

A Study of Problem Based Learning Scenario for Enhancing Employability Skill among Undergraduate Girl Students in Maharashtra.

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Abstract

This paper specially devoted for examining the effectiveness of Problem Based Learning Scenario for enhancing employability skills among undergraduate girl students in Pune. Problem Based Learning Scenarios (PBLs) were created by using Product Research Method. Pre-test & post-test single group experimental research design was employed for testing effectiveness of PBLs on Employability Skills among girl students in Pune. 30% of the instructions were delivered by dyadic learning mode and remaining 70% were conducted by web based learning mode.

There were no special sampling strategies considered that may limit the experiment. However, present study does utilize purposive sampling strategies. Before starting intervention, pre-test was administered on 50 students out of which 42 women students participated in experiment. Remaining eight students dropped out due to some inconvenience. Above mentioned 42 students registered as the participants in blended learning programme and data collected for them was analyzed further. This Blended Learning Programme went on for 52 days in a Hujurpaga Women College of Commerce in Pune city during January to February 2018. The students regularly participated in the Self-Governed Activities. All online facilities were made available to the registered students. The post-test was administered on the same students after the intervention of blended learning programme. The Data has been filtered and filled in SPSS 20 version. It is organized as well as analyzed in tabular form that tests the effectiveness of Blended Learning scientifically.

Keywords: Problem based Learning Scenario, Employability Skills, Blended Learning

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I. Introduction:

Porter (Porter, 1985) defines scenarios as “an internally consistent view of what the future might turn out to be, not a forecast, but one possible future outcome”. Moreover, Schwartz (Schwartz, 1991) defines scenario as a tool for ordering one’s perception about alternative future environment in which one’s decision might be played out.

Scenarios are not concerned with getting the future ‘right’, rather they aim at challenging paradigms of thinking and broadcast a series of stories in which attention is directed to aspects that would have been otherwise overlooked (Shoemaker, 1995).

(Ringland, 1998) suggests an approach consisting the analysis of trend impact for scenario planning, which requires three phases namely preparation, development and reporting and utilizing. Wack 1985 asserts that scenarios must come alive in ‘inner space’, individual’s microcosm where choices are played out and judgement exercised. More than two stories but fewer than five are helpful because they reflect the uncertainty present in future. These stories allow multidisciplinary approach to develop and discuss theories about the world as well as present the findings in a tangible/ real context using a casual mode of thinking.

Ermter & Glazewski (Ermter, P., & Glazewski, K. D., 2015) reflect on some of the characteristics of Problem-based Scenarios. According to them, these scenarios are messy, and based on ill structured problems which are authentically contextualized for future work places. They act as real world problem. It triggers curiosity; it challenges, motivates and promotes self-directed learning.

Development of Problem Based Learning Scenarios:

Learning scenarios are not imaginary stories in the present study but are evolved through reflected reality on the case studies of women entrepreneurs in Maharashtra. Five Successful Women Entrepreneurs from Pune region were selected as the case study. The stories used in the scenario are based on the in depth interview of these entrepreneurs, these cases mostly included narratives of women who has to face a lot of obstacles to achieve success because they were women. The women in the case study, also had to manage everything on

their own while managing their household errands. They had created their own social networking for the purpose of their business startups. Through these networking they were in contact of thousands of people. It was their real strength in business which has been converted in a social capital for their entrepreneurship and through which got the earning in fluent manner.

According to Som Naidu's six steps for creating PBLs are important which were employed in present study (Naidu, Learning Design as an Indicator of Quality in Teacher Education, 13/1/2007). The learning scenarios were created according to those six instructions. The story was constructed based on trigger events and role of the learner also designed in the story as per the context. The screen-shot of the learning scenario is given below in figure No. 1.

