Facilitating Professional Skills Through Student Engagement Activities For The Holistic Development of the Learner

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Abstract

This paper focuses on the professional skills required to transform the student in to a successful individual and competent professional. Graduates entering today's workplace face many challenges, especially how to learn and function in unfamiliar and unpredictable situations. Multi-skilled, multinational project teams, requiring collaboration, cooperation, flexibility and inter-cultural awareness, demand high levels of professional and interpersonal skills. Graduates must be able to service their own administrative needs and are routinely required to work longer hours than their predecessors. The professional skills should be gained over a period of time with self-learning and experience. Though many institutions have been conducting several activities to develop the professional skills in the students, the outcomes are not so effective and the gap is still noticeable. It should be a practice to the students through which they gain a lot of experience. To address this issue, several initiatives and activities are identified to make the students involve themselves and various professional skills needed for the student in their journey are depicted in the table.

Key words: professionalism, professional development, and professional skills, traits, pedagogy

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1. Introduction

The term professional skills often referred to the skills required for graduates to succeed in professional practice. These skills might include "generic," or "transferable" traits like attributes of self-promotion, self-motivation, self-management, self-confidence, as well as the quality of understanding ethical conduct, meeting deadlines, being punctual, cooperation with colleagues and clients and showing initiative towards new things (Harvey, 1999).

In today's global industry sharing of knowledge, collaborative teamwork, innovative process of thinking, problem-solving and decision-making skills are few key competencies required for a professional engineer.

There has been a significant shift over a period of time from mastering manufacturing skills to focusing on information services (Scardamalia et al., 2011). The increased use of technology is also transforming how graduates work and build new social practices. According to the National Research Council (2011) report, five skills namely adaptability, complex communication skills, non-routine problem-solving skills, self-management or self-development; and systems thinking are becoming essential if not mandatory.

