



EXPLORING EMPLOYABILITY FACTORS: A LITERATURE REVIEW

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I. INTRODUCTION

We are living in a digital age and India is a fast growing country and it is coming up as top industrial country at world level in field of software and Information technology. Government of India is also implementing a number of employment opportunities for Indian educated youth. Government policies are trying to empower the educated as well as technically trained professionals. Govt. organizations, employment exchange of each district and almost every institute and university are playing their own role by organizing placement drives.

Within the Indian community, enhancing graduate employability skills is considered as an important task, specifically in the entire region of Punjab. It is a known fact that skill definitions, employer expectation and the requirements differ from industry to industry even within IT field itself. Not only because technology is changing is fast but existing technology becoming obsolete too. Employer's need and learner's skill enhancement capabilities should be taken into account in formulating future skills assessments.

In today's academic environment, due to increased participation of private institutions, it has become necessary to meet the growing demand & supply of technical education. Most of the professional educational institutions imparting technical education in the state of Punjab are primarily focusing on maximizing the effectiveness of the institutions in terms of quantity of education. Quality is very crucial for student satisfaction, maintaining standards and finally surviving in competitive world. Even after completing the degree from professional institutes and from universities, students may have number of queries in their mind about the sufficient skills to get job, institute's capability to equip them with required skills and do they need further studies.

II. PUNJAB TECHNICAL UNIVERSITY

I.K.Gujral Punjab Technical University (PTU) was established by an Act of State Legislature on 16th January, 1997, to promote technical, management and pharmaceutical education in the state at degree level and above. It was established as Punjab Technical University and renamed as I.K.Gujral Punjab Technical University by State Government in the honor to Late Sh. Inder Kumar Gujral, Former Prime Minister of India, in 2015. The University has undertaken the task of training students to help in the development of skilled manpower in this sector in the country in general and in the state in particular. With this goal in mind, the university is promoting a number of courses in different streams in regular as well as distance education programmes. At present University have 121 AICTE and 65 UGC institutes affiliated with it. University started its journey with 09 Engineering & 05 Management colleges. The University has a rich strength of lakhs of students. Faculty Development Programs have been regularly organized to provide the best faculty by calling resource persons



from IITs, IIMs & NITs. The University has a mission to provide excellent education to the IKGPTU students. Despite of this big structure of education system, there are several big problems such as the education system does not entail any prediction about fail or pass percentage based on the performance. Getting employment is getting tough day by for various students studying under Punjab Technical University.

III. BACKGROUND OF STUDY

At the early stage of technological development, it was essential to achieve a minimum level of educational success in the population. Technological and Industrial advancement requires the broad availability of high-quality secondary education, vocational training and professional training. Countries have developed different institutional frameworks in the context of their own historical, political, economic and cultural development to overcome employment problems. The challenge for government policy is to develop and encourage institutional arrangements that establish and maintain the capacity of governments, employers, workers, schools, training institutions and universities to respond effectively to changing skill and training needs as well as playing a strategic and forward-looking role in facilitating and sustaining technological changes. The basic aim of getting technical qualification in the field of computers is not only gaining theoretical knowledge about various IT, CSE and computer application subjects but also to have employability skills which employers look amongst fresh graduates too. At present fresh graduates are either not getting a good job or getting a under paid job and struggle in market for years to come.

Many employers give concrete examples on the lack of skills of the fresh graduates which the employers link to shortcomings in the education system though none of them is ready to announce it publically. Young students as well as their parents also assume that technical qualification will help them to get good rather best employment. Therefore, a primary concern of the technical education is to equip students with market ready skills. Students should be given employability skills rather than just the degrees. Therefore, there is an urgent need to explore whether students are getting their required skills from Institutes and universities. To add further, there is a need to conduct study and to do data analysis so that we can reach to the factors responsible for getting a good job immediately after completing graduation or post graduation.

