A STUDY ON FEASIBILITY OF PROBLEM BASED LEARNING AT UNIVERSITY LEVEL

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Abstract

The study was designed to investigate the perceptions of university teachers for feasibility of problem based learning at university level. Being a descriptive study a questionnaire was used as a tool to acquire perceptions of university teachers regarding feasibility of problem based learning at university level. A purposive sample of 23 university teachers from two departments i.e. Education & Mass communication at university was selected including some senior faculty members. Participants were with different qualifications which ranged from masters to MS/PhDs. Data was analyzed through descriptive statistics and by calculating a t-test to determine the difference of perceptions among university teachers in view of their gender. Results indicated a strong perception of university teachers about effectiveness of problem based learning on student. It was also found that university teachers were having strong perceptions about initiation of problem based learning at university level. There was no significant difference about perceptions of teachers in view of their gender. Necessary changes in curriculum, assessment procedures, training of staff, administrative needs and raising of funding resources were recommended for initiation of problem based learning at university campus.

INTRODUCTION

Problem based learning (PBL) is very significant in different professions in general and in the field of education particular. According to Diana, Zayat & Munshi (2008) learning is an active process rather than a passive process. Instructional methods and learning should be in view of student, s independence for own views and futuristic demands. In view of them the activity of problem based learning starts with a problem. This problem is well described to the students in terms of underlying process. In this process both prior and new knowledge is activated and linked which leads to the good retrieval of information from memory. However most of the authors highly agree that objectives should be achieved and the problem which is put to be solved must guide and stimulate thinking, analyzing and reasoning.

Erik & Kolmos (2003) describing major characteristics of PBL revealed that learning through PBL involves participant directed, self directed, experience based, activity based, interdisciplinary and grouped based learning.

PBL approach is effective for community and institutional goals. It can also be applied at all level of learning and different disciplines. It helps student how to learn and lead to learn. The problem and its nature stimulates for a real life situation. The role of a tutor is very important and facilitating in solution of a problem. Tutor explains everything for better learning facilities, freedom of expression and the group process. It would be the strategy of tutor which will guide and help students to explore and stimulate thinking. Role of a tutor also helps in throwing new questions in teaching learning process which generates new knowledge and connects with the existing knowledge. (Education for Health, 2003).

Development of curriculum and instructions is another standpoint where decisions are to be finalized. According to Mimbs (2005) some of the innovative trends in problems based learning are the use of text books having problems solving and critical thinking skills, extensive use of internet, new state implementation guide, national standards and adopted curricular guide all of which serves as major resources for teaching.

PBL curriculum development covers all components, objectives, students and teachers learning strategies, content choices, learning methodologies, ICT, organization, culture and assessment. Once the change in one component is carried out, nearly all other components require changes. (Graff & Kolmos, 2003).

For the framework of problem based curriculum there are many stages which should be kept in mind, simply is designed and focused on problem based learning. Tfeletti & Bound (1999) highlighted some salient core components while developing a problem based learning curriculum. In this curricula the problem are use as selection criteria of curriculum , students work on their problems as part of their course and students are given specific type of training aptitude in order to make them capable of solving problems. Purpose, form of the problem, resources and process for the work are also important factors. Curriculum design team has to play its active role in listing the problems by the students either individually or in groups. The problem can be in the form of an event, descriptive statement or in a set of questions. In any form of all these curriculums the main purpose or aim would be to facilitate the learner in solving out problems either in groups with tutor, in group without tutor or as individuals.

Concluding the outcomes and benefits of PBL (Education for Health ,2003) reported that due to different variances of practical setting of learning the results of the researches in PBL can be generalized in particular situation but not at all institutions. However students who learn in clinical setting have good clinical performance. Similarly PBL students show better score on tests of humanistic knowledge, attitudes and skills. PBL students often chose the ways who lead them to self directed learning instead of getting assigned work from teachers; they are more satisfied and less stressed.

