A STUDY OF THE EFFECT OF CO-CURRICULAR COURSES ON STUDENT ATTENDANCE, COMPOSITE ACT SCORE AND STUDENT DROPOUT RATE

RONALD D. FORTUNE

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The Department of Professional Education Faculty

Northwest Missouri State University Missouri

Department of Professional Education

College of Education and Human Services

Maryville, MO 64468

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ABSTRACT

Student participation in co-curricular courses may have benefits to students beyond the intrinsic value of the subject taught. This research intends to investigate three specific areas of possible impact for students involved in the following specified co-curricular activities: Debate, Acapella Choir, Jazz Band, Orchestra, Show/Jazz Choir, Symphonic Band and Theatre. All research data is provided by one large Mid-western school district office of Core Data and is compared to the data for the same district located in the data inquiry section of the Missouri Department of Elementary and Secondary Education.

Twenty-one individual t-Tests have been used to measure the data for each of the seven co-curricular courses measuring student attendance, ACT Composite score and dropout rate. The results of these tests are provided within this paper and indicate the result of a comparison between students enrolled in the specified co-curricular course and the general high school population of the Mid-western suburban School District over the years 2009-10, 2010-11 and 2011-12. It should be noted that there may be some distortion in accuracy of test comparison because the data for each of the co-curricular courses is also embedded in the general population.

The results of the t-Tests and research indicate that students who participate in co-curricular courses have significantly better attendance, significantly better ACT composite scores and a significantly lower dropout rate.
INTRODUCTION

Background, Issues and Concerns

Missouri is currently employing the School Improvement Program referred to as MSIP 5. This program requires schools be evaluated in five specific areas: Academic Achievement as indicated on MAP, EOC and soon Common Core State Standards, Subgroup Achievement as identified by specific subgroups within the school community, College and Career Readiness as indicated in a variety of testing tools such as ACT, SAT, ASVAB, COMPASS and scores within AP, IB and TSA tests and post high school experience, Attendance Rates and Graduation Rates. All school districts are searching for ways to decrease the dropout rate and increase persistence to graduation as well as increase attendance, address subgroup performance and improve test readiness for the rigor and relevance of Common Core.

This study is intended to help determine if co-curricular courses provide benefits to students beyond their intrinsic subject content. Do co-curricular courses in some way help reduce the dropout rate for enrolled students, impact attendance, increase grade point average and impact ACT scores? If these courses do reduce dropout rate and increase attendance, grade point average and ACT test scores, then administrators and counselors may consider the importance of encouraging parents of middle and high school students to involve their students in activities related to high school co-curricular courses.

Practice under Investigation

Should middle school and high school administrators and counselors encourage students to become involved in co-curricular courses? Should district administration consider
providing more course options for middle school students within an enrichment field that may lead to improved participation in high school and beyond? Do co-curricular courses offer additional benefits beyond the course subject that can benefit the student, the school and the district?

School Policy to be Informed by Study

Middle School and High School course offerings and counseling of students should be considered carefully with this study in mind. Additionally parent information about the benefits of involvement in co-curricular courses should be made available.

Conceptual Underpinning

High School students who participate in the highest level of school co-curricular courses develop an internal social community that increases expectation of attendance, grade point average, graduation rate and preparation for college and career readiness. These communities are developed by internal expectations developed within the group that are often related to performance expectations for concerts, contests and other events associated with the student’s co-curricular course. Participation in these co-curricular courses increases student engagement in all aspects of school and increase the likelihood that a student will find success as indicated by the Missouri Improvement Program.

Statement of the Problem

There is limited research data available that conclusively explores the theory that student involvement in co-curricular courses will significantly decrease high school dropout rates and increase attendance, grade point average and college and career readiness.
Purpose of the Study

Collect and analyze data of students who participate in specified co-curricular courses that relate to student success in three areas: 1. Student Attendance, 2. Dropout Rate, 3. ACT Test results and the general school population. This data may provide important information for district officials who help decide student programs of study and available courses for participation in co-curricular courses at the high school level. This may also help promote discussion and evaluation of course opportunities available for middle level students.

