Analysis and Solutions of Career Problems: A Case of Fresh Graduates of Industrial & Production Engineering

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Abstract

Department of Industrial & Production Engineering started its glorious journey from 2006 in Rajshahi University of Engineering & Technology. Since then approximately 250 students graduated and continuously enhancing the global quality of the department through leading discovery and innovation. Despite some senior graduates’ shines in career after a long struggle, some problems come their way and make them realize that they should be more careful about them in their University life. In order to get the regarding information, we surveyed about 100 graduates of IPE from different series. Previous graduates are now working in different sectors with a different designation. Their experience about their career life will help us to find out the problems faced by the fresh IPE graduates as well as it will help us to solve the problems in our University life. We analysed the data & build methodology through the brainstorming process & finally achieved our result. This will provide a way to overcome the problems faced by the fresh IPE (Industrial & Production Engineering) graduates in their initial career.

Keywords: IPE, Graduates, Skill, Career, Suggestions

INTRODUCTION

The process of graduation helps the graduates in their career alongside the future life. So, in this time they should be more concern about their learnings. The department can provide them proper guideline and it can modernized its education structure. For this we need to survey among the graduates. After survey, we have to analysis the results. Then we have to identify the future scope and obstacles and make a conclusion of the remedy of the initial problems faced by the fresh graduates. Actually, graduate quality improvement is a very important task but it is very difficult to solve without finding the root causes. This is a long-term process & have not felt the problem deeply yet by anybody. This article will help to all students of Department of Industrial & Production Engineering of developing, less developed or underdeveloped countries.

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LITERATURE REVIEW

The admission system in Engineering Universities is not so easy. A very competitive examination is held among the students who score more than 80% marks in Physics, Chemistry, Mathematics, and English in A level exam. Eligible students can participate in the admission test which varies in different universities from 500 to 700 marks. Both written & Multiple-choice questions have to be answered. The merit position of the admission test result is published based on the order of marks scores in the exam. Then, they can get themselves admitted into different programs according to their merit position and order of choice. In this system, many students can’t get admitted into their desired Engineering program. It is one of the major reasons for poor academic result as well as frustration.

The social medias are taking a lot of time from us. Students are teenagers & they are the main victim of social media addiction. Attraction to opposite gender is one of the vital causes behind the problem. Getting rejected to love proposal, suffering from frustration, failure in scoring good result in spite of trying harder etc. deviate many students from studies. It is a responsibility of the university to help and guide them. It is possible to overcome these problems at the early stage but university is immutable in this case and only care the good students who get higher marks only. This type of discrimination & humiliation discourages students to ask help to the university or course advisers. In this research, a continuous approach has been applied experimentally within the students who were trying hard to overcome their situation.

A few works have been initiated & successfully starting a flow in different types of improvements in our university. Hasan and Dutta (2017) applied PDCA cycle, a concept included in TQM philosophy in order to improve personal skills of engineering students and successfully initiated a study on students to develop their skill to ensure better career. Hasan and Hossain (2018) experimentally applied TQM tools to determine root causes and used PDCA cycle concept of TQM and successfully improved the effectiveness of engineering students. Junejo, Sarwar, and Ahmed, (2018), researched on fresher’s vocational, educational, personal, and social concerns while attending a predominantly White university. Channar, Mehran, Ali, and Brohi, (2017) showed the problems that are faced by the female’s Postgraduate students in the universities of Jamshoro cities, Pakistan and found a solution in their research. Shreenivas, Archanar, Gururaj, and Ambika, (2015) leveraged the use of technology in the conventional teaching system, which results in improved teaching-learning process. The focus on OBE was through the use of various assessment methods in a specific course. Daghan and Akkyunlu, (2014) examined cases on performance based assessment methods (PBAMs) and enabled students to take responsibility of the method also for progress in lessons. Kubota, Terashima, Nakahashi, and Morioka, (2008) analyzed the distance learning environment in Japan and suggested to provide different learning strategies according to the students need for their improvement. Miyakoshi, (2016) worked on a research to understand the connection between higher education as a joint development project between Egypt and Japan and ESD based on students’ opinions. Korsah, (2013) examined the factors that impede the academic progression of graduates from technical institutions to the Polytechnics and the Universities, reasons of not getting the appropriate level of job placement in industry & suggested to modify the curriculum. Ali Alghail and Ali Mahfoodh (2016) worked in the assessment of the academic reading difficulties encountered by international graduate students in a Malaysian university.
and solved the problem. Hai-ming, Hai-ling, and Guo-chun, (2010) surveyed on Graduate Employment Difficulties and reached a solution by adjustments of schooling, strengthening the training of students’ comprehensive quality, solve the student’s conformity psychology and offering employments guidance courses. Geng-yu, Meng, and Jun-wu, (2011) analyzed of employment difficulties of female graduate students in Engineering colleges in 2011 to solve the problem. Savery (2015) discussed that self-exploration is a solution of choosing own career, understand things easily & solve problems instantly. Lau and Pang, (2000) worked on developing career goals and adopting appropriate career strategies of the graduates during the first two years of employment after graduation in the Hong Kong labour market.