One of the modern and innovative trends of PBL is the concept of online PBL. Aim of PBL online learning is to promote students abilities to develop structured approaches towards PBL exercises. Sulaiman (2011) focusing on online PBL highlighted that PBL online learning integrates theory and the practice, students enjoy the learning via web sites, however it needs much efforts, time, energy besides old and traditional methods. It further increases social interaction, acquisition of meta cognitive reasoning skills and proficiency in problem solving in workplace scenario. Tutor or the facilitator has to play an energetic outfit with good pedagogical competence and access to ongoing discussions and participation with guidance, design of the digital space and authoring of the text presented.

Structuring and developing PBL course at college or university level is a challenging task. Assistance and guidance of experts may be helpful in structuring and developing such courses. There are numerous waterways which are necessary to be crossed by the organizers of courses. Curriculum structuring of PBL engages clarity of concepts, definition and analysis of problem, finding explanation, formulating objectives and reporting and testing new information. Learning should be self directed, assessment procedures must be in accordance with the set objectives and project based learning should be integrated. (Erik & Kolmos 2003).

In organization and structure development some other distinguishing characteristics noted by Stanford University Newsletter on Teaching (2001) are, clearly defined purpose of doing PBL, numbering groups for assignments, class room level managements, instructor/tutor, s control, developing multiple solution of problems, raising of questions, proper assessment procedure at regular intervals and allocated time for solutions of problems.

SIGNIFICANCE OF STUDY

In view of the problem understudy, current study will help both students and teachers. Teachers will guide, train and direct the students to follow the lines of project based, practical and problem based learning which will develop multiple skills among students. The study will facilitate students too; students will get benefit from problems and will also develop thinking, problem solving, critical thinking and reasoning skills. They will be able to learn in groups and tasks. Study will also be helpful for administrators of the university to analyze, plan and take initiatives for PBL at university level. Study will also help to the staff of university related to finance or budget matters, to decide whether PBL will be feasible and to what extent and by which means extra funding will be generated. Study will also facilitate the curriculum developers to modify the curriculum and bring required changes to improve multidimensional skills among students. Hence learning will become more and more active process. Finally the study will help out policy makers to formulate the policies for this innovative idea so that student may be more active in practical application of skill and they may better succeed in their professional lives as well.

Objectives of the study

Study was designed to achieve following objectives,

1. To find out the general perceptions of a university teachers about PBL
2. To find out the perceptions of university teachers for commencement of PBL at university campus.
3. To find out the difference about perceptions of PBL among university teachers in view of their gender.

RESEARCH QUESTIONS

In view of the problem under exploration following research questions were developed

1. What are the general perceptions of university teachers about PBL?
2. What are the perceptions of university teachers for initiation of PBL at university?
3. What is the difference of perceptions in university teachers in view of their gender?

METHOD

Participants

Total 23 teachers from Department of Education and Mass Communication were involved in the study. Sample was purposive in nature in view of time frame of study and teachers commitment in exam duties. However it was assured that participants having higher level teaching experience and qualification may be included in the study. Total 23 out of 37 participated in the study. Hence participant's ratio was 62%. Participants were having different age, experience, education qualification, marital status. Demographic details of the participants are as under.(See Table 1)

Table 1.
Demographic Characteristics of participants (in Percentages)

University teachers	n	% of sample
Gender		
Male	09	39
Female	14	61
Marital status		
Married	13	56
Single	10	24
Age		
25 Years or less	01	4
25-35 Years	17	74
36-45 Years	04	17
45 Years or more	01	4
Years of teaching experience		
0-10	20	87
11-20	02	9
21 Years or more	01	4
Highest degree held		
Graduate or less	0	0
Masters	14	61
M.Phil/PhDs	09	39

SAMPLING TECHNIQUE

As teachers were engaged in examination duties and researcher has limited timeframe for the study hence the sample was purposive in nature. The study was delimited only to department of Education and Mass communication. However being some senior experts in department of Education and Mass communication only these two departments were focused for sample. Education department being from educational fields and experiences about students learning, curriculum needs and innovative changes was taken in the sample. Most of the sample participants were professors Assistant professors and lecturers.

