E-LEARNING READINESS AND JOB STRESSOR OF ELEMENTARY SCHOOL TEACHERS IN THE COVID-19 PANDEMIC

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Abstract

Background: E-learning readiness became a new workload for teachers during the Covid-19 pandemic because of the obligatory online teaching. E-learning readiness comprises four factors: the readiness of technology, innovation, people, and self-development; and it might cause job stressors and affect teachers' performance. The research objective was to explore job stressors that influence teachers the most and how they might be associated with E-learning readiness.
Method: The cross-sectional method assessed 186 teachers from public and private elementary schools in the urban city area in Jakarta. The data obtained from questionnaires: Teacher Stress Inventory (TSI) Boyle and E-learning Readiness (ELR) Aydin and Tasci. TSI assessed teachers' job stressors in five main components: workload, student behavior, professional recognition, time and resources, and interpersonal relationships.
Results: Most teachers perceived readiness at e-learning (84.9%). E-learning readiness was a profound problem for female and non-classroom teachers. The dominant job stressors for teachers were workload (27%), professional recognition (22%), time and resources (21%), and student behavior (21%). The number of students influenced workload and professional recognition. Self-development was the prominent e-learning readiness factor associated with teacher job stressors, especially professional recognition.
Conclusions: In urban areas like Jakarta, fifteen percent of teachers remain unprepared for e-learning teaching. The unpreparedness was related to the female gender and non-classroom teachers, who need e-learning skills training to improve their readiness and control job stressors for better teaching performance in a prolonged pandemic situation.

Keywords: E-learning readiness, job stressor, teacher, elementary school

Introduction

Stress is an internal condition characterized by physical, environmental, and social situations that have the potential to be in unfavorable conditions so that it can affect human physical health [1]. According to research by Arismunandar, 30.27% of 80,000 teachers suffer from stress at work [2]. According to a study conducted, stress at work will affect teachers' performance. The higher the level of stress experienced by teachers, the productivity and performance of teachers will decrease. Job stress can be caused by individual stressors, interpersonal stressors, social stressors, physical environmental stressors, or organizational stressors [3]. Many factors can cause work stress on teachers, namely poor student behavior, time and resources, respect for work, poor interpersonal relationships, and excessive workload [4]. The process of learning activities in schools is an interactive activity between teachers and students. The preliminary research results said that elementary school teachers have a monotonous teaching task compared to other school levels [5]. The Teacher Stress Inventory can measure which stressors have the most influence on teachers.

At first, the spread of the coronavirus greatly affected the economic fields, which began to show sluggishness. The education sector also feels the same impact. This pandemic has a tremendous effect on schools, students, and teachers. The policies taken by many countries, including Indonesia, by closing all educational activities, make the government and related institutions have to present alternative educational processes for students who cannot carry out the educational process at educational institutions [6]. The teaching and learning process was carried out remotely using Information and Communication Technology (ICT). ICT aims to overcome school closures in Indonesia, which resulted in hampered learning activities. Distance learning with electronic learning methods (e-learning) is considered the best approach to continuing the pandemic's teaching and learning process.

This e-learning method requires a relatively large and fast adaptation process for teaching staff and students. This demand to adapt to technology can become a new workload for teachers, which can cause work stress factors for teachers. E-learning readiness is defined as the readiness of an organization, both mentally and physically, to implement e-learning [7].

In July 2020, a webinar on online teaching readiness was held, attended by various teachers, coinciding with the start of the new school year. As a continuation of the webinar, the author wants to know more about the relationship between teacher e-learning readiness, where there are technological, innovation, human, and self-development factors with job stressors such as workload, students' bad behavior, professional recognition, time and resources, and interpersonal relationships. In addition, it is also to assess the relationship between individual factors and work factors on e-learning readiness and job stressors.

Materials and Methods

This study uses a cross-sectional survey to assess teacher e-learning readiness and teacher work stressors for elementary school teachers in Jakarta. This study focuses on how the level of e-learning readiness of elementary school teachers, which job stressors are the most dominant, and

how the relationship between respondent characteristics consisting of individual factors and work factors on E-learning and work stressors, as well as the relationship between E-readiness and work stressors learning and its factors on teacher work stressors.

Sample selection was made by convenience sampling. The sample number obtained was 186 teachers consisting of 101 teachers from public schools (54.4%) and 85 from private schools (45.6%). Respondents consisted of 51 (27.4%) male teachers and 135 (72.6%) female teachers.

