

Teaching Aptitude in Indian perspective: An Analytical Review

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Abstract—

Teacher is the first extra familial adult a child encounters and who moulds their lives, making them individuals fit for society. Teaching is a profession celebrated in society and teachers are ideals looked up to as role models. Not every individual is suited for this profession as proper teaching aptitude should be present in teachers to reach the maximum of their potential. This review paper critically analyses numerous empirical papers to find out the factors which can foster or hinder teaching aptitude. The empirical papers are analyzed on several grounds as the sample used, research design implemented and tools applied. The findings are organized thematically to bring out several factors related to teaching aptitude.

Keywords- Teaching aptitude, Gender, Location, Dimensions, Teacher Attitude, Teaching competency, Adjustment

I. INTRODUCTION

In the words of the famous American historian, Henry Adams “A teacher affects eternity, it is impossible to judge where his influence stops.” Teacher forms the pivotal strength of the education system of a nation. Teaching is not only an art; it is a science as well. Teaching is a profession which embarks on a mission to upgrade behaviour of the student. According to Khan and Farhatunissa (2016) teaching is an amalgamation of variety of actions corresponding to child's behavior under the existing environment in classroom and society.

Sharma (2017) rightly pointed out that the latest infrastructure provided by school management will not be effective if right aptitude is absent among teachers. It is the right aptitude which creates competitive edge for any organization, hence the need for the right aptitude is so much highlighted (Janet al., 2015 cited in Rao & Asthana, 2018). Not only at organizational level but also at individual level, positive aptitude can predict the future success or failure of an individual in his profession (Tasleema & Hamid, 2012). According to Mishra and Yadav (2012), the teacher is the backbone in the educational structures and should be equipped with specific skill and responsibility towards teaching job.

To cite Shukla (2013), earlier it was believed that teachers are born but now teachers are made in the teacher training institutes. Only when the teacher possesses the right aptitude that he can be trained to become a successful teacher. Teaching is a noble job and proper teaching aptitude is required to make the teaching profession a successful one (Kalaivani & Pugalenth, 2015). The central aim of education is the all-round development of the child and this can be achieved only if teachers possess proper teaching aptitude (Sharma & Bedi, 2016). No training institute can improve teaching quality if the teacher trainees lack teaching aptitude (Lata, 2017). There is a positive association between aptitude and success in teaching (Kukruti, 1990 cited in Sajan, 2010).

According to Jain (2018), a teacher has three major roles to perform; firstly, they have to fulfill responsibility towards their students, secondly, their duty as a good citizen towards the society and the nation, and finally, continually upgrading oneself for their own professional growth. Alongwith this every teacher should have three basic qualities as content knowledge, communication skill and aptitude for teaching (The Hindu (2002, Sept 3) cited in Malik & Sindhu, 2015). It is important to assess aptitude of trainee teachers so that they can perform multiple roles of teaching profession, be it research or classroom management (Kaur, 2014).

After independence, the demand for education increased manifold, leading to increase in the number of institutions which though increased enrolment but lead to degradation of quality of education (Kothari & Shelat, 2009 cited in Parh & Benjongkumba, 2019). India has achieved universalization in education with Sarba Shiksha Abhijan and now the focus is diverted to quality (Anwar et al. 2012). The 12thfive year plan emphasizes that teachers and teaching are central in promoting school quality (Chugh, 2012). As a nation's destiny is shaped in her classrooms the teacher should have positive teaching aptitude in order to shoulder these responsibilities and obligations (Kanti, 2013).

Teaching aptitude describes the ability or the potentiality of teacher (Srivastava, 1977 cited in Chandel & Dhiman, 2014). Teacher being a role model determines the quality of children who are the future citizens of the country. Having positive teaching aptitude is essential as teachers are nation builders who prepare children for both social and national reconstructions (Rohiwal, 2018). Researchers opine that it is crucial to select proper candidate who have adequate teaching aptitude (Chandel & Dhiman, 2014). According to Rana and Singh (2015) teaching profession should comprise of the brightest minds, amicable personalities, and persistent determined souls. Teaching aptitude ensure that the teacher is transacting effectively (Kalita, 2016).

Teaching aptitude is not something which is momentary, it is a continuous persistent need of professional development and self-evaluation (Chandel & Dhiman, 2014). Professional enrichment can occur by acquainting oneself with new teaching methodologies, changing student behaviour, new age educational technology and individual differences in terms of child psychology.

Teaching aptitude depends upon various endogenous and exogenous variables like demographic factors (sex, age), personal characteristics (motivation, intelligence, creativity) and environmental factors income, designation, type of educational organization, interpersonal relationship etc (Kumar & Kumar, 2015). The performance of a good teacher depends upon proper organizational climate for the teacher to work without hindrance (Jena, 2012). Teaching Aptitude Test Battery (Singh & Sharma) includes the five factors namely mental ability, professional information, adaptability, attitude towards children and interest in profession for measuring aptitude (Chugh, 2012).

II. IMPORTANCE OF THE REVIEW

Teaching aptitude is increasingly important as teacher quality has declined in recent years. Selecting suitable candidates for teaching requires a critical analysis of the factors affecting teaching aptitude.

