

# Attitudes of Biology Teachers in Pedagogical Beliefs and Practices at School Level

*\*Qaisur Rahman & \*\* Dr. Md.Tanwir Yunus*

qaisur.rahman@gmail.com  
mdtanwiryunus786@gmail.com

## ABSTRACT

*A teacher is required to have a higher level of professionalism because of rapidly changing circumstances. The importance of teacher's professional development is being too much emphasized today. The teachers who possess the professional and interpersonal skills are more effective in their classrooms in terms of student's behavior attitude and achievement. Every individual has a variety of attitudes which might be positive or negative and can vary according to their favourable and un-favourable conditions for various attitudinal objects. That the professional attitudes can also serve a lot in attitude of teachers largely depends upon their personal characteristics and its position both seems to be highly interlinked. The teaching profession requires certain dominant behaviors which show teacher's intellect desire to excel extended professionalism and teaching as life concern. This is a profession which exalts service above the personal gains which teaching involves human nurturance connectedness warmth and love and teacher's beliefs about his role in caring for the student plays the crucial part in developing the personality of the students. The population for the present study is biology teachers of urban and rural areas that are working in school education department of district Hazaribag. The sample of the study was selected by which consists of 200 biology teachers. Researchers also observed about 30 classes of these teachers. Random sampling technique was used to select the sample of the study. To measure the biology teachers' attitudes in pedagogical beliefs and practices the questionnaire was developed by the researcher. The copies of the questionnaire were distributed among the sampled teachers selected from clusters schools of population. To measure the practices of biology teachers the researchers observed the 30 classes of the biology teachers. After analysis of data it was found and concluded that there was attitudes in biology teacher have moderately firm belief about the interest of biology subject. Biology teachers beliefs on constructivist pedagogies are also moderately firm in belief. They have moderately firm beliefs on traditional pedagogies as compared to constructivist pedagogies. Female biology teachers have more strong pedagogical beliefs as compared to male teachers Biology teachers' practices for teaching biology are predominantly traditional. It is recommended that male biology teachers ought to be given proper time in their classrooms. They should be given proper training to shape their practices according to their beliefs. Proper supervision and monitoring mechanism will be more helpful for this purpose.*

**Key Words:** Attitudes, Pedagogical Beliefs, Teaching Practices.

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*Research Scholar, Deptt. of Education, V. B. University, Hazaribag, Jharkhand*  
*Associate Professor, Department of Education, V. B. University, Hazaribag, Jharkhand*

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### **Introduction:**

Education is a process of a social function carried on by the society for its own sake. Man is a social animal and education plays an important role through out his life. No civilized society is believed possible for an individual to be fit for adult life if he does not have some degree of formal education. It has universally been accepted that prosperity of nation is also reflected in its educational system. Quality of a nation depends upon quality of its people and economic growth but both depend upon quality of education the facility remains same that the most important factor in the education process is the teacher. The teacher is the key of any education are construction. If a student is to be prepared for evolving world then an essential attribute of a competent teacher is awareness of the world they and Barred (1993). The teacher should be an integrated individual skilled in the art and science of human relations and conscious of the wide variety of behavior patterns in the world to which he may have to adjust. Adjustment is not a simple term like adoption is accommodation. It is actually a condition or the state of mind and behavior in which one feels the needs to have will be gratified for those of who can adopt are adjust to all needs of changing conditions can live happily and successfully.