Research Questions

RQ 1: Do students who participate in co-curricular courses have a higher attendance rate?

RQ 2: Do students who participate in co-curricular courses have a higher ACT composite score?

RQ 3: Do students who participate in co-curricular courses have a lower dropout rate?

Null Hypotheses

Ho 1: There is no significant difference in attendance rate for students who participate in identified co-curricular courses compared to the general school population.

Ho 2: There is no significant difference in Composite ACT score for students who participate in identified co-curricular courses compared to the general school population.
Hypotheses 3: There is no significant difference in Dropout rate for students who participate in identified co-curricular courses compared to the general school population.

*Anticipated Benefits of the Study*

This study will help determine advantages of student participation in co-curricular activities. The study may also provide additional rational for continued or increased support by all levels and facets of school staff to increase student participation in co-curricular courses leading to and continuing in high school.

*Definition of Terms*

Dropout Rate- For grades 9-12 the number of dropouts divided by the total of September enrollment, plus transfers in, minus transfers out, minus dropouts, added to September enrollment, then divided by two.

Co-curricular Courses- Identified in this study as one of the following classes: Jazz Band, Symphonic Band, Orchestra, Jazz/Show Choir, Accapella Choir, Debate and Theater

ACT Results- The percentage of graduates taking the ACT, along with the average composite ACT score. These statistics are provided to DESE by ACT.

MSIP5- Missouri School Improvement Program designed to evaluate schools success in: Academic Achievement, College and Career Readiness, Sub-group performance, Attendance and Graduation Rate.
Summary

Most high school staff and counselors encourage students to be immersed in the school society and be a part of an extra-curricular or co-curricular activity. The intrinsic value of a co-curricular course is important for life beyond a regular work area and study in the particular course may offer preparation for a career within the associated field. There may also be other benefits to student enrollment within a co-curricular class. This study hopes to answer at least one question. Does involvement in co-curricular courses improve student engagement in school and encourage behavior that promotes success in school as measured by Attendance, Standardized tests and Persistence to Graduation?
REVIEW OF LITERATURE

The literature reviewed provided support that students involved in co-curricular courses helped increase attendance rate, decrease dropout rate and increase student standardized test scores. According to O’Brien and Rollefson (1995) in a study for the National Center for Educational Statistics:

Indicators of successful participation in school include consistent attendance, academic achievement, and aspirations for continuing education beyond high school. Extracurricular participation (1) was positively associated with each of these success indicators among public high school seniors in 1992 (table 1). During the first semester of their senior year, participants reported better attendance than their non-participating classmates--half of them had no unexcused absences from school and half had never skipped a class, compared with one-third and two-fifths of nonparticipants, respectively. Students who participated were three times as likely to perform in the top quartile on a composite math and reading assessment compared with nonparticipants. Participants were also more likely than nonparticipants to aspire to higher education: two-thirds of participants expected to complete at least a bachelor's degree while about half of nonparticipants expected to do so. It cannot be known from these data, however, whether participation leads to success, successful students are more inclined to participate, or both occur.”

This report did indicate extracurricular to include a wide variety of activities that included co-curricular courses identified in this study as well as academic clubs and
Effect of Co-curricular courses

Additional support for the supposition that co-curricular courses provide benefits beyond their subject was reported in an online Washington Post article by Strauss (2007). Schools with music programs have graduation rates of 90.2 percent, as compared with a 72.9 percent rate for schools without music education, according to a 2006 Harris Interactive poll of high school principals funded by the National Association for Music Education and International Music Products Association, known as NAMM. The poll also found that schools with music programs have attendance rates of 93.3 percent, compared with 84.9 percent for those that don't.

(p. 1)
The author from this same article quotes the same Harris poll indicating a marked difference in SAT scores in verbal and math based on experience in music performance.

One may also infer from the available literature other components of co-curricular courses that support student engagement and impact student achievement. These components work together to help influence the positive impacts that students gain from participation in co-curricular activities. Examples of these components include: student relationships, parental involvement, connections to school and student engagement in school.

