

Impact of Online Teaching Attitude and Stress of Secondary School Teachers on their Self-efficacy

P. Ponnusamy¹, R. Kingston² and P. Pavithra³

*Department of Education, Gandhigram Rural Institute- Deemed to be University,
Gandhigram624 302, Tamil Nadu, India*

E-mail: ¹<pponnusamy56@gmail.com>, ²<pavithraponnusamy97@gmail.com>

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ABSTRACT The growth of educational institutions and the academic success of students depend on how well teachers perform in the educational system. Numerous studies have shown that two significant elements affecting teachers' ability to effectively teach in the classroom were their attitudes and stress levels. The key objective of study was to explore whether or not secondary school teachers' attitudes toward and stress levels related to online teaching impacted how effective they were at teaching. To gather the necessary data from 428 randomly selected secondary school teachers in both government and private secondary schools, a survey technique of research was used. They were given the teacher attitude scale, teacher stress scale, and teacher self-efficacy scale, and collected required data from all selected teachers. The investigation of the data gathered revealed that attitudes and stress levels of secondary school teachers in online teaching have an impact.

INTRODUCTION

Sustainable development in any nation depends on its educational development and, consequently, aims to produce qualified and well-developed citizens. The excellence of education depends on many factors, and the excellence of teachers is a vital one among them (Myint Lay 2021). The quality of teachers mostly depends on teachers' content mastery, performance in teaching, and commitment to the profession as well. Teachers who see themselves competent in their professions might have high self-efficacy and it might reflect positively on their job satisfaction (Kasalak and Dagyar 2020). Effective teachers can instruct in ways that reflect this belief on their capacity to influence the academic trajectories among students. According to Akil and Jafar (2019), self-efficacy is the belief in one's capacity to organise and carry out the events required to accomplish specific goals. Self-efficacy is the foundation of social cognitive theory by Albert Bandura and his studies disclosed that differences in self-efficacy could be detected through efficacy expectations, and the latter had a major impact on outcomes (Corry and Stella 2018). Self-efficacy is an important notion for schools because motivated instructors can assess their own performance and the performance of their pupils to the best of their abilities (Pressley 2021).

The personal assessment of teachers on their own capacity to perform associated obligations in teaching career is acknowledged as teacher self-efficacy (Ma et al. 2021). Numerous studies have established a considerable constructive correlation between the two domains, with teachers managing their classrooms more successfully when they have more self-efficacy (Horvitz et al. 2015; Poulou et al. 2018). According to the common opinion at the level of classroom organisation, effective instruction cannot occur in a bad classroom environment, highlighting the relevance of effective classroom organisation strategies as a requirement for educational accomplishment (Korpershoek et al. 2016). Teachers' self-efficacy helps them in their work environment, which influences how successfully a lesson is taught and how they act in the classroom (Barni et al. 2019). Additionally, it helps them successfully uphold better bonds with both their students and their coworkers (Siciliano 2016; Hajovsky et al. 2020). Greater cognitive foundations, improved classroom management, and increased facilitation of student learning throughout classroom activities may all contribute to the teachers' high teacher effectiveness (Holzberger et al. 2013).

The COVID-19 pandemic's unforeseen crises stressed the educational systems around the world to switch from the traditional meth-

ods of teaching and learning to online, virtual, or computer-based training. It differs significantly from in person instructional practices and calls for a separate teacher's role and student's role in terms of academic activities (Barbour and Unger 2014). Teachers must also possess the knowledge, abilities and integration techniques essential to efficiently use digital tools and platforms (Baroudi and Shaya 2022). This abrupt transition has interfered with academic operations at the university and increased hurdles for both students and teachers (Mosleh et al. 2022).

The barrier between teachers and students as a consequence of these issues also makes it difficult for teachers to effectively convey content material to their pupils (Johnson et al. 2020; Putri et al. 2020). The capacity to use technology was an additional source of concern as teachers and students started working independently and frequently from home (Pickup 2020). Teachers and students are under a lot of pressure and stress because of the lack of resources, support, and understanding of online practices (Bao 2020; Green et al. 2020). The role of the instructor is vital while teaching online, and they must devote the majority of their time to creating evaluation criteria, synchronising activities, and arranging online lessons. They also experienced higher stress and burden as a result of over workload and inadequate training (Batool et al. 2020).