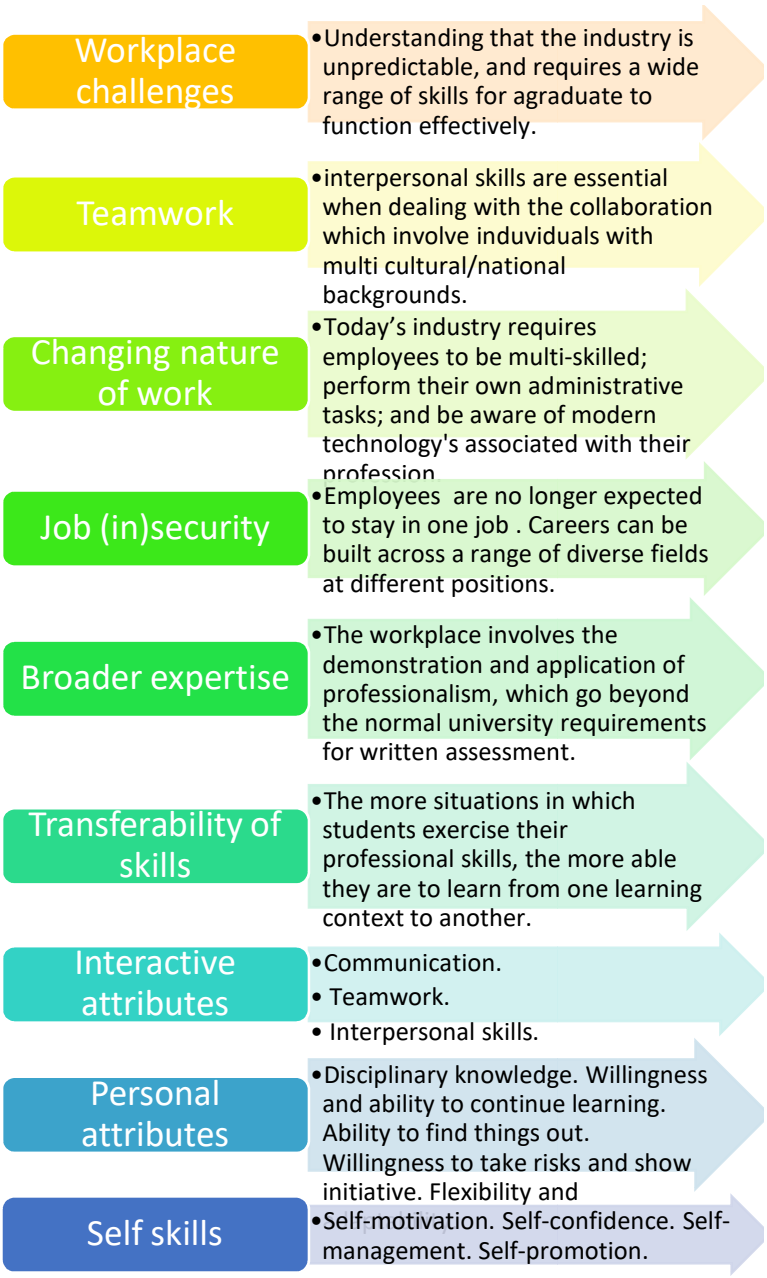

Fig. 1 Skills required for today's work place

Figure 1 summarizes the needs of today's workplace and is based on the work of Lee Harvey in the United Kingdom (1999). In addition to the above needs, there are few other traits which are necessary for transforming a person in to a professional. The list is as follows:

- Communication Skills
- Building Relationships
- Decision-Making
- Leadership
- Advocating and Negotiating for Yourself and Your Causes
- Career Planning and Management
- Work-Life Balance
- Boundary Enforcement
- Background

Fig. 2 Professional Knowledge and Skills toolkit

Figure 2 shows the professional expertise, ethics and values to be imparted (CILIP, 2013). It is observed that traditional engineering education practices like lectures and lab sessions are not enough in the current scenario in preparing engineering students for being effective professionals.

This is truer when lectures turn out to be monotonous and the laboratories are recipe driven rather than inquiry driven. Traditional classroom practices encourage a form of learning within a compartmentalized curriculum (Duderstadt, 2008). Therefore, it is important for engineering education to understand the importance of a curriculum that focuses more on collaborative and interdisciplinary projects, tasks and assignments.

Such activities require students to be involved in active learning strategies, be acquainted with high-level problem-solving skills and be able to participate in team building activities and forge collaborative partnerships amongst multidisciplinary teams (Kalonji, 2005).

In the study pertaining to the professional development with an emphasis on facilitating appropriate professional attitudes, it gives a clear distinction between the characteristics of a professional and a non-professional worker and also clarifies on what the role of attitude is and its behavioral impacts on work productivity. This study can be used as a base to understand that the traits or characteristics of a professional change with respect to the field in which they are working. Thus the requirement to identify the traits of a professional in engineering filed is identified and steps are taken to do the same (Jonathan, 2016). A study on facilitating 21 century skills in engineering students has taken the task of understanding the various characteristics that define a graduate as a professional by considering the market and the way in which various corporate organization's work in the 21st century (Lakshminarayanan & Kiruthika, 2013). A lot of emphasis is done

on the change in the curriculum, as it is not par with the current needs of the industry, placing equal importance on professional practice rather than focusing only on knowledge acquiring and various effective pedagogies that impart practical skills, which cannot be taught using conventional forms of teaching. Research on the process of mapping the engineering professional skills across the curriculum levels in the Arts and Sciences Program. It also includes feedback from students who completed the target courses to show how they perceive the growth of their own professional skills as engineering students and their level of preparedness for work and the conclusions that the paper reveals are mapping the professional skills across the curriculum, student perceptions of their professional skills development, a shared framework for addressing professional skills and identify the aspects of soft skills training (Nusedusg, 2016). A study on personal skills by professional bodies found that though engineering programs are good at developing technical knowledge and skills but many students fail to achieve acceptable levels of intellectual development, which can be possible through group-based, project-driven teaching throughout the program (Gavin, 2012). Another study on integrated approach to develop professional and technical skills for informatics engineering students states that the conventional methodologies like seminars and theoretical knowledge sharing sessions can help a student to some extent but for an individual to develop various professional skills, an integrated approach consisting of individual and group activities based on practical experience are more beneficial. It also emphasizes the need for finding a correct approach for teaching the students various professional skills while at the same time stresses on the fact that regular monitoring in the form of a survey can also be considered as an assessment method (Joao et al., 2012). A research addresses the issue of developing and assessing professional skills in higher education programs. This includes defining and assessing these skills, in the contexts of an individual course unit and for the entire degree program. Identifying various forms of assessment that can be considered as authentic, meaningful and understandable by the students, teaching staff and curriculum developers are of utmost importance if professional skills are to be accepted and included in the formal curriculum. It places great importance on the use of blooms taxonomy and Reflection as a Means to Assess Professional Skills (Asa et al., 2011).

