INTRODUCTION

The Tenth Amendment to the United States Constitution states: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." (Tenth Amendment, 1791, para. 1). Because education is not mentioned in the Constitution, it is one of those powers reserved to the states. However the Federal Government has increasingly become involved in public education. The Elementary & Secondary Education Act of 1965 (ESEA) was a Great Society program enacted by the U.S. Congress. The ESEA allocated federal funds for primary and secondary school education. This Act also provided a vehicle to hold schools and states accountable for student achievement (Elementary and Secondary Education Act, 1965).

Public Law 107-110, also known as the No Child Left Behind Act of 2001 (NCLB), was a revision and reauthorization of the ESEA (Public Law 107-110, 2002). The stated purpose of NCLB was a fair, equal, and significant opportunity to obtain a high-quality education. The NCLB law called for children to obtain proficiency on challenging state achievement measures.

The American Reinvestment and Recovery Act (ARRA) of 2009 was enacted by the U.S. Congress to stimulate the economy, support job creation, and invest in critical sectors including education. The ARRA created a platform for educational reform by calling for adoption of standards and assessments, measurement of growth and success, measures to improve teacher quality, and improvement of low-achieving schools (U.S. Department of Education, 2009). The ARRA provided 4.35 billion dollars in a Federal grant program known as Race to the Top. Tennessee was announced as one of the first states to receive Race to the Top grant funds. Tennessee’s application, titled First to the Top, included reforms to cur-

THE RELATIONSHIP BETWEEN
GROWTH SCORES AND THE OVERALL OBSERVATION RATINGS FOR
TEACHERS IN A PUBLIC SCHOOL SYSTEM IN TENNESSEE

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ABSTRACT

The purpose of this study was to investigate the relationship between the TVAAS growth score given by the Tennessee Department of Education and the overall Tennessee Educator Assessment Model (TEAM) observation rating for teachers in grades 3 through 8. The participating county public school system for this study is located in Northeast Tennessee. Participants were teachers in the school system teaching Math, English/Language Arts, Science, and Social Studies in grades 3 through 8 in 10 elementary schools, 6 middle schools, and 2 K-8 schools. Specifically, this research examined the relationship between the TEAM observation scores and overall TVAAS growth score given to the teacher from the Tennessee Department of Education based upon yearly-standardized test scores. Research reinforced mixed views about the validity and purpose of teacher evaluation systems and the use of Tennessee Value-Added Assessment System. Five research questions guided this study and quantitative data were analyzed using a Pearson correlation, one-way MANOVAs and a one-way ANOVA. Results indicated a moderate positive relationship between a teacher’s TEAM observation score and the TVAAS growth score given by the Tennessee Department of Education.

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STATEMENT OF THE PROBLEM

The Tennessee Department of Education now links TEAM observation scores and student achievement data (TVAAS and TCAP). At the conclusion of the 2012-2013 school year, the Department of Education released data for every public school in the state with a number, 0-5, stating how closely TEAM observation scores related to student achievement and growth data according to the Tennessee Value-Added Assessment System. Additional research is needed to assess the relationship between teacher growth scores and teacher observation scores. The purpose of this study is to determine if there is a relationship between the TVAAS growth score given by the Tennessee Department of Education and the overall TEAM observation rating for teachers given by system administrators in grades 3 through 8 in a Tennessee school system.

RELATED LITERATURE

Teacher Evaluation in Tennessee

Tennessee’s new performance-based teacher evaluation model (TEAM) requires administrators to rate a teacher’s performance on lesson planning, classroom environment, lesson standards and objectives, student motivation, lesson structure and pacing, teacher questioning, teacher deviation from lesson standards and objectives, student motivation, lesson length, and the quality of tasks. The new model requires administrators to rate a teacher’s performance on lesson planning, classroom environment, lesson standards and objectives, student motivation, lesson structure and pacing, teacher questioning, teacher deviation from lesson standards and objectives, student motivation, lesson length, and the quality of tasks.

Tennessee Value-Added Assessment System

The Tennessee Value-Added Assessment System (TVAAS) was created in 1992 as a component of the Education Improvement Act (Tennessee Department of Education, 2014). TVAAS is based on SAS’s Education Value-Added Assessment System. TVAAS is a statistical method that is designed to measure the impact schools and teachers have on their students’ academic progress. The TVAAS method uses previous test data to plot a growth pattern for every student in grades three through eight in Tennessee. Growth is measured by how much gain or progress an individual student or group of students make over time. Under Tennessee’s teacher evaluation legislation, value-added scores count for a portion of teachers’ overall evaluation. The state’s Department of Education requires 50% of the evaluation to be comprised of student achievement data that includes 35% based on student growth measures selected by the Tennessee Department of Education and 15% based on additional student achievement measures selected by the teacher.

findings

Research Question 1: Is there a significant relationship between overall TEAM observation scores and TVAAS growth scores given by the Tennessee Department of Education for teachers in grades 3 through 8 in the participating school system?