Students in co-curricular courses develop relationships with teachers and other students providing an incentive to attend school and do well in school so they can continue participation in their select co-curricular course. Taylor (2011), suggests that “Today’s learners want to connect and communicate constantly and want an environment to support these connections.” Every co-curricular course not only encourages, but
requires by the nature of the course that students communicate and connect to those around them. Students build a trust with each other and their teachers and the expectations of both community and teacher impact the student’s decision to attend school, complete assignments and continue education beyond high school. Wilson (2009) observes, “Another positive impact of participation in extracurricular activities is the possibility of a student acquiring some type of supportive relationship, mentor or role model with an adult. When children identify with a helpful coach or talented director, the children get to know them better by being involved.” (p. 15)

Parent involvement in a student’s education will impact that student’s success. Sanders, Epstein, Joyce and Connors-Tadros report that: “The findings of this study suggest that high schools that develop programs of partnership, including practices for different types of involvement, are likely to improve parental attitudes toward the school and enable more families to become involved in their teens’ education at school and at home.” (p. 15) Parents with student in co-curricular courses continue to be involved in their student’s school life as they are asked to participate in school functions in a variety of capacities such as fund raising, supervision of trips and audience members for performances.

Students who are connected to school are more likely to attend. Blue and Cook (2004) report that:

Participation in school activities is an additional strategy for schools to help students form school attachments to prevent dropping out.” A study by Davalos, Chavez, and Guardiola (1999) examined extracurricular activity, perception of
school, ethnic identification, and the association of these variables with school retention rates among Mexican Americans and White non-Hispanics. They found that students reporting participation in extracurricular activity were 2.3 times more likely to be enrolled in school than were those not participating in extracurricular activity. (p. 8)


*Academic engagement.* The extent to which students are motivated to learn and do well in school.

*Belonging.* This includes being proud of one's school, feeling respected, being able to talk to teachers, and feeling like school staff are interested in students.

*Discipline/fairness.* The extent to which students perceive the rules of the school to be enforced fairly.

*Liking for school.* Whether students looked forward to going to school.

*Extracurricular activities.* Participation in out-of-school activities.

*Student voice.* This includes, for example, opportunities for students to participate in decision making.

*Peer relations.* This includes the presence of friends and students' feelings of loneliness.

*Safety.* The extent to which students reported that they feel safe in school.
**Teacher support.** The most common theme that emerged from the literature review, this includes whether students feel close to or valued by teachers and school staff.”

According to Gallup (2012), “57% of students are engaged in school, 27% are not engaged and 16% are actively disengaged.” (p. 4) Gallup continues to define each of the preceding as:

Engaged | students are highly involved with and enthusiastic about school
Not Engaged | students are present but not involved with or enthusiastic about school
Actively Disengaged | students undermine the educational process for self and others (p. 11)

Students who participate in co-curricular courses demonstrate a higher level of engagement in the school community. Band and choir members participate in a wide variety of school activities from marching band to pep band. All groups represent their school at district and state level events as well as community and school performances. Some groups are continue their education with local and national trips to competitive festivals.
RESEARCH METHODS

Research Design

This study utilizes the independent variables of Student Attendance, ACT Composite Score and Dropout Rate as recorded by the Missouri Department of Elementary and Secondary Education for the years 2009-10, 2010-11, and 2011-12. The dependent variables will be provided by the department of Core Data for the School District with excel spreadsheets indicating Student Attendance, ACT Composite Score and Dropout Rate for students enrolled in Debate, Acapella Choir, Jazz Band, Orchestra, Jazz/Show Choir, Symphonic Band and Theatre for the years indicated above. Independent t-Tests will be utilized to compare high school Attendance, ACT Composite and Dropout Rate between the independent variables and the dependent variables. The results of the t-Tests will determine if participation in the specified Co-curricular courses impacts student outcomes for Attendance, ACT Composite and Dropout Rate.

