



Article

Impact of Instructional Alignment Workshop on Teachers' Self-Efficacy and Perceived Instruction Performance

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Submitted: February 09, 2019; **Accepted:** May 30, 2019; **Published Online:** July 31, 2019

Abstract

The extent to which teachers' level of efficacy and quality of instructional performance changed after they received a professional development workshop on instructional alignment was unknown. Therefore, this researcher focused this inquiry on teachers in a Florida school district, investigating how professional development on standards and assessment alignment would impact teachers' self-efficacy level in writing lesson plans. Results indicated that teachers' level of efficacy and quality of instructional performance, measured as their beliefs on how alignment can benefit their students and improve how they write lesson plans, showed overall improvement after undergoing professional development. These findings can be used to initiate positive social change, starting with the field of education. The results benefit both teachers and students, as well as administrators and school districts. State and federal policymakers can also benefit from this evidence regarding the positive impact of professional development on improving instructional alignment.

Keywords: *Instructional alignment, Professional development, State standards, Teacher self-efficacy, Instructional performance*

Introduction

The alignment disparity among state standardized assessments has been the focus of multiple research efforts, with researchers concluding that instructional alignment is a key factor affecting student learning (Polikoff, 2012a, 2012b). A strong alignment between the state standards and the state assessments is required for valid assessments of student knowledge. If a state does not achieve high alignment between the assessment and the standards, then the alignment between instruction and the standards could be compromised (Carr-Chellman, 2015; Coburn, Hill, & Spillane, 2016).

The Every Student Succeeds Act (ESSA, 2015), hinged on the theoretical approach of standards-based instructions. Both the ESSA (2015) and the earlier No Child Left Behind Act (NCLB, 2002) were designed to achieve nationwide academic proficiency. The measures introduced the alignment necessity

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among standards, content, and instruction as a venue for improving learning gains on standardized assessments. Fundamentally, the NLCB (2002) Act authorized various federal education programs that are administered by the states. It also reauthorized the 1965 Elementary and Secondary Education Act. With NCLB (2002), states are required to test students in the subjects of reading and math from grade 3 to 8 and when they enter high school. The federal law provided additional funding or educational assistance for poor children, aimed at fostering improvements in their academic progress. Although ESSA (2015) reduced or eliminated many of the requirements of the NCLB (2002), the legislation maintained requirements for standardized assessments, and for content standards to be developed by states and implemented by districts and school.

The ESSA (2015) maintained one of the four basic education reform principles of the NCLB (2002). These principles were developed to apply teaching methods that show improvement in students once the states developed mandatory standards and assessment. Student proficiency on state standards is part of the educational accountability requirement. The measure of teachers' instructional alignment with state standards and assessments could be the most significant indicator of student learning of the standards (Polikoff, 2012a). The alignment among teacher instruction, state standards, and assessment as covariables can help achieve the performance goal of standards-based reform, which is increased academic level overall among U.S. students in kindergarten through grade 12 (Polikoff, 2012b). However, misalignment continues to happen in many classrooms, schools, and school districts. Misalignment undermines the clear communication of content in the standards (Porter et al., 2013). Misalignment of assessments also can fail to provide teachers with robust information about the extent to which their instruction has helped students learn core content. The need for increased alignment has taken on new urgency as educators transition to the Common Core State Standards. Despite the national educational accountability initiative, Polikoff (2012b) argued that standardized assessment policies should align with the state tests and assessments at the classroom level. This misalignment could create unintended academic effects and ineffective vertical alignment between the state and the classroom.

The standardized national educational trend delineated the demand for academic accountability of teachers and students coming from different levels of authority (Polikoff, 2012a). Educational policies such as standards-based reform demark the accountability requirements of each state, district, and school (Polikoff, 2012b). Educational system-wide accountability is the national goal of standards-based reform. The conclusive justification of this research study comes from the accountability requirements of the ESSA (2015). Thus, the ESSA (2015) required the learning of state standards and required high student performance on standardized assessments. Further, the legislation required all students to show progressive learning, demonstrated by increases in proficiency levels. Further, the parameters of the ESSA (2015) required improvement among all subgroups of students, including students with disabilities and English language learners.