**METHODOLOGY**

**Research Plan Design & Method**

In order to detect most important problems, level of problems as well as to brainstorm the solutions the research was started and accomplished through the following steps:

- A survey was done to know the real problems a fresh IPE graduate face at his initial career. For this, we collected information from our honourable seniors from different academic series. To contact them we used E-mail, Social apps. We created a form by the help of google docs to collect their experience about their faced problems through internet
- After collecting the information, we created a Database by the help of Microsoft Excel software
- Then with the help of Microsoft Word and Microsoft Excel, we create an analysis of the survey result
- According to the survey result, we selected the most voted problem and then we provide a solution of the problem by the help of multiple decision-making criteria

<table>
<thead>
<tr>
<th>No.</th>
<th>Challenges they have faced</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>If you ask the challenge for 1st career then must say &quot;waiting for a call for viva&quot;. In this point, your CV &amp; networking is very-very important</td>
</tr>
<tr>
<td>02</td>
<td>Multi-task in very short time</td>
</tr>
<tr>
<td>03</td>
<td>Choice of a job field that I expect to start my carrier</td>
</tr>
<tr>
<td>04</td>
<td>To survive inside new environment</td>
</tr>
<tr>
<td>05</td>
<td>To cope up in a BUET environment</td>
</tr>
<tr>
<td>06</td>
<td>Communication</td>
</tr>
<tr>
<td>07</td>
<td>English Communication with foreign management including my Dept. Head</td>
</tr>
<tr>
<td>08</td>
<td>New environment with new faces. It is a very big challenge for everyone to cope with that conditions</td>
</tr>
<tr>
<td>09</td>
<td>To manage people</td>
</tr>
<tr>
<td>10</td>
<td>Garments Oriented Job Sector for IPE Graduates in BD. Hardly, there is Job opportunity in other sectors for IPE Graduates</td>
</tr>
<tr>
<td>11</td>
<td>Not faced</td>
</tr>
<tr>
<td>12</td>
<td>To cope with the new environment</td>
</tr>
</tbody>
</table>
Communication problem

To cope with new environment

For higher study

Presentation problem

Communication related problem

Presentation Skill

Communication Problem

For me it was hard to adapt with the industrial environment

To adapt with the working pressure in garments sector

Mainly IPE related jobs are challenging for girls. It was hard for me to cope with the working environment

To maintain the working pressure in new environment

To choose a particular sector when there was a lot of opportunities

To cope with new environment, new people and working pressure

High pressure of the industry

Report submission to boss

Suggestion

From the above answers in Table 1 the respondents give, we can conclude to the following suggestions

• Some of the graduates face communication problems. In order to eliminate the communication problem there should be given more concern about English language practice as well as should develop the practice of extracurricular activities like joining debates, giving speech, anchoring etc.

• Some of the graduates faced problem with the new workplace environment as well as in other University environment for higher studies. To eliminate the problem there should be make sure to increase the industrial visit (Minimum 1 industrial tour per year); and there should be good communication with other Universities in Bangladesh as well as foreign Universities. This will also help students to complete their higher studies at their chosen universities easily.