III. OBJECTIVE OF THE REVIEW

The purpose of this review is to analyse empirical studies and determine the factors which either positively or negatively influence teacher aptitude.

IV. DELIMITATIONS OF THE REVIEW

This review paper is developed based only on 32 empirical papers dealing with teaching aptitude and their determinants. All the empirical studies were conducted in India except one from Pakistan thus giving a traditional view on teaching aptitude. Western classrooms are entirely different from traditional ones requiring different skill sets in teachers, so comparing the determinants did not seem fruitful to authors. Studies were conducted between 2010 to 2020 that is a period of ten years only as researchers wished to focus on recent articles. The studies were conducted on teachers from primary schools, secondary schools, high schools and also with trainee teachers. Mostly the studies used survey design and none were experimental, longitudinal or qualitative in nature thus manipulation of variables or observing the trend was not possible.

V. METHODOLOGY

The empirical studies included in this paper were chosen on the basis of certain inclusion & exclusion criteria.

A. Inclusion and Exclusion Criteria

All the articles of this review were written in English, articles written in any other Indian or European language were excluded. Out of the 32 articles, all were empirical papers published in peer reviewed journals ($n = 31$), and one was conference paper. The papers were written in various locations of India and used various tools and sampling method but all used survey design.

B. Search Strategy, Study Selection and Coding Procedure

Empirical papers ($n = 31$) and one conference paper were taken from various journal databases and search engines through the use of search terms as teaching aptitude, gender, location, trainee teachers, level of education and characteristics of teacher (intelligence, personality, achievement). The study selection process was done in few phases: firstly, discarding non-English articles, then reviewing article titles and removing irrelevant articles, reviewing abstract and eliminating those not matching the inclusion exclusion criteria.

C. Search Trends

The 32 empirical articles were analysed under following categories (a) Year of study (b) Location of these studies (c) Nature of sample (d) Tools (e) Sampling technique (f) Design (g) Findings (h) Limitations, and trends are listed below (Table 1).

Year Range: In the year range 2006-10, only one study was conducted ($n = 1$), in 2011-15 range twenty studies were conducted ($n = 20$), in 2016-2020 range eleven studies were conducted ($n = 11$). Highest number of studies were recorded in the year 2015 ($n = 7$), followed by 2012 ($n = 5$); years 2013, 2016 and 2018 with four studies each ($n = 4$), whereas year 2014 recorded three studies ($n = 3$), 2017 recorded only two studies ($n = 2$), and years 2010, 2011 and 2019 each recorded a single study.

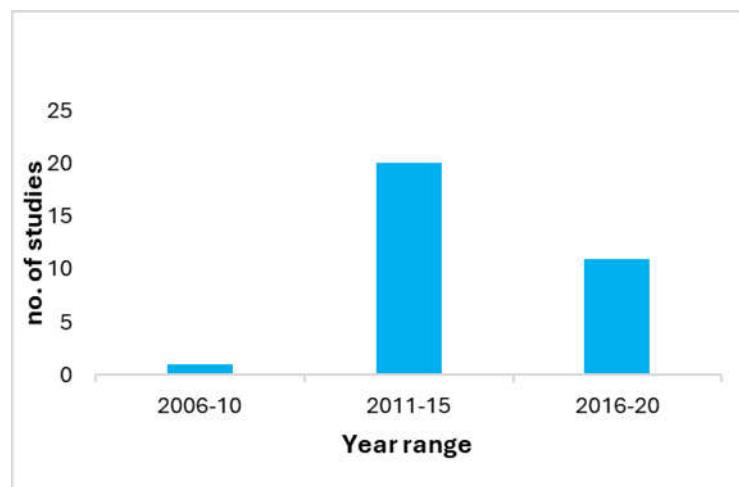


Figure 1: Year range wise study obtained

Location: All the studies were conducted in India except only one study was from Punjab, Pakistan ($n = 1$). In India a total of 31 studies ($n = 31$) were reported, which were conducted in states of Tamil Nadu ($n = 2$), Chattisgarh ($n = 1$), Haryana ($n = 6$), Himachal Pradesh ($n = 2$), Orissa ($n = 1$), NCR, Delhi ($n = 1$), Kashmir ($n = 3$), Uttar Pradesh ($n = 3$), Punjab ($n = 2$), Gujarat ($n = 2$), Andhra Pradesh ($n = 1$), Kerala ($n = 1$), Maharashtra ($n = 1$), Madhya Pradesh ($n = 1$), Assam ($n = 1$). Three studies did not mention the location (Menka, 2016; Mishra, & Chincholikar, 2014; Sharma & Bedi, 2016).