INSTRUMENTATION

To judge the perception of university teachers for feasibility of PBL at university campus a questionnaire was developed after a detailed review of relevant literature. It contained both the teachers' general perceptions about PBL and feasibility of PBL at campus. Instrument comprised twenty items. First five items were developed to know the general perceptions of university teachers about PBL while items 6-19 were developed with a special focus for feasibility of PBL at campus. First five items comprised the views of teachers regarding benefits of PBL in learning, development of multiple skills, career development skills and community goals. Items 6-19 were highlighted in view of curriculum, administrative issues, student's interests, aids and equipments, funding, assessment procedure, integration of current curriculum into PBL and influence of political issues etc. Last one item was left open ended for views of teachers about start of PBL. Items were based on five point likert scale which were strongly disagreeing (SD), Disagree (D), Neutral (N), Agree (A) and strongly agree (SA). Every item was given weightage on the basis SD=1, D=2, N=3, A=4 and SA=5 for quantative analysis. First part of instrument comprised demographic information of sample like gender, age, educational qualification, marital status, years of teaching experience, average class size and highest degree held. Questionnaire was with proper cover letter and detailed instructions how to fill. Confidentiality of information of respondents was ensured. Before finalization it was put before experts validation. Construct validity was ensured and opinion about every item was acquired, necessary suggestions were incorporated prior to the administration of the tool.

PROCEDURES

Questionnaire was administered personally by the researcher to the selected sample. Questionnaire was administered after a brief introduction of researcher and purpose of research. Nearly all available teachers fill in the questionnaire however few of them refused due to their personal commitments. Some of the teachers filled the questionnaire at the spot and returned nearly within one hour while others returned it on coming day. Teachers from department of mass communication filled the questionnaires on next day. Hence it took nearly three days in administration and collection of questionnaire.

DATA ANALYSIS

As study was descriptive and was aimed to find out perceptions of university teachers about feasibility of PBL at university level therefore descriptive statistics was used to analyze each item to determine the perceptions of teachers. Each statement depicted a particular aspect of feasibility. Percentage of university teachers about agreeing, disagreeing or being neutral was analyzed. Raw data was coded and numbered to find out percentages, standard deviation and difference among groups. A separate t-test was carried out in order to find the difference of perceptions among university teachers in view of their gender. Data was also analyzed in qualitative perceptive for last item which was kept open ended for feedback and view of university teachers for initiation of PBL at university.

RESULTS AND DISCUSSION

Results of data acquired from different teachers were analyzed and arranged separately on the basis of objectives of current study. First general perceptions of teachers about PBL were determined and its effects on students learning, multiple skills, career development and community success. While in Table 2 feasibility of PBL at university campus was analyzed. At the end last item was analyzed on qualitative perceptive in which teachers included their view about start of PBL at campus.

Table 2 General perceptions of university teachers about PBL and its effects on students							
Statement	Mean	sd	SD (%)	D (%)	N%	A (%)	SA (%)
1. PBL if designed can promote good learning.	4.13	0.548	0	0	9	69	22
2. Problem based learning can develop multidimensional skills among learners	4.13	0.069	0	4	4	65	26
3. PBL can develop good humanistic values among learners	3.82	0.777	0	0	39	39	22
4. PBL can best enhance students career development skills	4.04	7.67	0	0	26	44	22
5. PBL is effective for community goals	4	0.755	0	4	30	44	22

General Perception of the University Teachers

First five items were framed in order to meet first objective of the study. University teachers' overall perception towards their PBL at campus was very strong (see Table 2). From item 1-5 teachers showed a significant mean score ranging from 3.82 to 4.13. For item 1 & 2 teachers perceptions about effects of PBL on promotion of good learning and in developing multidimensional skills among students is much strong. However in statement 3 while asking about effects of PBL on students humanistic values teachers showed a bit varied response with a less mean score of 3.82.While in statement 3 a ratio of 39 percent of teachers was neutral. For statement 5 again teachers showed a positive perception with a mean of 4 and sd of 0.755, only 4 percent disagreed. They had a positive perception about effectiveness of PBL for community goals. Overall general perception of university teachers about PBL was much better with a mean of 92.8 and sd of 2.867. Only few of the teachers disagreed in some of the items but most of them remained in agreed and strongly agreed level which ranged from 22% to 69%.