The data source used is secondary data obtained from teachers who participated in the Webinar "Jurus Jitu Mengajar Online" and filled out a questionnaire. Two questionnaires are used: Teacher Stress Inventory (TSI) Boyle and E-learning Readiness (ELR) Aydin and Tasci. Teacher Stress Inventory is used to describe teacher job stressors as the dependent variable, and E-learning Readiness is used to see teacher readiness as an independent variable. In the Teacher Stress Inventory, for each item, the respondent will fill in with 0, 1, 2, 3, 4, which means no stress, light stress, moderate stress, heavy stress, and significant stress. As for E-learning readiness, a scale of 1, 2, 3, 4, 5 is used, which describes strongly disagree, disagree, neutral/doubtful, agree, and strongly agree.

The data was collected when the participants filled out a questionnaire while participating in the webinar held in July 2020. Then the data was selected according to the inclusion and exclusion criteria. The data were analyzed using SPSS software (version 20) using descriptive statistics, Chi-square test, Mann-Whitney test, and linear regression to look more deeply into the relationship between E-learning readiness and teacher job stressors.

The E-learning assessment model introduced by Aydin and Tasci [8] is used to determine the analysis result. Data processing is carried out by how to group the data from the questionnaire according to the research variable, then look for the value of the average in each group of variables research and determine the level of readiness for each group of variables, determine the level of readiness to implement e-Learning and determine [9]. The level of readiness is described using a rating scale as in Figure 1.

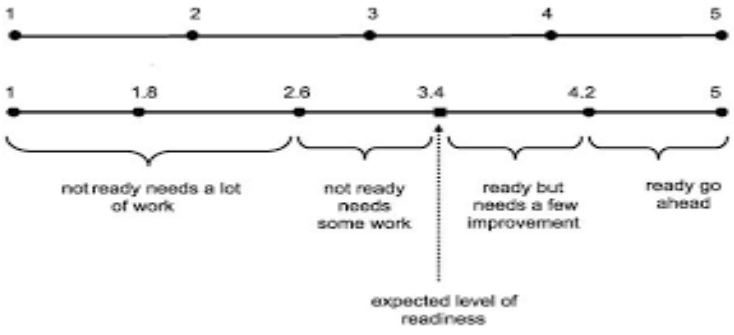

Figure 1. E-Learning Readiness Assessment Scale

Teacher Stress Inventory is used in the analysis of job stressors. It is known from the total score of all questions with the interpretation of the assessment results, namely, the higher the score, the higher the job stressor. In this study, the most significant stressor was identified by calculating the relative score, where the higher the score, the more dominant stressor. The TSI method is presented by calculating the relative value, the number of questions for each stressor

category multiplied by 4 (the highest value of response choices). Then, the total of each stressor category is divided by the mean value of each stressor category.

Results

This study included the characteristics of the respondents using individual factors (age, gender, marital status, and educational status) and occupational factors (years of service, number of students, number of classes taught, total teaching hours, teacher functions, and school status).

Tabel 1. Characteristics of Respondents

Variable	Private n=85		Public n=101		Total n=186	
	Total	%	Total	%	Total	%
Age	39(23-58)		41(19-59)		39(19-59)	
1. 21 -40 year	50	58.8	50	49.5	100	53.7
2. 41-60 year	35	41.1	51	50.5	86	46.3
Gender						
1. Male	25	29.4	26	25.7	51	27.4
2. Female	60	70.6	75	74.3	135	72.6
Marital status						
1. Single	17	20	11	10.9	28	15.1
2. Married	68	80	90	89.1	158	84.9
Education status						
1. D3	1	1.2	2	2	3	1.6
2. S1	84	98.8	99	98.0	183	98.4
Year of service						
1. 1-5 years	24	28.2	25	24.8	49	26.3
2. >5 years	61	71.8	76	75.2	137	73.7
Total students						
1. < 28 students	47	55.3	18	17.8	65	34.9
2. >28 students	38	44.7	83	82.2	121	65.1
Total class						
1. 1 class	44	51.8	72	71.3	116	62.37
2. >1 class	41	48.2	29	28.7	70	37.63
Total teaching hours						
1. <40 hours	84	98.8	99	98.0	183	98.38
2. >40 hours	1	1.2	2	2.0	3	1.62
Teacher Function						
1. Classroom	64	75.3	79	78.2	143	76.9
2. Subject	21	24.7	22	21.8	43	23.1

E-learning readiness

The readiness of teachers who took part in this study in facing the e-learning level was ready with a score of 3.84 where the score was obtained from the average score of each factor, namely technology (3.88), innovation (3.74), humans (3.87) and self-development (3.87).