• Then comes the problem of selecting a particular sector for career. Recently Electrical and Electronic department of RUET started a trend of helping students to select their sector of career. They provide a choice form to the third Even Semester students and sort them for a particular career field according to their CGPA. This should be practice in our department with some modification like not only with CGPA but also with the expertness about the career field as soon as possible. This will enhance the job sectors which are suitable for IPE graduates.

• There should be start different projects like industrial case solving to make students experts in multi-task. This will also provide good experience of practical knowledge. This will also provide students to adapt with the working pressure in industries

• Management related subjects should be come in lab course to overcome the managerial related problems

• Presentation related problems should be eliminated. For this, there should be at least one formal presentation in every cycle. This will provide students a better knowledge
about the presentation, and development of their presentation skill

- Report submission should improve by practicing the related software as formal reports in industries are mainly submitted by writing in Microsoft word, Microsoft excel etc.
- We know that the conservative society of Bangladesh makes some of the working sectors inappropriate for IPE graduated girls. To, minimize this problem there should be established an information related group to provide them the best suitable working sectors. The group should also provide them mental support and solution of the career problem.

Table 2: Environmental adaptedness of workplace

<table>
<thead>
<tr>
<th>Options</th>
<th>Very adaptable</th>
<th>Adaptable</th>
<th>Hard to adapt</th>
<th>Very hard to adapt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>1</td>
<td>16</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Frequency Percentage</td>
<td>3.57%</td>
<td>57.14%</td>
<td>39.29%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Description**

We can see from the figure 1 that about 57% of respondent feels that the environment of working environment for fresh graduates is adaptable. 39% of them thinks that the environment is hard to adapt. 4% of them feels the environment for freshets is very adaptable. From this we can conclude that we are still facing problems regarding environmental adaptations.

![Pie Chart of environmental adaptedness of workplace](image)

**Figure 1: Pie Chart of environmental adaptedness of workplace**

**Suggestion**

To eliminate the problem, we should make sure to increase the industrial visit (Minimum 1 industrial tour per year). As well as we should keep a good communication with industries and we should also apply our research to solve different industrial cases.
Table 3: Communication Problem

<table>
<thead>
<tr>
<th>Options</th>
<th>Not faced</th>
<th>Often faced</th>
<th>Faced a lot</th>
<th>Faced but overcome easily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Frequency Percentage</td>
<td>14.29%</td>
<td>17.86%</td>
<td>7.14%</td>
<td>60.71%</td>
</tr>
</tbody>
</table>

Description

As described in question 1 suggestion section (Suggestion i) communication problem is many of the respondent’s common problem. Selective perception, Language, Silence, Cultural barrier, Gender difference are the most common barriers of communication. From the Figure 2 we can see that 61% of the respondents faced the communication problem but they overcome that easily, 18% of them often faced, 7% faced a lot and the left 14% respondent didn’t faced the problem.

![Figure 2: Pie chart of communication problem](image)

Suggestion

In order to solve the communication problem some steps should be taken. Such as, Practicing English language as most of the formal communication are done by English. We should come forward from the cultural barrier. There should also develop the practice of extracurricular activities like joining debates, giving speech, anchoring in different programs etc.

Table 4: Important Software to Learn

<table>
<thead>
<tr>
<th>Options</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Microsoft Excel</td>
<td>28</td>
</tr>
<tr>
<td>b. Microsoft word</td>
<td>26</td>
</tr>
<tr>
<td>c. Microsoft Access</td>
<td>11</td>
</tr>
<tr>
<td>d. MATLAB</td>
<td>3</td>
</tr>
</tbody>
</table>
Description

The good knowledge of different software makes an IPE graduate more smart. From the Table 5 and Figure 3, it can be seen that 100% of the respondent think that students should learn Microsoft Excel. The importance of learning Microsoft Word and the percentage of importance is 92.86%, importance of learning AutoCAD is 50%, then comes the SolidWorks and Microsoft Access both of them are equally important and the importance is 39.29%. Importance of learning Microsoft PowerPoint is 17.86%, MATLAB 10.71%, C/C++ programming and LINDO both 7.14%. Application based soft, Photoshop & illustrator, MS project, Microsoft Visio are equally 3.57% important.

