



An Investigation into Teacher Assessment Literacy (TAL) of Learners' Writing Developments: Impact on Learners' Writing Achievements and Implications for Teacher Development

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Abstract

The present study examined teachers' assessment literacy (TAL) and its effect on their present assessment practices and learners' writing developments. The study sought to gain a better comprehending of the extent to which teachers' assessment literacy affects their practices and their learners' learning. In order to conduct the present study and collect the required data, the researchers employed teachers' assessment literacy inventory. The method of the study is based on Qualitative method. The findings of the study demonstrated that teachers' assessment literacy has a statistically significant effect on learners' writing developments and teachers' assessment awareness leads teaching environments into effective and motivated assessment design. These findings of the results suggest educators considering teachers' assessment awareness in their teacher education programs. It was found that the effects of teacher assessment literacy (TAL) has strong effect on the writing developments. That is to say, teacher assessment literacy (TAL) has a significant effect on the enhancement of the writing ability by learners.

Keywords:

Assessment, Teacher Assessment Literacy (TAL), Writing

1. Introduction

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Assessing students' performance and the quality of the instruction is considered as an important ability of teachers. However, teachers believe that they need formal assessment training (Mertler, 2003) to become assessment literates (Plake & Impara, 1992).

Writing is an important skill that needs a great consideration in first and education contexts, as it is one of the main channels of communication for academic and real-life contexts. Moreover, because of the complexity of writing skills, writing teachers should receive unique training. However, it seems that teaching writing has not received adequate attention, On the other hands, as PytlikZillig, & Bruning, (2009) and Crusan, Plakans, & Gebril, (2016) argue, due to the teachers' less training in assessment, mostly they denied to teach and assess writing. Having investigated the problems associated with writing, Lee (2010) provided a solution, 'strong professional development can lead to teachers seeing themselves as writing teachers and as assessors of writing'. Therefore, this study aims to re-construct an instrument to measure the assessment literacy of Czechia writing primary education teachers, called Teachers' Writing Assessment Literacy (TWAL). The following research question was posed: *Is there any significant effect of the use of Teacher Assessment Literacy (TAL) on Primary Education Teachers' writing?*

2. Literature Review

According to Wang & Wang (2007), the word "assessment" originates from 'ad sedere' – means to sit down beside (as cited in Birjandi & Tamjid, 2010). They also discussed that the etymology of assessment is mainly based on the learner guidance and feedback. Many methodologists such as Erwin (1991) stated assessment as "the process of defining, analyzing, understanding, and using information to upsurge students' learning and development" (p.14). Angelo (1995) defines: "assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing and interpreting evidence to determine how well performance matches those expectations and standards" (p.7).

Richards & Schmidt (2002) believes that assessment is a methodical method to assemble material and make implications and conclusions about pupils' performance. In addition, Airasian (1994) defined assessment as gathering, separating and explaining information to make-to-make decisions on student performance. He also states, "In classroom, assessment can be done conducted to diagnose student problems, to judge their academic performance, to provide feedback to student and to plan instruction" (p.16).

2.2 Definition of Assessment Literacy

Different definitions of AL were proposed by several researchers. The American Federation of Teachers (1990) provided the first definition of assessment literacy, although the term "assessment literacy" was not in use at the time. Assessment literacy's competencies included selecting assessments, developing assessments for the classroom, administering and scoring tests, using scores to aid instructional decisions, communicating results to stakeholders, and being aware of inappropriate and unethical uses of tests (AFT, 1990). The term "assessment literacy" has become accepted to refer to the range of skills and knowledge that stakeholders need in order to deal with the new world of assessment into which we have been thrust (Stiggins 1991, 1997). The other definition from Stiggins was cited. Assessment literacy (AL), traditionally defined as a basic understanding of educational assessment and related skills to apply such knowledge to various measures of student achievement (Stiggins, 1991a). Brindley (2001) saw the curriculum-related assessment as a foundation of assessment literacy, in a way that the focus is directed toward techniques of the large-scale testing, although, the discussion is about the needs of classroom teachers.