The attitude, stress and self-efficacy of instructors are just a few of the variables that have an influence on student performance and attainment when it comes to learning (King and Chen 2019; Fathi et al. 2021). Unrealistic demands, poor online instruction training, increasing workload, and changes in curricula cause teachers to feel uncomfortable and unconfident in the online instructional environment (Dolighan and Owen 2021). Teachers must contend with low levels of student engagement while providing instruction online (Bintliff 2020). In light of the potential effects of changes in educational practices at the school level on teachers' self-efficacy, this study intends to investigate the association between teachers' stress and attitudes toward using online teaching.

Objectives of the Study

The objectives of the study were:

1. To identify the attitudes of secondary school teachers towards online teaching.
2. To understand the teachers' stress and self-efficacy during their online instruction.
3. To know whether the self-efficacy of teachers is influenced by their attitudes and stress in online teaching.

METHODOLOGY

The qualitative and quantitative designs were utilised in this study to examine whether the stress and attitudes towards online teaching influence the self-efficacy of teachers at the secondary level. For this purpose, the researchers used the survey method to collect data from a sample of 428 teachers working in rural-based secondary schools. This teacher sample was selected using simple random sampling technique from 34 secondary schools in the districts of Dindigul, Coimbatore, Tirupur, and Nilgiris in Tamil Nadu, India. The details on sample distribution of study are presented in Table 1.

Table 1: Details on the sample distribution

<i>School management</i>	<i>Gender</i>	<i>N</i>	<i>%</i>
<i>Government</i>	Male	99	23.13
	Female	113	26.40
	Total	212	49.53
<i>Private</i>	Male	122	28.50
	Female	94	21.96
	Total	216	50.47
<i>Total</i>	Male	221	51.64
	Female	207	48.36
	Total	428	100.00

Study Instruments

The Teacher Attitude Scale towards Online Teaching (TAS-OT), Teacher Stress Scale (TSS), and Teacher Self-Efficacy Scale (TSES) were used as the research tools of the study. All these Likert scales are developed by the researchers in a bilingual (Tamil and English) language version following the necessary standardisation procedures.

Teacher Attitude Scale

The Teacher Attitude Scale towards online teaching with 20 statements was distributed to

the sample, and they were instructed to answer on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). TAS reliability was found using the test-retest method (0.76). The attitude levels of teachers were classified based on their mean and standard deviation scores. If one gets a score below 1 standard deviation (S.D) from their mean score, then the sample is classified as a *teacher with a poor attitude*, above 1 standard deviation (S.D) from their mean score, then the sample is classified as a *teacher with a positive attitude*, and between 1 S.D above and 1 S.D below the mean score, then the sample is classified as a *teacher with a neutral attitude*.

Teacher Stress Scale

The Teacher Stress Scale is another scale with four subscales, namely, *school demands, classroom teaching, responsibilities, and interpersonal relationships*, used in the study. Each subscale was prepared with five statements in each, and therefore the TSS was constructed with 20 statements. This scale was also given to the sample and they were asked to give their response on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The test-retest method was also used to determine the reliability of the total scale (TSS =0.82) and subscales school demands (0.81), classroom teaching (0.83), responsibilities (0.85), and interpersonal relationships (0.80). Teachers’ stress levels were classified as follows, that is, if one gets a score below 1 standard deviation (S.D) from their mean score, the sample is classified as *low stress*, above 1 S.D from their mean score, the sample is classified as *high stress*, and between 1 S.D above and 1 S.D below the mean score, the sample is classified as *moderate stress*.

Teacher Self-efficacy Scale

A Teacher Self-efficacy Scale with 20 statements was also administered to the sample. The

sample was instructed to give their responses on a four-point Likert scale (1 = not at all true to 4 = exactly true). TSES reliability was found using the test-retest method (0.86). The teacher self-efficacy levels of teachers were classified as, if one gets a score below 1 standard deviation (S.D) from their mean score, then the sample is classified as a *teacher with low efficacy*, above 1 standard deviation (S.D) from their mean score, then the sample is classified as a *teacher with high efficacy*, and between 1 S.D above and 1 S.D below the mean score, then the sample is classified as a *teacher with moderate efficacy*.

RESULTS

Normality Test on Teachers’ Scores

The data collected from 428 school teachers were analysed to see whether the scores are normally distributed or not. The test results are listed in Table 2.