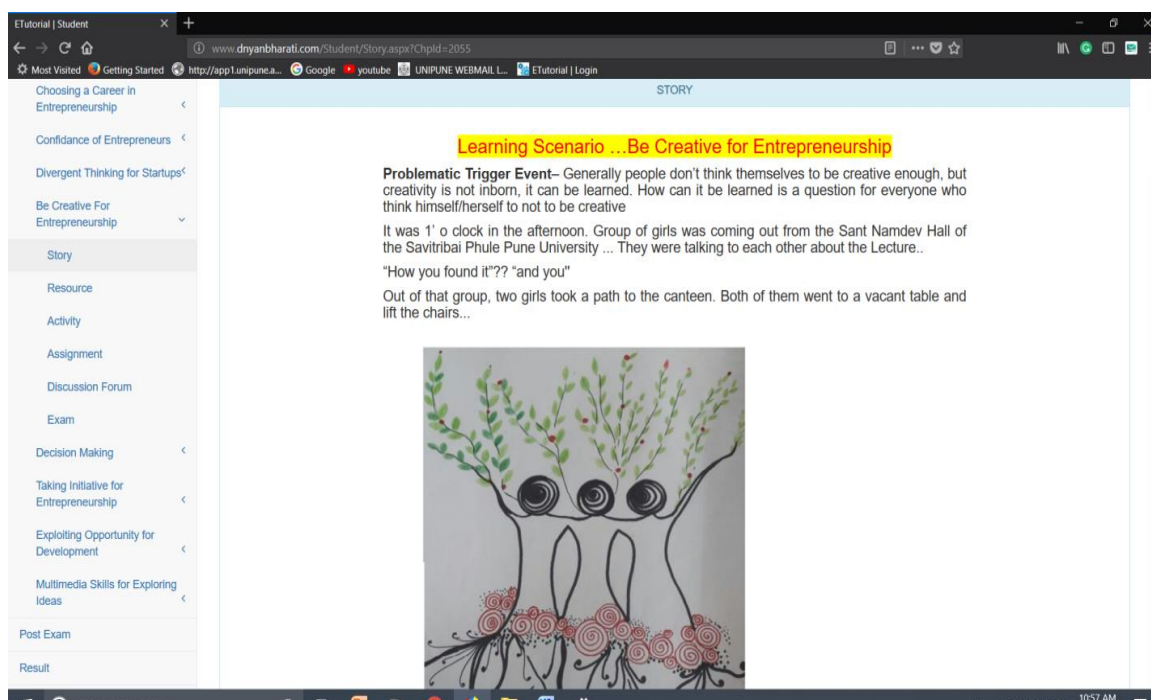


Figure no.1: Story Based Learning Scenario (Tupe, 2018)

Every learning scenario was encapsulated in interactive form. It is developed in four parts and since learning scenario is a continuous spiral process, learner has to complete all steps one by one in a sequential manner.

In the first step learner has to read the story carefully and be acquainted with the scenario. Later, define their role appropriately in relation to learning outcomes in the scenario.

In present study three problem based learning scenarios have been developed on the different issues of employability skills of women along with the self-governed learning activities. The online learning materials have been provided time to time through website. The discussion forum and face to face learning meetings have been organized for solving the learning issues. The learning support service has made available for participants.

Important Terms:

In the experimental space, the investigator tries to examine the plausibility of PBLs for Enhancing Employability Skills among undergraduate girl students. Bearing this in mind and on the basis of theoretical scaffolds, present study is entitled as “**A Study of PBLs for Enhancing Employability skills among Undergraduate Girl Students in Pune.**”

1) **Blended Learning Model-** It is an educational communication model where alternative media sources such as print, multimedia, videos, audios, on-line & offline modes of delivery, as well as conventional face-to-face interactions through learning scenarios are applied to impart employability skills among undergraduate girl students.

2) **Problem Based Learning Scenario-**In the problem based learning scenario the goals of learner are determined at the first level along with key attributes of successful entrepreneurs who had achieved such goals. The learning outcomes are developed based on those attributes. the key events in the life of learners who achieved these learning outcomes were determined according to learning outcomes. It helped to create a story board that provided opportunities for these events. They were further developed as aligned with the tasks that a

for mentioned learners had to complete within the context of this story in which learners were playing the role of a successful entrepreneur through achieving employability skills.

3) Employability Skills:

Employability skills are the skills that encourage one's long-term capacity to build a career and to prosper in a dynamic labor market (Curtis & McKenzie, 2001). These skills are required for both employment and nurture one's potential.

For the purpose of this study, Employability skills were defined as skills required to gain employment as well as to improve one's potential in teamwork, organizing resources and problem solving which were specially required to progress within enterprises (see *figure no 2*).

i. Teamwork Skills

Teamwork skills can be described as skills required for leading dynamics of the sense of responsibilities of work, ownership. It needs application of emotional stability and synergic approach to identify the strengths of each member of team for productive work.

ii. Organizing Skills:

Organizing skills are defined as the skills necessary to maintain control over available resources and to plan a scheme for raising financial and social capital as per the high expectations from him or her.

iii. Problem Solving skills

Problem Solving Skills are the skills required for identifying people concern, realizing problem, setting goals, generating potential solutions, igniting execution and testing its effectiveness for productive outcomes.