The relationship between e-learning readiness and respondent characteristics using chi-square shows that e-learning readiness is significantly related (p=0.010; p<0.05) with gender, where male teachers feel more prepared (88.2%) compared to female teachers (83.7%). In addition, the function of the teacher also found a significant relationship (p = 0.047; p <0.05), namely teachers as teachers of certain subjects felt more prepared (90.6%) than teachers as homeroom teachers (83.2%).

Table 2. The Relationship between Respondent Characteristics and E-learning Readiness

Variable	E-learning Readiness		Total	p
	Not ready	Ready		
Gender				
1. Men	6(11.7%)	45(88.3%)	51(100%)	0,010 cs*
2. Women	22(16.2%)	113(83.8%)	135(100%)	
Education status				
1. D3	0(0%)	3(100%)	3(100%)	0.417 cs
2. S1	28(15.3%)	155(84.7%)	183(100%)	
Years of service	6(12.2%)	43(87.8%)	49(100%)	0.763 cs
1. 1-5 years	22(16.1%)	115(83.9%)	137(100%)	
2. >5 years				
Total students				
1. <28 students	7(10.8%)	58(89.2%)	65(100%)	0.308 cs
2. >28 students	21(17.4%)	100(82.6%)	121(100%)	
Total classroom				
1. 1 class	20(17.2%)	96(82.8%)	116(100%)	0.307 cs
2. >1 class	8(11.4%)	62(88.6%)	70(100%)	
Total teaching hours				
1. < 40 hours	28(15.3%)	155(84.7%)	183(100%)	0.476 cs
2. >40 hours				

	0(0%)	3(100%)	3(100%)	
Teachers function				
1. Classroom	24(16.8%)	119(83.2%)	143(100%)	0.047 [cs*]
2. Subject	4(9.3%)	39(90.7%)	43(100%)	
School status				
1. Public school	22(21.8%)	79(78.2%)	101(100%)	0.677 [cs]
2. Private school	6(7.1%)	79(92.9%)	85(100%)	

cs)chi-square

Job Stressors on Teachers

It was found that the most significant stressor felt by teachers was workload (27.01%) followed by professional recognition (21.73%), time and resources (21.42%), student behavior (21.34%), and interpersonal relationships (19.26%).

The relationship between the characteristics of respondents to each job stressor can be seen in this table 2. The Mann-Whitney test is used to see the connection between characteristics and teacher job stressors. The results showed a significant relationship between workload and the number of students (p=0.037, p<0.05). Likewise, there was a significant relationship between the number of students (p=0.044, p<0.05) and school status (p=0.040, p<0.05) with professional recognition. There is also a significant relationship between the number of students (p=0.035, p<0.05) with interpersonal relationships.

Table 3. Job Stressors on Teachers

Variable	Workload Median (min-max)	p	Professional recognition Median (min-max)	p	Time and resources Median (min-max)	p	Student Behaviour Median (min-max)	p	Interpersonal Relationship Median (min-max)	p
Total students										
1. <28 students	2(0-7)	0.037[m*]	4(0-16)	0.044[m*]	5(0-12)	0.087[m]	6(0-14)	0.068[m]	3(0-8)	0.035[m*]
2. >28 students	2(0-7)		2(0-12)		4(0-15)		3(0-17)		1(0-8)	
School status										
1. Public	2(0-7)	0.053[m]	2(0-16)	0.040[m*]	4(0-11)	0.163[m]	4(0-15)	0.237[m]	1(0-8)	0.053[m]
2. Private	2(0-7)		4(0-13)		5(0-15)		6(0-17)		3(0-8)	

m)Mann-Whitney

Factors in E-Learning Related to Job Stressors

The Mann-Whitney test was also used to examine the relationship between e-learning readiness and its factors to job stressors. A statistically significant connection between the self-development factor and professional recognition was found from these results. (p=0.042; P<0.05). No significant connection was found between teacher job stressors, technology, innovation, and human factors.

Table 4. Factors in E-Learning Related to Job Stressors

Variable	Workload		Student behavior		Professional recognition		Time and resources		Interpersonal relationship	
	Median (min-max)	p	Median (min-max)	p	Median (min-max)	p	Median (min-max)	p	Median (min-max)	p
ELR										
Not raedy	2(0-4)	0,669[m]	5(0-12)	0,839[m]	3.33(0-11)	0,876[m]	3.45(0-10)	0.921[m]	2.26(0-7)	0,937[m]
Ready	2(0-7)		4(0-17)		3.2(0-16)		3.49(0-15)		2.13(0-8)	
Self-development										
Not ready	2(0-5)	0.438[m]	4(0-12)	0.416[m]	2.86(0-10)	0.042[m]	3.46(0-11)	0.572[m]	2.33(0-7)	0.808[m]
Ready	2(0-7)		5(0-17)		3.25(0-16)		3.49(0-15)		2.12(0-8)	

m)Mann-Whitney

Multivariate Test Results Factors Associated with Teacher Job Stressors

A linear regression test was conducted to see which factors had the most significant role in teacher work stressors. For the results in the multivariate test, there was no significant relationship between e-learning readiness and job stressors.