Figure 3: Bar chart of important software to learn

Suggestion

From the above description, we now know the importance of learning software. From their importance level given by the respondents we can serial them from highly important to less important. The serial is- Microsoft Excel > Microsoft Word > AutoCAD > SolidWorks, Microsoft Access > Microsoft PowerPoint > MATLAB, C/C++ Programming > LINDO > Application based soft, Photoshop & illustrator, MS project, Microsoft Visio. There should be given more concern about learning of the software by arranging seminars, workshops, and competitions. This all will encourage students to learn the important software.
Table 5: Condition of lab facilities

<table>
<thead>
<tr>
<th>Options</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Enough</td>
<td>0</td>
</tr>
<tr>
<td>b. Need a little bit modification</td>
<td>19</td>
</tr>
<tr>
<td>c. Need to change a lot</td>
<td>7</td>
</tr>
<tr>
<td>d. Other suggestion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

It depends on job responsibilities. Regarding the IPE graduates these are suffice. Since we are being modernized with automation, hence our lab facilities would be followed by then.

Description

Lab facilities is a very important thing to the whole graduation process. A little bit of lack in this section causes a lot of learning gap. Figure 4 shows that the lab facilities need a little bit modification and this is voted by 68% graduated respondents. 26% respondent there need to change a lot. 4% said that the facilities are enough but there are some important opportunities. Later 3% said that the lab facilities should be modernized.

Figure 4: Pie chart of condition of lab facilities

Suggestion

From the Table 6 and Figure 4, it seems that our lab facilities need to improve and modernized. This could be done through enriching our labs with modern equipment, creating new labs according to the latest concepts of IPE tools. From the analysis of question 5 we saw that there should be added some important software learning lab courses. Most of the departments of renowned universities have their own lab trainee who perfectly helps the students regarding the needs of the department, but we do not have any trainee. Therefore, we should assign lab trainee as soon as possible. This all will be helpful to improve the lab facilities.
## Table 6: Problems for Session Overdue

<table>
<thead>
<tr>
<th>No</th>
<th>Problems they have faced for session overdue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I have avoided to overdue session. However, in this case, learning was missed and scold by boss is must. A negative mark adds with your personality. Because in career life, discipline is very important.</td>
</tr>
<tr>
<td>2</td>
<td>We should smarter in our speech, body language, dress code, and loyalty.</td>
</tr>
<tr>
<td>3</td>
<td>Your juniors of other university will lead you in the job.</td>
</tr>
<tr>
<td>4</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>I am entering into the job market 1 year later, while some of my colleague are actually my junior. Nevertheless, I think it is not a big deal.</td>
</tr>
<tr>
<td>6</td>
<td>Timing.</td>
</tr>
<tr>
<td>7</td>
<td>Got job before result published, so no major problem faced due to 5 months delay the session.</td>
</tr>
<tr>
<td>8</td>
<td>Actually, I did not face this sort of problem because we passed away on due date.</td>
</tr>
<tr>
<td>9</td>
<td>There are so many problems for session overdue like the unhappiness of boss.</td>
</tr>
<tr>
<td>10</td>
<td>Initial lagging in competition.</td>
</tr>
<tr>
<td>11</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>For session overdue, the others varsity students can easily lead you in the job sector.</td>
</tr>
<tr>
<td>13</td>
<td>Timing of job circular.</td>
</tr>
<tr>
<td>14</td>
<td>Not faced any problem for session overdue.</td>
</tr>
<tr>
<td>15</td>
<td>Passed later and as a result joined later in job.</td>
</tr>
<tr>
<td>16</td>
<td>So many problems were created for session overdue. Mainly in job sector we were missed so many job circulars for session overdue.</td>
</tr>
<tr>
<td>17</td>
<td>Passed later.</td>
</tr>
<tr>
<td>18</td>
<td>No Problem.</td>
</tr>
<tr>
<td>19</td>
<td>Passed later and as a result started job later</td>
</tr>
<tr>
<td>20</td>
<td>Juniors from others varsity passed quickly and as a result we competition were increased in job sector.</td>
</tr>
<tr>
<td>21</td>
<td>Promotion problem compare to other university graduates.</td>
</tr>
<tr>
<td>22</td>
<td>The main problem was timing. However, personally, I did not face any problem for session overdue.</td>
</tr>
<tr>
<td>23</td>
<td>Got job so early, so I did not face any problem for session overdue.</td>
</tr>
<tr>
<td>24</td>
<td>N/A</td>
</tr>
<tr>
<td>25</td>
<td>It was not a big problem for me at all.</td>
</tr>
<tr>
<td>26</td>
<td>Mainly frustration is the major problem of session overdue.</td>
</tr>
<tr>
<td>27</td>
<td>Family pressure and mental pressure.</td>
</tr>
<tr>
<td>28</td>
<td>Delay to get job</td>
</tr>
</tbody>
</table>