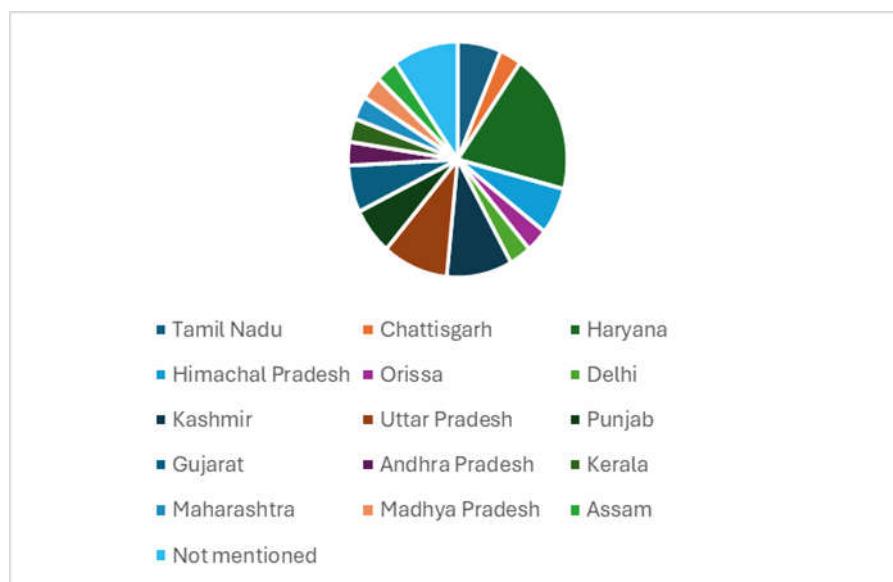


Figure 2: Number of studies state wise distribution

Sample: Sample sizes were classified into five categories such as *below 100*, *101-300*, *301-500*, *501-1000*, and *above 1000*. In the *below 100* category, 10 studies ($n = 10$) were reported; in the *(101-300)* category, 12 studies ($n = 12$) were reported; in the *(301-500)* category a total of three studies ($n = 3$) were reported; in the *(501-1000)* category a total of four studies were found ($n = 4$); in the *above 1000* category one a single study was reported. In two studies (Sharma & Bedi, 2016); Shukla, 2013) sample size was not reported.

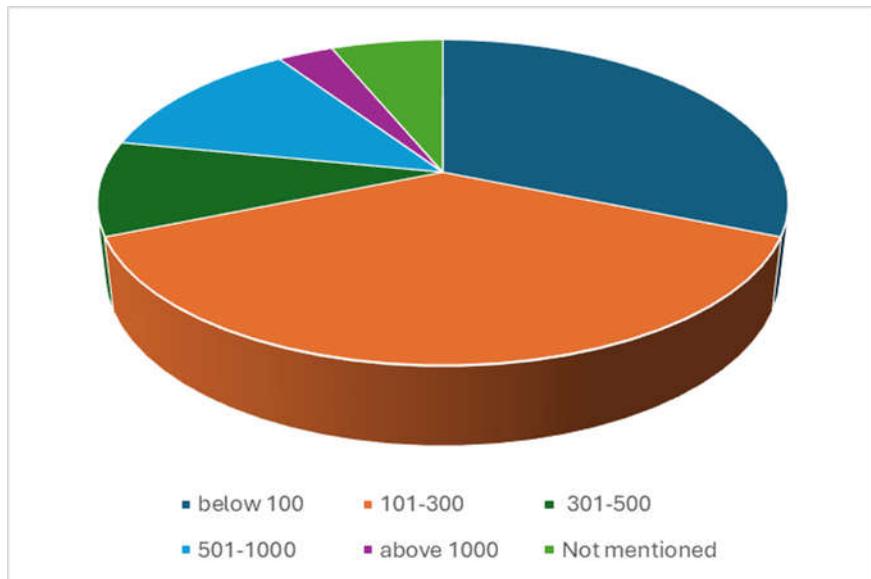


Figure 3: Number of studies with according to Sample size

The sample consisted of two types of teachers: in-service and pre-service. In the first category, a total of five studies ($n = 5$) were conducted each on secondary teachers, a total of two studies each were conducted on high school teachers ($n = 2$), on high secondary teachers ($n = 2$) & primary school teachers ($n = 2$); one on college teachers ($n = 1$), two studies on B.Ed. teacher educators ($n = 2$). In the pre-service category, a total of fifteen studies were conducted on B.Ed. pupil teachers ($n = 15$); only two studies were conducted one each on M.Ed. students ($n = 1$) and college students ($n = 1$).

Teachers belonging to both genders were used in 28 studies. In about eight studies ($n = 8$), the proportion of male in sample was lesser in number than female, while in four studies ($n = 4$) proportion of male teachers were greater. About 11 studies ($n = 11$) used exact same number of both male and female teachers.

Tools: The articles used different type of tools to measure teaching aptitude of which the most frequently used tool was Teaching Aptitude Test Battery (TATB; Singh, & Sharma, 1998, 2005, 2011; $n = 10$) followed by Teaching Aptitude Test Battery (TATB; Karim& Dixit, 1986; $n = 5$). Another frequently used test was Teaching Aptitude Test (Prakash & Srivastava, 1973; $n = 4$). Other versions of these two scales are also used as Teaching Aptitude Test Battery (TATB; Singh, 2004) & Teaching Aptitude Test (Srivastava & Tiwari, 1986). Yet another test which was frequently used is Teaching aptitude test (Gakhar & Rajnish, 1971, 2010; $n = 3$). Some lesser used scales were Teaching Aptitude Scale (Singh & Dahiya, 2002; $n = 2$), Teaching Aptitude Test (TAT, Shukla, 2013) and specially developed aptitude test ($n = 1$), Instrument for school teacher's aptitude (ISTA, $n = 1$).