This paper identifies various traits that are to be considered to develop professional skills in engineering graduate and a table is depicted on how to implement various methodologies and processes for imparting these skills to the students and facilitating their growth as professionals. It presents various activities that are being implemented at Hyderabad Institute of Technology And Management (HITAM) to facilitate the professional development of professional skills in the students.

HITAM has been conducting various activities like Student self governance, affinity clubs, student mentoring which involve students to the maximum and few activities are student centric where students have to take part from planning to implementation. These activities facilitate the development of professional skills.

A. Student Self Governance (SSG)

The Student Self Governance is a body formed by the students to safeguard their interest when any policy is being made at the institute level. It helps students realize the responsibility of performing their duties at various levels.

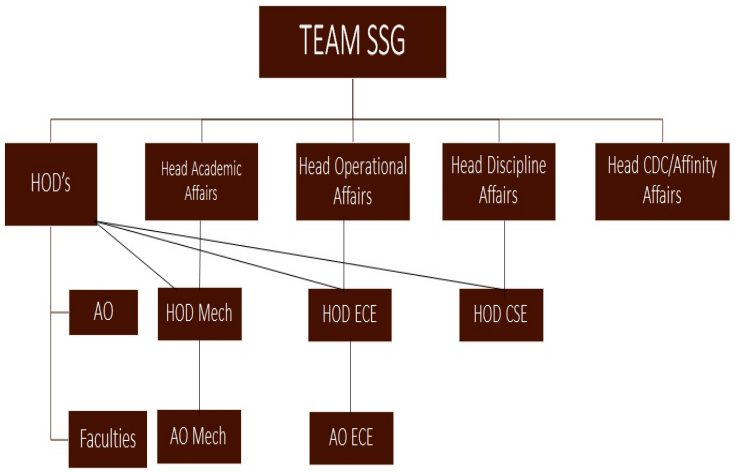

Fig. 3 SSG Organization chart

Professional environment is simulated where students hold various positions like student principal, head of the department, faculty for each subject, Administrative officer etc. It helps them inculcate various professional skills like decision making, policy making, protocols, understanding individual role in the system, managing people, leadership qualities and team work. The organization chart for SSG is given below. It has the hierarchy of all the positions which would be held y the students. The bar chart depicted here talks about the development of the professional skills in the students over a period of 6 weeks. A survey was conducted on the students who are currently the part of SSG and asked to rate them selves on a scale of 0 to 10. They compared themselves before and after joining SSG and rated accordingly. Significant difference can be observed from the bar chart in the development of professional skills like communication skills, management skills, cultural competencies, leadership skills and analysis skills.