IV. REVIEW OF LITERATURE

Cheryl L. Noll and Marilyn Wilkins from USA presented a paper on “**Critical Skills of IS Professionals: A Model for Curriculum Development Cheryl**” and laid stress on continuous reevaluation and revision of educational programs. They proposed curriculum revision process. They surveyed on expected skills and knowledge required for information systems professionals in three groups such as programmers, analysts, and end-user support their survey analysis showed that knowledge of information system related to entire organization and overall business knowledge is much more important than advanced IS applications. Soft Skills plays an important role in IT field also, as highlighted by the authors. Authors also concluded that it’s good to use and teach web based languages instead of traditional languages.[1]

Alexis Esposto Swinburne from Swinburne University of Technology presented a paper on " **THE FUTURE DEMAND FOR EMPLOYABILITY SKILLS: A NEW DIMENSION TO LABOR MARKET**



FORECASTING IN AUSTRALIA". They identified eight key skill groupings such as communication skills team work skills, problem-solving skills, initiative and enterprise skills, planning and organizing skills, self-management skills, learning skills, and technology skills. They favored that each person should have employability skills to face the challenges of Australian industry. They also pointed out that technical and job specific skills are subject to change and may not be readily available. They emphasized importance of capacity of continually adaptation and upgrading with the application of generic and transferable employability skills across different fields. In this report key competencies of graduates were also identified. As an output of report they proposed **Occupational Net Content Model** which allows occupational information to be applied across jobs industry sectors and within occupational. As such 6 domains were identified such as Worker Characteristics, Worker Requirements, Experience Requirements, Occupation Requirements, Occupation Characteristics and Occupation Specific Information. As a concluded remarks this report that someone has to decide that which type of courses should be provided in future.[2]

Ruth Kane, Susan Sandretto and Chris Heath from University of Otago presented a paper on "**Telling Half the Story: A Critical Review of Research on the Teaching Beliefs and Practices of University Academics**" and advocates that at research universities , academics are expected to produce and to disseminate knowledge. and proposed that we should understand how adults , in particularly university academics, learn to teach.[3]

Marilyn L. did his study on "**Critical Skills of IS Professionals: Developing a Curriculum for the Future Marilyn**" The objectives of the study was to determine the skills and knowledge expected for information systems professionals. They took three general groups as programmers, analyst and end user support. They used a survey instrument to get the rating of importance of knowledge. In future web based languages will be more in use rather than traditional languages. Soft Skill will be required for success in future. In their study they found that DSS/GSS was considered as the most important for analyst and programming groups. Further they found that depending upon the job its requirement changes. they concluded with the points that all programs should monitor enrollment data and placement data to continually improve program offerings[4]

Julie E. Mills from Australia did his research on "Engineering education – is problem- based or project-based learning the answer?". This paper examined the difference between problem based and project based learning during engineering. Author says that incorporating human skills into knowledge and professional life engineers these days must cope up with technological and organizational changes at their workplace. They have discussed chalk and talk techniques also. In this paper they have examined the critical issues of engineering education.[5]

AIMEE L. WHITESIDE from **University of Minnesota** did research on "**The skills that technical communicators need: an investigation of technical communication graduates, managers, and curricula**" This study was done on the requirements of skills for technical graduates and managers. They explored the skills which are must for any technical graduate before entering into industrial world. Data was collected through questionnaires and interviews from passing and pass out students. Course curriculum was also analyzed. This study suggests areas where technical communication students may need more preparation before entering business and industry. The author concluded that though the study was conducted on a limited number of participants but it serves as a baseline for the coming years. They highlighted that how technical communicators and managers rate their importance of information gathering and interpersonal skills. It was strongly



recommended that through continued academic-industry research we can ease the technical transition into the industry.[6]

Brian V. Krauth in his paper on “**a dynamic model of job networking and social influence on employment**” explored that personal connections facilitates the job search because the firms receives information on the productivity of applicants with their social ties with the present employees of those firms. They have shown that with small changes in group composition may change in employment. Many a times it happens in firms that existing employees provide information about their friends having job specific skills. Their model has concluded that personal connections help in transmitting important information which can match the quality of job with employee.[7]

ASTD (American Society for Training & Development) is the world’s largest association in their report dedicated to workplace learning and development professionals and said in their report that despite a large pool of unemployed workers employers continue to struggle to find skilled talent to fill the growing number of job openings in any country. According to author , it is not just individual organizations or sectors that are feeling the consequences of the skills gap. Communities, states, regions, and entire nations pay a heavy price when they cannot find or equip workers with the right skills for critical jobs. Despite a large pool of unemployed workers, employers continue to struggle to find skilled talent to fill the growing number of job openings in the country.”[8]

