

Educational Research on “Constructivism” - An Exploratory View

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Abstract- This exploratory study has been conducted with the core intention to understand the emergence of inquiry approach on constructivism as an important and thriving learning theory in the field of education. This paper first focuses on a concise account of different perspectives under recent investigation on constructivism in the educational ground, generally established currently by recent theorists, academic and intellectuals, point toward the practical implication of constructivist theory, Various aspects of study critically examine their belief to what extent they are going to act on the theory, and if they do so then view how they manage or maintain constructivist uniqueness and ideology of learning. It provides a link for potential agenda, policy and practice reforms, which is consistent with philosophical evidence and rate of success where it would be implemented. Use exploratory research method based on survey, research design stand on quantitative research, covering a sample of 26 different private and government schools of Defense and Clifton, Karachi, out of approximately more than 60 schools, by filling questionnaire from the principals/head of department of that schools. Regression and correlation analysis were used through SPSS. The time horizon for this research study was cross sectional. The results of the study suggest that occurrence of range of effects exist, effects were documented in two sorts: (a) concrete consideration of ideology and (b) substantial application to facilitate growth of constructivist education. It provides a link for potential agenda, policy and practice reforms, which is consistent with philosophical evidence and rate of success where it would be implemented. Finally, the study was critically assessed to find out gap in the field of research and education in particular to our country. Perhaps a crucial confront for education, ‘educational restructuring’ was suggested to arrive to a greater understanding of the ideology that informs recommended application.

Index Terms- Constructivism, Perspectives, Inquiry approach, Educational restructuring.

I. INTRODUCTION

The basis of specific study on “constructivism” is to build a meaningful understanding appropriately for all learners and all circumstances, using a variety of educational and non educational procedures, tends to be generalized by educationalists. Constructivists shares a focus on the learner centre approach and the density of the learner’s cognitive course of action for their learning and support needs and the value of providing learner’s with opportunities to make meaning and be

real dynamic contributors in the learning-teaching experience. Further they believe that knowledge is constructed, involving social processes, interaction with the environment and self-reflection, required a great resource frame work, in that they;

- encourage learner centered experiences
- provide opportunities for learners to work together;
- encourages individuals to make sense of information for themselves;
- assist novice learners to develop expertise;
- focuses on the role of social interaction & the impact of socio cultural factors on one’s ability.

International Encyclopedia of Education, (1987) defines Constructivism as, “It is the statement used for the thought that information build by the pupils for their own, every individual create understanding as they gain knowledge independently and in a social content.” So here constructivism includes a statement about the student’s existing progress that might arise from the supportive and encouraging environment provided by institutions having student’s oriented goals, reflecting factors relevant to each specific individual such as former knowledge and socio-cultural context, influenced strongly by effective social communication. Constructivist curriculum, (1996), states that, “The foundation of constructivist knowledge resting on learners dynamic involvement in ability of problem-resolving and decisive thinking concerning actions of learning realized as appropriate and appealing.” thus considering this definition suggests a series of propositions that could serve as guidelines for educators attempting to make learning more effective for all students.

ALN Magazine, (1997), embrace that, “Constructivism is basically a term used for an educational view point rely on the principle that student eventually build their understanding which already contained within them, in order that as every individual is distinctive so that their knowledge is also distinctive.” this definition proclaims that the constructivist thought of learning proposes that the students acquiring communally derivative shapes of acquaintance which not only internalized eventually but also influenced by processes of group effort, role of social collaboration and the impact of factors related to the socio cultural aspect on one’s ability to organize activities and standardizes thought process.

Recently constructivism is viewed as one of the focused issue in educational context, as it illustrate learner progress by indicating a connection between the division of information, high

lights how one can use different types of knowledge to conceptualize and put into practice, it helps to keep track of one's progress in directing specific functions. This approach might assist educators, something particularly beneficial for seeking to understand how best to help out young people to learn, draw attention to different dimensions of learning, and how it contribute to ensure effective learning process. It spirited with quite a lot of hype educational ideology and approach to learning to select the most appropriate strategy for their purpose, for how the recent instruction is likely to structure.