Study Group Description

This study reviews Attendance, ACT Composite and Dropout Rate of students who participated in specified co-curricular courses within a large suburban mid-western school district during the 2009-2010, 2010-11, and 2011-2012 school year. This information will be compared to all high school students within this district for these years. Although the study group dependent variables are specific to students who have only enrolled in the specified co-curricular courses, the data provided by the Missouri Department of Elementary and Secondary Education will include all students enrolled in high school during those years. Therefore, the independent variables reported by the
Missouri Department of Elementary and Secondary Education will include scores for both the members and non-members of the co-curricular courses reviewed.

**Data Collection and Instrumentation**

All data will be collected with the assistance of the school district office of Core Data with the exception of data provided by the Missouri Department of Elementary and Secondary Education. Data concerning specific outcomes of co-curricular courses will be transferred to an excel spreadsheet to be incorporated into t-Tests utilizing the VassarStats: Statistical Computation Web Site.

**Statistical Analysis Methods**

Data from the Missouri Department of Elementary and Secondary Education has been utilized to provide independent variables from the study school district in the areas of Attendance, ACT Composite Score and Dropout Rate for the years of 2009-10, 2010-11 and 2011-12. The dependent variables are provided from data retrieved by the office of core data in the study school district for the same years and research topics within specific Co-curricular courses that include, Debate, Acapella Choir, Jazz Band, Orchestra, Show/Jazz Choir and Symphonic Band. A series of t-Tests have been applied to Attendance, ACT Composite Score and dropout rate comparing the District average to averages in each Co-Curricular course for the indicated years.
FINDINGS

Table 1

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
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<td>Debate Attend (n=3)</td>
<td>95.26</td>
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<td>District Attend (n=3)</td>
<td>92.43</td>
<td>2.823</td>
<td>6.05</td>
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</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Attendance for students in Debate class and all high school students in the district. The mean of attendance for Debate course students was 95.26% and the mean of the district was 92.43%. The Mean D, or difference between the two groups, was 2.823. The t-test result was 6.05 and the df was 4. The null hypothesis states there is not a significant difference in attendance for students enrolled in Debate class and all other high school courses. Since the p-value was 0.0019, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Debate demonstrated a significantly higher attendance rate than those not enrolled in this course.

Table 2

<table>
<thead>
<tr>
<th>Source</th>
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Note: Significant when p<=0.25
The above data table is information from the study school district comparing differences between Attendance for students in Acapella Choir class and all high school students in the district. The mean of attendance for Acapella course students was 95.35% and the mean of the district was 92.43%. The Mean D, or difference between the two groups, was 2.92. The t-test result was 5.44 and the df was 4. The null hypothesis states there is not a significant difference in attendance for students enrolled in Acapella class and all other high school courses. Since the p-value was 0.0055, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Acapella Choir demonstrated a significantly higher attendance rate than those not enrolled in this course.

**Table 3**
**t-Test Analysis Results for Attendance NKC District Average & Jazz Band**

<table>
<thead>
<tr>
<th>Source</th>
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<td>96.70</td>
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</tr>
<tr>
<td>District Attend (n=3)</td>
<td>92.43</td>
<td>4.267</td>
<td>12.11</td>
<td>4</td>
<td>0.00027</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Attendance for students in Jazz Band class and all high school students in the district. The mean of attendance for Jazz Band course students was 96.70% and the mean of the district was 92.43%. The Mean D, or difference between the two groups, was 4.267. The t-test result was 12.11 and the df was 4. The null hypothesis
states there is not a significant difference in attendance for students enrolled in Jazz Band class and all other high school courses. Since the p-value was 0.00027, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Jazz Band demonstrated a significantly higher attendance rate than those not enrolled in this course.