Department of education science and training Australian Government presented a report on “**Employability Skills From framework to Practice**” report says that Employability Skills, in and of themselves, are not a new concept. the key competencies to be considered are collect, analyze and organize information, communicate ideas and information, plan and organize activities, work with others in teams, use mathematical ideas and techniques, solve problems and use technology.[9]

Margaret C. Lohman presented a paper on “**A Survey of Factors Influencing the Engagement of Information Technology Professionals in Informal Learning Activities**” According to Margret C. Lohman six environmental factors which inhibit IT professional are lack of time, lack of proximity to colleagues’ work areas, unsupportive organizational culture, inaccessibility of others, lack of equipment and technology, and lack of meeting/work space. They also highlighted nine personal factors which engage IT professional in informal learning as initiative, self-efficacy, love of learning, interest in the profession, integrity, outgoing personality, teamwork ethic, curiosity and open-mindedness.[10]

Lorraine Dacre Pool and Peter Sewell Centre of UK explained the concept of practical model of Employability in their paper “**The key to employability: developing a practical model of graduate employability Lorraine**” that allows the concepts to be explained and can be used a framework for working with students to develop skills for employability. this model was developed from the existing research articles on the same issue on employability and from the authors personal experiences. Author has concluded that employability is a lifelong process and no one is ever perfect there is always an improvement scope. With the changing world employment requirements also change so model does not depict a process that any student can follow during their education cycle but the main keys can help them to better equip themselves for employment in future. As said by author this employability model is possible to adapt at any life stage to go for employment. It has been mentioned in their paper that self esteem isn't everything, it's just that there's nothing without it.



Author has mentioned that degree, subject knowledge, understanding and skills are necessary components of employment. It is further found in their research that employers will judge graduates on the basis of their successful completion of degree and how well they can present themselves. They proposed career edge as their Employability Model[11]

Bangsuk Jantawan, Cheng-Fa Tsai from Taiwan presented a paper on "**A Classification Model on Graduate Employability Using Bayesian Approaches: A Comparison**". A graduate employability model was presented using Bayesian Method to find the most important factors of graduate employability. They compared six algorithms on graduate data sets with some parameters.[12]

A paper was presented on "**Graduates' Employability Skills: Evidence from Literature Review**" by **Susima Samudrika Weligamage from Sri Lanka** Author has said that enhancing graduate employability skills is considered as an important task within the Sri Lankan Community. Their review findings revealed that skills, definitions, employer expectations and requirement differ capabilities should be taken into formulating the future skills assessments. They identified that universities should identify skill sets that will best serve the future labor market and align programmes to meet those needs. The authors proposed a model and identified that there is a mismatch between courses offers and expectations of learners. This study concludes that many research studies have revealed a consistent core set of desirable attributes, such as communication skills, interpersonal skills and team working, problem solving, analytic, critical and reflective ability, willingness to learn and continue learning, flexibility and adaptability, risk-taking and self-skills and these attributes are often independent of the degree subject. Universities are incorporating extracurricular activities into their study programme and changing their subject to develop specific skills through specialist modules. We also need to identify the skill set that will best serve the future labor market.[13]

Dipawalee Santosh Mishra from India, published a paper on "**Engineering Employability Skills Required By Employers in India**" As he says that in Today's scenario placement is a buzzing word. Parents and students both are actually worried about their placements. Author has studied the perception of employers and employees both. According to author Employability skills can also be termed as soft skills. Soft skills include: Effective Communication, Inter personal skills, Personal presentation skills, Technical knowledge, Leadership skills, Self assessment and Goal setting. Students put more efforts to learn technical knowledge whereas it is considered as entry level from employers point of view. Author also recommends that there is a need for students to be aware about employability skills required by market employers. The most important skills are field knowledge with a blend of soft skills and positive attitude. the studies suggest that the engineering graduates should opt and demonstrate a set of basic skills such as Communication skills, Strong basic, Interpersonal skills, problem solving and good Presentation skills[14]

Canadian council of learning has given this report on "**The Impact of Experiential Learning Programs on Student Success**" and has discussed that how experiential learning can help students to understand the concept in better way. They have concluded a few points like placement for placement's sake is not advisable, inappropriate placements. They have proposed the idea of having a dedicated coordinator who oversees all aspects of the program is fundamental to the success of these programs. And of course students must be well prepared. They have said that in addition to academic preparation we need to put in efforts on career preparation also. [15]