Hence by acquiring constructivist realistic education meant to considering relative effectiveness by applying such westernized approach in our system of education, managing learning along with sufficient support structures & curriculum demands widely in their learning/teaching procedures to obtain positive outcomes. It spirited with quite a lot of hype educational ideology and approach to learning to select the most appropriate strategy for their purpose, for how the recent instruction is likely to structure in educational setup under Pakistan, for example;

- the evolution of the new trend set from traditional teaching methods to according to current educational need phenomena linked to the achievement of learning goals, as per change the teacher's responsibility from less competent to highly competent getting to know the suitable classroom-management procedures required for successful classroom functioning.
- application of constructivist elements, likely to be influential, demonstrate the efficacy of effective techniques across a range of learners and curriculum disciplines, to attain the shared targets that benefit individuals in facilitating self regulation; as giving them freedom to learn.
- Encouragement of personal responsibility of completing task by facilitative interaction within social context, reflection and collaborative/cooperative teaching/learning expertise, to build meaningful understanding.

(President's Committee of Advisors on Science and Technology: Panel on Educational Technology, 1997)

Whereas recent US review quote that: "Learners do not grab any current knowledge and understanding until he is not affianced with some foundation knowledge and concepts, if he is lacking so he may not succeed transmitting his erudition to current situations." (*U.S Review, National Research Council, 1999*) So, essentially we might state that, constructivism is basically a meaningful theory – offers several explanations, focuses on learning situations on the grounds that possesses the appropriate structure needed to ensure that learning outcomes are achieved, coping with clearly stated objectives, emphasis on the centrality of each individual, concern the significant role of teacher with appropriate personal and professional skills needed to implement constructivist approach. Now, it is necessary to inquire the network of information presented by well known philosophers and educationalists, considered as guidelines to negotiate effectiveness of constructivist procedures.

A. Research Objectives

Here, the research objectives are basically to evaluate the analysis of constructivist effects on the system of education and high lightened the required teaching skills, teacher response, students satisfaction & affordability regarding constructivism and to focus whether this approach really works in our system of education. Hence my basic aim is to facilitate awareness of constructivist theory, observe the constructivist views of learning and lastly confer the related thought on our educational consequences.

B. Research Questions

With the information presented in previous studies, Researchers needed counter questions in relation to the implications of constructivism in our learning environment, like,

- Does the constructivist approach is a preferred model for delivery of education?
- Can we explore relative effectiveness of full inclusion of academic achievements in these settings?
- Does it address high student satisfaction?
- Is it inclined to fulfill goals of education?
- Do teacher skills, students satisfaction, teacher response and affordability has significant impact on application of this theory in schools?
- Which type of schools encourages this type of learning environment?
- What measures would be required to make sure that successes of this effective philosophy of learning exist?

II. LITERATURE REVIEW

The focus of a literature review regarding any issue does not set off the spirit of that topic completely. In fact it provides supporting impact and critical overview about practical viability of the topic. It also places the emphasis on verification of the foundation work for the topic within which, researchers expect to review the support structure of knowledge to do an essential review of the literature. They have chosen this approach to learning because of the fact that this theory attaches importance to the learner's centrality and learning environment, which has become widely accepted and admired as a learning view point in educational field. It will be worthwhile to gain knowledge of constructivism by the teachers from these selected efforts considered as valuable effort lead to constructivist thoughts.

According to De Vries, (1986), the philosophy of constructivism were initially promoted at a time when Socrates began to encourage his assistant's understanding, achievement and personal growth by overcoming the flaws in their prior beliefs, proposed the liberal innovative temptation rather than by authority/control. The Socratic concept have continued to influence the current educational paradigm, following the growth in popularity of progressive model of education used to refer to the approach to learning based on developmental perspective of students in context of their knowledge background. It also began to emerge as recognizing the essential role in recent constructivist educators side, the way they followed to capture one's full potential and to map innovative learning practices for active learning. The impact of constructivism, to perceive as an

educational view point, has been felt throughout the 18th century, but particularly in the latter half of the century, there was much emphasis likely to be shaped in terms of democratic learning environment, dominated by innovative learning styles. It can be found to the effort of the Giambattista Vico, the Neapolitan philosopher, who actually believe in such philosophy that is based on human psyche, with a context within which they are free to nurture, actually based on realization about the value of understanding meaning and when giving opportunities undoubtedly one has to create it by own.

Dewey, (1966), conducted a dynamic rational atmosphere of education in where he produce learning, he illustrated that education is basically an activity, thoughts appear by circumstances which learner generally faced in the process of gaining knowledge. He used the term learning be stuck in actual practice. He marked, "If there is any reservations about learning take place in what manner, employed in persistent inquisition: learning, contemplate, judging substitute potential and turn up at your credence based in evidence. Hence major element of constructivist learning is inquiry as per Dewey claimed.