### Suggestion

From the Table 8 we can see that almost every respondent faced different problems for session overdue. The only solution of this problem is to remove all of the session overdue remains. This can be done through proper managements of the university authorities.
Table 7: Suggestions for the syllabus of IPE

<table>
<thead>
<tr>
<th>No.</th>
<th>Suggestions for the syllabus of IPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Please add, Decision making in PPC (production planning &amp; control), ref book- Fundamentals of Management Science, Sixth Edition, by- Turban, Meredith. Profit planning in accounting, Business communication- very important &amp; required for whole career life, way of negotiation, formal processes, engineering applications like HVAC, PLC, TIS (Technical information system) etc.</td>
</tr>
</tbody>
</table>
| 2   | We think,  
1. Physics, chemistry, math can be merged as much as possible instead of several semester.  
2. Supply chain management, Operations management, Organization behaviour, Industrial & Business Management should be extended.  
3. Industrial attachment time should be extended 4 weeks to 12 weeks. |
| 3   | Lab facilities of control and automation, Simulation should be made more effective. Some practical industry base problems should be practice so that a graduate can understand the problems in his job life easily and trace it easily. |
| 4   | N/A |
| 5   | Need slight modification. |
| 6   | Be Updated in industrial Problem, more focus on communication, software related topics. |
| 7   | Excellent, some chapter may be included like Lean Management, Six Sigma Management, Systematic Problem-Solving Tools etc. |
| 8   | There is no comment regarding the overall syllabus of IPE but some Industrial Engineering Tools like as Lean Manufacturing, 5S, TPM, TQM, JIT, POKA-YOKE etc. could be taught separately by initiating 1 or 2 credits so that the students get acquainted with these in broadly before entrance into job fields. |
| 9   | No. |
| 10  | Need to increase the use of Software in Lab sessions and assignments. |
| 11  | Lean manufacturing is too much important. So, it should be added as a course. |
| 12  | Mainly, we need more practical knowledge. For this the attachment should be increase. Need More quality control and management related course ... |
| 13  | Need some modification about physics, chemistry course and I think credit should be decrease for those courses. |
| 14  | Management related course should be increased. |
| 15  | Need more practical life related course like Organizational Behaviour, Management etc. |
| 16  | Some modifications are needed in our IPE course. |
| 17  | No thanks. |
| 18  | Need more courses about Six Sigma, management etc. |
| 19  | No thanks. |
| 20  | Need more courses on quality control, quality management, six-sigma etc. |
| 21  | No. |
| 22  | Some practical job-related problems should be practice in graduate level. |
| 23  | We should focus on real life problems. For this industrial tour needed (I think). |
| 24  | Non-departmental courses should be minimized and departmental courses should be increased. |
| 25  | Presentation related context should add in the syllabus. |
| 26  | N/A |
| 27  | Attachment duration should be increased. |
| 28  | No |
**Decisions**

From the Table 13 we can conclude to the following changes to our syllabus-


2. Profit planning in accounting, Business communication related subjects and courses should add in the syllabus.

3. Physics, chemistry, math should be merged as much as possible instead of several semester and Supply chain management, Operations management, Organization behaviour, Industrial & Business Management should be extended in several semester.