Table 3
Perceptions of university teachers about feasibility of PBL at campus

Statement	Mean	sd	SD (%)	D (%)	N (%)	A (%)	SA (%)
6. Curriculum design team is important for PBL at campus	3.91	0.792	0	4	22	52	22
7. A facilitator can better support PBL environment	3.86	0.868	0	9	17	52	22
8. Online PBL facility can be provided at university	4	0.852	0	0	17	44	30
9. Class room assignments for PBL would be laborious as compared to traditional curriculum	3.13	1.013	4	30	13	52	0
10. Staff development programs would be prerequisite for PBL	3.91	0.90	4	0	17	57	22
11. University administration will favor PBL	3.04	1.186	17	9	30	39	4
12. Students will favor innovative change of PBL	3.65	0.934	4	4	26	52	13
13. Instructors at university would have harsh response about initiation of PBL	3.17	1.114	0	35	30	17	17
14. PBL will fail due to insufficient equipments at campus	3.52	1.038	0	22	22	39	17
15. Assessment procedures of PBL would be difficult	3.43	1.079	4	13	30	39	13
16. First university should carry out research projects for PBL	3.60	1.033	4	13	13	57	3
17. PBL can be integrated into existing university curriculum	3.60	0.940	4	4	30	48	13
18. PBL would have difficulties due to financial constraints	3.60	0.97	4	9	30	48	9
19. Multicultural effects among students will hinder their performance in PBL	3	1.044	9	22	35	30	4

Perceptions of University Teachers about Feasibility of PBL at University Campus

Teachers were also asked about feasibility of PBL and its start at campus , how they perceive , hence item 6-19 were set out for feasibility related matters , curriculum , training, assessment procedures, administration, provision of equipment and finance etc. Teachers again had better perception about most of feasibility related statements. However their mean

and sd were clearly different as compared to their general perception of PBL effectiveness on university students. Most of the teacher were Agreed or strongly agreed. In some of statement teachers had negative perceptions too. For statement 6 about importance of curriculum design team for PBL 52% participants agreed and 22% strongly agreed. For statement 2 about need of a facilitator who may support PBL in a better way, most of respondents were with a same percent as statement 6, however mean score was a bit less.

Statement 8 was asked in view of provision of online PBL programs, either teachers think it could be provided in view of current situation at campus, with a mean score of 4, teachers showed a positive perception having 44% Agreed and 30 % Strongly agreed that this facility can be provided at university and university should take initiatives for this purpose. Item 9 was asked in pursuit of perceptions of teachers whether classroom assignment and activities would either be difficult as compared to university, s current traditional curriculum. Teacher showed a negative perception, a total of 52% teachers were Agreed with this statement that it would be laborious and difficult, however many of the teacher have positive perceptions and they negated with a 30% ratio that these assignment would not be difficult, 13 % remained neutral. In statement 10 teachers were asked for training of teaching staff for PBL or staff development program, teacher's perception for this statement was much stronger with a mean of 4 and sd of 0.852. A total 57% teachers were Agreed and 22% were strongly agreed that staff development programs should be trialed before start of PBL at campus.

