



An Analysis of Teachers' belief in Learning practice in Elementary School

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Abstract. Teachers' belief is one of the components of personal competence that may affect classroom learning practices. Elementary school teachers' belief will likely affect their classroom learning process. This descriptive survey depicts elementary teachers' belief in Central Java. The data were collected from seventy-two elementary school teachers using a questionnaire. The data were analyzed using descriptive quantitative analysis. This study noticed that (1) male teachers had firmer beliefs than female teachers, (2) teachers 32-40 years of age have the firmest belief among other age groups, (3) Teachers holding master's degree exhibited the firmest belief, and (4) teachers working for 6-10 years old exhibited the firmest belief. This study may serve as the pilot study providing information regarding elementary school teachers' belief in learning practice.

Keywords: Belief, teacher, learning, elementary school

1 Introduction

Education, curriculum, and learning process are indivisible trinity. Education is an institution containing a well-planned and guided design called the curriculum, which will not be functional without being implemented in the learning process. Curriculum is a set of plan and organization of learning processes' purpose, content, and materials viewed as a guidance in the learning process, ensuring that the activities fit the institution's development and goals. It refers to a learning plan containing the learning purposes, what they need to learn, and the learning outcome [1]. Curriculum is a written document which may contain many ingredients, but basically it is a plan for the education of pupils during their enrollment in given school [2]. The interpretation that teachers give to subject matter and the classroom atmosphere constitutes the curriculum that students actually experience [3]. The definition presents a technical understanding of education

Teachers are implementers and dominate the educational practices A professional teacher is the main actor in successful curriculum implementation and learning

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M. Salimi et al. (eds.), *Proceedings of the 6th International Conference on Learning Innovation and Quality Education (ICLIQE 2022)*, Advances in Social Science, Education and Humanities Research 767,

https://doi.org/10.2991/978-2-38476-114-2_51

process, as they are capable of exercising tasks set by the curriculum regardless of their belief in the success rate. Teachers play a crucial role in determining students' learning success in the classroom [4]. However, it should be noted that teaching is a complex process, as it involves various curriculum components, such as goal, learning, content, and assessment [5]. A teacher is required to be able to cover these components when delivering lessons [6], [7].

The field of education has shifted from teacher-centered to student-centered [8]. However, in practice, learning activities in elementary school are still dominated by teacher-centered delivery [9]. Teachers are reported to face numerous problems when implementing student-centered learning, such as limited competence, inadequate facilities and infrastructure, limited time and budget, lack of creativity and innovation, lack of enthusiasm, motivation, and curiosity; lack of critical thinking skills, problem-solving skills, and decision-making skills, lack of communication and teamwork skills, poor reading habit, lack of information literacy, poor ICT literacy, and limited training and socialization of lesson planning, process, and evaluation [10]. A learning process should be ideally designed to help students develop their own knowledge structure [11]. In such a process, teachers' factors (e.g., personal characteristics; experience, and preparation education,) play pivotal roles [12].

Teachers' internal factors are known to significantly contribute to the learning process. Teachers' belief is also important for developing their cognitive and practical skills, which eventually determine the learning process success (Wang, 2006). Teachers' beliefs effect on the learning process have drawn a considerable attention from scholars, and are considered to significantly affect the classroom learning practice [14], [15]. Teachers' beliefs is believed to play important roles in implementing new curriculum [16]. Educational theories and policies on standard based, positivistic teacher development appear to result in teachers' lower belief [17]–[19]. Teachers' belief affects their responses and views of a learning object and phenomena [20].

Teachers' belief represents their emotional and cognitive activities to construct a theory and learning process based on their professional experience as an educator. Teachers' belief is a significant idea to understand teachers' thinking process, teaching method, and teaching-learning process [21]. Previous studies report that teachers' belief affects their attitude towards the learning process and their behaviors [22]–[24]. Teachers viewing a learning process as a transfer of knowledge will likely be different from those viewing it as a transformative, contextual process [24], [25]. Majority of previous studies on teachers' belief deal with their classroom practice. Its relationship with teachers' practice has been discussed in many literature on various educational issues, such as (a) constructivism [26]; (b) curriculum [27] (c) Science education goal [28] (d) nature of science [29]; (e) science, technology, and the society [30]. Teachers' belief plays an important role in the learning process, as teachers tend to depend on their belief when making lesson plan, instructional decision during the learning process, understanding students, presenting the materials, and developing their classroom professionalism [31], [32].