The researcher found a deficiency in the literature related to professional development alignment between instruction and standards and how this type of professional development influences the instructional practice of the educators. The body of existing literature lacks adequate data regarding the level of professional development that is adequate for helping teachers to achieve high levels of classroom alignment with state standards (Polikoff & Porter, 2014). Additionally, there are few research studies specifically addressing alignment between Florida standards and instruction, creating a hollow effect on the alignment between instruction and standards. The researcher observed this obvious lack of alignment research in Florida in the process of conducting the literature review, locating only one study that reported the alignment between the standards and the assessment.

Hassler, Beech, and DeMeester (2005) conducted the sole alignment study available regarding the state of Florida. With their research, Hassler et al. (2005) sought to determine the alignment between Florida's standards and the standardized assessment. The results of the study did not show a high degree

of alignment between the standards and the assessment, recording merely an acceptable alignment. Researchers found the same results at the national level. Polikoff and Porter (2014) indicated that the assessments implemented by multiple states to measure the proficiency of the state content standards were only weakly aligned to the standards.

This research is designed to develop and explore the impact of professional development with regard to the alignment between standards and instructional practices on the self-efficacy and perceived instructional performance of teachers. Before and after they received the professional development training on the alignment between standards and instruction, the teachers took the Teacher Assessment Efficacy Scale (TAES) developed by Wolfe, Viger, Jarvinen, and Linksman (2007). The researcher raised the following two research questions to be answered through this study:

1. In what ways do professional development workshops on alignment impact teachers' self-efficacy in implementing standards for classroom lessons and assessments?
2. In what ways do professional development workshops on alignment impact teachers' beliefs regarding the benefit to students of alignment among standards, classroom instruction, and assessment?

Review of related literature

Alignment as a key factor for standards-based reform

Polikoff (2012b) postulated that the alignment of instruction, content standards, and assessments was the necessary link to connect educational policies such as standards-based reform with the required student proficiency levels. This connection would help to determine students' learning growth based on standardized assessments, linked to schools' yearly academic progress. Alignment proved to be a key factor in this literature review, which revealed it to be central for helping teachers to understand the alignment process during the professional development training. The alignment review comes from two main points of reference: (a) alignment between standardized assessments and state content standards, and (b) alignment between classroom instruction and content standards.

Multiple researchers have tackled the issue of the alignment disparity among state standardized assessments, with researchers pointing to instructional alignment as a key factor affecting student learning (Polikoff, 2012a, 2012b). A strong alignment between state standards and state assessments is required for valid assessments of student knowledge. If a state does not achieve high alignment between the assessment and the standards, then the alignment between instruction and the standards could be compromised. Thus, the results of the assessment may not reflect the alignment that the standardized assessment requires.

This researcher, therefore, focused this inquiry on the alignment of instruction with the state standards as being a central concern for professional development training. The alignment between instruction and state content standards is a challenge that each teacher needs to meet in each classroom. This alignment is necessary for achieving the nationwide standards-based policies that have been adopted as the educational law of the land. The alignment between the standards and instruction is the necessary link for achieving student performance on standardized assessment (Fulmer, 2011). The review of instructional alignment with the state standards cannot be isolated from multiple alignment factors affecting the results of standardized assessments. Other factors may also create discrepancies in the results of the standardized assessment.

As discussed previously, one of the factors is the effective construction of the standards and the strength of the alignment of the standards with state standardized assessments. Another factor is the question of how teachers integrate and align the standards for instruction, planning, and delivery (Polikoff, 2012a). All of these alignment factors influence the results of the standardized assessments. The factors are interrelated and occur independently at multiple levels of authority (e. g., state, district, school, and classroom). Also, none of the factors are mutually exclusive. Multiple factors may affect the results of standardized assessments, including socioeconomic status, teacher attitude, and self-concept. In this review, the researcher examined alignment issues in standards-based instruction, focusing on the instructional practices used in the classroom that may affect the results of the standardized assessment. The researcher also reviewed other factors impacting standardized assessments and explored additional theoretical approaches.