On the other hand, Piaget, (1973), in Piaget's developmental theory, indicated the psychological extraction of constructivism commence with the developmental effort. In order to draw abstract of his thoughts regarding education led as , he begin to learn human development in the 1920s, created a developmental conjecture (the presumption of inherited set of mind) which proclaimed that intellect is correlate with the progressionary organic growth that projected its purpose to develop cognitive approach. According to him the elemental origin of knowledge was innovation: "On the way to identify is something revealed, or it can say that restructure the vision by recreation, this type of circumstances must be in accordance with, if potential people are to be produced who they are competent of creativeness and inventiveness rather than replication." (Piaget, Jean, 1973). Piaget anticipated 4 phases of child growth and invite teachers to be aware of the stages, he proclaimed in the growth of the child's brain as, sensory motor, preoperational, concrete operational and formal operational phases of growth. He claimed that development of each child depend upon these phases till one can think rationally. According to him the student is gone through in their learning by three means.

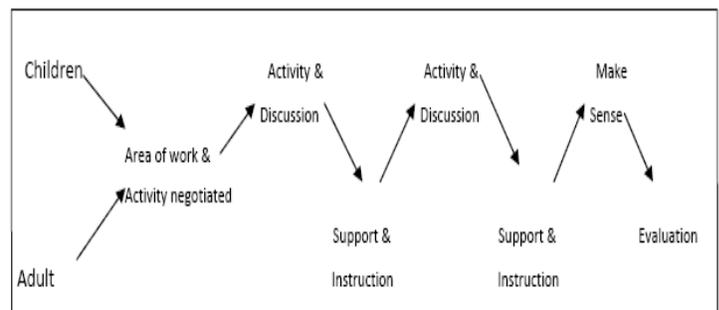
1. Occurrence of latest apt into an already presented mind set - Absorption
2. Modify the presented mind set due to latest occurrence - Adjustment
3. Looking for mental constancy by means of absorption and adjustment – Stability

In accordance with the above content Piaget alleged that individuals learn through the creation of logical construction one after another through active participation until they arrive at an understanding of central fact.

Essentially within contemporary psychology, Piaget, (1973), highlighted that the James Mark Baldwin was also contributed in bringing the design of construction cognitively

into key element of developmental theory, along with Jean Piaget, attempted to drawing the measures by focusing human, particularly given the way in to consciousness and mental functioning, discover the secure covering of pragmatic surrounding. Hence Baldwin and Piaget both could depict the theory of evolution, confirm the comprehensive role of constructivism in education.

Vygotsky, (1978), presented the application viewpoint regarding constructivism, which is seemed to be equally important. Vygotsky initiated the social characteristics into constructivism for potential development and effective learning. He distinct the "proximal developmental zone" (ZPD), acknowledged the function of potential social interaction in mental development. The ZPD expressed each child's capacity to 'make believe'. Given a learner present state of understanding, what development can occur if the child is given correct means support by more capable others? If assistance is appropriate and significant, then, it is entailed; the understanding of learners can be absolute far beyond that which they could reach independently. Because of that pupils work out their issues, further entail height of real prospective growth following diagram about constructivist teaching-learning process best illustrated the concept of ZPD by Vygotsky, as:



the ability to become lifelong learners. Bruner set off program of study change grounded upon the belief that understanding of any learner founded on its existing information and according to him that process of learning has to be dynamic and must be in a social context.

Fosnot, (1989), suggested a series of special developmental steps that could serve as principles for recent educators to take for expected changes to become evident, recognize four principles by described his personal ideology about constructivism: learning, in an essential means, based on what we already be familiar with; new thoughts take place as we become accustomed and amend our previous thoughts; learning entail discover ideas rather than involuntarily gather facts; significant learning happen through review previous thoughts and approaching to new finish end about latest thoughts which divergence with our previous thoughts. In considering the processes supported by Bruner led to the inclusion of a dynamic, constructivist environment requires extensive changes to current educational practices, with effective instructional procedures applied on learner centered environment. In such way, here the teacher's responsibility is to assist this course. Fosnot proposes that "the theory of constructivism advanced that produce those pupil who are independent, intrusive and rationale in inquiry and examination. This theory liberated instructor as to build conclusion and augment learner's advancement". This reveal the most important contribution about successful learning , it is not only heighten our awareness of instruction as an art to be undertaken by caring individuals to succeed in the phase of growing up but also contribute an effort to recognize different aspects of children's learning, which is apparent in present educational revolution.