For measuring the independent variables the scales used were: for measuring *competency* -Teaching competency Scale (Passi & Lalitha, 2011); General Teaching Competency Scale (Passi& Lalita, 1994) ; Teacher Efficacy questionnaire (Gibson & Dembo, 1984); for measuring *teacher attitude*-Teacher Attitude Inventory (Ahluwalia, 1978; $n = 3$); Teacher Attitude questionnaire (Cook, Leeds, & Callis, 1951); for measuring *Intelligence*-Rogan Emotional Intelligence Test (Zainuddin, R., & Ahmed, A.); Test of General Intelligence (Pal & Mishra, 2012) ; Raven's standard Progressive Matrices Scale; General Mental Ability Test (Jalota, 1990); for measuring *adjustment*- Teacher adjustment Inventory (Mangal, 1971) ; for measuring *environmental influence*-Home Environment Inventory (Mishra, 1989); Organizational Climate Scale (Chaudhari & Pethe, 2001); The Responsibility Feeling Test (Gupta, V. S., $n = 2$); Level of aspiration test (Bhargava & Shah, 1996); job satisfaction scale (Dixit, 1993); for measuring *Anxiety*- Comprehensive Anxiety Test (Sharma, Bharadwaj& Bhargav, 2015). A Single study out of 32 studies did not mention tool used.

Sampling Procedure: Out of 32 studies, only 21 studies reported the sampling procedure. Mostly the studies used simple random sampling ($n = 12$) followed by stratified random sampling ($n = 3$), two studies used convenient sampling ($n = 2$) and two studies used purposive sampling ($n = 2$) while a single study used cluster sampling ($n = 1$) and double matched group design ($n = 1$) was used in a research. 11 studies did not mention sampling process.

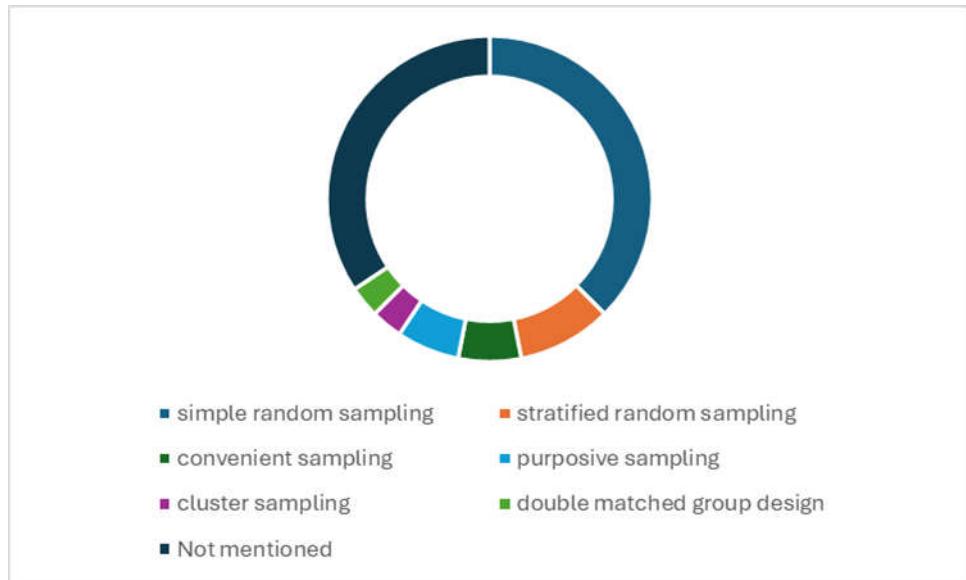


Figure 4: Number of studies according to Type of Sampling

Study Design: Out of the 32 studies, research design was reported only in 25 studies. In majority of the studies survey ($n = 13$) or descriptive survey ($n = 9$) or normative survey ($n = 3$) was the preferred design.

VI. FINDINGS

The findings of empirical papers are categorised under various themes which are created based on factors (gender, location, intelligence etc.) affecting teacher aptitude.

A. Overall Teaching Aptitude and Dimension Wise Aptitude

Previous literature was found to study both overall and dimension-wise aptitude of teachers and the latter provided a more comprehensive understanding but former was more frequently studied. Researchers studying overall teaching aptitude with a sample of high school teachers found that though teachers possess very high mean score in overall aptitude, for some specific dimensions as optimistic attitude mean score is moderately high (Kalita, 2016). Moderate overall teaching aptitude was found in about 51% teachers in Malwa, Punjab (Singh & Kaur, 2018). The trainee teachers of two training institutions (GETTI, Mewat as well as DIET, Gurgaon) showed average level of overall teaching aptitude, but possessed below average scores in dimensions of mental ability and adaptability (Chugh, 2012).

Another study showed contradictory findings as most of the trainee teachers exhibited average overall teaching aptitude and no trainee showed very high or very low overall teaching aptitude (Rana & Singh, 2015). A survey study on 120 trainee teachers selected through purposive sampling showed that over all trainee teachers have above average teaching aptitude (Menka, 2016). A study in Raipur city found overall teaching aptitude of Secondary School Teachers and Higher Secondary School teachers is low (Khan, S.A., & Khan, F, 2016).