Statement 11 was asked specifically with relation to administration of university, *whether teachers think that administration of university will favor PBL*. Here it was the statement where most of the population of teacher a higher level negative perception. A total of 17% strongly disagreed and 9% Disagreed, also a higher ratio of 30% remained neutral. But despite of that many of the teacher had positive perception with a ratio of 39% and 4% strongly agreed with a hope that university administration will favor PBL, mean score remained with a low position of 3.04 and sd 1.186. In statement 12 teachers being from the field of teaching were asked whether students will favor this innovative approach. Teachers perception was higher with 57% agreed and 13% strongly agreed, 26 % neutral, mean score was 3.65 and sd 0.934. Statement 13 was about teachers themselves at university. Whether they would have harsh response against initiation of PBL as compared to traditional ongoing curriculum. Teachers with a ratio of 30% being neutral, 39% agreed and 4% disagreed. However 17% were agreed and 17% with same ratio were strongly agreed that teacher would not have smooth response for PBL.

Teachers when asked about the failure of PBL due to insufficient equipment, most of the teachers showed positive perceptions with 39% agreed and 17% strongly agreed; conversely a ratio of 22% had negative perception about this statement. Mean and sd were 3.52 and 1.038 with their level which showed a strong positive perception of teachers. In item 15 teachers were asked about difficulty of assessment procedures about PBL, mean score here was bit sever with a ratio of 3.43, 39% were agreed and 13% strongly agreed which showed a negative perception overall. Ratios of 13% were disagreed and 30% remained neutral.

In statement 16 when teachers were asked whether university should carry out research projects regarding initiation of PBL, again perception of teachers was stronger with a mean of 3.60, 57% agreed and 3% strongly agreed while 13% disagreed and 4% strongly disagreed with this statement. Item No 17 which was asked in view of university curriculum *whether it could be integrated into existing university curriculum*. Again mean was 3.60 and sd 0.94 which showed a positive perception 48% of teachers agreed and 13% strongly

agreed that curriculum could be integrated into PBL, while ratio of disagree and strongly disagree was 9% and 4% respectively.

In statement 19 views of teachers were acquired, whether due to financial limitations or constraints PBL will fail, 48% of teachers were agreed and 9% strongly agreed with a mean of 3.60 and sd of 0.97, 30% of the teachers remained neutral. Statement 19 was in search of finding teachers perceptions about multicultural impacts on students learning while PBL. Here mean score stood lowest from all statements, sd was 1.044, teachers with 30% agreed and 4% strongly agreed were having favor in this statement. A percentage of 35 which was highest in neutral were shown by teachers in this statement. However 22% disagreed and 9% strongly disagreed despite of other statements.
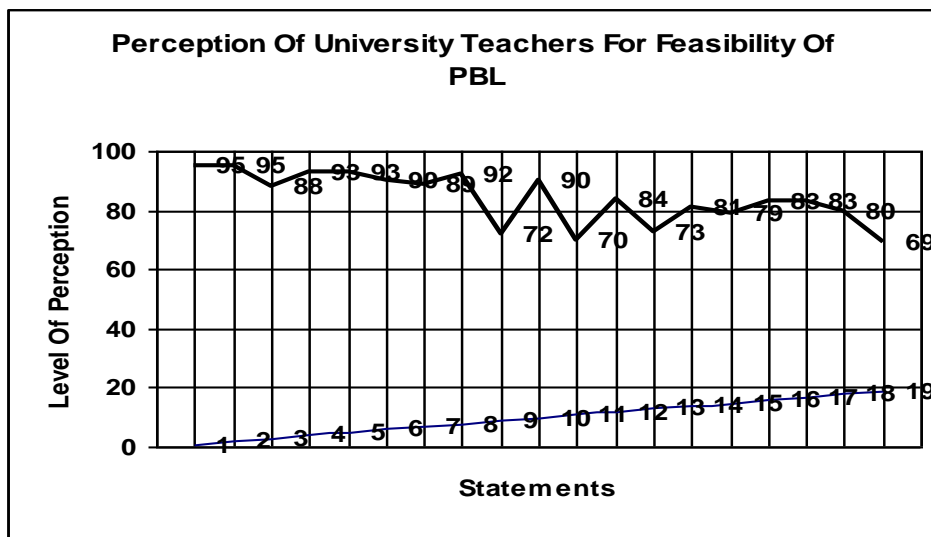

