Original Research Article

EFFECTIVENESS OF SCHOOL TEACHERS:

A CRITICAL DIMENSIONAL ANALYSIS IN GENDER, LOCALITY AND ACADEMIC

STREAM VARIATION

Abstract

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| The study was a comparative dimensional analysis of effectiveness of secondary school teachers in gender, locality and academic stream variations. This was a quantitative survey type research. All secondary school teachers under WBBSE in Balurgaht block were considered as the population. The data was collected by random selection of 171 teachers from different schools. in Balurghat block in Dakshin Dinajpur district. The sample constituted of 171 teachers including 97 (57%) male and 74 (43%) female teachers, 82 (48%) rural teachers and 89 (52%) urban teachers, 69 (40%) teachers from science stream and 102 (60%) teachers from arts stream. Tool adopted to collect the data was Teacher Effectiveness Scale (TES) by Kumar and Mutha (2011). The data were analyzed by calculating mean, standard deviation, and standard error. The nature of data has been checked by normal probability curve with histogram. The inference has been drawn by using t-test value comparing with critical value at 0.05 level. Result revealed that significance difference exists in the academic dimension (t=2.00, p=0.04), professional dimension (t=2.65, p=0.008), social dimension (t=3.19, p=0.001), and emotional dimension (t=2.38, p=0.01) of effectiveness across gender. It was also found from the study that significant difference exists in the professional dimension (t=2.78, p=0.005), emotional dimension (t=2.43, p=0.015), and personality dimension (t=2.60, p=0.009) of effectiveness across locale. Similarly, significant difference exists in the academic dimension (t=2.68, p=0.008), and moral dimension (t=3.21, p=0.001) of effectiveness across different academic stream. The significant differences were found in professional and emotional dimensions in gender variations as well as locale variations. Similarly, significant difference observed in academic dimension in gender variations and academic stream variations. The difference was observed in moral dimension in academic stream variations only. The effectiveness of teachers from science background in almost all the dimensions was comparatively lower than the teachers of arts background. Similarly, the male teachers were less effective than female counterparts, and urban teachers were less effective than rural teachers that were observed from the results in dimensional analysis of teacher’s effectiveness. So, school authority should take this into account and improve the commitment of science teachers and those teachers who belongs to urban area. The outcome of this research will be benefited to maintain the quality of teaching-learning process So, to build up a healthy society for sustainable future, we have required more effective teachers in the education system to preserve the quality. |

*Keywords: Teacher Effectiveness (TE), Dimension, Gender, Locale, Academic Stream, School Teacher.*

1. INTRODUCTION

Education is fundamental right of Indian citizen that promotes all round development of human beings through exploring knowledge, understanding and various skills that helps them to maintain good quality of life which is not only beneficial for individual but also play a necessary role to development of nation (Koshy & Tiwari, 2021). Teachers are a very necessary component of education because they take part in every activity which is strongly related to students’ achievement through quality education (Burgess, 2019). Effective teachers are able to create an effective environment for learning and enhance academic competency as well as other qualities by their deeper subject knowledge and professional skills like quality of rational thinking, situation analysis, motivate students, create interest on learning and introduce moral values among learners (Yadav, 2023). The effectiveness of teacher educators is very important because teachers of secondary level are responsible for development of learners though the various activities within educational organization but teachers’ educators are solely responsible for proper planning for making effective teachers (Dodmani, 2024). Teacher effectiveness is calculated by the performance of students and enhancing competency which are component of the product dimension, as per other dimension students must enhance their various internal qualities (Babu & Sundari, 2023). These qualities are developed though the using flexible learning-teaching method, suitable learning, classroom management, efficient delivery of instruction, good communication and keep empathy on students by the teachers which is impossible without major effectiveness of teachers (Nisa. et al, 2025). In present education system teachers should meet the requirement of students with the changing needs of society that is not fulfill without effective teacher so self-realization, good behavioral trait and proper training is needed (Seth & Pandey, 2024). Teachers should continue their professional development to maintain the quality of teaching through effectiveness (Kola. et al, 2015).