A Pearson correlation coefficient was computed to test the relationship between TEAM observation scores and TVAAS growth scores. The results of the correlation analysis revealed a moderate positive relationship between TEAM observation scores (M = 4.65, SD = .47) and TVAAS growth scores (M = 3.41, SD = 1.49) scores and a statistically significant correlation (r[238] = .28, p < .010). In general, the results suggest that teachers with high TVAAS growth scores tended to have high TEAM observation scores. Figure 1 displays the bivariate scatterplot.
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Figure 1

SCATTERPLOT FOR TEAM OBSERVATION SCORES AND TVAAS GROWTH SCORES

A one-way multivariate analysis of variance (MANOVA) was conducted to determine the relationship of license types (apprentice or professional) to the two dependent variables, TVAAS growth scores and TEAM observation scores. A significant difference was found for license type and the dependent variables, Wilks’ $\Lambda = .94$, $F(2, 237) = 7.56$, $p = .001$. The multivariate $\eta^2$ based on Wilks’ $\Lambda$ was .06. Table 2 contains the means and standard deviations on the dependent variables of license type.

An analysis of variance (ANOVA) was conducted on each of the dependent variables (observation and growth) as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at the .025 level (.05/2). The ANOVA for license type and observation scores was found to be statistically significant, $F(1, 202) = 9.72$, $p = .002$, $\eta^2 = .04$, and the ANOVA for license type and growth scores was also statistically significant, $F(1, 34) = 9.35$, $p = .002$, $\eta^2 = .08$. Teachers holding professional licenses tended to have higher TVAAS growth scores and higher TEAM observation scores than teachers holding apprentice licenses.

Research Question 3: Is there a significant difference in teachers’ TVAAS growth scores and teachers’ TEAM observation scores by socioeconomic status of the school in grades 3 through 8 in the participating school system?

A one-way multivariate analysis of variance (MANOVA) was conducted to determine the relationship of the school’s socioeconomic status (Title I or Non-Title I) to the two dependent variables, TVAAS growth scores and TEAM observation scores. There was no significant difference in teachers’ TEAM observation scores or TVAAS growth scores between Title I schools and Non-Title I schools, $F(1, 238) = 11.96$, $p < .001$. The strength of the relationship between the experience of the administrator and the observation rating, as assessed by $\eta^2$, was large (.13).

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise differences among the means of the four groups. A Dunnett’s C procedure was selected for the multiple comparisons because equal variances were not assumed ($p = .086$). There was a significant difference in the means between administrators with 11 or more years of experience and all three of the other groups. However, there was not a significant difference between the means of any of the other pairs. It appears that administrators with more experience award higher observation scores. The 95% confidence intervals for the pairwise differences, as well as the means and standard deviations for the four groups are reported in Table 4.

Summary

Important findings for this study included a moderate positive correlation between teachers’ TEAM observation scores and their TVAAS growth scores, no significant difference on TEAM observation scores or TVAAS growth scores by gender of the teacher, a significant differ-

Table 1: Means and Standard Deviations on the Dependent Variables for License Type

<table>
<thead>
<tr>
<th>Type of License</th>
<th>Team Observation</th>
<th>TVAAS Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>2.04</td>
<td>3.53</td>
</tr>
<tr>
<td>Apprentice</td>
<td>1.67</td>
<td>1.43</td>
</tr>
</tbody>
</table>

Table 2: Means and Standard Deviations on the Dependent Variables for Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Team Observation</th>
<th>TVAAS Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3.91</td>
<td>3.35</td>
</tr>
<tr>
<td>Female</td>
<td>4.88</td>
<td>3.42</td>
</tr>
</tbody>
</table>

Table 3: Means and Standard Deviations on the Dependent Variables for Socioeconomic Status

<table>
<thead>
<tr>
<th>Socioeconomic Status</th>
<th>Team Observation</th>
<th>TVAAS Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title I</td>
<td>4.06</td>
<td>51</td>
</tr>
<tr>
<td>Non-Title I</td>
<td>4.05</td>
<td>33</td>
</tr>
</tbody>
</table>

Research Question 4: Is there a significant difference in teachers’ TVAAS growth scores and teachers’ TEAM observation scores by socioeconomic status of the school in grades 3 through 8 in the participating school system?

A one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between the evaluating administrator’s experience and the overall TEAM observation rating. The factor variable, years of experience, included four levels (0-1 year of experience, 2 to 4 years of experience, 5 to 10 years of experience, 11 or more years of experience). The dependent variable was the overall TEAM observation rating. The ANOVA for experience of administrator in observation scores was significant, $F(1, 238) = 11.96$, $p < .001$. The strength of the relationship between the experience of the administrator and the observation rating, as assessed by $\eta^2$, was large (.13).

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the four groups. A Dunnett’s C procedure was selected for the multiple comparisons because equal variances were not assumed ($p = .086$). There was a significant difference in the means between administrators with 11 or more years of experience and all three of the other groups. However, there was not a significant difference between the means of any of the other pairs. It appears that administrators with more experience award higher observation scores. The 95% confidence intervals for the pairwise differences, as well as the means and standard deviations for the four groups are reported in Table 4.
The Relationship between Growth Scores and Overall Observation Ratings for Teachers in a Public School System in Tennessee

Changes to Tennessee’s teacher evaluation model include an increased emphasis on testing and accountability. These changes are in response to legislation that has led to an increased emphasis on testing and accountability.

Changes to Tennessee’s teacher evaluation model include the adoption of the Tennessee Educator Accelerator Model (TEAM) and the incorporation of student achievement and growth data (TVAAS) for teachers’ overall annual evaluations. Further research is suggested to examine other public school systems in Tennessee to determine if the results are specific to the participating public school system.

The state of Tennessee has made changes over the past several years in the way schools and teachers are evaluated. These changes are in response to legislation that has led to an increased emphasis on testing and accountability.


REFERENCES

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