Figure 1: Perception of university teachers about Problem Based Learning

The graph above has been constructed for teacher's level of perceptions both about effects on students and for feasibility of PBL at university. On x axis statements asked by author has been shown, while on Y axis teachers level of perceptions about statements asked has been illustrated. As we note that whenever teachers move ahead for their responses from 1-19 , their level of perception first increased but when they reached at statement 19 their level of perceptions felled at lowest. From statement 1-5 teachers overall level of perception is very strong which ranged from 88-95. At statement 11 and 19 for perception about favor of university administration for PBL and effects on multiculturism on students learning while PBL is too low. For item 1-2 perceptions about good learning by PBL and its role in developing multiple skills among students level of perception is highest which stands at 95 respectively.

Table 4. Differences in perception between males and females teachers				
Group Statistics				
Gender	N	Mean	Sd	Std Error
Male	09	47.33	3.640	1.2133
Female	14	52.13	7.038	1.8818

Difference in Perceptions of Male and Female University Teachers

To differentiate the perception of university teachers in view of their gender an independent sample t-test was conducted to meet last objective, whether there was a significant difference between perceptions of male and female teachers. Results indicated that there was no significant difference between perception of male and female university teachers t (23) = 0.107, p > 0.000 (insignificant).However female teachers had a higher mean score than male teachers. Therefore null hypothesis is accepted.

Perceptions of University Teachers in Open Ended Item

Last item was kept open ended for teacher to provide their comments or feedback about start of PBL at university level. *Write in few lines your suggestions or feedback for commencement of PBL at university level.* Twelve out of twenty three teachers gave their comments about PBL, its initiation steps and relevant initiatives for its launch at campus. The view of the teachers were are under;

Teachers proposed for a comprehensive planning for PBL, especially training of the faculties was insisted. Some of teachers commented role of administration and provision of sufficient funding and research projects for its launch. Teacher also gave their comments on importance of grooming career based skills among students while others stated that PBL cannot be implemented in all social sciences however it can be implemented in pure sciences. One senior faculty member stated the PBL is currently not feasible at university; other proposed that PBL should be integrated into existing university curriculum and PBL programs should be used more frequently. Some teachers focusing on curriculum stated that it should be modified and monitored; one being much inspired said that such programs if feasible should be started right from coming semester. One senior instructor advising said that establishment of well-equipped labs and flexible time table is essential need of time. Assessment should be shifted from paper pencil to performance based tests. Some teachers highlighted about the importance in such words that these programs will promote communication and good thinking skills among students; teachers should be provided training on daily basis to promote it. A teacher favoring it said that it is a new concept if we promote this concept in class room, then it is hoped it can give better results, in modern days learning is based on critical and problem solving skills so old system should be extinguished and new learning methodologies should be promoted as a culture of innovative learning current situation is not up to the mark, however we need more struggle and provision of facilities to launch it at university level.

CONCLUSION

This study was carried out to find the general perceptions of university teachers and also their perceptions with reference to feasibility of PBL at university level. Results showed that university teachers were having very strong perceptions about PBL and its effects on students. Most of the teachers were with positive opinion that PBL would have good effects on students learning, in development of multidimensional skills, humanistic values and community goals overall.

Teachers also showed a varied and multi sighted views on the feasibility of PBL at university campus. Teachers have a very strong and positive perception about need of a curriculum design team at university level which may take initiatives of PBL curriculum development. Similarly they had a good perception about the need and importance of a

facilitator regarding PBL in university which may enhance PBL. Most of the university had strong perceptions about the online PBL and they have a viewpoint that this program can be started at university. Class room assignment of traditional versus PBL curriculum in most of teachers' views would be laborious and difficult. However a sufficient number of teachers negate this viewpoint too. Necessity of staff training is one of the aspect which is deeply focused by university teacher. In their view staff development programs about PBL must be launched at university, their perception is very strong and few of the teachers proposed weekly basis training for this purpose. Teachers also showed a strong negative perception about support and favor of university administrative about PBL initiative. However a significant number of teachers opposed too perceiving that university administration will definitively support this initiative. Teacher's views about whether student will accept this new approach was significantly better, most of the teacher gave strong views about acceptance of PBL by students.