2. LITERATURE REVIEW

The study of Dodmani (2024) on teacher educator’s teaching effectiveness with 30 teacher educators as samples by using random sampling technique through the analysis of the personal data of teacher educators and their effectiveness revealed that effectiveness among teacher educators is very high and effectiveness was almost same for male and female teacher educators but it was differ in the context of rural and urban areas. A descriptive study of Seth & Pandey (2024) focused on teacher effectiveness of 100 secondary school teachers with the objective to study the different dimensions (Preparation, Presentation, Application and Management) of teacher effectiveness of female and male secondary school teachers. Teachers effectiveness scale (2020) was adopted which was developed by Dr. S. Sarkar and A. Deb. It was found that teacher effectiveness is an essential parameter for developing the learners as well as the whole nation. The survey research work by Babu & Sundari (2023) on teacher effectiveness of 200 high school teachers in Kurnool district selected through stratified random sample technique. The Teacher Effectiveness Scale (TES) by U. Kulsum (2014) was adopted in this study and reliability coefficient of TES was 0.68 measured through split half reliability method. The study concludes that maximum teachers in high school have average teacher effectiveness, highly effective teachers are 26% and only 13.5% teachers are low effective in teaching. Tiwari (2021) conducted a quantitative study on teacher’s effectiveness among school educators in relation to use of technology over the years. The study focuses on the role of teachers’ effectiveness by using digital tools on influence, benefits, challenges and coping strategies. The paper conclude that after facing many challenges of using technology, it is very beneficial for maintaining quality of education by enhancing teachers’ effectiveness. Digital technology helps to fulfil the goals of globalization in education system which is helpful to increase the effectiveness of teachers.

3. OBJECTIVES OF THE STUDY

**Obj-1:** To study the different dimensions of effectiveness among teachers in gender variations

**Obj-2:** To study the different dimensions of effectiveness among teachers in locale variations.

**Obj-3:** To study the different dimensions of effectiveness among teachers in academic stream variations.

4. HYPOTHESES

**HO1:** There would be no significant difference of effectiveness in various dimensions between male and female teachers.

**HO2:** There would be no significant difference of effectiveness in various dimensions between rural and urban teachers.

**HO3:** There would be no significant difference of effectiveness in different dimensions between arts and science stream teachers.

5. methodology

The present research is a quantitative survey type comparative study. The data were gathered from teachers of secondary schools by using TES tool. The data were fitted in the normal probability curve. Data were analyzed by parametric test, t-test. The inference has been drawn at 0.05 level at df= 169.

5.1 Population & Sample:

The population comprised school teachers under WBBSE of Balurgaht block in Dakhsin Dinajpur district. The sample selected the male as well as female teachers drawn through random sampling, collected from rural as well as urban area including science and arts stream. A total 177 teachers were selected randomly from 14 schools. It was found that 171 teachers including Rural= 82 & Urban=89; Male=97 & Female=74; Science=69, Arts=102 comprised the actual sample.

5.2 Sample frame:

Sample frame includes the total no of sample distributed according to categorical variables in the table 1 given below.

**Table 1**

***Gender, Locale and Academic Discipline wise distribution of sample***

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Category | Frequency (sample) | Percentage (%) |
| Gender | Male | 97 | 57% |
| Female | 74 | 43% |
|  TOTAL | 171 | 100% |
| Locale | Rural | 82 | 48% |
| Urban | 89 | 52% |
|  TOTAL | 171 | 100% |
| Academic Stream | Science | 69 | 40% |
| Arts | 102 | 60% |
|  TOTAL | 171 | 100% |

5.3 Variables of the study:

The researchers have been taken one dependent variable and three categorical variables.

* Major Variables-
* Teacher Effectiveness
* Categorical Variables-
* Gender
* Locality
* Academic Stream

5.4 Toots Used:

A Standardized tool was used for the investigation and data were collected by the researchers for this quantitative study. The tool which has been adopted for data collection in this research is mentioned below-

* “Teacher Effectiveness Scale (TES)”

This scale was developed by Kumar and Mutha (2011).

Teacher Effectiveness Scale (TES) is consisted of 69 items divided into six dimensions e.g. Academic, Professional, Social, Emotional, Moral and Personality.

6. results and discussion

Results obtained from the analysis of data were tested at 0.05 significance level.

**6.1 Testing of Hypothesis HO1:**

HO1: There would be no significant difference of effectiveness in various dimensions between male and female teachers.