2.3 Teachers' Lack of Assessment Knowledge

Different studies were indication of teachers' inadequate ability and insufficient knowledge of assessment in assessing students' performances (Murray, 1991; Plake & Impara, 1992; Schafer,1993;

Stiggins, 1999; Mertler. 2003; Mendoza & Arandia, 2009; Jin, 2010; Fulcher, 2012; Lam. 2015). The teachers declared that the formal assessment training has greater influence than the classroom experiences (Wise, Lukin, & Roos, 1991; Mertler. 2003). Subsequently, Teachers often believe that they need remediation or assistance in applying assessment concepts and techniques, as well as making assessment-related decisions (Plake & Impara. 1992; Mertler. 2003).

In other words, classroom teachers are calling for more training due to their perceived lack of preparedness to assess their students, citing weaknesses in their undergraduate preparation programs (Plake & Impara. 1992). Moreover, the summative assessment is used by the teacher as reported by different studies. Beside inadequacy of the teacher training, the assessment textbooks weaken the teachers in assessment. For instance, Taylor (2009) stated that “highly technical or too specialized for educators seeking to understand basic principles and practice in assessment” (p. 23). Studies by Brown & Hudson. (1998) showed that textbooks are rarely changed. Similarly, the content of testing courses does not appear to change very much, perhaps reflecting the same conservatism.

2.3 A summary of Studies on Assessment Literacy

Various studies measured the assessment literacy of the teachers (Yamtim & Wongwanich. 2014; Lan & Fan. 2019; Lam. 2019). Others designed an assessment course for teachers for the purpose of assessment literacy improvement (Battistone et al., 2019; Gotch et al., 2019). Researchers as (Xu & Brown. 2016) provided AL framework. As well as those mentioned researches in the review of literature, these researches informed us in developing teacher writing assessment literacy issues.

Alkharusi (2011) implied the TALQ from Plake & Impara (1992) for examining the psychometric properties of TALQ. The results support the utility of the questionnaire for instructional and assessment purposes. Yamtim & Wongwanich (2014)'s study aimed at investigating the levels of classroom assessment literacy of primary school teachers and at suggesting a developmental approach for improving the classroom assessment literacy of primary school teachers. The data was collected by the Classroom Assessment Literacy Questionnaire (Mertler. 2003) and a focus group discussion. The study findings revealed that most of the teachers had classroom assessment literacy at the low level. Secondly, the researchers suggested the approaches for improving the classroom assessment literacy of primary school teachers by emphasizing cooperative learning and teamwork, with knowledgeable persons acting as mentors or coaches who offer advice during teaching practicum.

Xu & Brown (2016) also proposed a new framework of teacher assessment literacy. They tried to conceptualize the assessment literacy by connecting educational assessment and teacher education. The paper concluded with the theoretical contributions of the framework, a working definition of TALiP, and the implications for policy and practice of assessment education. The study by Battistone et al., (2019) indicated the low proficiency of teachers in grading and assessment, so the purpose of the study was to be a new teacher in a school that uses innovative methods such as standards-based or standards-referenced grading (SBG). The results from several interviews indicate the teacher training programs have a positive impact on the development of teachers in assessment. In other words, preparedness of the teachers as a professional was due to teacher education training on assessment.

Lan & Fan (2019) focused on the assessment literacy in the case of classroom-based assessment, that this research provides insights into assessment literacy training for in-service teachers of English. This study based on the gap analysis through a questionnaire, found that EFL teachers investigated were nearly at the functional level of classroom-based assessment literacy (CBLAL), and that they wished to be procedurally and conceptually literate through professional training so as to understand the central concepts of classroom-based assessment and use their knowledge in practice.

An empirical study by Gotch et al., (2019) examined the outcomes of a state education agency sponsored teacher professional development initiative in the northwestern United States. Results showed no changes in teacher knowledge of assessment concepts across the training. Teacher self-efficacy for assessment tasks, however, increased significantly. Nearly 26% of teachers were not or little

attained to the assessment training. The rest had been trained through workshops, conference presentation and graduate courses. In addition, the results reported the effect of linguistic background and teaching training on their writing assessment knowledge, beliefs and practices. Lam (2019) tried to investigate what Hong Kong secondary school teachers know and think about, and how they practice classroom-based writing assessment. A questionnaire, telephone interviews and class observations were used as data collection tools.

3. Methodology

The participants of the present study were around 20 Primary Education Teachers at different academic degrees from primary school teachers. They were selected from among male and female participants. The researchers selected 10 teachers (available sample) who taught writing skill course. Next, the researchers administered the assessment literacy inventory. With respect to results of this inventory, the researchers selected five instructors (Those who got the highest score from the inventory) with high assessment literacy (*assessment literate instructors*) and five instructors (Those who got the lowest score from the inventory) with low assessment literacy (*assessment illiterate instructors*) as the participants of the study (N=10). In addition, the researchers also selected 60 learners as participants and divided into two groups: experimental and control groups.