Table 4
\textit{t-Test Analysis Results for Attendance NKC District Average & Orchestra}

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
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<td>District Attend (n=3)</td>
<td>92.43</td>
<td>4.51</td>
<td>11.15</td>
<td>4</td>
<td>0.00037</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Attendance for students in Orchestra class and all high school students in the district. The mean of attendance for Orchestra course students was 96.94% and the mean of the district was 92.43%. The Mean D, or difference between the two groups, was 4.51. The t-test result was 11.15 and the df was 4. The null hypothesis states there is not a significant difference in attendance for students enrolled in Orchestra class and all other high school courses. Since the p-value was 0.00037, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Orchestra demonstrated a significantly higher attendance rate than those not enrolled in this course.
Table 5
\textbf{t-Test Analysis Results for Attendance NKC District Average & Show Choir}

<table>
<thead>
<tr>
<th>Source</th>
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</tr>
<tr>
<td>District Attend (n=3)</td>
<td>92.43</td>
<td>2.91</td>
<td>4.82</td>
<td>4</td>
<td>0.00852</td>
</tr>
</tbody>
</table>

Note: Significant when p\leq0.25

The above data table is information from the study school district comparing differences between Attendance for students in Show/Jazz Choir class and all high school students in the district. The mean of attendance for Show/Jazz Choir course students was 95.34% and the mean of the district was 92.43%. The Mean D, or difference between the two groups, was 2.91. The t-test result was 4.82 and the df was 4. The null hypothesis states there is not a significant difference in attendance for students enrolled in Show/Jazz Choir class and all other high school courses. Since the p-value was 0.00852, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Show/Jazz Choir demonstrated a significantly higher attendance rate than those not enrolled in this course.

Table 6
\textbf{t-Test Analysis Results for Attendance NKC District Average & Band}

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
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<tr>
<td>Band Attend (n=3)</td>
<td>96.54</td>
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<td></td>
</tr>
<tr>
<td>District Attend (n=3)</td>
<td>92.43</td>
<td>4.11</td>
<td>12.59</td>
<td>4</td>
<td>0.00023</td>
</tr>
</tbody>
</table>

Note: Significant when p\leq0.25
The above data table is information from the study school district comparing differences between Attendance for students in Symphonic Band class and all high school students in the district. The mean of attendance for Symphonic Band course students was 96.54% and the mean of the district was 92.43%. The Mean D, or difference between the two groups, was 4.11. The t-test result was 12.59 and the df was 4. The null hypothesis states there is not a significant difference in attendance for students enrolled in Symphonic Band class and all other high school courses. Since the p-value was 0.00023, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Symphonic Band demonstrated a significantly higher attendance rate than those not enrolled in this course.

**Table 7**  
* t-Test Analysis Results for Attendance NKC District Average & Theatre

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
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<tbody>
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<td>Theatre Attend (n=3)</td>
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<tr>
<td>District Attend (n=3)</td>
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<td>2.257</td>
<td>3.62</td>
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<td>0.02236</td>
</tr>
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</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Attendance for students in Theatre class and all high school students in the district. The mean of attendance for Theatre course students was 94.69% and the mean of the district was 92.43%. The Mean D, or difference between the two groups, was 2.257. The t-test result was 3.62 and the df was 4. The null hypothesis states there is not a significant difference in attendance for students enrolled in Theatre class and all other
high school courses. Since the p-value was 0.02236, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Theatre demonstrated a significantly higher attendance rate than those not enrolled in this course.

**Table 8**
*t-Test Analysis Results for ACT Comp. NKC District Average & Debate*

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
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<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debate ACT (n=3)</td>
<td>23.86</td>
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</tr>
<tr>
<td>District ACT (n=3)</td>
<td>21.27</td>
<td>2.593</td>
<td>8.03</td>
<td>4</td>
<td>0.00130</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Composite ACT scores for students in Debate class and all high school students in the district. The mean of ACT Composite for Debate course students was 23.86 and the mean of the district was 21.27. The Mean D, or difference between the two groups, was 2.593. The t-test result was 8.03 and the df was 4. The null hypothesis states there is not a significant difference in Composite ACT score for students enrolled in Debate class and all other high school courses. Since the p-value was 0.00130, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Debate demonstrated a significantly higher ACT Composite score than those not enrolled in this course.
Table 9