According to Brooks & Brooks, (1993), "For building understanding, pupil should have certain liberty to consider, inquire and to interrelate with thoughts, stuffs etc." Whereas Brader et. al, (2002) suggests that "Constructivism is basically the thought about the expansion of knowledge entail the student in forming sense of knowledge by means of dynamically connected with the thought." Jacquelin et. al., (1999) proclaims that, "It is all about how we all get to know about our surrounding which can't change." These evident presented by the recent theorists and educators entails that Constructivist theory actually promotes grave view and build dynamic and provoked pupil. They suggest that constructivist approach be integrated into the program of study, and adherent that instructor construct atmosphere in which students can create their perception of own ability as a cause of learning. Training may need to be given to ensure that students have these skills, needed to be succeeded. Other contemporary researchers of represent the critical elements in the learning-teaching process, which provides potential for learning experiences within educational programs.

Hence above covered perspectives proves that constructivist learning is compatible with how the learner gain knowledge of. There is no disagreement, and abundance of research to establish, that constructivist instruction is the preeminent manner for pupil to be taught, to ensure that potential of students are realized and expressed if appropriate opportunities are provided within educational environment.

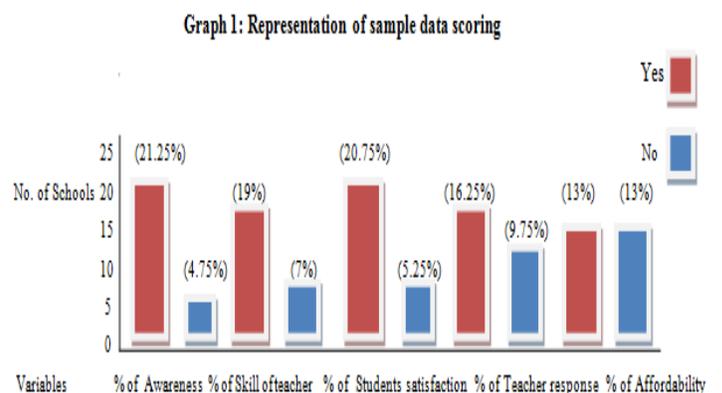
Educator task in a classroom is to motivate learners to realize their potential by engaging them in intellectually and socially challenging learning experiences and amount of diverse teaching follow ups which motivating learners to utilize active skills (trial, problem resolving of actual-world) to build more understanding. Teacher must provide the necessary support and stimulation to ensure motivation to be maintained and enhanced and recognize the students' pre-obtainable formation, and direct the action to tackle them and then construct on them.

III. RESEARCH METHODOLOGY

This research approach inductively uses exploratory research method based on survey. Research design was based on quantitative research. This research was conducted in educational settings. The unit of analysis is schools of Clifton and Defense areas of Karachi, and all other regions and schools are excluded from this research, as this research was conducted on the influence and effects of practicing constructivism in schools of Pakistan. Close-ended questionnaire was designed which high lightened the dependent variable like awareness, and independent variables like teacher's skills, student's satisfaction, teacher's response and affordability, gathered sample data from 26 schools out of approximate population of more than 60 schools (from primary up to higher secondary level), by filling questionnaire from the heads / principals or vice principals of the schools. Data has been examined with the help of statistical tool SPSS. The time horizon for this research study was cross sectional. Extracted from analysis, found deeper outlook of constructivist layout of on existing acceptance of theory and field application. Findings, actually pursued are structured by research question.

IV. DATA ANALYSIS AND FINDINGS

After gathering sample data from strength of 26 schools of sample unit, by filling questionnaire from heads/principals underpinning results have supported the facts as shown in the following graph:



The data has been analyzed in the course of SPSS (statistical package for social sciences) software by means of descriptive, correlation and regression analysis as follows:

A. Descriptive Analysis

For the interpretation of data to indicate the Mean and Std. Deviation, descriptive analysis was done to suggest how much association/correlation lies in between the variables, results were obtained as following:

Table 1: Descriptive Statistics
Table showing the descriptive statistics of constructivism

	N	Minimum	Maximum	Mean	Std. Deviation
awarenessofwork	26	4.00	7.00	4.7308	1.15092
skillofteacher	26	4.00	8.00	5.1154	1.58308
studentsatisfaction	26	4.00	7.00	4.8077	1.05903
affordability	26	4.00	8.00	5.9231	1.54721
teacherresponse	26	4.00	8.00	5.5000	1.30384
Valid N (listwise)	26				

According to respondent opinion the rating on independent variable Affordability was highest with a mean of (5.9231) the rating of teacher responsibility was second highest with a mean of 5.5000, the rating of skill of teacher was third highest with a mean of (5.1154), and the rating of student satisfaction 4.8077. The rating on dependent variable awareness of work is least with a mean of 4.7308. The Std. Deviation of respondents' opinion on students' satisfaction was the least 1.05903, as compare to the other dimensions. This indicates that there is highest participation in Student satisfaction dimension.