Proposed alignment assessment method

With the purpose of developing a common language of instructional content alignment, Porter (2002) investigated 25 years of previous research concerning that ways that teachers made decisions about instructional content. This investigation led Porter (2002) to develop three approaches for estimating content alignment: “(a) survey of teachers on the content and alignment; (b) content analyses of instructional materials; and (c) alignment indices describing the degree of overlap in content between, for example, standards and assessment” (p.4). These approaches used specific content language to describe instruction, assessment, instructional material, and standards. The establishment of the common language creates a content relationship ideal for estimating a value for an index of alignment. Porter (2002) expressed the idea that a large index value represented a higher content overlap, or alignment, between the content of two categorical documents. However, Porter (2002) did not find a criterion for determining “how big the alignment index value must be to be considered ‘good’” (p.6).

Porter (2002) noted that continued low alignment results were of concern to the U.S. Department of Education. Porter presented three possibilities for the low alignments. First, the “state standards are not sufficiently specific to allow an assessment for sufficient alignment with them” (*ibid*, p. 6). Porter stated that the “states have much more work to do to bring their assessments into alignment with their standards” (p.6). Second, the content analysis method used in the Goals 2000 study might have lacked the reliability to achieve a higher level of alignment. The third possibility was that the discrepancy between the standard holistic domain and the assessment design was too big. This discrepancy indicated that the state assessment possibly evaluated an item of the standard domain, whereas the standard as a whole domain was not evaluated.

Research Method

Design

The researcher used the cross-sectional survey to evaluate the teachers’ professional development and administered the instrument before and after the professional development training. According to Creswell (2008), researchers use the cross-sectional survey design to collect data at one specific time to measure current practices. The teachers completed the TAES before and after the professional development training. On day one, the teachers received instructions on how to complete the TAES before the professional development. On day two, they were asked to complete the TAES after the professional development training ends. The researcher used the pre- and post-training TAES data to examine the extent to which the professional development changed the efficacy of the teachers in understanding and using alignment practices for classroom instruction. The researcher used descriptive statistical analysis to evaluate the data to determine the effect of this professional development.

The search to attain an alignment method for the current professional development study led to the discovery of four different models: (a) Porter’s (2002) method using the SEC; (b) the Council for Basic Education’s method (as cited in Bhola, Impaira, & Buckendahl, 2003); (c) Webb’s (2007) method; and (d) Organization Achieve’s method (as cited in Bhola et al., 2003). The researcher used a group of expert judges to assess the content alignment between assessment and standards and found that among these models, Webb’s (2007) and Porter’s (2002) models had a better fit for the design of the professional development study. However, between the two, the researcher chose to not use Webb’s (2007) method because it necessitates the alignment of multiple domains and access to multiple raters, which were not possible to do at the time. In addition, the researcher did not choose the Webb (2007) method because it has no capacity to determine an individual teacher alignment index; rather. Instead, it was designed to compute the degree of alignment of a specific assessment to a unique group of content standards (Porter et al., 2013).

The researcher chose Porter’s (2002) method because the model provides for easy illustration of alignment between two variables and the comparison of two categorical documents as a variable for coding: (a) instructions and standards or (b) assessment and standards (Shivraj, 2017). The researcher used Porter’s (2002) method in the professional development to elucidate how to measure critical alignment values. Porter (2002) had established a mathematical expression where the two variables for alignment can be directly linked to calculating Porter’s alignment index (I). Moreover, according to Fulmer (2011), this alignment approach had “numerical methods corresponding to alpha levels 0.05 and 0.10. Thus, the researchers can determine whether their alignment measures were likely to have occurred by chance” (p.383). This method also put limits on the range of the alignment index for comparison between documents 0 and 1. According to Fulmer (2011), the alignment value showed how close the distribution of categorical points was between two tables (documents). In content analysis, the tables were related to the amount of time used to teach a topic and to the relative emphasis placed on each content standard during instruction. More importantly, Porter’s (2002) method has the mathematical flexibility required for tackling the alignment estimations of standards assessment and instruction.

Participants

The target population for this research included teachers from three charter schools: an elementary school (School A, the target school), a middle school (School B), and a school serving kindergarten through middle school (School C). The teachers from the three charter schools were asked to participate in a professional development training focusing on how to align their lesson plans. This research investigated how professional development on standards and assessment alignment impacted the efficacy of teachers when writing lesson plans across different grade levels with the state standards. School A has about 14 teachers, School B has about 10, and School C has 18 teachers, for a total population of 42. The minimum education of the teachers is a bachelor’s degree, with all teachers having received certification in the state of Florida. However, after data collection, a total of 41 teacher participants completed the survey questionnaire. Based on the sample size calculation conducted through G*Power v3.1.0, at least 34 participants were necessary for achieving 80% power for the statistical analyses. Because more than 34 participants were collected, the dataset considered for this study was sufficient for achieving statistical validity of results considering paired samples t -tests. The participants were only teachers who agreed to participate in the study voluntarily.