Percentage wise analysis in studies showed only 11% trainees reported high overall teaching aptitude, 25.6% with above average overall teaching aptitude, 44% with average overall teaching aptitude and about 17.2% teacher trainees having below average teaching aptitude while a meagre 1.6% with low teaching aptitude (Rana & Singh, 2015). Another study examining overall teaching aptitude of 120 trainee teachers found that 2.5% trainee teachers showed superior teaching aptitude, 30% trainee teachers exhibited high teaching aptitude, 33.3% of them had above average teaching aptitude while 24.2% exhibited average teaching aptitude. On the other hand, 6.66% trainees reported below average teaching aptitude, one trainee teacher showed low level of aptitude and 2.5% trainee teachers were with very poor level of aptitude (Menka, 2016).

Research on dimension wise teaching aptitude found trainee teachers scoring highly in dimension of professional information (75.81 %) at the end of B.Ed. course, which may be because of they are provided with information throughout the course (Sajan, 2010). Dimensions where trainee teachers showed very low scores were professional interest (50.21), mental ability and adaptability (Sajan, 2010). Singh & Kaur (2018) found among all the dimensions of teaching aptitude, prospective teachers scored highest in mental ability dimension (18.71) and lowest in professional interest dimension (6.98). Chugh (2012) found trainee teachers were good in dimensions of teaching aptitude as interest in the profession, professional information and correct attitude towards children, but fared poorly in mental ability dimension, which was caused by poor basic education which training colleges could not rectify. Trainees scored highest on professional information but moderately on interest which is essential in this profession, scores were also moderate for attitude towards children which is extremely essential to determine whether the teacher is authoritarian (Chugh, 2012).

B. Teaching Aptitude and Teaching Competency

Teaching competency can be defined as a set of skills which includes interaction with students, creation of a conducive class environment, communication skills, evaluation skills and so on. It is an essential prerequisite to become an effective teacher. In their study, Malik & Sindhu (2015) showed that teaching aptitude did not increase teaching competency among B.Ed. pupil teachers and these variables are not correlated with each other. Conversely, Jena (2012) reported positive correlation between teaching aptitude and teaching competency among teachers of both gender and all streams (science and arts).

C. Teacher Attitude and Teaching Aptitude

Teacher attitude can be defined as care for students, respecting diversity, motivating, encouraging and also sharing responsibility in class. A positive correlation was observed between teacher attitude and teaching aptitude and researchers have opined potential teachers should be allowed to enter this profession only upon possessing requisite teaching aptitude. Teachers thus chosen will exhibit positive attitude towards the profession during their internship and also in future while performing as a teacher (Kanti, 2013). Similar results were obtained in a Chennai based study with 400 secondary teachers where positive correlation between teacher attitude and teaching aptitude was seen (Appadurai & Saraladevi, 2015; Islahi & Nasreen, 2013).

D. Teacher Adjustment and Teaching Aptitude

Teacher Adjustment occurs when a teacher is successful in creating a balanced relation between himself and his environment. Khan, S.A., & Khan, F. (2016) found that neither high nor positive relationship exists between teaching aptitude and teacher adjustment of secondary & higher secondary school teachers of Chattisgarh. Another normative study conducted on primary teachers of Haryana revealed no significant relationship between adjustment and teaching aptitude (Sharma, 2017). No association between adjustment and teaching aptitude was found in case of either male or female primary school teachers (Sharma, 2017).

E. Academic Qualifications, Methodology Opted and Teaching Aptitude

Academic qualifications of individuals were found to have insignificant effect on relationship between the Teacher attitude and Teaching aptitude and higher qualification does not guarantee a better teacher if the trainee does not possess positive teaching aptitude and right attitude towards the profession (Kanti, 2013). Educational achievement was found to have no significant correlation with teaching aptitude (Chugh, 2012). Sajan (2010) reported that significant correlation is found to exist between the mental ability dimension of teaching aptitude and the scores obtained in graduate level examinations. Another study reported academic achievement groups are found to significantly differ in certain dimensions of teaching aptitude such as "Innovations regarding Activities of the School" and "Teaching Potentiality and Current Knowledge", with high academic achievement group scoring higher on these dimensions compared to low achievement counterparts (Rana & Singh, 2015). Both high academic achievement group and low achievement group were similar in dimensions of Teaching Profession, Interest towards Students, Social Contacts and Professional Ethics as well as in case of overall Teaching Aptitude (Rana & Singh, 2015). Another study conducted on prospective teachers found high achievers and low achievers differ significantly in teaching aptitude (Singh & Kaur, 2018).

Yet another study found aptitude score positively predicted and anxiety score negatively predict academic score of M.Ed. trainee teachers while attitude score though being positively correlated did not significantly predict academic score (Mishra & Chincholikar, 2014).

Similarly, methodology opted in a training course had insignificant influence on relationship between Teacher attitude and Teaching aptitude, i.e., a teacher teaching difficult subject is not necessarily a good teacher, quality of teaching is rather determined by teacher attitude and teaching aptitude (Kanti, 2013). Subject taught by teachers did not cause any difference in teaching aptitude between teacher trainees and higher secondary school teachers (Shukla, 2013).