**t-Test Analysis Results for ACT Comp. NKC District Average & Acapella Choir**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
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<th>df</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Acapella ACT (n=3)</td>
<td>22.48</td>
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<td>District ACT (n=3)</td>
<td>21.27</td>
<td>1.217</td>
<td>10.29</td>
<td>4</td>
<td>0.00025</td>
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</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Composite ACT scores for students in Acapella Choir class and all high school students in the district. The mean of ACT Composite for Acapella Choir course students was 22.48 and the mean of the district was 21.27. The Mean D, or difference between the two groups, was 1.217. The t-test result was 10.29 and the df was 4. The null hypothesis states there is not a significant difference in Composite ACT score for students enrolled in Acapella Choir class and all other high school courses. Since the p-value was 0.00025, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Acapella Choir demonstrated a significantly higher ACT Composite score than those not enrolled in this course.
Table 10
**t-Test Analysis Results for ACT Comp. NKC District Average & Jazz Band**

<table>
<thead>
<tr>
<th>Source</th>
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<th>p-value</th>
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<tr>
<td>Jazz Band ACT (n=3)</td>
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<tr>
<td>District ACT (n=3)</td>
<td>21.27</td>
<td>2.893</td>
<td>6.59</td>
<td>4</td>
<td>0.00137</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Composite ACT scores for students in Jazz Band class and all high school students in the district. The mean of ACT Composite for Jazz Band course students was 24.16 and the mean of the district was 21.27. The Mean D, or difference between the two groups, was 2.893. The t-test result was 6.59 and the df was 4. The null hypothesis states there is not a significant difference in Composite ACT score for students enrolled in Jazz Band class and all other high school courses. Since the p-value was 0.00137, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Jazz Band demonstrated a significantly higher ACT Composite score than those not enrolled in this course.

Table 11
**t-Test Analysis Results for ACT Comp. NKC District Average & Orchestra**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orchestra ACT (n=3)</td>
<td>25.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District ACT (n=3)</td>
<td>21.27</td>
<td>4.08</td>
<td>19.03</td>
<td>4</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25
The above data table is information from the study school district comparing differences between Composite ACT scores for students in Orchestra class and all high school students in the district. The mean of ACT Composite for Orchestra course students was 25.35 and the mean of the district was 21.27. The Mean D, or difference between the two groups, was 4.08. The t-test result was 19.03 and the df was 4. The null hypothesis states there is not a significant difference in Composite ACT score for students enrolled in Orchestra class and all other high school courses. Since the p-value was 0.0001, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Orchestra demonstrated a significantly higher ACT Composite score than those not enrolled in this course.

Table 12
*t-Test Analysis Results for ACT Comp. NKC District Average & Show Choir*

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shw Choir ACT (n=3)</td>
<td>23.31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District ACT (n=3)</td>
<td>21.27</td>
<td>2.04</td>
<td>5.54</td>
<td>4</td>
<td>0.0026</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the school district comparing differences between Composite ACT scores for students in Show/Jazz Choir class and all high school students in the district. The mean of ACT Composite for Show/Jazz Choir course students was 23.31 and the mean of the district was 21.27. The Mean D, or difference between the two groups, was 2.04. The t-test result was 5.54 and the df was 4. The null hypothesis states there is not a significant difference in Composite ACT score for
students enrolled in Show/Jazz Choir class and all other high school courses. Since the p-value was 0.0026, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Show/Jazz Choir demonstrated a significantly higher ACT Composite score than those not enrolled in this course.

Table 13
t-Test Analysis Results for ACT Comp. NKC District Average & Band

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band ACT (n=3)</td>
<td>23.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District ACT (n=3)</td>
<td>21.27</td>
<td>2.67</td>
<td>29.69</td>
<td>4</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Composite ACT scores for students in Symphonic Band class and all high school students in the district. The mean of ACT Composite for Symphonic Band course students was 23.94 and the mean of the district was 21.27. The Mean D, or difference between the two groups, was 2.67. The t-test result was 29.69 and the df was 4. The null hypothesis states there is not a significant difference in Composite ACT score for students enrolled in Symphonic Band class and all other high school courses. Since the p-value was 0.0001, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Symphonic Band demonstrated a significantly higher ACT Composite score than those not enrolled in this course.
Table 14
*t-Test Analysis Results for ACT Comp. NKC District Average & Theatre*