Nearly equal numbers of teacher were having perception that teachers would be harsh in their response about start of innovative trend at university. Some were favoring while other were denying, a sufficient number was neutral too. Teacher's perceptions about financial issues and constraints for start of PBL were too strong positive perceptions. Most of the teachers had positive perceptions that university would face difficulty and budge limitation is one of the prevailing issues of university for PBL. Some of the teacher proposed for allocation and source creation of funding for this purpose. Teachers had a perception of difficulty in assessment procedure of PBL, most of them were agreed that assessment procedure would be difficult for teachers. Most of the teachers have stronger views for initiation of research project first before start of PBL at university. Teachers have higher level of strong perception about integration of current university curricula into PBL curriculum. Few of teachers had personal suggestion to take steps for this regard. A large majority of teachers highlighted the needs of equipments; they realized that university should try to provide equipment for PBL initiatives. Effects of multiculturalism was diversified by teachers views, nearly half of population was favoring the multiculturalism will put effect on students learning in PBL while half were against this view. Teachers had common comments about issues regarding provision of equipment, training, favor of administration, good planning, need and importance of fiscal resources and creation of an environment which could enhance life long skills and practice based learning.

Despite of all above mention facts, figures and results, this study has some limitations too. A small sample of university teachers, the sampling from only two departments of the university, leaving out other departments and expertise may minimize generalization of the results. Therefore results may be generalized to particular departments.

RECOMMENDATION

PBL is one of the most innovative approaches in the field of education. Students with this type of approach learn in multidimensional ways, improve their critical and analytical skills. Their thinking ability improves and they are more enlightened for the success in career. Currently study was carried out to find out perceptions of university teachers in view of effectiveness of PBL on students and its feasibility at university level. Further researches may be carried out how to implement PBL at university level. Student's perceptions regarding PBL may be investigated. For successful implementation of PBL, curriculum of social sciences may be redesigned. Current research focused on many areas which require attention and relevant gaps may be covered if a successive and effective PBL is to be

started. For launch of PBL programs importance of curriculum design team is very much important.

With the help of professionals of education a good PBL curriculum for the university may be structured. Similarly curriculum may be modified and monitored time and again according to changing scenario of educational revolution. If possible current curriculum may be integrated into existing curricula. Class room assignment and activities may be developed in such a way that student's performance based activities could enhance instead paper pencil activities of traditional educational activities. Learning activities may be expanded in a way that practical skills and life long skills may nourish in students.

New labs with equipment relevant to PBL may either be established or integrated into existing labs. Online or E learning is one of modern mode of education. Students of today's world at universities are interacting and surfing computer and internet. Online PBL guideline and facilitation may supply a power to generate PBL activities in existing university curriculum and in their personal learning as well. Staff of the university may be provided guideline in general and university teacher in particular. Teachers may be trained by developing short term or PBL special training programs. Teachers may be informed about the importance of PBL through seminar, workshops and such other forums.

Administration of university may have to take notice with an enthusiasm for decisive want of era as today's world is changing with the speed of micro seconds. Funding is a major issue of university among one of the drastic factor in moving towards PBL. For this purpose university may take initiative in intervals or chunks towards PBL. Collaboration from other educational institutions and universities may be one of the leading ways towards PBL. University may have to generate funding using various channels, sources, collaboration and communication for a way directing to a clear and easy destination for PBL launch.

LIMITATIONS OF THE STUDY

This study has certain limitations, being a case study at university level and having a small sample will not support generalization of results on other educational institutions for the results. However study will open the ways to conduct.

Finally studies on administrative requirements and other relevant disciplines may be carried out to reach on a decisive point. Technical suggestions and survey may help from head of departments, financial institutions and other educational establishments already operating PBL at their campuses.

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