F. Teaching Aptitude and Aspiration

To aspire for a goal is a kind of driving force which seems to affect teaching aptitude and is highly positively correlated with all the dimensions of teaching aptitude. A two-way relationship is observed where teaching aptitude and aspirations influence and is influenced by each other (Lata, 2017).

G. Teaching Aptitude and Intelligence

Intelligence is a quality where individual possesses higher mental capacities, emotional knowledge, ease of comprehension, creativity and adjustment skills. Kumar & Kumar (2015) studied the relation between teaching aptitude & intelligence and found both the variables are significantly related, i.e., teachers possessing higher intelligence showed better and higher teaching aptitude than others. Another study on pupil teachers of Haryana shows that pupil-teachers having high intelligence have higher teaching aptitude than pupil-teachers having low intelligence as the former group may have received greater experiences and infrastructure(Jain, 2018). While highly intelligent female pupil-teachers showed higher mean teaching aptitude score compared to less intelligent female pupil-teachers, but highly intelligent male pupil-teacher did not differ in mean teaching aptitude score from less intelligent male pupil-teacher counterparts (Jain, 2018). Conversely, intelligence did not seem to affect the teaching aptitude of prospective teachers of Malwa, Punjab. Interaction effect between gender and intelligence also showed no significant effect on teaching aptitude (Singh & Kaur, 2018).

H. Teaching Aptitude and Gender

Gender stereotyping and discrimination is explicit in all strata of society and caused researchers to assess gender-based differences in teaching aptitude. Researchers found there exists significant difference in teaching aptitude of teachers with respect to stream and gender (Jena, 2012). Earlier studies found male teachers were found to have higher mean values of teaching aptitude than female teachers, and researchers explained this result stating female teachers have to perform household chores leaving them little time to be engaged in academic pursuits (Mishra & Yadav, 2012). Opposing results were found in student teachers of Orissa where female student-teachers showed better teaching aptitude than male counterparts (Parh & Benjongkumba, 2019). Female teachers outperformed in every category as 31.32% female student- teachers had above average teaching aptitude compared to 17.52% percent male student-teachers; only 3.61 percent female showed low teaching aptitude compared to 16.49% male student-teachers (Parh & Benjongkumba, 2019). In another study category wise comparison among 120 trainee teachers (60 =male = Female) showed, 5% female trainee teachers possessed superior teaching aptitude while no male trainee had superior teaching aptitude. 40% female trainee teachers have high teaching aptitude compared to 20% male trainee teachers. 36% female trainee teachers have above average teaching aptitude compared to 30% male trainee teachers. On the other hand, 40% male trainee teachers have average teaching aptitude compared to 8.3% female trainee teachers, six male trainee teachers have below average teaching aptitude compared to 2 female trainees. No male has low and poor level teaching aptitude while one female trainee teacher has low teaching aptitude and 3 female trainee teachers have very poor teaching aptitude (Menka, 2016). Chugh (2012) found contradictory results as in some training colleges (DIET, Gurgaon) there was no statistically significant difference in the teaching aptitudes between male and female trainees while in other training colleges (GETTI, Mewat) female trainees had better aptitude.

Male prospective teachers showed better overall teaching aptitude and dimension wise teaching aptitude in dimensions as Social contacts and Professional Ethics as well as in Innovations regarding the School Activities, and Teaching Potentialities & Current Knowledge (Chandel & Dhiman, 2015). Conversely, researchers also found female student teachers score significantly high on overall teaching aptitude than male teachers and were superior in the dimensions of Adaptability, Professional Information and in Professional interest compared to male (Sajan, 2010). Both gender teachers showed similar 'attitude towards children' (Sajan, 2010) and 'interest towards students' (Chandel & Dhiman, 2015).

Sharma & Bedi (2016) pointed out that there is no significant difference between aptitude of male and female teachers whether they belong to urban areas or rural areas. Similar results were found in a study conducted on high school teachers where no significant gender-based difference in teaching aptitude was recorded (Kalaivani & Pugalenth, 2015). Kant (2011) found no significant difference in teaching aptitude among teachers of secondary schools based on gender though male teachers possessed higher mean teaching aptitude scores. Pany (2013) found that male and female primary level teacher-trainees possess similar kind of teaching aptitude. In case of prospective teachers of Punjab, no gender-based difference was obtained across all dimensions of teaching aptitude (Singh & Kaur, 2018). In a study conducted with trainee teachers, (Menka, 2016) found that teaching aptitude of male trainee teachers and female trainee teachers are not significantly different. Another study found no significant difference in teaching aptitude between teachers belonging to both genders, and supported the finding with a statement that Indian society being equalitarian society, both genders are provided equal rights to flourish their aptitude (Kaur, 2014). In a study based on primary teachers of Punjab it was found gender and years of experience (less than or greater than 10 years) has no influence on teaching aptitude (Anwar et al., 2012). Kalita (2016) concluded that there is no significant difference in the mean teaching aptitude based on teacher's gender. Shukla (2013) found there exists no difference between teaching aptitude of male and female HSST (Higher Secondary School Teachers), as well as there exists no difference between teaching aptitude of TT(Teacher Trainees) and HSST(Higher Secondary School Teachers) on the basis of their gender. Khan, S.A., & Khan, F. (2016) found no gender-based difference in Teaching Aptitude exists in case of both Secondary & Higher Secondary School teachers. Similar findings were obtained among primary teachers where no significant gender-based difference in teaching aptitude was reported (Sharma, 2017).