iv. Expertise in Employability

It denotes knowledge and skills for entrepreneurship. Expertise includes ethical practices and maintaining control in organization, dynamic leadership, sense of responsibility in teamwork, problem realization and generating potential solutions.

v. Intrinsic motivation

It denotes a behavior in entrepreneurship that individual has within which ignites an urge for achieving skills of keeping high expectation that is very resourceful for organization, emotional stability and work ownership in teamwork. Similarly, it manifests the setting of goals for resolving problem.

vi. Thinking Styles

Thinking styles is termed as divergent and convergent thinking for becoming an effective entrepreneur. These thinking skills are required to solve issues of entrepreneurship especially interactions for solving problems. It is useful for raising financial and social capital, synergic approach for team work, division of labour, ignition of execution and testing its effectiveness.

Objectives of the Study:

1. To develop the problem based learning scenarios for enhancing Employability skills.
2. To conduct the problem based learning scenarios through blended learning mode of delivery.
3. To test the effectiveness of problem based learning scenarios for enhancing Employability skills.

Research Design and Methodology:

Multi-research methods have been employed in the present research study. Implementation of the literature survey (review of literature) helped to study the learning process, learning needs, learning outcomes and different modes of learning. PBLs were created by using Product Research Method. Pre-test & post-test single group experimental research design was employed for testing effectiveness of PBLs on Employability Skills among girl students in Pune city.

Research Construct:

Researcher tried to blend the employability skills with components of creativity (i.e. expertise (knowledge & skills), intrinsic motivation, and thinking styles). It is called Employability Skill Matrix. The Blended Learning Programme has been developed for exploration of Employability Skill Matrix. All the aspects of Employability Skills of girl students were assessed through self-assessment scale. It explores the Employability Skill Matrix which provides an authentic and reliable pedagogy to develop employability skills among learners.

The focus of present research is to develop skills of creative entrepreneur. Therefore, with the discussed theories of creativity, three essential elements came up, which includes Expertise, i.e. knowledge; Intrinsic Motivation and Thinking Style. All characteristics of entrepreneur, which were gathered by extensive

literature survey, have been categorized into three major categories of Person, Process and Outcome, (OECD, 2007) as per the conceptual definition given by OECD. Therefore, on the basis of those three essential elements of creativity along with the employability skills have been clubbed together, to form a matrix. This matrix of creative entrepreneurs can be visualized as shown in the *figure no 2*.

Creative Entrepreneurs Creativity Components	Employability Skill M		
	Organization	Team Work	Problem Solving
Expertise	Ethical Practices	Dynamic Leadership	Problem Realization
	Maintaining Control	Sense of Responsibility	Generating Potential Solutions
Intrinsic Motivation	Resourceful & Persevering	Emotional Stability	People Concern
	High Expectation	Work ownership	Setting goal and interests
Thinking Style	Raising Financial Capital	Synergic Approach	Ignition for Execution
	Social Capital	Division of Laour	Testing of effectiveness

Figure NO.2: Employability Skill Matrix

It can be clearly seen, how theory of creativity has been operationalized along with the employability skills. Therefore, from the above matrix, three essentials of creative entrepreneurs, i.e. *Knowledge, Intrinsic Motivation and Thinking style* have been operationalized in three aspects of employability skills such as Organizational Skills, team work ability and problem solving skills.

employability skills are shown in columns and Expertise, Intrinsic Motivation and Thinking Styles are the three layer of each skill of employability are shown in the rows. All the aspects of employability skills of girl students were assessed through the self-assessment scale. Problem Based Learning Scenario explores the employability skill matrix which provides an authentic and reliable pedagogy to develop employability skills among learners.

II. Results and Discussions:

For the purpose of this study, Employability skills were defined as the skills required to gain employment as well as to improve one's potential in teamwork, organizing resources and problem solving which were specially required to progress within enterprises. Thus organization, teamwork and problem solving were the measures of Employability Skills in this study.

- i. **Organization Skills:** Thus, knowledge of Ethical Practices and skills of Maintaining Control over the available resources, Resourceful & Persevering, High Expectation, Raising Financial Capital, and Social Capital were considered as the sub-skills of Organization Skills which were measured in present Study. The data is shown in the table no.1.