Discussion

The results of this study illustrate that elementary school teachers, both public and private, already have a sufficient level of readiness for the E-learning process during the Covid-19 pandemic, with a score of 3.84. The other study This is by, which said that the professional competence of teachers is at the highest level compared to other teacher competencies [10]. The professional competence of teachers includes the ability of teachers to use new technologies, which is very necessary for undergoing e-learning. In addition, Jalal also researched teacher readiness and found that 65% of teachers felt ready for distance learning [11].

On e-learning readiness, it was found that the male gender was more ready to learn e-learning. This finding follows the study in which men had a better perception of computers [12]. They have a more positive attitude towards using computers and other technological tools.

The relationship between teacher functions and e-learning readiness where classroom teachers feel more ready for e-learning. A classroom teacher has more responsibilities and tasks in the teaching process so that when online learning is carried out, they use more time with computers than teachers of certain subjects [13].

The workload is the most significant stressor felt by teachers compared to other stressors. The same thing was said by a study conducted in Malaysia that elementary school teachers where the workload was the primary stressor for teachers [14]. However, researchers from Malaysia [15] reveal that student behavior is the most significant stressor for elementary school teachers.

In the relationship between respondent characteristics and job stressors, in this study, it was found that a smaller number of students increased stress on workload factors, professional recognition, and interpersonal relationships. This is related to social cognition [16], which says that fewer students in one class have a more negligible effect on interactions with teachers and friends. The cognitive development of students is directly proportional to the number of students. The fewer students, the more interaction, communication, and interpersonal intelligence will decrease, giving the teacher more effort. Different from what another study said, one of the factors in the teacher's workload is assessing each student so that if the number of students increases, the workload increases [17].

The number of students is also related to interpersonal relationships if the attitude is supportive and good communication in student teaching tasks [18]. A good relationship between teachers and students will also increase student learning requests and make students more obedient [19].

In addition, school status is also significantly related to professional recognition from teachers. Similar to Ningsih et al. [20], where public elementary school teachers feel calmer in teaching with civil servant status, private teachers work according to regulations set by the foundation.

In the relationship between e-learning readiness and job stressors, it was found that, statistically, a significant relationship was found between the factors of self-development with professional recognition. This finding is similar to Budi Mulyawan, who stated that the training obtained by teachers significantly affects teachers' professionalism [21]. This study illustrates that the teachers had better self-development but had higher stress levels than those who have not; this may cause by teachers with self-development who are more prepared will feel the tasks given are too easy or light to do so that they can also become stressors [22]. In addition, teachers with better self-development on professional recognition stressors felt more stressed because the professional recognition assessment was still the same as before the pandemic.

If we take a deeper look at the relationship between e-learning readiness itself and job stressors, especially workloads and time and resources, there is no significant relationship. The job stressors teachers often complain about are the workload increases, the longer working time, and the time to try using technology. As stated by Rahmasari and Setiadita, in their research on the impact of online learning, teachers must adapt to new ways of learning and take the time to adapt [23]. In addition, in terms of time, teachers' working hours are not limited because teachers have to communicate with the school or parents outside of learning hours [24].

For e-learning readiness itself, it is not a burden because, in this research, elementary school teachers are at the ready level. Like previous research data, the biology teacher at MAN schools said that the ability to use basic computers was in the good to a very good category as well as the ICT literacy level had reached the excellent category [25]. When the teacher is ready in e-learning, such as technology, it will not be a stressor [26].

There are limitations in this study that cannot be detailed in selecting respondents who are included in the population (selection bias), in this case, is the experience of using an interest in technology. In addition, in this study, significant results were obtained from the bivariate test, while no significant results were obtained from the multivariate test.

Conclusions

The E-learning readiness of elementary school teachers is at a ready level. E-learning readiness is unrelated to teacher job stressors, specifically workload and time, and resources. In addition, there is no relationship between individual factors on teacher job stressors. However, the work factor, namely, the number of students being taught (<28 students) and school status (private schools), has a relationship with the workload, professional recognition, and interpersonal relationships. Even though e-learning readiness is not a stressor for teachers' workload, schools still need to improve communication with teachers and conduct periodic evaluations.

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