**Table 2**

***Group Statistics of Teacher Effectiveness in Gender Variations***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Major Variable | Categorical variable | N | Mean | t-test statistics |
| t-stat | df | t-critical | Sig. (2-tailed) |
| Teacher Effectiveness | Gender | Male | 97 | 278.16 | 4.01\* | 169 | 1.97 | 0.00 |
| Female | 74 | 294.54 |

 *Note:* \*At 0.05 level

It is found from the table 2 that mean score of female teachers (294.54) is more than that of male counterparts (278.16). The result revealed that statistical t-value is 4.01 and p < 0.05. Hence, t is significant at 0.05 level. So, HO1 was rejected and it was concluded that the effectiveness of male teachers were significantly different from the female counterparts. Furthermore, analyses were done to identify those dimensions of effectiveness of teachers across gender in where significant differences exist and the results are given below in table 3.

6.1.1 Dimension wise analysis of TE\_ Gender variations:

**Table 3**

***Group Statistics in Different Dimensions of Teacher Effectiveness in Gender Variations***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dimensions of TE | Categoricalvariable | N | Mean | t-test statistics |
| t-stat | df | t-critical | Sig. (2-tailed) |
| Academic | Male | 97 | 60.47 | 2.00\* | 169 | 1.97 | 0.04 |
| Female | 74 | 63.64 |
| Professional | Male | 97 | 53.32 | 2.65\* | 169 | 1.97 | 0.008 |
| Female | 74 | 56.69 |
| Social | Male | 97 | 42.97 | 3.19\* | 169 | 1.97 | 0.001 |
| Female | 74 | 46.68 |
| Emotional | Male | 97 | 31.35 | 2.38\* | 169 | 1.97 | 0.01 |
| Female | 74 | 33.72 |
| Moral | Male | 97 | 40.27 | 1.94 | 169 | 1.97 | 0.053 |
| Female | 74 | 42.17 |
| Personality | Male | 97 | 49.78 | 1.89 | 169 | 1.97 | 0.059 |
| Female | 74 | 51.64 |

 *Note:* \*At 0.05 level

**Interpretation:**

The table 3 shows that mean scores of female teachers are slightly more than that of male teachers in all the dimensions of effectiveness. Table-3 also revealed that in case of comparing the mean score of effectiveness in different dimensions across gender, the calculated t-values are t=2.00 (p=0.04) in Academic dimension, t=2.65 (p=0.008) in Professional dimension, t=3.19 (p=0.001) in Social dimension, and t=2.38 (p=0.01) in Emotional dimension, t=1.94 (p=0.053) in Moral dimension and t=1.89 (p=0.059) in Personality dimension. Hence, t was not significant at 0.05 level in Moral, and Personality dimensions but significant differences exists in Academic, Professional, Social, and Emotional dimensions. So it was concluded that a significant difference in the academic, professional, social and emotional dimensions of effectiveness exists across the gender.

**6.2 Testing of hypothesis HO2:**

**HO2:** There would be no significant difference of effectiveness in various dimensions between rural and urban teachers.

**Table 4**

***Group Statistics of Teacher Effectiveness in Local Variations***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Major Variable | Categorical variable | N | Mean | t-test for equality of means |
| t-stat | df | t-critical | Sig. (2-tailed) |
| Teacher Effectiveness | Locale | Rural | 82 | 293.09 | 3.57\* | 169 | 1.97 | 0.00 |
| Urban | 89 | 279.61 |

 *Note:* \*At 0.05 level

The table-4 shows mean score of rural teachers (293.09) is slightly greater than that of urban counterparts (279.61). The result revealed that statistical t-value is 3.57 and p < 0.05. Hence, t was significant at 0.05 level. So, HO2 was rejected. Hence, it was concluded that the effectiveness of rural teachers were significantly differ from urban counterparts. Furthermore, analyses were done to identify those dimensions of effectiveness of teachers across locality in where significant differences exist and the results are given below in table 5.