In order to collect data about the knowledge of teachers regarding assessment literacy, the Scale of Teacher Assessment Practices (STAP) was applied in this study. This questionnaire, which was developed by Howell (2013), is a 36-item measure of teacher's assessment knowledge. Individual items were generated to measure five domains of assessment literacy (selection and development of assessment methods, administering, scoring and interpreting results, using results to inform day-to-day decisions, communication of results to others, and ethical use of assessment). Regarding the scoring of this questionnaire, seven items were the indicators of the first category, which is the selection, and development of assessment methods (items 3, 11, 15, 17, 18, 27, and 29). Six items were the indicators of the second category, which is administering, scoring and interpreting results (items 2, 13, 14, 19, 25, and 26). Six other items were the indicators of the third category, which is using the results to inform day-to-day decisions (items 4, 6, 9, 22, 23, and 24). Another six items were the indicators of the fourth category that is communication of results to others (items 1, 7, 8, 16, 21, and 30). Finally, five items were the indicators of the fifth category that is the ethical use of assessment (items 5, 10, 12, 20, and 28). Hence, the participants were asked to indicate their skill level regarding various assessment practices that were addressed in the scale items. Each item was presented on a 5-point Likert-type scale with anchors that range from very low (1) to very high (5). The highest score that a participant could gain was 180 and the lowest score was 36. Regarding the reliability of TALQ, according to Howell (2013), Cronbach's alpha was calculated to be .96, indicating that this questionnaire has strong internal consistency reliability. Additionally, in the present study Cronbach's alpha was used to estimate the reliability of TALQ and the results indicated that the TALQ has a high internal consistency reliability (alpha = .92).

Table 1. The Reliability Analysis of Teachers' Assessment Literacy Questionnaire (TALQ)

Cronbach's Alpha	N of Items
.92	36

The aim of writing test is to assess the learners' writing developments before and after taking the course. It included four important parts: *error identification*, *error correction*, *completion*, and *writing* and responding to a complaint letter. The teachers had to complete all of the test tasks within 3 hours.

For letter writing part, the assessment principle for letter writing is categorized into four majors writing components: *organization*, *content*, *appearance*, and *use*, with each one having four rating level: exemplary, accomplished, improving, and beginning.

The design of this study was empirical study and was consisted of one control group and one experimental group. The application of assessment literacy was the independent variable, while writing development was the dependent variable of this study. The methodology was based on quantitate approach.

The present study attempts to an investigation into assessment literacy of learners' writing developments and implication for teachers. The participants of the present study were around 20 Primary Education Teachers at different academic degrees from primary school teachers. They were selected from among male and female participants. To comprehend and explore the latent aspects of assessment literacy and its impact on their assessment practices, the researchers needed to compare the practice and perception of AL of assessment literate teachers and assessment illiterate teachers. To do this, at the outset of the study, the researchers chose 26 instructors (available sample) who taught writing skill course. Next, the researchers administered the assessment literacy inventory. With respect to results of this inventory, the researchers selected five teachers (Those who got the highest score from the inventory) with high assessment literacy (*assessment literate instructors*) and five teachers (Those who got the lowest score from the inventory) with low assessment literacy (*assessment illiterate instructors*) as the participants of the study (N=10). To investigate the effect of teachers' assessment literacy on learners' writing development, the researcher administered a writing pretest at the beginning of the study to determine learner is writing competence at the outset of the study and a writing posttest at the end of the study. The effects on content were controlled by teaching the same materials to the learners.

In order to answer the research questions, the researcher used one independent samples t-test procedure.

4. Results and Discussion

This study aimed at exploring the impacts of teacher assessment literacy (TAL) on learners' writing development. The data collection procedure was carefully run and the raw data was entered into SPSS (version 21) to compute the required statistical analyses and deal with the research question and hypothesis of the present study.

This study aimed at exploring the impact of teacher assessment literacy (TAL) on learners' writing developments. In order to answer this null-hypothesis, two independent sample *t*-tests were conducted on both pre-test and post-test. Before presenting the results of the first *t*-test, the related descriptive statistics are given in Table 2. The statistical analysis was done for the control group to find out whether any improvements have occurred in that group or not. The following two tables show the results of the related analysis.