Previous studies report that teachers' belief does not affect teachers' practice in the classroom [33]. However, only few studies focus on elementary school teachers. [34] identify that the definition of this practice relates to the problem-oriented scientific

learning by analyzing the teaching practice, which actually stems from teachers' belief. The present study is a pilot study aiming to see elementary school teachers' belief in the learning practice. This study may have implications for the teachers' education program, especially elementary school teachers. This study also examine teachers' belief based on their characteristics, such as gender, age, educational background, employment status and length of service. These characteristics appear to be potential factors affecting teachers' belief and practice and their relationship.

2 Methodology

This survey study applied a descriptive analysis method by taking a sample from a population and using questionnaires to collect the data [35]. Data obtained from respondents were presented descriptively and analyzed to portrait elementary teachers' belief in the learning practice. Four data were collected related to learning practice, including the learning implementation, students' understanding, teachers' mastery, and professionalism.

Study participants in this study were seventy-two elementary school teachers. Most participants were female (n=60), while the rest, 72 participants, were male teachers. Thirty-one participants were in the age range of 20-30 years old, twelve participants in the age range of 31-40, twenty-two participants in the age range of 41-50, and seven participants in the age range of 51-60 years old. One participant held an associate's degree, while sixty-six participants held bachelor's degree and five participants held master's degree. Fifty-one participants were civil service, while twenty one participants were school-hired, temporary teachers. Most of them had 1-5 years of teaching experience (n=37), two of them had 6-10 years of teaching experience, thirteen of them had 11-15 years of teaching experience, fifteen of them had 16-20 years of experience, and the other fifteen teachers had more than twenty years of teaching experience. Participants in this study were recruited using the random sampling technique. The study object was the learning practice.

The data were analyzed descriptively by turning the ordinal scale into interval ones. The quantitative data were calculated using Microsoft Excel. The calculation focuses on finding average, data percentage, and interpreting the data into three categories: high moderate and low [36]. The descriptive analysis was made following Miles and Huberman's (1994) interactive analysis consisting of data reduction, data display, and conclusion drawing.

Table 1. Success Rate Indicators [36]

Indicator	Description
90	Very high
80-89	High
70-79	Fair
60-69	Low
<60	Very Low

3 Result and Discussion

Elementary school teachers’ belief in learning practice is presented in terms of their gender, age, educational background, and length of service. The following table 2 displays the dimensions of teacher belief in in terms of gender.

Table 2. Teachers Belief in terms of gender

No.	Dimension	Gender			
		Female		Male	
1.	Belief in teaching or delivering lessons	3.404	85.10%	3.375	84.38%
2.	Belief in understanding students	3.325	83.13%	3.396	84.90%
3.	Belief about presenting materials	3.371	84.27%	3.625	90.63%
4.	Belief about teachers professionalism	3.461	86.53%	3.583	89.58%
		3.390	84.76%	3.495	87.37%

Data presented in Table 2 above show that, in terms of gender, teachers’ belief is categorized as high in all dimensions. However, male teachers exhibited higher belief than female teachers. Gender has been an interesting research topic among globally. A gender-based study on elementary teachers’ perception found that there is no quantitatively significant difference, yet the qualitative analysis revealed more negative responses to survey item related to male teachers [37]. More than half participants perceive difference between male and female teachers, including views that female teachers are considered more caring than male teachers, while male teachers are viewed more dominant in teaching students. It is different from [38], who found that female mathematic teachers in Iran are more constructive than male teachers. Another study found a statistically significant difference between female and male teachers, showing that male teachers tend to have more content knowledge than their female colleagues [39].

The following table 3 display the dimensions of teacher belief in in terms age.