The analysis’s findings show that teachers’ average scores on the teacher attitude scale, teacher stress scale and teacher self-efficacy scale are 59.52, 44.54, and 55.33, respectively. To examine whether the collected scores from the sample are normally distributed or not, the Can’s Normality Test (2014) was used in the study. According to Can (2014), if a sample’s scores are normally distributed, the result of dividing the coefficient of skewness by the standard error must fall within the range of 1.96 and -1.96. The calculated normality test scores for teacher attitude scale, teacher stress scale and teacher self-efficacy scale are 0.05, -0.03 and 1.00, respectively. It is therefore assumed that the sample scores on each of the three scales were normally distributed.

Teachers’ Levels in their Attitude Towards Online Teaching, Stress and Self-efficacy

With reference to the mean and standard deviation scores of the sample, teachers’ atti-

Table 2: Normality distribution test on scores of sample

Teacher variable	N	Mean	Standard deviation	Standard error	Skewness	Kurtosis	Skewness / Standard error
Attitude towards online	428	59.52	12.64	0.61	0.03	-0.62	0.05
Stress	428	44.54	7.64	0.37	-0.01	0.56	-0.03
Self-efficacy	428	55.33	4.99	0.24	0.24	-0.6	1.00

tude toward online teaching, stress, and self-efficacy of teachers were categorised. Table 3 provides the details.

Table 3: Number of teachers having different levels of attitude towards online teaching, stress and self-efficacy

Teachers' attitude/ stress/self-efficacy level		N	%
<i>Attitude Towards Online Teaching (M=59.52; SD=12.64)</i>	Negative	82	19.16
	Neutral	270	63.08
	Positive	76	17.76
<i>Stress (M=44.54; SD=7.64)</i>	Low	62	14.49
	Moderate	309	72.20
	High	57	13.31
<i>Self-efficacy(M=55.33; SD=4.99)</i>	Low	64	14.95
	Moderate	309	72.20
	High	55	12.85

Among the 428 secondary school teachers, 82 were secured scores below 46.88 (Mean - S.D), there were 270 teachers scored between 46.88 and 72.16, and 76 teachers were scored above 72.16 (Mean + S.D) in the teacher attitude scale. It indicates that 19.16 percent of selected teachers had unfavourable opinions toward online teaching, 63.08 percent had neutral sentiments, and 17.76 percent had good attitudes. Similarly, out of 428 teachers, 62 were secured scores below 36.90, there were 309 teachers scored between 36.90 and 52.18, and 57 teachers were scored above 52.18 in teacher stress scale. This says that 14.49 percent reported low stress, 72.20 percent reported moderate stress, and 13.31 percent reported high stress as a result of their schools' use of online instruction. Additionally,

64 secured scores below 50.34, there were 309 teachers that scored between 50.34 and 60.32, and 55 teachers scored above 60.32 in the teacher self-efficacy scale. It means that 14.95 percent had low self-efficacy, 72.20 percent of teachers had moderate self-efficacy, and 12.85 percent had high self-efficacy. Therefore, it can be inferred that most of the chosen teachers had a neutral attitude about online teaching, had a moderate amount of stress from it, and had a moderate level of self-efficacy.

ANOVA Test on Scores of Teachers in Attitude Scale, Stress Scale and Self-efficacy Scale

Table 4 explains the ANOVA results of teachers' scores in teacher attitude scale, teacher stress scale and teacher self-efficacy scale.

ANOVA Test Result on Teacher Attitude towards Online Teaching

The average scores of teachers selected from government and private schools in teacher attitude scale were found as 58.17 and 60.84, respectively. These scores lie between 46.88 and 72.16 and hence both teachers of government and private schools had a neutral attitude towards online teaching and further the scores infer that the attitude of private school teachers is better than teachers of government schools. The ANOVA Table 4 results on school management also indicates that there was a significant difference between the attitudes of teachers of government and private schools towards online teaching because the F (1, 424) ratio value is

Table 4: ANOVA test results

Teacher variable		Sum of squares	df	Mean square	F	Sig.
<i>Teacher Attitude towards Online Teaching</i>	School management (A)	636.46	1	636.46	4.10	0.04
	Gender (B)	89.34	1	89.34	0.58	0.45
	A x B	1547.50	1	1547.50	9.97	0.00
	Within	65796.74	424	155.18		
<i>Teacher Stress</i>	School management (A)	12.14	1	12.14	0.21	0.65
	Gender (B)	347.52	1	347.52	6.03	0.01
	A x B	102.45	1	102.45	1.78	0.18
	Within	24447.46	424	57.66		
<i>Teacher Self-efficacy</i>	School management (A)	80.72	1	80.72	3.33	0.07
	Gender (B)	152.21	1	152.21	6.27	0.01
	A x B	148.72	1	148.72	6.13	0.01
	Within	10291.51	424	24.27		

4.10 and $p(=0.04)$, which is less than 0.05. Hence it is assumed that there was an impact of school management on attitudes of teachers towards online teaching.