4. Lab facilities of control and automation, Simulation should be made more effective. Some practical industry base problems should be practice so that a graduate can understand the problems in his job life easily and trace it easily.

5. Industrial attachment time should be extended as much time as possible (at least 6 to 12 weeks).

6. Software related topics and courses should be added in the syllabus.

7. Special care should be taken on Lean Management, Six Sigma Management, Systematic Problem-Solving Tools etc.

8. There should be add some Industrial Engineering Tools like as Lean Manufacturing, 5S, TPM, TQM, JIT, POKA-YOKKE etc. could be taught separately by initiating 1 or 2 credits so that the students get acquainted with these in broadly before entrance into job fields.

**Table 8: Suggestion regarding our whole graduation system**

<table>
<thead>
<tr>
<th>No.</th>
<th>Suggestion regarding our whole graduation system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Its good design, no doubt, although many courses seems very irrelevant &amp; painful, but in few cases those are important. So we should read all with equal importance. To be specific our courses can include above terms which must aid IPE Engineers guaranteed. Thank you.</td>
</tr>
</tbody>
</table>
| 2   | 1. Complete formal dress at least one day in a cycle must be ruled.  
2. Presentation in every cycle after 2nd semester (no group, one topic one student). |
| 3   | Industry based jobs are more practical than theoretical. So we need to understand the every problem practically. |
| 4   | N/A |
| 5   | N/A |
| 6   | N/A |
| 7   | Students should enhance their Leadership Skill, Communication Skill, Pro-activeness through voluntary participatory work (not hampering the class & study, it is a parallel task). Now please try, take challenges, and do your best! |
| 8   | It is a common practice in our graduation system to go through the bookish knowledge whereas the job field is completely different than it. Students have to face a lot of problems during job lives which are not embedded into the books. Some seminars, workshops, idea contest etc. could be run along with academic activities to enhance and garnish the knowledge of students so that they can compete with outsiders at very beginning of their job lives. |
There should be some modification in graduation system. I think the more materialistic education should be introduced so that in our real job life we can think that we have already done that in little scale. 

Need to increase the communication with industrial sector and corporate sector.

Need more lab facilities and new machine in the machine shop like CNC machine, etc.

During your BSc course, you should focus on your target and work for it.

We need more practical knowledge. For this, I think some modification needed in our courses. Thanks.

I want to suggest to the new graduate’s, focus your target and try your best to fulfilling it. That is all. Thanks.

I think some improvement needed in our lab facilities.

Mainly we need to improve our bonding. It is most important matter for IPE related jobs. Thanks.

No thanks.

We need more practical knowledge for this we need more time in attachment.

The system should provide every student good at communication and make himself reasonable for his position.

Need more knowledge about industry, factory, and other job sectors. So that, one can easily cope with the new environment of job place.

Some modification needed –
1. Physics, Chemistry related courses should minimize.
2. Seminar, workshop should increase.

Need more seminars and workshops on IPE related topics.

Co-curricular activities should give more concern and practical knowledge should develop.

I think our department need more club to practice our course related practical problems.

Need more conference and workshops on our courses.

Presentation and report submission are the most important matter for promotion in the industry. So I think more importance needed for those issues.

Decisions

From the Table 14 we can take the following decisions-

i) Complete formal dress at least one day in a cycle must be ruled.

ii) Presentation in every cycle after 2nd semester (no group, one topic one student).

iii) Students should understand every problem practically.

iv) Students should enhance their Leadership Skill, Communication Skill, Pro-activeness through voluntary participatory work, practicing co-curricular activities (not hampering the class & study, it’s a parallel task)

v) Some seminars, workshops, idea contest etc. could be run along with academic activities to enhance and garnish the knowledge of students so that they can compete with outsiders at very beginning of their job lives

vi) More materialistic education should be introduced so that in our real job life we can think that we have already done that in little scale

vii) Need to increase the communication with industrial sector and corporate sector

viii) The graduates must focus on his/her target and try his/her best to fulfill it
ix) Bonding among the graduates and current students must be improved through organizing and attending different programs

x) Our department need more club to practice our course related practical problems as well as need to arrange more conference and workshops on our courses

xi) The system should provide every student good at communication and make himself reasonable for his position.