Table 3. Teachers Belief in terms of age

No.	Dimension	Age							
		20-30 years old		31-40 years old		41-50 years old		51-60 years old	
1.	Belief in teaching or delivering lessons	3.444	86.09%	3.500	87.50%	3.273	81.82%	3.429	85.71%
2.	Belief in understanding students	3.290	82.26%	3.458	86.46%	3.330	83.24%	3.357	83.93%
3.	Belief about presenting materials	3.452	86.29%	3.438	85.94%	3.341	83.52%	3.429	85.71%
4.	Belief about teachers professionalism	3.527	88.17%	3.417	85.42%	3.455	86.36%	3.476	86.90%
		3.428	85.70%	3.453	86.33%	3.349	83.74%	3.423	85.57%

The present study found that teachers aged between 31-40 years old have the highest belief. The present study found that teachers aged between 31-40 years old have a high belief. This finding is different from the previous study finding that younger teachers have stronger belief and more hope [40]. Meanwhile, another study found that teachers from older age group have a higher belief in pedagogical success [41]. Increasing age may lead to one's higher self-respect and confidence, and more experience may improve one's self-esteem. Every life period has its own challenges. The success and failure in a period may either increase or decrease one's belief at the same time.

The following table 4 display the dimensions of teacher belief in terms of their Educational Background.

Table 4. Teachers Belief in terms of Education

No.	Dimension	Educational Background					
		D2		S1		S2	
1.	Belief in teaching or delivering lessons	3.402	85.04%	3.000	75.00%	3.450	86.25%
2.	Belief about understanding students	3.330	83.24%	3.750	93.75%	3.350	83.75%
3.	Belief about presenting materials	3.398	84.94%	3.500	87.50%	3.600	90.00%
4.	Belief about teachers professionalism	3.470	86.74%	3.667	91.67%	3.600	90.00%
		3.400	84.99%	3.479	86.98%	3.500	87.50%

The present study found that teachers holding masters' degree education have the highest belief. Teachers' educational background also positively contributes to the teachers' belief in their profession. A higher educational background may contribute more to the teachers' professional competence, as an education process provides them with experiences and skills [42].

The following table 5 display the dimensions of teacher belief in terms of length of service.

Table 5. Teachers Belief in terms of Length of service

No.	Teachers' belief	Length of Service				
		1-5 years old	6-10 years old	11-15 years old	16-20 years old	>20 years old
1.	Belief in teaching or delivering lessons	3.412	3.750	3.327	3.483	3.100
	Belief in understanding students	85.30%	93.75%	83.17%	87.08%	77.50%
2.	Belief about presenting materials	3.284	3.625	3.442	3.400	3.150
		82.09%	90.63%	86.06%	85.00%	78.75%
3.	Belief in teaching or delivering lessons	3.426	3.875	3.385	3.383	3.300
	Belief in understanding students	85.64%	96.88%	84.62%	84.58%	82.50%
4.	Belief about presenting materials	3.532	3.833	3.410	3.467	3.200
		88.29%	95.83%	85.26%	86.67%	80.00%
		3.413	3.771	3.391	3.433	3.188

As shown in the table above, no significant difference is noticed in terms length of service. Teachers' belief represents their knowledge and understanding of their world

by establishing a complex personal and professional knowledge system. Teachers' professional competence may affect their belief. Teachers with more professional experience will likely develop more personalized belief system that restricts their understanding, assessment, and behaviors [43]. Previous studies examine factors affecting teachers' belief and practice in the classroom. These factors are transfer of knowledge, higher efficiency, adherence to curriculum policy, students' test preparation, prevailing curriculum, limited support, school community, teacher education program, teachers' knowledge, teachers' epistemological belief, and teachers' belief about students' ability [44]. Rokeach [44] proposes three types of belief: descriptive or existential belief, evaluative belief, and prescriptive belief.

4 Conclusion

Following the finding and discussions presented above, this study concluded that male teachers' have higher beliefs than female teachers. It is also concluded that those aged between 31-40 years, holding masters' degree, and have 6-10 years of teaching experience have the highest belief. This study captured a differences in teachers' belief and practice, which possibly affect the learning success. Therefore, all parties involved in the learning practice are expected to pay more attention to the teachers' belief. Future studies are recommended to see the elementary school teachers' belief in learning practice. Several limitations should be addressed to direct the future studies. First, data in the present study were collected through online questionnaire, a setting that can make students give answers not representing their real condition. This study is further limited by less proportional male-female representation as female teachers were significantly higher in number than male teachers.

Acknowledgments

Authors would like to thank Universitas Sebelas Maret for facilitating this study and elementary school teachers in Central Java for participating in this study.

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