6.2.1 Dimension wise analysis of TE\_ Locale variations:

**Table 5**

***Group Statistics in Different Dimensions of Teacher Effectiveness in Local Variations***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dimensions of TE | Categoricalvariable | N | Mean | t-test statistics |
| t-stat | df | t-critical | Sig. (2-tailed) |
| Academic | Rural | 82 | 63.43 | 1.88 | 169 | 1.97 | 0.06 |
| Urban | 89 | 61.02 |
| Professional | Rural | 82 | 56.57 | 2.78\* | 169 | 1.97 | 0.005 |
| Urban | 89 | 53.24 |
| Social | Rural | 82 | 45.58 | 1.29 | 169 | 1.97 | 0.19 |
| Urban | 89 | 44.30 |
| Emotional | Rural | 82 | 33.65 | 2.43\* | 169 | 1.97 | 0.015 |
| Urban | 89 | 31.35 |
| Moral | Rural | 82 | 41.96 | 1.66 | 169 | 1.97 | 0.09 |
| Urban | 89 | 40.32 |
| Personality | Rural | 82 | 51.90 | 2.60\* | 169 | 1.97 | 0.009 |
| Urban | 89 | 49.38 |

 *Note:* \*At 0.05 level

**Interpretation:**

The table-5 shows mean scores of rural teachers are slightly more than that of urban teachers in all the dimensions of effectiveness. Table-5 also revealed that in case of comparing the mean scores of effectiveness in different dimensions across locality, the calculated t-values are t=1.88 (p=0.06) in Academic dimension, t=2.78 (p=0.005) in Professional dimension, t=1.29 (p=0.19) in Social dimension, and t=2.43 (p=0.015) in Emotional dimension, t=1.66 (p=0.09) in Moral dimension and t=2.60 (p=0.009) in Personality dimension. Hence, t was not significant at 0.05 level in Academic, Social and moral dimensions but significant difference exists in Professional, Emotional, and Personality dimensions. So it was concluded that a significant difference in the professional, emotional, and personality dimensions of effectiveness among teachers exists in locale variations.

**6.3 Testing of hypothesis HO3:**

**HO3:** There would be no significant difference of effectiveness in various dimensions between science and arts stream teachers.

**Table 6**

***Group Statistics of Teacher Effectiveness in Academic Stream Variations***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Major Variable | Categorical variable | N | Mean | t-test for equality of means |
| t-stat | df | t-critical | Sig. (2-tailed) |
| Teacher Effectiveness | Academic Stream | Science | 69 | 283.09 | 2.20\* | 169 | 1.97 | 0.028 |
| Arts | 102 | 289.61 |

 *Note:* \*At 0.05 level

The table-6 shows mean score of arts teachers (289.61) is greater than science teacher (283.09). The result revealed that statistical t-value is 2.20 and p < 0.05. Hence, t was significant at 0.05 level. So, HO3 was rejected. And it was concluded that effectiveness of science teachers were significantly differ from arts teachers. Furthermore, analyses were done to identify those dimensions of effectiveness across academic stream in where significant differences exist and the results are given below in table 7.

6.3.1 Dimension wise analysis of TE\_ Academic Stream variations:

**Table 7**

***Group Statistics in Different Dimensions of Teacher Effectiveness in Academic Stream Variations***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dimensions of TE | Academic Stream | N | Mean | t-test statistics |
| t-stat | df | t-critical | Sig. (2-tailed) |
| Academic | Science | 69 | 60.11 | 2.68\* | 169 | 1.97 | 0.008 |
| Arts | 102 | 63.58 |
| Professional | Science | 69 | 55.38 | 0.07 | 169 | 1.97 | 0.94 |
| Arts | 102 | 55.06 |
| Social | Science | 69 | 45.09 | 0.10 | 169 | 1.97 | 0.91 |
| Arts | 102 | 44.96 |
| Emotional | Science | 69 | 32.73 | 0.49 | 169 | 1.97 | 0.62 |
| Arts | 102 | 32.87 |
| Moral | Science | 69 | 39.24 | 3.21\* | 169 | 1.97 | 0.001 |
| Arts | 102 | 42.35 |
| Personality | Science | 69 | 50.54 | 0.47 | 169 | 1.97 | 0.63 |
| Arts | 102 | 50.79 |

 *Note:* \*At 0.05 level

**Interpretation:**

The table-7 shows mean scores of science teachers are more than that of of arts teacher in academic and moral dimensions of effectiveness but mean scores of arts teachers are slightly more than that of science teachers in social, emotional and personality dimensions. Table-7 revealed that in case of comparing the mean score of effectiveness in different dimensions across academic stream, the calculated t-values are t=2.68 (p=0.008) in Academic dimension, t=0.07 (p=0.94) in Professional dimension, t=0.10 (p=0.91) in Social dimension, and t=0.49 (p=0.62) in Emotional dimension, t=3.21 (p=0.001) in Moral dimension and t=0.47 (p=0.63) in Personality dimension. Hence, t was not significant at 0.05 level in Professional, Social, Emotional and Personality dimensions but significant difference exists in Academic and Moral dimensions. So it was concluded that a significant difference in the academic and moral dimensions of teacher effectiveness exists in academic stream variations.