Table 1 below showed the demographic characteristics of the 41 teacher participants in the study. The researcher collected demographic characteristics for study participants including: years as an educator, age, gender, and education level. For years as an educator, 15 participants (36.6%) had been teaching for fewer than three years, while nine participants (22%) had been teaching for 4-8 years, and eight participants (19.5%) had been teaching for 20-30 years. In terms participants’ ages, 15 participants (36.6%) were 30-39 years old, while nine participants (22%) were 40-49 years old, six participants

(14.6%) were 21-29 years old, and six participants (14.6%) were 50-59 years old. Gender demographics reported that a majority of the participants ($n = 37$, 90.2%) were female. In terms of education levels achieved by the participants, a majority ($n = 23$, 56.1%) had completed at least a bachelor's degree, while 15 participants (36.6%) had completed a master's degree, and two participants (4.9%) had earned their doctorate degrees.

Table 1. *Demographic Characteristics of Participants (N = 41)*

		Frequency	Percent
Years as an educator	0-3 years	15	36.6
	4-8 years	9	22.0
	9-12 years	3	7.3
	13-18 years	3	7.3
	20-30 years	8	19.5
	31 years and above	3	7.3
	Total	41	100.0
	Age group	21-29 years old	6
30-39 years old		15	36.6
40-49 years old		9	22.0
50-59 years old		6	14.6
60 years old or above		5	12.2
Total		41	100.0
Gender	Female	37	90.2
	Male	4	9.8
	Total	41	100.0
Education level	Associate's degree	1	2.4
	Bachelor	23	56.1
	Master	15	36.6
	Doctoral	2	4.9
	Total	41	100.0

Instruments

The researcher relied on the TAES as the primary data collection instrument used for this research study. Developed by Wolfe et al. (2007), the TAES was a questionnaire composed of 42 items designed for elementary, middle, and high school teachers. The TAES items were rated on a five-point Likert-type scale that ranges from 1 (strongly disagree) to 5 (strongly agree). The TAES consisted of the five sub scales listed below.

1. Experiences (indicates teacher familiarity with state standards);
2. Impact (measures teachers' beliefs about the benefit of aligning classroom instructions and assessment with standards);
3. Confidence (the dimension that was most relevant for the first research question, measuring teacher confidence implementing standards for classroom lessons and assessments);
4. Students (measures teacher belief of the benefit to students of alignment among standards, classroom instruction, and assessment); and

5. Training (indicates whether teachers felt the training was adequate to create effective lesson plans aligned with standards, with results from this sub scale answering the second research question).

Wolfe et al. (2007) reported validation of TAES scores to measure teacher efficacy in standards-aligned classroom assessment. Their analysis supported the validity of TAES as a measure that indicates the efficacy of teachers related to the alignment of classroom test with the state standards. The initial finding indicated that the dimensional configuration provided the best descriptive way to estimate the parameters of the scale. In addition, Wolfe et al. (2007) reported TAES internal consistency. Subscale reliability estimates were 0.94 for the confidence sub scale, 0.91 for the impact sub scale, 0.94 for the use sub scale, 0.86 for the utility sub scale, 0.82 for the experience sub scale, and 0.77 for the students sub scale.

Data collection procedures

The professional development took place over two days, lasting three hours on Day 1 and one hour on Day 2. Before completing the professional development training, the teachers filled out the TAES. The TAES pre-surveyed the teachers, who indicated their level of agreement with the items on a five-point, Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). On Day 1, the professional development covered common language including terms for instructional alignment. The instructor then described Porter's (2002) alignment method and mapping so teachers understand the mathematical and illustrative (mapping) concept of alignment among the standards, the standardized assessment, and the instructions. Also, the instructor addressed the depth of knowledge as one of the alignment indicators for classroom instruction adopted during the construction of the state standards. Depth of knowledge was one of the necessary concepts when teachers write their aligned lesson plans.