RESULTS AND DISCUSSION

The following steps are the result of our research. There should be given more concern about English language practice as well as should enhance their Leadership Skill, Communication Skill, Pro-activeness through voluntary participatory work, practicing co-curricular activities (not hampering the class & study, it’s a parallel task). There should be make sure to increase the industrial visit (Minimum 1 industrial tour per year); and there should be good communication with other Universities in Bangladesh as well as foreign Universities. This will also help students to complete their higher studies at their chosen universities easily. Recently Electrical and Electronic department of RUET started a trend of helping students to select their sector of career. They provide a choice form to the 3rd Even Semester students and sort them for a particular career field according to their CGPA. This should be practice in our department with some modification like not only with CGPA but also with the expertness about the career field as soon as possible. This will enhance the job sectors which are suitable for IPE graduates.

There should be start different projects like industrial case solving to make students experts in multi-task. This will also provide good experience of practical knowledge. This will also provide students to adapt with the working pressure in industries. Management related subjects should be come in lab course to overcome the managerial related problems. There should be at least one formal presentation in every cycle (not in a group but individually). This will provide students a better knowledge about the presentation, and development of their presentation skill. If possible there should be added a mandatory presentation in every Lab course. Complete formal dress must be ruled in these sessions.

Report submission should improve by practicing the related software; as formal reports in industries are mainly submitted by using software like Microsoft word, Microsoft excel etc. There should be established an information related group to provide female students the best suitable working sectors. The group should also provide them mental support and solution of the career problem. Important software like Microsoft Excel, Microsoft Word, AutoCAD, SolidWorks, Microsoft Access, Microsoft PowerPoint, MATLAB, C/C++ Programming, LINDO, Application based soft, Photoshop & illustrator, MS project, Microsoft Visio must be given priority in software relates labs. If needed there should add new lab course regarding the mentioned software. There should be given more concern about learning of the software by arranging seminars, workshops, and competitions. This all will encourage students to learn the important software. We should also increase the existing Lab facilities. Session overdue problem must be eliminated through proper managements of the university authorities. There should be arrange an encouragement program on CGPA at the beginning of university life. Students should be encouraged to achieve a good CGPA and the teachers and course advisers should be more careful about the student’s response in learning.
The graduation system should be more practical and relatively more modernized. There should also arrange career related seminar, workshop etc. in a regular basis. Bonding among the graduates and current students must be improved through organizing and attending different programs. Decision making in PPC (production planning & control), ref. book- Fundamentals of Management Science, Sixth Edition, by- Turban, Meredith should add in the syllabus. Profit planning in accounting, Business communication related subjects and courses should add in the syllabus. Physics, chemistry, math should be merged as much as possible instead of several semester and Supply chain management, Operations management, Organization behaviour, Industrial and Business Management should be extended in several semester. Lab facilities of control and automation, Simulation should be made more effective. Some practical industry base problems should be practice so that a graduate can understand the problems in his job life easily and trace it easily. Industrial attachment time should be extended as much time as possible (at least 6 to 12 weeks). Software related topics and courses should be added in the syllabus. Special care should be taken on Lean Management, Six Sigma Management, and Systematic Problem-Solving Tools etc. There should be add some Industrial Engineering Tools like as Lean Manufacturing, 5S, TPM, TQM, JIT, POKA-YOKE etc. could be taught separately by initiating 1 or 2 credits so that the students get acquainted with these in broadly before entrance into job fields.

CONCLUSIONS

We did our survey on 100 IPE graduates this is only 30% of total graduates. If we did it with the whole 100% graduates, we could reach a better solution than this is. Nevertheless, the sampling was random and they are from different series and works in different sectors as well as different institutions. Therefore, the most important problems are identified and we tried to project a solution as result of our research. This step of our result should employ in our graduation system with some modification and further research. This research is a pioneer in case of Bangladesh & hope it will be very helpful for any newly started IPE department at any university. They can consider the problems & solutions in the beginning so that their graduates face very low difficulties in the career at the beginning.

REFERENCES