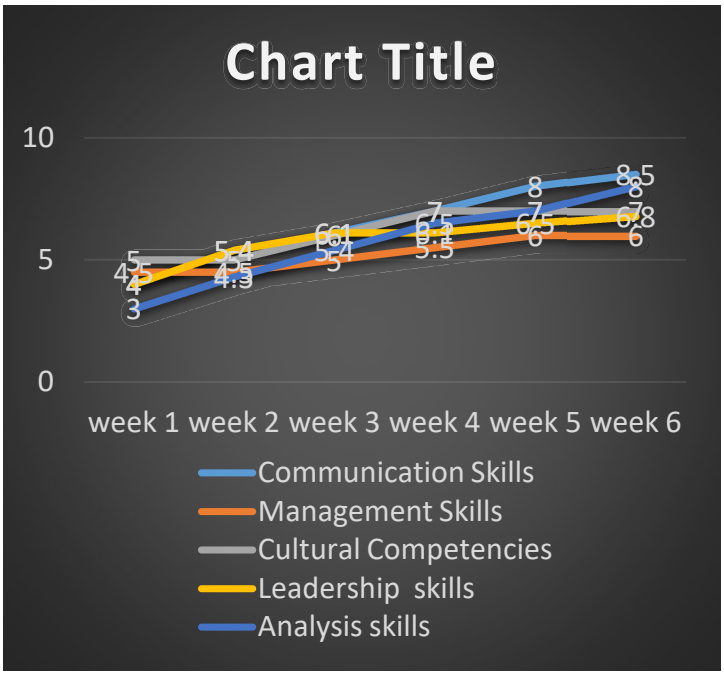

Fig. 4 Professional skills development of the students after joining SSG

B. Affinity Clubs

HITAM took an initiative of introducing Affinity clubs to bring like-minded individuals together to enhance their interpersonal skills and help the student find a balance between their career and passion. The groups could range from events, communication to idea sharing. Students choose the club based on their interests and or can form their own clubs. Senior faculty members facilitate these clubs and guide the members in the conduct of various activities. These group activities provide the students a platform to shed their inhibitions, become more self-driven and express themselves confidently in a forum.

Affinity club is a platform created for the students to interact and work together in a multi-disciplinary environment. Thus it prepares them for the industry where almost every project requires real-time interaction with multinational peers.

C. Student mentoring

It is a pilot project, which is being currently implemented at HITAM and the observations from this system are indeed astonishing. In this initiative, one senior student is assigned to 10 juniors. In case of any information regarding the institutional policies/ practices, juniors can approach their assigned senior to get their queries resolved. It is found that the students who are selected to guide the juniors became more responsible over the time and their regularity and behavior in the campus seemed to be more idealistic when compared to their earlier behavior as they are in a responsible position where they have to lead by example.

D. Committees

At HITAM the students are allowed to be part of various committees like Library committee, anti ragging committee, food court committee, disciplinary committee. They hold a responsible po ng te cy, identifying the deviations in the implementation and informing the higher authorities. It allows the students to gain valuable skills like decision-making and a first hand experience of the ability to draft or document various policies.

Professional skills development of the students after being a part of SSG

E. Industry Guidance

1) Industry experts

These sessions Helps student identify strengths, weaknesses, interests, and values by maintaining open, effective communication and ongoing encouragement

- Encouraging communication in a two-way manner
- Helping students to identify their interests, skills, and values.
- Scheduling career development workshops

2) Industry mentors

Help students meet their goals through contacts with people and resources

- Helping them formulate strategies and consulting on development plans
- Providing opportunities for exposure, experience, and visibility, such as task forces and committees
- Assisting in seeking student placement lateral or vertical

F. Internal guidance

1) Advisor (institute heads)

Provides organizational information, realities, and resources to student.

- Helping student develop realistic career goals based on their individual development plans
- Helping student understand the various opportunities on the campus
- Advising student on the practicality of various career options

2) Mentors

Evaluates student performance in a candid, open way and relates this to possible opportunities

- Providing frequent feedback in a way that promotes development
- Conducting performance appraisals that define weaknesses, career development needs and strengths

- Relating current performance to future potential in practical manner
- Using a specific development plan as a tool for continues development and feedback

Table 1: Traits needed for the student

Trait	Outcomes	Methodology	Resources
Communication Skills	● Technical report ● Business writing ● Executive summaries	Workshop, Training	Industry person
Communication Skills	● One-on-One ● Small group ● Large group	Seminars, Group discussions, Debate	Internal English Department
Communication Skills	● Second language ● Negotiation skills ● Conflict resolution	Workshop, Activity which includes multidisciplinary students involvement	Personality development trainers
Management Skills	●Budgeting ● Personnel procedures ● Time management	Workshop	External MBA people
Technical Skills	●Microsoft Word, Excel, and Power point ● Microsoft Project and Access ● Web page creation	Training and Labs	Internal CSE Department faculty
Cultural Competencies	●Extracurricular activities ● Volunteering	Volunteering	Internal
Analysis Skills	●Literature research ● Design and methodology of research and ● Data collection, management, and analysis ● Manuscript preparation ● Grant writing	Paper publishing Internship Conferences	Ph.D. people
Leadership and Systems Thinking Skills	● Evidence of productive ● Negotiation and problem solving	Seminars	Industry people
Leadership and Systems Thinking Skills	● Willingness to assume major role ● Timely deliverance on commitments	Seminars	Industry people
Leadership and Systems Thinking Skills	● Professional etiquette ● Strong interviewing skills ● Competitive resume ● Professional references	Seminars	Industry people
Leadership and Systems Thinking Skills	●Team work and leadership activities ● Multi-disciplinary activities	Activity based learning	Industry people
Leadership and Systems Thinking Skills	● Develop a project plan ● Execution and management of plan ● Process evaluation ● Comprehend project's role	Projects	Industry people

This table has been designed in such a way that it can be integrated to the current syllabus. In this table, various traits are identified which are needed for several industries. Outcomes of the traits, methodology to be used for delivery and the resource person needed (Could be internal person or external person) are depicted.