The development of nation depends upon their students and the all over development of student depends upon his teacher. Only a teacher develops the capacity among the children for adjusting in come school and society. As the Education commission (1964-66) has lightly pointed out the destiny of the country is being shaped in her classrooms. Evidently the commission has in mind the role of the teacher in realizing the goal of national reconstruction. Teachers have important role to play in shaping the further generation. The role of the teachers in

democratic system of education is very crucial. They have to act as friend philosophers and guides of the students and help them to march forward to establish a new social structure. The role of the teachers in moulding the personality of the students depends on the aims of education. It is the responsibility of the teachers to develop the physical mental social emotional intellectual and aesthetic aspects i.e. total personality of the students. It is good that educationalists and educational planners in India have started realizing that only securing enough teachers will not do as what is equally important is securing the right type of teachers. Teacher is the most vital factor in the system of education. Education commission (1952-53) also point out every teacher and educationalist of experience knows that even the best curriculum and the most perfect syllabus remanded unless quickened into life by the right methods of teaching and right kind of teachers. Moreover effective and productive learning on the part of students can be achieved by employing teachers with desirable attitudes or by shaping their attitudes in the desired direction Anamalai (2000). Until and unless teachers with positive frame of attitude are engaged in the teaching profession no drastic results can be expected from them. Beliefs are emotional constructs which lead human decision making behaviours and professional practices. Beliefs may be rooted in different theoretical views which have their roots in different epistemologies and learning theories. Teachers' educational beliefs are generally categorized into two streams i.e. traditional pedologies are also called transmission rooted in behaviorist and cognitivist traditions are constructivist rooted in constructivism.

According to beliefs shape and improvement of person's value system that helps in determining performances patterns. Individual teacher's beliefs are strong indicators of his

instructional classroom practices Mouliand Bhaskar (1982). It is defined classroom practices as a set of teaching strategies and methods of instruction employed in the classroom. Classroom practices also include collaboration between teacher and student aimed at cognitive development of students and achieving desired learning outcomes. The beliefs can be assume das guiding principles of teachers hold to be true that supports lenses through which new experiences can be understood At water Mary (1991). When people believe something is true they perceive information supporting that belief. What teachers do in the classroom is supposed to be governed by what they believe and these beliefs often serve to act as a filter through which teaching judgments and decisions are made Pajares (1992) and Cantu(2001). Mihaela and Oana (2015) were of the view that educational beliefs about professional individuality affect instructional behaviour. It is the start of the educational process and application of definite methods by teachers.

According to teachers may have similar scientific knowledge they are likely to teach in different ways because teachers' beliefs are more powerful than their knowledge to influence the way in which they teach. The discussion about the relationship between knowledge beliefs and practices show disagreement about whether knowledge makes beliefs or beliefs make practices. This placed teachers' beliefs into two classes by arguing that teaching as a process of knowledge transmission while others view as process of developing social relationships. In contrast to the transmission, the constructivist view is being emphasized more for teaching and learning of science Shrivastava and Pratibha (2009) respectively. The capacity of experienced teachers enables the students to construct McNamara, and Gilroy(2004) and Tsai (2002) stated that the beliefs of several teachers who have outdated ideas of teaching and learning science and the nature of

science may originate from the problem of their own school science experience. Science classes laboratory exercises and relevant activities in teacher education programs may be protected from these traditional views. There is a strong relationship between the science teachers' experiences of teaching and their developing pedagogies The dynamic nature of teachers' teaching and learning beliefs are affected by their personal social cultural historical and contextual influences. Science instructors' pedagogical beliefs can be categorized into three type son the basis of learning theories and epistemologies. Similarly instructors can be grouped into three types are the scientific innovative pedagogical and the scientific conventional Neuhaus and Vogt (2005). College biology instructors have been called upon to transform their teaching to improve student outcomes and to contribute to the goal of producing one million more highly qualified graduates in science technology engineering and math. (Mansour (2009) argued that there is a collaborative connection between knowledge and beliefs. Keeping in view the role of pedagogical beliefs in teaching and learning process present study was devised to solicit biology teachers' pedagogical beliefs and attitudes in teaching practices in the Indian context.

### **Statement of the Problem**

The studies show relationship between teachers' pedagogical beliefs and their teaching practices. Pedagogical beliefs can be determinants of the practices of teachers. The present study aimed to explore the attitudes of biology teachers in pedagogical beliefs and practices at the school level.