**Table No. 1: Effect of PBLs for Enhancing Organization Skills
Paired Samples Test**

	Mean	N	Std. Deviation	Paired Differences				t	df	Sig. (2-tailed)	
				Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
							Lower				Upper
Organization Skills Before Treatment - Organization Skills After Treatment	34.6429 49.7857	42	7.48925 3.17410	-15.14286	7.75091	1.19599	-17.558	-12.727	-12.661	41	.000

It is evident from table No.1 that, at the pre-test and post-test stage experimental group of women, the paired samples t test revealed that there was a significant difference between Organization Skills before treatment (M = 34.6429, SD = 7.48925) and Organization Skills after treatment (M = 49.7857, SD = 3.17410), df (41) = -12.661, p = .000. Organization Skills after had a higher mean than Organization Skills before treatment of PBLs. In addition, the mean difference between the two was 15.14286.

In terms of the hypothesis testing the differences in means test is represented as follows:

H₀ (Null hypothesis): There is not a significant positive gain in the achievements of women in post-test mean scores of Organization Skills as compared to Pre-Test mean scores before and after intervention of the PBLs for Enhancing Entrepreneurial Skills.

H_A(Alternative Hypothesis): There is a significant positive gain in the achievements of women in post-test mean scores of Organization Skills as compared to Pre-Test mean scores before and after intervention of the PBLs for Enhancing Entrepreneurial Skills.

The test statistic was calculated by SPSS-Version 20. The Table No. 1 shows that the calculated t-test value is -12.661 which is significant at 41 degree of freedom on test mean scores of Organization Skills. It demonstrates that the experimental groups mean scores of Post-Test are significantly higher than the Pre-Test mean scores in Organization Skills.

Inferences: The test statistic which was calculated to be -12.661 was given level of significance at df 41. Thus these two scores of pre-test and post-test were differed significantly on Organization Skills achievement of women after studying in PBLs. It means that the Null hypothesis was rejected and the alternative hypothesis was accepted, it seems that the experimental group of women has gained reasonably much more in post-test with compared to pre-test as a result of PBLs treatment.

- ii. **Team-Work Skills:** The Dynamic Leadership, Sense of Responsibility, Emotional Stability, Work Ownership, Synergic Approach, and Division of Labour were considered as the sub-skills of Team Work Skills which were measured in present Study. The data is shown in the table no.2.

Table No.2: Effect of PBLs for Enhancing Team-Work Skills among Girl Students
Paired Samples Test

	Mean	N	Std. Deviation	Paired Differences				t	df	Sig. (2-tailed)	
				Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
							Lower				Upper
Team-Work Skills Before Treatment - Team Working Skills After Treatment	36.3810 49.1190	42	8.75953 3.15612	-12.73810	8.42	1.299	-15.36	-10.12	-9.805	41	.000

It is evident from table No.2 that, at the pre-test and post-test stage experimental group of women, the paired samples t test revealed that there was a significant difference between Team-Work Skills before treatment (M = 36.3810, SD = 8.75953) and Team-Work Skills after treatment (M = 49.1190, SD = 3.15612), $df(41) = -9.805$, $p = .000$. Team-Work Skills after had a higher mean than Team-Work Skills before treatment of BLM. In addition, the mean difference between the two was 12.73810.

In terms of the hypothesis testing the differences in means test is represented as follows:

H₀ (Null hypothesis): There is not a significant positive gain in the achievements of women in post-test mean scores of Team-Work Skills as compared to Pre-Test mean scores before and after intervention of the PBLs for Enhancing Entrepreneurial Skills.

H_A(Alternative Hypothesis): There is a significant positive gain in the achievements of women in post-test mean scores of Team-Work Skills as compared to Pre-Test mean scores before and after intervention of the PBLs for Enhancing Entrepreneurial Skills.

The test statistic was calculated by SPSS-Version 20. The Table No.2 shows that the calculated t-test value is -9.805 which is significant at 41 degree of freedom on tests mean scores of Team-Work Skills. It demonstrates that the experimental groups mean scores of Post-Test are significantly higher than the Pre-Test mean scores in Team-Work Skills.

Inferences: The test statistic which was calculated to be -12.661 was given level of significance at DF 41. Thus these two scores of pre-test and post-test were differed significantly on Team-Work Skills achievement of women after studying in PBLs. It means that the Null hypothesis was rejected and the alternative hypothesis was accepted, it seems that the experimental group of women has gained reasonably much more in post-test with compared to pre-test as a result of PBLs treatment.

iii. **Problem Solving Skills:**

Entrepreneurs create products or services that solve the problems of people or costumers. An idea which generates potential solution in different way for routine problem is a basic process of entrepreneurship. It requires a developed look to see differently towards problem. In this study, identifying people concern, realizing problem, setting goals and interest, generating potential solutions, igniting execution and testing its effectiveness for productive outcomes were considered the sub-skills of problem solving which were measured in the present study. The data has been shown in table no. 3.