2. Results

A survey was conducted at HITAM on the students to identify the development of professional skills before and after being the part of at least one of the initiatives like SSG, Affinity clubs, student mentoring, and committees. Professional skills are identified and put up on the x-axis against the scale of 0 to 7. Students who are taking active part in these initiatives were asked to rate themselves on a scale of 0 to 7 to identify the difference in their professional skills before and joining these initiatives.

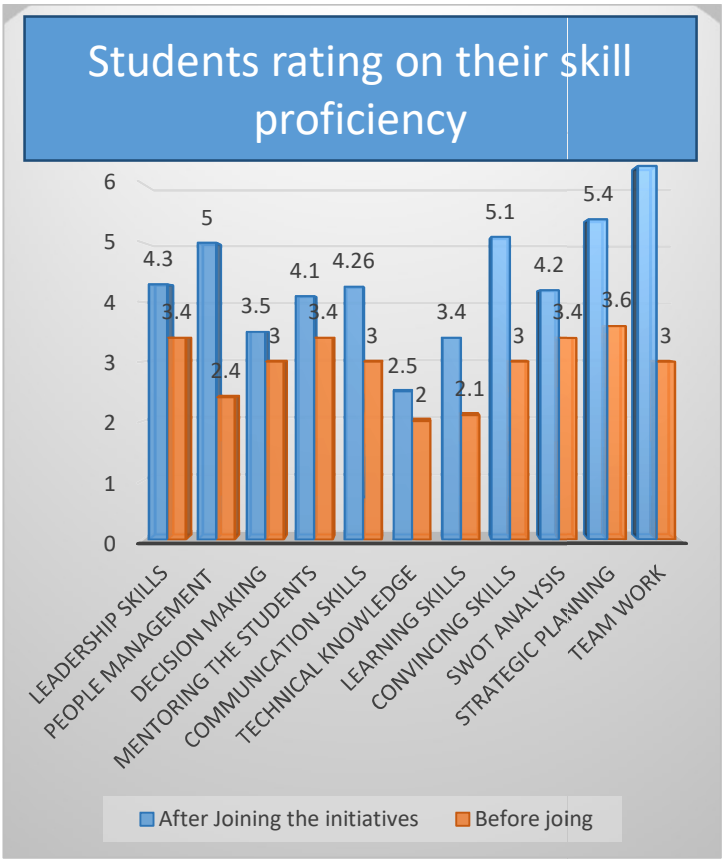

Fig. 5 Students rating on their skill proficiency

3. Discussions

Figure 5 demonstrates the development of the professional skills like leadership skills, people management, decision making, mentoring the students, communication skills, technical knowledge, learning skills, convincing skills, SWOT analysis, strategic planning and teamwork of the students before and after joining the initiatives. It is observed that the professional skills before joining the initiatives were low and there is a noticeable development seen in the skills after involving themselves in these activities. Few skills like communication skills, convincing skills, people management and teamwork got improved drastically where other skills have clear change.

As the findings of the research proved that the development of professional skills in the student is noticeable after taking the active role in any of the initiatives. Motivating the students to understand the importance of involving in these activities is a big challenge and the Institution must take it up for the betterment of the student and the organization itself.

4. Conclusion

Involvement of students in the initiatives/ activities makes them realize their strengths and help them developing the professional skills, which are needed by the industry. Many institutions are focusing on various activities to develop the traits needed for the students but more planned approach is required to integrate these trainings in to the curriculum as students and faculty must realize the necessity of these skills because "developing professional skills in the student has become a need, not an option" now a days. To meet the cutthroat competition, student must focus on acquiring the skills needed for industry besides academics, which is possible through involving themselves in the activities that aids to learn the needed.

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