### **Objective Of The Study:**

1. To investigate the pedagogical believes of biology teachers towards teaching profession in relation to gender school.
2. To compare the pedagogical beliefs of male and female teachers in teaching profession in relation to school level.

3. To gather the information about teaching practice in the biology class and attitude towards teaching profession and adjustment of schools teachers.

### **Hypotheses of the Study**

H1. There is no significant difference between the pedagogical believes of biology teachers towards teaching profession in relation to gender.

H2. There is no significant difference between attitude towards male and female teachers in teaching profession in relation to school level.

H3. There is no significant difference between teaching practice in the biology class in attitude towards teaching profession and adjustment of schools teachers.

### **Delimitations of the Study**

Taking into consideration the time and resources on the need of the research the present study was delimited in terms of sample and areas of study as under:-

1. The study was delimited to district Hazaribag only.
2. The study was confined to the secondary schools of male and female teachers only.
3. Only 200 biology teachers were selected by multistage sampling technique due to time and financial constraints.

### **Attitudes of Biology Teachers**

The main aim of the study was find out teachers attitude towards teaching profession from amongst the general teachers population. An attempt was also made to study the relationship of teacher attitude towards teaching profession with adjustment of the teachers. Thus the problem is stated by the attitude towards teaching profession in relation to adjustment of school teachers. The place and importance of teacher in the society and the nation can hardly be over emphasized. It does not take much to realize that the quality of the nation

depends upon the quality of its citizens Bryan (2003). The quality of its citizens depends not exclusively but in critical measure upon the quality of education. The quality of education depends more than any other single factor upon the quality of the teachers. The school may have excellent material resources equipment building library laboratory and other essential teaching learning facilities along with a curriculum appropriately devised to suit the community needs. Hence, the problem of identification of effective teachers is of prime significance for realizing desirable education goal. It is not only desirable but obligatory to find out the associating factor of teacher's attitude towards teaching profession and their adjustment interest in teaching and values are such significant factors which have their bearing upon teacher and his teaching Buaraphan (2011).

### **Need And Significance Of the Study**

It is hoped that this study provides clear under standing of teachers how their beliefs influence their classroom practices. This may prompt them to create interest in the professional development to enhance their knowledge or may make them more aware of the effect of those beliefs on their pedagogical decisions and consequently contribute in improving the achievements of their students. This study may provide researchers with framework for identifying the elements that contain the system of teachers' beliefs. This will also provide knowledge skills and tools for data collection through the literature review. This research may provide findings and tools for teacher's educators and other workers in studying the classroom behaviour to evaluate the teachers' beliefs and the ir practices in a more comprehensive way than the conventional methods.

### **Population and Sample**

The populations for the present study were all biology teachers from 235 schools that were working in school education department of district

Hazaribag only. Sample of the study was chosen from district Hazaribag that consists of the rural and urban areas only. The sample of the study consists of 200 biology teachers and researchers also observed 30 classes of these teachers regularly while teaching in classroom.

### **Instruments**

To measure the biology teachers pedagogical beliefs the researchers adopted 4 point Likert scale questionnaire method. The questionnaire consisted of four parts (A, B, C, D). Part A consisted of demographics part B comprised of 11 statements about beliefs part C has 16 statements about constructivist pedagogical beliefs and part D consisted of 13 statements about the traditional pedagogical belief. The questionnaire consisted of 40 statements. The researchers distributed 257 to biology teachers randomly. The researcher also prepared checklist for observation of classroom practices of biology teachers. This check list has the space for various information entries of the class. This checklist of classroom observations consists of 22 items about classroom environment for learning instructional methods of biology teachers and involvement and responsiveness in student learning.

### **Data Collection**

Data was collected from all participants during the academic year (2018-2020). Before distributing all questionnaires the researcher introduced the topic of the research to the participants. The data was collected by the researcher himself. Before data collection the heads of the schools were contacted to obtain informed consent. The instrument was administered among the sampled teachers. The participants were guided to tick the right option of each statement after understanding it. The questionnaires were collected back after some time.