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theatre ACT (n=3)</td>
<td>21.597</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District ACT (n=3)</td>
<td>21.270</td>
<td>0.33</td>
<td>1.22</td>
<td>4</td>
<td>0.1627</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Composite ACT scores for students in Theatre class and all high school students in the district. The mean of ACT Composite for Theatre course students was 21.597 and the mean of the district was 21.27. The Mean D, or difference between the two groups, was 0.33. The t-test result was 1.12 and the df was 4. The null hypothesis states there is not a significant difference in Composite ACT score for students enrolled in Theatre class and all other high school courses. Since the p-value was 0.1627, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Theatre demonstrated a significantly higher ACT Composite score than those not enrolled in this course.
Table 15
**t-Test Analysis Results for Dropout Rate NKC District Average & Debate**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debate Drop (n=3)</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Drop (n=3)</td>
<td>2.833</td>
<td>2.833</td>
<td>11.79</td>
<td>4</td>
<td>0.00015</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Dropout rate for students in Debate class and all high school students in the district. The mean of Dropout rate for Debate course students was 0.00% and the mean of the district was 2.833%. The Mean D, or difference between the two groups, was 2.833. The t-test result was 11.79 and the df was 4. The null hypothesis states there is not a significant difference in Dropout rate for students enrolled in Debate class and all other high school courses. Since the p-value was 0.00015, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Debate demonstrated a significantly lower Dropout rate than those not enrolled in this course.

Table 16
**t-Test Analysis Results for Dropout Rate NKC District Average & Acapella**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acapella Drop (n=3)</td>
<td>0.007</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Drop (n=3)</td>
<td>2.833</td>
<td>2.826</td>
<td>11.76</td>
<td>4</td>
<td>0.00015</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25
The above data table is information from the study school district comparing differences between Dropout rate for students in Acapella Choir class and all high school students in the district. The mean of Dropout rate for Acapella Choir course students was 0.007% and the mean of the district was 2.833%. The Mean D, or difference between the two groups, was 2.826. The t-test result was 11.76 and the df was 4. The null hypothesis states there is not a significant difference in Dropout rate for students enrolled in Acapella Choir class and all other high school courses. Since the p-value was 0.00015, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Acapella Choir demonstrated a significantly higher ACT Composite score than those not enrolled in this course.

Table 17
**t-Test Analysis Results for Dropout Rate NKC District Average & Jazz Band**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jazz Band Drop (n=3)</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Drop (n=3)</td>
<td>2.833</td>
<td>2.832</td>
<td>11.78</td>
<td>4</td>
<td>0.00015</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Dropout rate for students in Jazz Band class and all high school students in the district. The mean of Dropout rate for Jazz Band course students was 0.001% and the mean of the district was 2.833%. The Mean D, or difference between the two groups, was 2.832. The t-test result was 11.78 and the df was 4. The null hypothesis states there is not a significant difference in Dropout rate for students enrolled in Jazz
Band class and all other high school courses. Since the p-value was 0.00015, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Jazz Band demonstrated a significantly higher ACT Composite score than those not enrolled in this course.

**Table 18**

**t-Test Analysis Results for Dropout Rate NKC District Average & Orchestra**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orchestra Drop (n=3)</td>
<td>0.008</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Drop (n=3)</td>
<td>2.833</td>
<td>2.825</td>
<td>11.75</td>
<td>4</td>
<td>0.00015</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Dropout rate for students in Orchestra class and all high school students in the district. The mean of Dropout rate for Orchestra course students was 0.008% and the mean of the district was 2.833%. The Mean D, or difference between the two groups, was 2.825. The t-test result was 11.75 and the df was 4. The null hypothesis states there is not a significant difference in Dropout rate for students enrolled in Orchestra class and all other high school courses. Since the p-value was 0.00015, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Orchestra demonstrated a significantly higher ACT Composite score than those not enrolled in this course.
Table 19

**t-Test Analysis Results for Dropout Rate NKC District Average & Show Choir**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show C. Drop (n=3)</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Drop</td>
<td>2.833</td>
<td>2.833</td>
<td>11.79</td>
<td>4</td>
<td>0.00015</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Dropout rate for students in Show/Jazz Choir class and all high school students in the district. The mean of Dropout rate for Show/Jazz Choir course students was 0.00% and the mean of the district was 2.833%. The Mean D, or difference between the two groups, was 2.833. The t-test result was 11.79 and the df was 4. The null hypothesis states there is not a significant difference in Dropout rate for students enrolled in Show/Jazz Choir class and all other high school courses. Since the p-value was 0.00015, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Show/Jazz Choir demonstrated a significantly higher ACT Composite score than those not enrolled in this course.