It is evident from table No.3 that, at the pre-test and post-test stage experimental group of women, the paired samples 't' test revealed that there was a significant difference between Problem Solving Skills before treatment (M = 37.2619, SD = 7.43118) and Problem Solving Skills after treatment (M = 50.4286, SD = 3.64352), df(41) = -10.803, p = .000. Problem Solving Skills after had a higher mean than Problem Solving Skills before

Table No.3: Effect of PBLs for Enhancing Problem Solving Skills among Girl Students
Paired Samples Test

	Mean	N	Std. Deviation	Paired Differences					t	Df	Sig. (2-tailed)
				Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
							Lower	Upper			
Problem Solving Skills Before Treatment - Problem Solving Skills After Treatment	37.2619 50.4286	42	7.43118 3.64352	-13.16667	7.89849	1.21876	-15.628	-10.705	-10.803	41	.000

treatment of PBLs. In addition, the mean difference between the two was 13.16667.

In terms of the hypothesis testing the differences in means test is represented as follows:

H₀ (Null hypothesis): There is not a significant positive gain in the achievements of women in post-test mean scores of Problem Solving Skills as compared to Pre-Test mean scores before and after intervention of the PBLs for Enhancing Entrepreneurial Skills.

H_A(Alternative Hypothesis): There is a significant positive gain in the achievements of women in post-test mean scores of Problem Solving Skills as compared to Pre-Test mean scores before and after intervention of the PBLs for Enhancing Entrepreneurial Skills.

The test statistic was calculated by SPSS-Version 20. The Table No.3 shows that the calculated t-test value is -10.803 which significant at 41 degree of freedom on tests mean scores of Problem Solving Skills. It demonstrates that the experimental groups mean scores of Post-Test are significantly higher than the Pre-Test mean scores in Problem Solving Skills.

Inferences: The test statistic which was calculated to be -10.803 was given level of significance at DF 41 Thus these two scores of pre-test and post-test were differed significantly on Problem Solving Skills achievement of women after studying in PBLs. It means that the Null hypothesis was rejected and the alternative hypothesis was accepted, it seems that the experimental group of women has gained reasonably much more in post-test with compared to pre-test as a result of PBLs treatment.

Results: The test statistic which was calculated by SPSS Version 20. It was given level of significance at DF 41 for the three categories of Employability skills. Thus these two scores of pre-test and post-test were differed significantly on **Organization Skills, Team-Work Skills, Problem Solving Skills** achievement of girl students after studying in PBLs through blended learning mode. it seems that the experimental group of girls have gained reasonably much more in post-test with compared to pre-test as a result of PBLs treatment.

Implications:

There is a crucial problem of employability among graduate people in India. The changed scenario of economy demands the need to develop entrepreneurship and competencies of creativity to properly train and educate learners in accordance with the requirements of the business enterprise and service sectors as well. For this purpose, education system of higher education has to change the instructional design and try to involve the community of practices in learning system. It is only possible through BLM. This study provides effective design of problem based learning scenarios with the mode of online as well as face to face learning.

Since its focus is an assessment of Employability skills of women, the results of this study are pertinent to build a fundamental base for future online training services and research prospects on women entrepreneur. Moreover, majority of the existing studies have done research work on blended learning in western context with a philosophical perspective. Present study is particularly concerned with Indian context and explores main characteristics of Learning in the same. The results of this study emphasize on the implications for instructional practices, educational research and theorization from different socio-economic perspectives.

III. Conclusion:

The interactions play the vital role in the learning process. Creating effective interactions between learner to learner, learner to instructors, learner to communities of practice and learner to content is the major challenge in any academic programme. In present PBLs, students had got longer online communications with instructors, experts, mentors, community of practitioners and other learners about learning tasks through the same. Arguably, in such an environment, maximum teaching-learning activities were carried out by computer-mediated online platform and some of them were completed through the face to face mode of learning. Both the benefits of face to face and online mode of learning had been taken into consideration for effective way of learning in the present PBLs. In face to face mode of learning, students and teachers were interacting each other very much effectively because of their physical presence while interacted each other; but in such a situation student could not be able to interact with community of practitioners and other experts because of physical distance between students and practitioners. But it is so easy and always possible to interact with practitioner time to time in online mode of learning. Problem Based Learning Scenario is very much effective for motivating to solve day to day problem through interactions in their situation. **Acknowledgement:** The author received financial assistance to present research from the University Grant Commission (UGC), New Delhi, H. R. D. Ministry, Government of India.

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