In addition, teachers were taught how to construct standards and write out their classroom objectives, classroom work activities, and homework. On Day 2, participating teachers were taught how to align the standards with the classroom assessments. Lastly, teachers applied their new knowledge and understanding of alignment by writing a lesson plan aligned with a standard. According to Drost and Levine (2015), students demonstrated higher scores on standardized assessments when lesson plans were aligned to the standards. Teachers completed the TAES as a post-survey to obtain the final data of the research. The TAES data were analyzed to answer the research questions.

Data analysis procedures

The researcher carried out a paired-sample t-test to analyze the pre- and post-training survey data. The research design was a repeated-measures survey with an intervention (professional development). Means comparison and standard deviations were computed to determine the teachers' efficacy change after the training. The researcher performed a t-test to explore whether teachers' scores on the TAES were significantly different following the professional development. The researcher used a significance level of .05 for the analyses. Comparisons were made by section on the survey to match the research questions. The professional development was designed to provide teachers knowledge and understanding of alignment and thus was hypothesized to increase teachers' efficacy when they write their lesson plans after the training. The researcher compared the mean score of the TAES before the professional development with the mean score of the TAES after the professional development to determine if any changes were evident and significant.

Findings

For the first research question (“How did a professional development workshop on alignment impact teachers’ self-efficacy in implementing standards for classroom lessons and assessments?”), the researcher found that the professional development workshop on alignment has a significant positive impact on teachers’ confidence implementing standards for classroom lessons and assessments. Teachers’ confidence implementing standards for classroom lessons and assessments were measured using the confidence subscale. Table 2 presents the descriptive statistics of pretest and posttest scores for confidence subscale. It can be observed that the mean of post confidence scores ($M = 42.98$, $SD = 9.08$) is higher than the mean of pre confidence scores ($M = 38.10$, $SD = 6.80$). In the paired samples t-test result presented in Table 3, it can be observed that there is a significant difference from pretest to posttest [$t(40) = -3.326$, p -value = .002]. The negative mean difference value indicated that the mean post confidence score is significantly higher than the mean pre confidence score (mean difference = -4.88 , $SD = 9.39$).

Table 2. *Descriptive Statistics of Pre- and Post-Confidence Scores (N = 41)*

		Mean	N	SD	SE Mean
Pair 3	Pre confidence	38.10	41	6.80	1.06
	Post confidence	42.98	41	9.08	1.42

Table 3. *Paired Samples T-Test of Pre- and Post-Confidence Scores (N - 41)*

	Paired differences		Std. error mean	95% confidence interval of the difference		T	Df	Sig. (2-tailed)
	Mean	Std. deviation		Lower	Upper			
Pre confidence	-4.88	9.39	1.47	-7.84	-1.91	-3.326	40	0.002
Post confidence								

For the second research question (“How did a professional development workshop on alignment impact teachers’ belief of the benefit to students of alignment among standards, classroom instruction, and assessment?”), the researcher found that the professional development workshop on alignment has a significant positive impact on teachers’ beliefs regarding the benefits to students of alignment among standards, classroom instruction, and assessment. The researcher looked at two aspects to answer this question, how teachers believed professional development on alignment benefited their students and overall improved how they write their lesson plans and classroom objectives.

The researcher measured teachers’ beliefs regarding the benefits to students of alignment among standards, classroom instruction, and assessment using the student’s subscale. Table 4 presents the descriptive statistics of pretest and posttest scores for students’ subscale. It can be observed that the mean of post student scores ($M = 30.71$, $SD = 6.44$) is higher than the mean of pre-students’ scores ($M = 26.76$, $SD = 5.03$). In the paired samples t -test result presented in Table 5, it can be observed that there is a significant difference from pretest to posttest [$t(40) = -3.475$, p -value = .001]. The negative mean difference value indicated that the mean post students score is significantly higher than the mean pre-students score (mean difference = -3.95 , $SD = 7.28$).