V. CONCLUSION

Employability status of any institute is the real achievement of any university or Institute. Employability related studies have been done in many countries like Malaysia, Taiwan, Sri Lanka, Australia, America and many more countries at a very large scale in multiple disciplines like health and care sector, business management sector but very less in IT sector. Moreover as far as computer field is concerned, it is difficult to find factors responsible for employment because what has been taught and what is required is something different and what students are getting is a big question mark. Many times a technically skilled person is not able to present themselves. Faculty teaching computer courses from ages should go through compulsory refresher courses as well as practice employability skills required by industry from time to time and help their students to get employment. Studies have shown that not only technical knowledge is sufficient but soft skills are also required for computer graduates. It professionals also lack in initiative, team work and self learning as said by one of the study and without which it is difficult to survive in this field.

VI. FUTURE SCOPE OF STUDY

To understand the exact picture of factors responsible for employability we can collect data through questionnaires from all the stakeholders of field i.e. teacher, student and employers or students (who got employment?). What kind of problems they face in reality while delivering or getting some knowledge and presenting themselves before employer?

BIBLIOGRAPHY

- [1] C. L. Noll and M. Wilkins, "Critical Skills of IS Professionals: A Model for Curriculum Development," *J. Inf. Technol. Educ.*, vol. 1, no. 3, pp. 143–154, 2002.
- [2] A. Esposito, "the future demand for employability skills : a new dimension to labor market forecasting in australia," 2002.
- [3] R. Kane, S. Sandretto, and C. Heath, "Telling half the story: A critical review of research on the teaching beliefs and practices of university academics," *Rev. Educ. Res.*, vol. 72, no. 2, pp. 177–228, 2002.
- [4] C. L. Nolltt and M. L. Wilkins, "Critical Skills of IS Professionals: Developing a Curriculum for the Future," *J. Inf. Technol. Educ.*, vol. 11, no. 3, pp. 143–154, 2002.
- [5] K. Campus and S. Penrith, "of Engineering Based or Project-Based Learning the," *Australas. J. Eng. Educ.*, vol. 3, p. ISSN 1324-5821, 2003.
- [6] A. L. Whiteside, "The skills that technical communicators need: an investigation of technical communication graduates, managers, and curricula," *J. Tech. Writ. Commun.*, vol. 33, no. 4, pp. 303–318, 2003.
- [7] B. V. Krauth, "A dynamic model of job networking and social influences on employment," *J. Econ. Dyn. Control*, vol. 28, no. 6, pp. 1185–1204, 2004.
- [8] K. Attwood, "Bridging the skills gap," *Electron. World*, vol. 112, no. 1841, p. 11, 2006.
- [9] S. Thomasson, M. Cleary, and R. Flynn, "Employability Skills From Framework to Practice," pp. 1–62, 2006.



- [10] M. C. Lohman, "A Survey of Factors Influencing the Engagement of Information Technology Professionals in Informal Learning Activities," *Inf. Technol. Learn. Perform. J.*, vol. 25, no. 1, pp. 43–54, 2007.
- [11] L. Dacre Pool and P. Sewell, "The key to employability: developing a practical model of graduate employability," *Educ. + Train.*, vol. 49, no. 4, pp. 277–289, 2007.
- [12] B. Jantawan and C. Tsai, "A Classification Model on Graduate Employability Using Bayesian Approaches: A Comparison," *Int. J. Innov. Res. Comput. Commun. Eng. (An ISO Certif. Organ.*, vol. 3297, no. 6, pp. 4584–4588, 2007.
- [13] S. S. Weligamage, "Graduates" Employability Skills: Evidence from Literature Review," *Asaihl*, pp. 115–125, 2009.
- [14] A. Zaharim, Y. Yusoff, and M. Omar, "Engineering Employability Skills Required By Employers In Asia," *Proc. 6th WSEAS Int. Conf. Eng. Educ. Eng.*, vol. 6, no. 9, pp. 195–201, 2009.
- [15] C. Co. on Learning, "Programs on Student Success," vol. 2009, 2009.