Table 2. Descriptive Statistics in (assessment illiterate instructors) Control group (pretest and posttest)

	N	Mean	Std. Deviation	Skewness	Kurtosis		
		Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Pretest.Con	30	15.60	2.811	.081	.427	-.928	.833
Posttest.Con	30	16.07	2.900	-.080	.427	-1.466	.833
Valid N (listwise)	30						

The mean scores of the control group in pretest and posttest demonstrate that learners' performance actually improved; however, it is necessary to determine whether this improvement was significant

enough to reject the null hypothesis. In order to answer this question, the data were checked for normality by computing the skewness and kurtosis ratios from the descriptive table (Table 3).

Table 3. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest.Con & Posttest.Con	30	.409	.025

One of the assumptions of paired samples t test is the requirement for significant correlation between the pretest and posttest indicating the data on the two tests are related. According to Table 4, there is a significant correlation between the pretest and posttest ($p < .05$).

Table 4. One sample t test (pretest and posttest)

		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig.(2-tailed)
		Mean	Std. Deviation	Std. Error	Lower	Upper			
Pair 1	Pretest.Con - Posttest.Con	-.467	3.104	.567	-1.626	.693	-.823	29	.417

The findings of the independent sample test indicated non-significant discrepancy between the mean scores of the control group from pretest to posttest. It can be acknowledged that although the students in this group developed in writing, observed discrepancy is non-significant.

Similarly, the same statistical analysis was done for the experimental group to find out whether any improvements have occurred in that group or not. The following two tables show the results of the related analysis.

Table 5. Descriptive Statistics in (assessment literate instructors) Experimental group (pretest and posttest)

	N	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic
Pretest.Exp	30	15.87	3.003	-.010	.427
Posttest.Exp	30	17.23	2.112	-.659	.427
Valid N (listwise)	30				

The mean score of the group in pretest is 15.87 and the posttest mean score is 17.23, respectively. The mean scores of the experimental group in pretest and posttest indicate that learners' performance actually improved from 15.87 in pretest to 17.23 in posttest; but it is essential to specify whether this growth and improvement was significant enough to reject the null hypothesis. Therefore, paired samples t-test was performed to compare the mean scores of pretest and posttest of the experimental group.

Table 6. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest.Exp & Posttest.Exp	30	.745	.000

One of the assumptions of paired samples t-test is also the requirement for significant correlation between the pretest and posttest indicating the data on the two tests are related. According to Table 2, there is a significant correlation between the pretest and posttest ($p < .05$).

Table 7. One sample t test (pretest and posttest)

		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	Lower	Upper			
Pair 1	Pretest.Exp Posttest.Exp	-1.367	2.008	.367	-2.117	-.617	-3.727	29	.001

Table 7 shows that the significance value is below the p value of .05; so, the researcher can assume that the mean difference is significant and the learners have developed in their performance from pretest to posttest. In other words, the null hypothesis to this research question is rejected. That is to say, *assessment literate instructors* have a significant effect on the enhancement of the writing development by learners.

5. Conclusion

The present study investigated teachers' assessment literacy and its impact on their current assessment practices and learners' writing developments. The results of the study showed that instructors' assessment literacy has a significant effect on learners' writing ability. The results of the findings also demonstrated that there is a strong discrepancy between classroom practices of assessment literate teachers and assessment illiterate teachers. Assessment literate instructors often set their classroom activities with respect to three basic notions: setting goals regarding learners' interests, dynamic assessment via classroom assignments, and giving comments. Conversely, assessment illiterate teachers counted reasons other than a teacher education program for their failure in performing formative assessment in their classroom. They believed that limited time and wages are the most important factors that demotivated them in their classrooms. They also believed that shortage of knowledge has affected their decisions, which they make. The results of the findings emphasized the focus of teacher assessment literacy more effectively in teacher education programs. Teachers can learn

how to evaluate the effectiveness of instruction and learners' practical and potential when they were taught these concepts practically. Practical and pedagogical aspects of teacher assessment should be focused on the programs; a way which teachers can apply their theoretical knowledge about selecting the most suitable teaching and assessment methods for their particular environments, conducting prerequisite modifications, administering, scoring and interpreting the findings of teacher-produced assessment methods, making suitable decisions about individual learners and teaching process.

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