The std. dev. of respondents' opinion on skill of teacher was the highest (1.58308) as compared to other dimension. This indicates that there is a low involvement of skill of teacher in some schools of Karachi.

B. Correlation Analysis

For representation of data to show the inter relationship between variables or to measure the strength or degree of linear

association between two variables, evaluated through correlation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.926 ^a	.858	.831	.11814

a. Predictors: (Constant), affordability, teacherresponse, studentsatisfaction, skillofteacher
stats, results were obtained as following.

Table 2: The Correlation Statistics of Constructivism

The core values show that there is a positive correlation of awareness of work with skill of teacher, student satisfaction, teacher response and affordability in constructivism. The dependent variable "awareness of work" has the strongest correlation with skill of teacher (0.896**) with student satisfaction (0.842**) with affordability (0.841**) and there is

Model	Variables Entered	Variables Removed	Method
1	affordability, teacherresponse, studentsatisfaction, skillofteacher ^a		Enter

a. All requested variables entered.
no correlation of teacher response (0.840**) with the dependent variable awareness of work.

C. Regression Analysis

For representation of data to show the average relationship or dependence between the variables determined by R square, f-test and t-test, results were obtained as following.

Table 3: Variables Entered/Removed

Table 4: Model Summary

The R value show coefficient and correlation is the numerical mean use of strength of the linear relationship between two variables. The R value (0.926{a}) show that there is positive correlation between the awareness of work and dependent variable skill of teacher. The R square show coefficient of determination defines the square of coefficient of correlation. The R square value (0.858) means 85% reliable to be use for estimation of population. In other words it is accomplished that in education sector of Pakistan 85% of variation in dependent variable is due to independent variables.

The Std.error is important because they reflect how much sampling fluctuation a statistics will show. The standard error value show that 11% fluctuation of sampling mean. The R change shown that difference between R value and adjusted R square.

D. Analysis of Variance

		Awareness ofwork	skillofteacher	teacherresponse	studentsatisfaction	affordability
awarenessofwork	Pearson Correlation	1	.896(**)	.840(**)	.842(**)	.841(**)
	Sig. (2-tailed)		.000	.000	.000	.000
	N	26	26	26	26	26
skillofteacher	Pearson Correlation	.896(**)	1	.804(**)	.873(**)	.902(**)
	Sig. (2-tailed)	.000		.000	.000	.000
	N	26	26	26	26	26
teacherresponse	Pearson Correlation	.840(**)	.804(**)	1	.710(**)	.813(**)
	Sig. (2-tailed)	.000	.000		.000	.000
	N	26	26	26	26	26
studentsatisfaction	Pearson Correlation	.842(**)	.873(**)	.710(**)	1	.869(**)
	Sig. (2-tailed)	.000	.000	.000		.000
	N	26	26	26	26	26
affordability	Pearson Correlation	.841(**)	.902(**)	.813(**)	.869(**)	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	26	26	26	26	26

** Correlation is important at the 0.01 point (2-end).

Table 5: The ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.777	4	.444	31.822	.000 ^a
	Residual	.293	21	.014		
	Total	2.070	25			

a. Predictors: (Constant), affordability, teacherresponse, students satisfaction, skill of teacher

b. Dependent Variable: awareness of work

The sum of square shows the total variability around the mean. The degree of freedom means the number of sample -1. The F test value (31.822) shows the combination of all variables, over all significances of the model, its mean independent variables like skill of teacher, student satisfaction, teacher response and affordability on dependent variable awareness of work and observation of independent variable met.