Table 4. *Descriptive Statistics of Pre and Post Student Scores (N - 41)*

		Mean	N	SD	SE mean
Pair 4	Pre students	26.76	41	5.03	0.79
	Post students	30.71	41	6.44	1.01

Table 5. *Paired Samples T-Test of Pre and Post Student Scores (N - 41)*

	Paired differences			95% confidence interval of the difference		T	Df	Sig. (2-tailed)
	Mean	Std. deviation	Std. error mean	Lower	Upper			
Pre student	-3.95	7.28	1.14	-6.25	-1.65	-3.475	40	0.001
Post student								

The training subscale indicated whether teachers felt the training was adequate to create effective lesson plans aligned with standards. The mean pre and posttest training scores are presented in Table 6. It can be observed that the mean post-training score ($M = 23.07$, $SD = 9.38$) is higher than the mean pre-training score ($M = 16.95$, $SD = 4.84$). The result of the paired sample *t*-test presented in Table 7 showed that the mean post-training score is significantly higher than the mean pre-training score [$t(40) = -4.566$, p -value $< .01$]. This indicated that teacher participants felt the training was more adequate to create effective lesson plans aligned with standards after completing the professional development workshop.

Table 6. *Descriptive Statistics of Pre- and Post-Training Scores (N - 41)*

		Mean	N	SD	SE Mean
Pair 5	Pre training	16.95	41	4.84	0.76
	Post training	23.07	41	9.38	1.46

Table 7. *Paired Samples T-Test of Pre- and Post-Training Scores (N-41)*

	Paired differences			95% confidence interval of the difference		T	df	Sig. (2-tailed)
	Mean	Std. deviation	Std. error mean	Lower	Upper			
Pre training	-6.12	8.59	1.34	-8.83	-3.41	-4.566	40	0.000
Post training								

Discussion

The findings of the study imply that more professional development opportunities for teachers in the atmosphere of accountability should be created and offered, especially if based on the perceptions of the teachers in the current study revealed positive effects on their self-efficacy. Giving teachers with more

consistent messages about aligning standards on content, curriculum materials, and assessments with instructional standards can encourage teachers to do so. The researcher believes that with the findings of the current study, professional development may at least increase the self-efficacy of the teachers to align standards with practices on their lesson plans, which can be a significant motivation to actually write lessons plans demonstrating this needed alignment and teach accordingly. If teaching with alignment to standards, student proficiency on standardized tests and assessments can increase, a finding consistent with the conclusions of past researchers.

As of now, state and federal policies do not include particular guidelines on how schools should implement professional development workshops and opportunities. Instead, these initiatives are locally-determined and designed. The findings of the current study revealed that professional development workshops that can increase confidence and positively influence beliefs could be perceived as effective and self-efficacy boosting. State or federal policymakers can take these findings and consider additional funding for high-quality, locally designed programs, especially those can act as a model for other schools in relation to effective practices that can be learned from and implemented.

The findings of the study can be used to initiate positive social change, starting with the field of education. The findings of the study have benefits not only for the students, but also for the teachers themselves, as well as the administrators and school districts. State and federal policymakers can also benefit. The main beneficiary of the study naturally is the schools focused on this study, as the findings are more applicable to them and can be directly used as evidence to create more professional development opportunities for teachers for the purposes of alignment between instruction and standards. Teachers' effectiveness amid a high-pressure environment can be increased while student outcomes can improve. Teachers can experience less stress and anxiety if they are teaching aligned with what their students will be evaluated on. If their self-efficacy in writing lesson plans improve, this implies that their confidence and beliefs about their own skills and competence have become stronger, and such teachers can certainly do so much more for the school and the children. This is crucial since teachers have the most valuable instructional role in the educational system, helping to improve students' knowledge and understanding of the required content on the state standards. Teachers are ultimately responsible for the planning and delivery of the daily lesson plan, affecting students' learning during the school year. If these crucial skills at lesson planning can improve, their own performance can improve. Administrators and school districts can see a return on their efforts to form the professional development opportunities when because of these, individual student achievement and overall school performance improved.

Limitations

Even though the findings are insightful, and even as expected or hypothesized, there are limitations that must be disclosed so that there would be cautiousness in immediately applying findings without going beyond only what was asserted. The limitations also needed to be disclosed not because this is ethical to do but also so that future researchers can address them. First, the use of cross-sectional design has some inherent limitations. One of the main limitations of the study is that all the measurements for a sample participant are gathered at just one point in time, and this can be limiting. A longitudinal study could produce also offer unique understanding and interpretation of the data. The study may also be limited by the use of a preexisting survey, TAES instead of the researcher creating one.