Further, the average scores of male and female teachers in teacher attitude scale were found to be 60.09 and 58.91 respectively, and therefore their attitudes towards online teaching is at a neutral level. These mean scores also indicate that the attitudes of male teachers are better than that of female teachers. But ANOVA results on gender indicate that there was no significant difference between the attitudes of male and female teachers towards online teaching because the $F(1, 424)$ ratio value is 0.58 and $p(=0.45)$, which is greater than 0.05. Hence it is assumed that there was no impact of the gender of teachers on their attitudes towards online teaching.

Furthermore, there was an interaction effect of school management and gender of teachers on their attitudes towards online teaching at a 0.05 significant level because the $F(1, 424)$ ratio value is 9.97 and $p(=0.00)$, which is less than 0.05.

ANOVA Test Result on Teacher Stress

Data analysis on the teachers' scores in the teacher stress scale revealed that the average stress scores of teachers selected from government and private schools were 44.47 and 44.60, respectively. Since these two mean scores lie between 36.90 and 52.18, it is assumed that the teachers of government and private schools had moderate levels of stress during online teaching. When comparing these two mean scores, it is found that there was not much difference between the stress of government and private school teachers during online teaching. The ANOVA Table 4 result on school management also indicates that there was no significant difference between the stress of teachers of government and private schools because the $F(1, 424)$ ratio value is 0.21 and $p(=0.65)$, which is greater than 0.05. Hence it is assumed that there was no impact of school management on teachers' stress during online teaching.

Further, the average scores of female and male teachers in teacher stress scale were found as 45.46 and 43.67 respectively, and therefore their attitudes towards online teaching is at a neutral

level. These mean scores also indicate that the stress of male teachers during online instruction is better than female teachers. The ANOVA result on gender also indicates that there was a significant difference between the stress of female and male teachers during online teaching because the $F(1, 424)$ ratio value is 6.03 and $p(=0.01)$, which is less than 0.05. Hence it is assumed that there was an impact of the gender of teachers on their stress during online teaching.

Furthermore, there was no interaction effect of school management and gender of teachers on their stress during online teaching at a 0.05 significant level because the $F(1, 424)$ ratio value is 1.78 and $p(=0.18)$, which is greater than 0.05.

ANOVA Test Result on Teacher Self-efficacy

In the teacher self-efficacy scale, the mean scores of selected teachers of government and private schools were found as 54.97 and 55.69, respectively. These scores infer that the self-efficacy of private school teachers is better than teachers of government schools and their mean scores revealed that their self-efficacies were at moderate level. The ANOVA Table 4 result on school management indicates that there was no significant difference between the self-efficacy levels of teachers of government and private schools during online teaching because the $F(1, 424)$ ratio value is 3.33 and $p(=0.07)$, which is greater than 0.05. Hence it is assumed that there was no impact of school management on teachers' self-efficacies during online teaching.

Further, the average scores of male and female teachers in the teacher self-efficacy scale were found to be 54.79 and 55.91, respectively. It means that the female teachers' self-efficacy during online teaching is better than male teachers. The ANOVA result on gender also indicates that there was a significant difference between the self-efficacies of male and female teachers during online teaching because the $F(1, 424)$ ratio value is 6.27 and $p(=0.01)$, which is less than 0.05. Hence it is assumed that there was an impact of the gender of teachers on their self-efficacies during online teaching.

Furthermore, there was an interaction effect of school management and gender of teachers on their self-efficacies during online teaching at a 0.05 significant level because the $F(1, 424)$ ratio value is 6.13 and $p(=0.01)$ is less than 0.05.

Correlation between the Teacher Self-efficacy, Stress and Attitude towards Online Teaching

Table 5 shows the results of multiple regression analysis on teachers' scores in teacher attitude scale, teacher stress scale and teacher self-efficacy scale.

Multiple linear regression analysis was carried out to know the influence of teachers' attitudes towards online teaching and their stress on teachers' self-efficacies during online teaching. According to the results shown in Table 5, attitudes towards online teaching and their stress show a significant relationship with teacher self-efficacy ($R = 0.306$; $R^2 = 0.09$). Further, teachers' attitudes toward online teaching and their stress explain 9 percent of the variability in teacher self-efficacy [$F(2, 425) = 22.01$, $p = 0.00$]. According to the regression coefficients, it indicates that the values of teachers' attitudes and stress increase, and self-efficacy also increases since the slope of the regression line is between 42.44 and 49.23 and the p-value is 0.00. Therefore, when the teachers' attitudes increase towards online teaching and their stress level also falls, there will be an improvement in the self-efficacy of teachers working at secondary school level. Hence, it is concluded from the study finding that the secondary school teachers' self-efficacy was influenced by their attitudes and stress during their online instruction.