7. FINDINGS OF THE STUDY

There exists significant difference of effectiveness among teachers across gender (t= 4.01, p= 0.00), across locality (t= 3.57, p= 0.00), and across academic stream (t= 2.21, p= 0.03).

5.1 Dimension wise findings:

1. It was found that difference exists in the moral dimension (t=1.94, p=0.053); and personality dimension (t=1.89, p=0.059) of effectiveness among teachers in gender variations. But there exists significant difference in the academic dimension (t=2.00, p=0.04); professional dimension (t=2.65, p=0.008); social dimension (t=3.19, p=0.001); and emotional dimension (t=2.38, p=0.01) of effectiveness among teachers across gender.
2. It was observed that difference exists in the academic dimension (t=1.88, p=0.06); social dimension (t=1.29, p=0.19); and moral dimension (t=1.66, p=0.09) of effectiveness among teachers in locale variations. But there exists significant difference in the professional dimension (t=2.78, p=0.005); emotional dimension (t=2.43, p=0.015); and personality dimension (t=2.60, p=0.009) of effectiveness among teachers across locality.
3. Results also revealed that difference exists in the professional dimension (t=0.07, p=0.94); social dimension (t=0.10, p=0.91); emotional dimension (t=0.49, p=0.62); and personality dimension (t=0.47, p=0.63) of effectiveness among teachers in academic stream variations. But there exists significant difference in the academic dimension (t=2.68, p=0.008); and moral dimension (t=3.21, p=0.001) of effectiveness among teachers across different academic stream.

**8. CONCLUSION**

It is found that mean difference in almost all the dimensions of effectiveness among secondary school teachers observed in gender variations, locale variations as well as academic stream variations. The significant differences were found in professional and emotional dimensions in gender as well as locale variations. It would be beneficial to explore the reason for this difference and make legal adjustments to support teacher’s careers. Similarly, significant difference observed in academic dimension in gender and academic stream variations. The difference was observed only in moral dimension in academic stream variations. Modern education system focuses on the process rather than the product of teaching and learning irrespective of the gender, locality and academic stream of school teachers.Learning is continuous and lifelong process. Till the dawn of the universe all life form learns but most of the learning was informal hence very slow and ineffective. But in era of ultra-modernization we can't easily escape the ideologies like “Commitment" and “Effectiveness". Now is the era of rapid development and progress in every aspect especially in Education. The Teacher is most important pillar upon which our future depends. Effectiveness and commitment of the teacher make them strong as a serving pillar. Learning becomes easier lucid adoptive comprehensive apprehending when it is well equipped. The teacher is the best of all equipment if they have effectiveness and commitment. Hence to get succeed in learning, get favorable outcome a teacher must be effective in use of methods and techniques, means and material. Teacher plays pivotal role in learning efficiency and his commitment to the organization serves as a most important pillar which is undoubtedly intact with educational, organizational and professional success. Thus Effectiveness of work and Commitment to the organization result in better outcome to the learning, and good learning always serves to the up liftman of nation and society. **D**ue to rapid and fast growing education system in term of language, science, technologies, medicine and national and international affairs our education must be valid, it must be rapid, progressive as well as authentic and so on. But all these qualities lie on teacher efficiency, effectiveness and unconditional commitment to the pupils, society and organization. It was found from the results that effectiveness of science teachers in almost all the dimensions was comparatively lower than the teachers of arts background. Similarly, the male teachers were less effective than female counterparts, and urban teachers were less effective than rural teachers that were observed from the results in dimensional analysis of teacher’s effectiveness. So, school authority should take this into account and improve the commitment of science teachers and those teachers who belongs to urban area.

Consent

All authors declare that written informed consent was obtained from the school authority from where the data were collected.

AI Declaration: Researchers declares that no such AI contents are incorporated in this manuscript (AI content 0%).

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