### **Discussion**

Attitude denotes inner feelings or beliefs of

a person towards a particular phenomenon. Attitude is essential for the education of the individual because it shows the interview of person. If a person has a positive attitude towards on objects he will try his best to achieve it. If he has a negative attitude he will try to avoid it. Thus it plays an important role in determining the success and failure of person in any field. The choice of teaching profession also depends up on the attitude of person towards their particular profession. If teacher thinking positively towards his job he will generate good results Camp Bell *et.al.*, (2004). On the other hand if he thinks negative he will not find satisfaction in his work. The students would not be able to get the full benefits. Thus attitude towards the teaching profession shows the personality and the zeal with which he would take up his work. The teachers should develop a desirable professional attitude so that he may inspire himself for excellent programme in multifarious study of education. He is the person who holds the responsibilities of making the future of human beings under the change. Hence, it is necessary for teacher that he will be fully satisfied from all aspects. When we will be fully satisfied then it work with best talent and then we can say that he is adjusted. The good teacher is a potential cause of the problem to solve indiscipline and quality of work suffers but also the development of the personality of the children is under his control. A teacher fail to decide upon any cause of action or accept some ineffective and socially undesirable cause in short his behavior is disturbing to him and to the students. The concept of adjustment was biological and originally it was termed as adaptation. The type of adjustment with which biologists were concerned was nothing but physical adoption. The term adaptation which now stands for psychological survival in which psychologists are more interested that is the subject of their interest is individual's adjustment to social are inter personal pressure and not only adaptation to physical world Sahu and Sood (2005). The

process of adjustment is more complex than biological adoption. Psychologists have interpreted adjustment from two important points of view one is adjustment to achievement and another adjustment is a process. The first point of view emphasizes the quality and efficiency of adjustment and the second lays emphasis on the process by which an individual adjusts in his external environment. This presents beliefs arranged in order of respective mean of response values. Most firm belief of biology teachers is that biology is an interesting subject. They consider biology a useful subject and helpful in understanding about daily life. Flower and Schraw (2002). Biology teachers believe in learning new knowledge of biology. They also believe that students are keen to learn biology. Teachers also believe that teaching of biology is not an easy task.

### **Conclusion:**

We live in a secular democratic republic and in the Indian situation the teacher performs various roles. He is a transmitter of culture, builder of the character and personality of the children, conveyor of moral and ethical values, architect of the future of the nation, acts as a guide and counselor, inspires for social change. There was a time when the entire system of education revolved around the teacher. The teacher was the kingpin and was respected from the society. Biology teachers believe that constructivist pedagogies are also moderately firm. Biology teachers have very firm and moderately firm beliefs on traditional pedagogies. Biology teachers have relatively more firm beliefs on traditional pedagogies as compared to constructivist pedagogies. Biology teachers' practices for teaching biology are predominantly traditional. The effects of the study have uncovered that science instructors' beliefs in regards of showing and learning did not segment inside of a specific belief measurement. The discoveries are parallel to the

past examination led by instructors who had direct transmission and customary belief with respect to understudy part and classroom association parts of teaching and learning. Then again the members coming of present day belief on educator part in educational programs and teaching methods parts of learning are more grounded than that immediate transmission believes.

### **Educational Implications**

Teachers like teaching biology and take interest in preparing lectures for classroom. It was believed by the teachers that teaching of biology give them satisfaction but it was relatively less firm belief. Another relatively less firm beliefs were teaching of biology is not an easy task. Classroom practices were enlisted and occurrences of these activities were recorded over time. This arrangement shows most frequent activities at the top and less frequent activities at the bottom. It can be noticed that classroom activities at the top are traditional rooted in behaviorist pedagogies whereas practices rooted in constructivist pedagogies are at the bottom which means practices of constructivist pedagogies are not common. Hence it can be concluded that predominant practices of biology teachers are traditional in nature. Constructivist pedagogies are rarely practiced by the biology teachers.

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