Gender based difference in teaching aptitude was absent even in pupil teachers as shown in a normative survey (Jain, 2018). Gender has no role in determining teaching effectiveness of teachers, but some variations may be observed due to training (trained/untrained) and marital status (married/unmarried), but results cannot be generalized as unmarried and married teachers were separate groups of individuals (Appadurai & Saraladevi, 2015; Islahi & Nasreen, 2013).

I. Teaching Aptitude and Location

Researchers have largely worked with locational influence on teaching aptitude and one study by Ahmad & Sharma (2015) shows rural and urban in-service teachers significantly differ in teaching aptitude. Similar findings were exhibited in a study on primary teachers of Punjab where teaching aptitude of primary school teachers of Southern Punjab was lower than that of Central and Northern Punjab and teaching aptitude differed between urban and rural primary teachers (Anwar et al., 2012). Mean teaching aptitude score (99.83) of urban teacher trainees was comparatively greater than mean teaching aptitude score (75.24) of rural teacher trainees (Jain, 2018).

But when both gender and locality were considered mean teaching aptitude score of urban male and urban female did not differ much. Same results were found in rural areas where male and female showed similar level of teaching aptitude (Jain, 2018). Another study found that though location has no statistically significant effect on teaching aptitude, and rural male and urban male teachers have similar teaching aptitude, but urban male teacher showed a higher mean score (Kant, 2011). Similarly, location has no statistically significant effect on teaching aptitude and rural female and urban female teachers (Kant, 2011). Mishra and Yadav (2012) found mean teaching aptitude of rural and urban teachers is same and location has no influence on teaching aptitude. Another research conducted on high school teachers found no significant difference in teaching aptitude among rural and urban teachers (Kalaivani & Pugalenth, 2015). Similar finding was observed by Rana and Singh (2015) that residential background of B.Ed. trainees caused no significant differences in their teaching aptitude.

In dimension wise teaching aptitude, rural and urban in-service teachers differed significantly in the dimensions of co-operative nature, considerativeness, wide interest and scholarly taste, fair mindedness and impartiality, moral character and discipline aspect. While insignificant difference between the rural and urban in-service teachers was reported, in dimensions as optimistic attitude, motivational aspect and dynamic personality (Ahmad & Sharma, 2015).

J. Teaching Aptitude and Caste

Caste is an important demographic factor in Indian society but caste did not seem to be a deciding factor in determining teaching aptitude as both Scheduled Caste and General category teachers had similar mean values of teaching aptitude (Mishra & Yadav, 2012).

K. Teaching Aptitude and Stream

In Indian society certain disciplines of knowledge are associated with the quality of learners and their motivation. Researchers have found stream chosen by individuals has no effect on their teaching aptitude (Kaur, 2014). Again, conversely a survey study with teacher trainees (TT) and Higher Secondary School Teachers (HSST) concluded that teaching aptitude of Commerce HSST is better than that of Science HSST who again have better teaching aptitude than HSST belonging to Arts stream (Shukla, 2013).

L. Teaching Aptitude, Professional Level of Teacher and Teaching Experience

It is a common belief that experience in teaching field improves teacher quality and teachers belonging to University or college level are better teachers than school teachers. In Kashmir teaching aptitude of elementary and secondary level teacher educators differed significantly supporting this belief (Tasleema & Hamid, 2012). A survey conducted in Ahmadabad reported that teaching aptitude of HSST (Higher Secondary School Teachers) is better than teaching aptitude of TT (Teacher Trainees) (Shukla, 2013). Contrarily, among high school teachers, no significant difference was found among teaching aptitude of the graduate and post graduate teachers (Kalita, 2016). A study conducted in Raipur showed no significant difference in teaching aptitude of Secondary & Higher Secondary School Teachers (Khan, S.A., & Khan, F., 2016). Similarly, Pany (2013) revealed no significant difference in teaching aptitude between graduate and undergraduate primary school teacher trainees, between graduate and post undergraduate primary school teacher trainees, or between postgraduate and undergraduate primary school teacher trainees (Pany, 2013). Dimension wise differences in teaching aptitude shows that elementary teacher educators and secondary teacher educators mostly show differences in dimensions as co-operative nature, considerativeness, fair mindedness and impartiality, moral character and discipline, motivational aspect and dynamic personality but are similar in optimistic attitude, wide interest and scholarly taste (Tasleema & Hamid, 2012).

Teaching aptitude was found to increase with increase in experience and involvement in teaching profession (Kaur, 2014). Trained effective teachers were found to remain effective and factors as marriage, school location (rural or urban) and medium of instruction (Hindi/English) undermining effects (Appadurai & Saraladevi, 2015; Islahi & Nasreen, 2013).