DISCUSSION

The qualitative data of study exposes that most of the secondary school teachers had a neutral attitude about online teaching, had a moderate amount of stress from it, and had a moderate level of self-efficacy. Lack of resources in schools, inadequate competencies among students and teachers, workload, poor parents' supports and internet access to both students and teachers are the causative factors for the

neutral attitudes, stress and low self-efficacy of teachers during their online teaching (Cardullo et al. 2021; Fathi et al. 2021). Inadequate digital competencies among the teachers caused them to have low attitudes towards online teaching and in turn it was the reason for decrease in teachers' self-efficacies (Dolighan and Owen 2021). Further, a majority of the school teachers felt that they had some kind of mental and physical discomforts due to the shift from face to face teaching to online mode teaching (Selvaraj et al. 2021).

The key finding of study reveals that the attitudes of teachers towards online teaching influence the self-efficacy of teachers, which is in line with the research findings of Kisanga (2016) and Altundas and Yuce (2019). The study findings also show that there was an impact of stress on teachers' self-efficacy and it coincides with the finding of the studies of Karabatak and Alanoglu (2019) and Rani and Sharma (2021). But this finding is contradicted with the finding of Ipek et al. (2018), who found that there was no statistically significant relationship between teacher self-efficacy and occupational stress even though they had a moderate level of stress.

The findings of the study also reveal that the gender of teachers had no impact on teachers' attitude towards online teaching (Dolighan and Owen 2021) but had an impact on their stress and self-efficacy (Horvitz et al. 2015; Harvey et al. 2017). Similarly, the school management of teachers had no impact on teachers' stress (Ma et al. 2021) but had an impact on their attitude towards online teaching and self-efficacy. But Gale et al. (2021) found that gender and school levels were not impacted on teachers' self-efficacy.

CONCLUSION

When it comes to school administration, administrators of schools primarily concentrate

Table 5: Regression coefficient for relating teacher variables

Teacher variable	B	Std. error	Beta	t	p	Lower bound	Upper bound
Self-efficacy	45.835	1.725		26.567	0.00	42.44	49.23
Attitude towards online teaching	0.115	0.018	0.29	6.285	0.00	0.08	0.15
Stress	0.06	0.03	0.092	1.983	0.048	0.00	0.12

$R=0.306$; $R^2 = 0.09$

$F(2, 425) = 22.01$, $p < 0.00$

on good academic contributions from teachers to raise the academic standing of their students in comparison to other schools. They will also prioritise them in the workplace, but it is clear that authorities do not provide them the same level of attention when it comes to addressing their needs, concerns or practical issues. It might cause teachers to feel bad about them and have low self-efficacy, which would therefore have an impact on students' academic achievement in particular. The results of the study further expose the levels of secondary school teachers' attitude, stress and self-efficacy during online teaching in their school atmosphere. Further, the key finding explains the influence of teachers' attitude and stress during online teaching on their self-efficacy. The outcomes of this study may be useful to the school administrators to understand the impact of different teacher variables on self-efficacy levels of teachers. Self-efficacy of teachers is important not only for the self growth of teachers but it is also vital for achieving academic excellence in the school environment.

RECOMMENDATIONS

Teaching and learning are like the two eyes, and both are important for preparing the good citizens of the country. Their job is vital in this country to maintain harmonious relationships among the individuals of society. In the school set up, they are not only the backbone of the academic development of a student, but their contribution in developing good character among students is more significant. Hence, their dignity and work involvement should be maintained for the sake of the overall improvement in the school system. In this technological era, the teachers and students at all levels are expected to have digital literacy. In the present day educational system, digital competence is vital to the teachers to cope up with the younger generation. Therefore, the teachers at all levels should have adequate exposure and hands-on experience in handling online classes with the use of useful e-gadgets to enhance their professional competencies. The present study opens the path to further research studies, which could focus on attitudes of teachers at different educational systems towards online teaching, impact of teachers' instructional efficacy and academic

performances of their students. Further the future studies may focus to examine the correlation between the self-efficacy of school teachers and their work environment.

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