The use of a quantitative method in general can also be limiting. Gathering qualitative might produce more findings that the quantitative method could not, such as the why and how of the phenomenon being researched. For instance, a qualitative method could highlight why and how professional development workshop made the teachers feel much more confident about the alignment or made them realize the benefits of alignment better.

A qualitative study can also reveal what aspects of the professional development workshop were specifically influential or impactful in the perceptions of the teachers. In addition, a quantitative method cannot reveal the social and economic factors that could have influenced the teachers' survey responses or perceptions about the professional development workshop. A quantitative method also cannot reveal thoughts and ideas of teachers about effective professional development workshops and how they should be delivered so that they can understand why alignment is needed, how alignment can be achieved and many more questions on alignment.

The use of the nonprobability sample also did not allow the researcher to generalize the results from the sample to the population. The findings could only be valid for the teachers on the three schools that were focused on, and may not even be applicable to each and every teacher on these schools. Even though the sample of teachers was of different backgrounds, from age, years of working experience, to educational backgrounds, the quantitative research conducted did not evaluate if these factors could have an influence on their responses. Usually, these factors can have a hand on teachers' perceptions and attitudes about certain educational issues, not excluding the alignment of standards and instruction, standards and assessment, and the accountability atmosphere. If these factors are assessed, they may be revealed as mediating or moderating variables to the relationships between professional development workshop and self-efficacy. Years of teaching alone can play a significant role in teachers' levels of self-efficacy. The research purpose also did not allow for the researcher to evaluate whether the workshop led to actual alignment in instruction and standards in addition to increasing self-efficacy levels in writing lesson plans in consideration of alignment goals.

Recommendations for future research

Future researchers can build on the current research by avoiding the same limitations or addressing them. They can expand the current study by widening the sample to other schools or exploring other designs. Future researchers can use a qualitative research method to understand the impact of professional development workshops more in-depth. Future researchers who would rather build on the current study and still use a quantitative method, can try to examine if years of experience, educational background, and age can affect teachers' perceptions of alignment as well as self-efficacy in writing lesson plans. Veteran teachers can have a different perception of educational standards right from the start, which can affect their responses about the professional development workshop as well.

The teachers were from three very different schools, and yet the findings revealed commonalities among the participants' perceptions of professional development workshops. Still, it would be interesting to note whether differences exist between those who were from the charter kindergarten school and charter middle school. Students and teachers from two distinct grade levels would naturally operate differently and therefore, teachers would have different perceptions of the value of alignment right from the start, affecting their perceptions of the workshop.

Since schools do not have specific guidelines on how to carry out professional development workshops, some may also consider online professional development opportunities, which means a higher level of accessibility for many teachers. Future researchers can build on the current study but with a focus on online professional development workshops. Future researchers can also look beyond the effect of professional development on self-efficacy levels, but on actual behavior or behavioral intention. The current study stopped with the self-efficacy of teachers in creating standards-aligned lesson plans, but future researchers might make additional contributions to the body of literature by also examining: (a) actual behaviors, or whether the teachers did implement their standards-aligned lesson plans in the classroom, or (b) at behavioral intention, whether the teachers intended for their lesson plans to materialize or be carried out in the school.

Conclusion

The overwhelmingly positive results of the current study are notable, even though they are not without limitations and questions. A total of 41 participants answered the TAES survey before and after completing the professional development workshop, providing measures on the TAES sub scales of experiences, impact, confidence, students, and training. The professional development workshop had clear positive effects on the self-efficacy levels of teachers when writing lesson plans.

Before this study was conducted, the researcher identified a gap in the literature with regard to professional development alignment between instruction and standards and how this type of professional development influences the instructional practice of the educators. The researcher noted the dearth of data regarding the levels of professional development that are adequate for helping teachers to achieve a high level of classroom alignment with state standards (Polikoff & Porter, 2014) or how teachers perceive these opportunities to be trained more about alignment. Research studies specific to alignment between Florida standards and instruction are lacking, creating a hollow effect on the alignment between instruction and standards. At the time, the researcher had found only one study that reported the alignment between the standards and the assessment. The current study contributes to closing this gap in research, even though more can be done to narrow down this literature deficiency.

Acknowledgements

None. No funding to declare.

Conflict of Interest

Author has no conflict of interest to report.

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