the fact that whenever the students can apply meaning to their persistent knowledge as an embodiment of the thinking skills, the soft skills can be improved. Certainly there is need for further research as well as implications of this model on this regard, particularly to the students who are about to enter to the job market. This type of classroom engagement model can be applied at different educational as well as training institutions to inculcate their thinking skills and develop their soft skills. To make this theory a success, at first, trainers and academicians need to be made aware of their required soft skills. Students from different background can be given training or workshop as the questions asked in the ENEM is generic and provoke thinking capability. This will promote students to get preparation for entering the competitive job market.

Acknowledgement

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References


Appendix A

Feedback on the NFE Career Expo 2018
The questions are prepared to take you feedback about the Career Fair as well as the Workshop you attended in 11 July, conducted by VC Sir

1. Did you attend the workshop on Effective Neuralistic Engagement Model (ENEM) held on 11 July, 2018 & conducted by Professor dr. Yousuf Mahbubul Islam?
   Yes
   No

2. Did you have get any idea on soft skills required for the job from your course syllabus during your graduation?
   Yes
   No
   Some of it

3. Which skill do you think you have achieved already from your graduation study?
   Attention to detail skill
   Communication skill
   Team working skill
   Flexible approach skill
   Problem solving skill
   Organization skill

4. On which skill do you think, you need proper training before job applying
   Attention to detail skill
   Communication skill
   Team working skill
   Flexible approach skill
   Problem solving skill
   Organization skill

5. In the NFE Career Expo, to how many organization you could send your CV?
   Your answer

6. Did you get any call after sending the CV?
   Yes
   No

7. Could you get counseling/ communicate successfully with the employer in the Career Expo?
   Yes
   No
   Almost
   Option 1
Appendix B

Students’ Idea Cards