M. Teaching Aptitude and Environment (Home & School)

In today's competitive environment, youth are facing continuous pressure which causes adjustment problems and hinders development of proper teaching aptitude. A warm home environment can reinforce required behavior, develop a strong personality, a loving nature, liberal self-expression, self-discipline, provide autonomy, refrain from physical and affective punishment, and refrain from using emotional pressure to meet parental expectations and these helps to form a positive teaching aptitude. Home environment here is measured as home of college students comprising of Single and Dual parents. Teaching aptitude of students of Dual Parents household was significantly different from students of single parent household and students of Dual Parents household exhibited higher mean scores on teaching aptitude (Rohiwal, 2018). Another study conducted in Jammu with trainee teachers contradicted this finding and reported no significant differences in teaching aptitude occurring due to residential background of teacher trainees (Rana & Singh, 2015). School environment also did not seem to have any specific effect on teaching aptitude of high school teachers (Kalaivani & Pugalenth, 2015). Conversely, organizational climate of a school was found to positively impact teaching aptitude of male and female science teachers (Jena, 2012). In case of training colleges, it was found while understaffed colleges were unable to improve aptitude from first to second year of B.Ed. program (Mewat) but well-staffed colleges with great infrastructure (DIET, Gurgaon) successfully did so (Chugh, 2012).

N. Teaching Aptitude and Type of Institution

Teaching Aptitude may be influenced by the type of school or college (government, aided or private) in which a teacher is employed as each has a separate work culture. A survey study conducted with government, private and government-aided school teachers of Tamil Nadu showed that teaching aptitude of government and government aided schools, government aided and private schools, Government and private schools were similar (Kalaivani & Pugalenth, 2015). Sharma (2017) government and private primary school teachers did not differ in the level of teaching aptitude possessed. Rao & Asthana (2018) found type of institution a teacher works in significantly affects overall teaching aptitude and its dimensions. Male teachers of Government aided colleges had better teaching aptitude in comparison to male teachers of self-financed colleges. In case of female teachers, the situation was reverse. Dimension wise analysis found male teachers of government aided college scored higher in dimensions of teaching aptitude as moral character, discipline, optimism, cooperation and fairness while teachers of self-financed colleges were better in kindness, scholarly aspects and enthusiasm. Female teachers of government aided colleges scored lower in moral character, scholarly taste, enthusiasm, fairness and wild interest and scored higher in Kindness, Cooperation and Discipline than self-financed college teachers (Rao & Asthana, 2018).

VII. LIMITATIONS OF EMPIRICAL PAPERS

The empirical researches reviewed discussed the limitations of their work, which has been categorized under the following heads:

A. Sample

Most of the studies had small sample (Anwar et al., 2012; Jena, 2012; Kalaivani & Pugalenth, 2015; Kaur, 2014; Lata, 2017; Rohiwal, 2018; Sharma, 2017; Tasleema & Hamid, 2012) or biased sample as mostly female (Rao & Asthana, 2018), limited to only Gujarati Medium (Shukla, 2013) or English medium schools (Khan & Khan, 2016), only two Colleges (Lata, 2017), or only trainees who have completed Post Graduation (Shukla, 2013). Some studies measured aptitude of only B.Ed. students (Begum & Khan, 2015; Kaur, 2014), only with high school teachers (Kalaivani & Pugalenth, 2015), University affiliated degree colleges only (Rao & Asthana, 2018), student-teachers of IA&SE and CTE excluding In-service student-teachers (Parh & Benjongkumba, 2019).

B. Tools

Two studies reported problems with instruments as used only a single tool (Kaur, 2014) and other study used questionnaire method (Rohiwal, 2018).

C. Design

All the studies used survey design which made causal interpretation difficult (Kalaivani & Pugalenth, 2015; Shukla, 2013).

D. Location

Location wise studies were confined to only one district (Appadurai & Saraladevi, 2015; Jena, 2012; Kalaivani & Pugalenth, 2015; Kalita, 2016; Kaur, 2014; Lata, 2017; Sharma, 2017) or only one city (Begum & Khan, 2015; Khan & Khan, 2016; Rao & Asthana, 2018) or only from various districts of a state (Rohiwal, 2018).

E. Others

Studies often ignored extraneous variables as Jena (2012) worked with only three variables - teaching aptitude, teaching competency and organizational climate. While studying teaching aptitude, Tasleema and Hamid (2012) excluded variables like attitude, teaching methodology. Sharma (2017) only used effect of gender and type of school on teaching adjustment while other determinants were ignored.

VIII. CONCLUSIONS

It is crystal clear from all the above studies that one should apply wisdom while making selection of teachers. Individuals who enter the teaching profession must have genuine love for it. Individuals having proper teaching aptitude, can give the best quality of education. Upon knowing their teaching aptitude and adjustment, training colleges can modify their strategies. Administrators and educational planners can easily manage the functioning of education system if teachers have positive teaching aptitude. In this critical analysis, it was found that researchers agree that teaching aptitude is not an independent phenomenon, as it is influenced by a number of factors like teacher attitude, their educational achievement and demographic characteristics of teachers. Quality of education can only be maintained and improved if capable teachers are chosen for this profession. Lastly, to conclude that this review paper has its own limitations. This review used only 32 articles and all of the research were conducted in India. All the articles were of survey type and thus causal prediction was difficult. The strength of this review is that it focused on a number of themes such as demographic characteristics of teachers, their educational achievement, teaching competency, teaching attitude, adjustment, academic qualification of teacher, level of students taught, type of institution, environment in relation to their teaching aptitude.

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