D. Coefficient Analysis

Table 6: Coefficients Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.131		3.969	.001
	skillofteacher	.338	.160	.465	9.879	.000
	studentsatisfaction	.303	.200	.279	7.643	.000
	teacherresponse	.317	.131	.359	7.574	.000
	affordability	-.084	.165	-.112	7.631	.000

a. Dependent Variable: awareness of work

The standard error is important because they reflect how much sampling fluctuation a statistic will show. The Std.error of a statistic depends on the sample size in the journal. The larger sample of the standard error. Std.error of constant (0.131) value shows the 13% of fluctuation of sampling of knowing, and the Std.error of independent variable skill of teacher is (0.160) value shows the 16% of fluctuation of sampling mean, student satisfaction (0.200) value illustrate the 20% of variation of sampling mean, teacher response (0.131) value illustrate the 13% of variation of sampling mean, and affordability (0.165) value illustrate the 16% of variation of sampling mean.

Standardized coefficients are the coefficient that you would obtain if the predictor and the outcomes variables were standardized prior the analysis and the comparing the size of the coefficient across variable. The T value of independent variable skill of teacher is (9.879). Student satisfaction represent its T value is (7.643), teacher response represent its T value is (7.574), and affordability represent its T value is (7.631). Hence, the results of T value of all the variables show the overall significance of their occurrence in the test.

V. CONCLUSION

This study examines constructivist views of learning by highlighting the unique aspects of plan of constructivism, traits of teacher and class room set up which have had continuing impact on education. This research also indicate that transactional and constructivist practices should support a full inclusion model that must be maintained, based on organization, elaboration and attributions for generating learning and elevate strategy's effectiveness. Teachers who are expected to be part of the process should have received appropriate training with awareness of overall progress and the quality and quantity of support and practical suggestions. Also noteworthy is the focus on student's need or potential in a learning situation, rather than those of the teacher or curriculum. Attention is on different aspects of their development; independent learning environment; interactive teaching scheme focuses on student at a central place and make possible a process of encouraging learning environment. Researchers have also relied on socio-cultural factors as it directly impact on the process that underscore the importance of required teaching skill, teacher response as well as student's satisfaction and affordability. Thus, the approach works on the benefit of student's learning.

The most important contribution related to the constructivist debate about valuable education summarizes the impact of ideas about the effectiveness of teaching strategies, with a view to strengthen our understanding of teaching. The ability to be caring individuals lead to healthy self actualization and an intrinsic motivation towards achievement and committed to facilitating their students to be successful in the complex process of growing up. Hence getting to know the effectiveness of teachers and others who contribute to children's learning also recognized the gap in student's progress. It is also evident that students in constructivist programs were not academically disadvantaged when compared with other student.

Hence, the strength of exploring constructivist approach is aimed at considering relative effectiveness by applying westernized approach in our system. However, this report is based on field data from posh area schools. Thus the position, evaluation and need of various other areas have been neglected. Yet the report found that schools present in such areas (Defense, Clifton) have achieved little or more by acquiring constructivist realistic education but it is established that it might be concentrated in relatively few schools where funding and affordability is not the issue and this is where the success of this report lies. Indeed most schools present in various other areas is estimated not to have known this type of innovative theories, they incorporate traditional and contemporary operations, generally called as normal schools don't yet have a clear focus on educational outcomes and it is still working for their communities. So, it is particularly the responsibility of our government and education sector to bridge the gap by formal and informal ways (like building awareness regarding current strategies, training of teachers, provide funding, facilitate structural reforms, etc.). Both need to be successful by resolving the issue of reducing disparity and biasness among the people of our country to reach the height of success throughout the education system, in promoting education.

VI. RECOMMENDATIONS

This research suggests that in order to implement this kind of learning approach, teachers need to equip more skilled and confident to meet the current challenges and to acquire this approach, resources and funding must be provided to the schools, sufficient time and sincerity of teachers about managing independent/ discovery/ project learning along with all other structural demands must be insured, include perspectives in mainstream curriculum relevant to constructivist practices and according to student needs and interests so as to encourage their participation, and if someone wants to obtain idealized outcomes so there should be no lack of commitment from their side.

This makes certain maximizing the outcomes such as participation by ensuring the involvement of all stakeholders related to the field of education in every stage of development, implementation and evaluation. This guarantees the constructivist aspirations; preferences and practices take central place. Finally in addition, researchers last and foremost suggest that education system present in our country would likely be restructured thoroughly by means of delivering standard education in order to spread the benefits of quality education in all mediums to every single person of this country, only in this way we may think to consider western approaches to be implemented, otherwise multi system education would prevail which could be harmful in respect of creating biasness between different classes of people.

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