Table 20

**t-Test Analysis Results for Dropout Rate NKC District Average & Band**

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band Drop (n=3)</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Drop</td>
<td>2.833</td>
<td>2.823</td>
<td>11.74</td>
<td>4</td>
<td>0.00015</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25
The above data table is information from the study school district comparing differences between Dropout rate for students in Symphonic Band class and all high school students in the district. The mean of Dropout rate for Symphonic Band course students was 0.01% and the mean of the district was 2.833%. The Mean D, or difference between the two groups, was 2.823. The t-test result was 11.74 and the df was 4. The null hypothesis states there is not a significant difference in Dropout rate for students enrolled in Symphonic Band class and all other high school courses. Since the p-value was 0.00015, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Symphonic Band demonstrated a significantly higher ACT Composite score than those not enrolled in this course.

Table 21

t-Test Analysis Results for Dropout Rate NKC District Average & Theatre

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theatre Drop (n=3)</td>
<td>0.011</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Drop (n=3)</td>
<td>2.833</td>
<td>2.822</td>
<td>11.74</td>
<td>4</td>
<td>0.00015</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

The above data table is information from the study school district comparing differences between Dropout rate for students in Theatre class and all high school students in the district. The mean of Dropout rate for Theatre students was 0.011% and the mean of the district was 2.833%. The Mean D, or difference between the two groups, was 2.822. The t-test result was 11.74 and the df was 4. The null hypothesis states there is not a significant difference in Dropout rate for students enrolled in Theatre class and all
other high school courses. Since the p-value was 0.00015, and the Alpha number was set at 0.25, the null hypothesis is rejected. Therefore, students enrolled in the co-curricular course Theatre demonstrated a significantly higher ACT Composite score than those not enrolled in this course.
CONCLUSIONS and RECOMMENDATIONS

The data provided in each test suggests that participation in co-curricular classes impacts students in a positive way. The literature reviewed reinforces that this participation increases student success in school evidenced in lower student dropouts, higher test scores and better attendance. This is an important concept for school officials to keep in mind especially in an environment of high stakes testing that does not specifically target these courses.

The Common Core State Standard tests will soon be part of nearly every school vocabulary. Students will be held accountable for their knowledge in specific areas such as math, science and communication. Limited funding will continue to be an issue and although it may seem counterintuitive to continue supporting co-curricular courses, these courses may be the reason that students come to school each day. These courses may also impact the level of engagement in all coursework which students apply daily.

It is suggested that continued research be applied to the impact of co-curricular and extra-curricular courses on student achievement and engagement. An informal survey of teachers who either teach co-curricular courses or coach extra-curricular activities have indicated a general drop in student participation over the past ten years. It is suggested that research in the number of middle and high school students involved in either extra or co-curricular activities be researched.

The original intent of this paper was to define the relationship between participation in co-curricular courses and student dropout rate. Much of the literature indicated in the reference section of this paper relates specifically to this topic and although there is limited specific research data, much of the literature implies that there is a link between
reduced dropout rate and student participation in co-curricular courses. Because additional data was available, the scope of this paper has extended and the research of the this study has extended. This paper seeks to answer several questions concerning student participation in co-curricular classes. The tests that follow research three specific topics: 1. The impact of co-curricular classes on student attendance. 2. The impact of co-curricular classes on student composite ACT scores. 3. The impact of co-curricular classes on student dropout rates.

Once important research consideration may be determining when students become disengaged from school and why. Instinct and years of teaching would suggest that this may occur in the middle school years indicating an increased need to find activities for this age student to find a passion that will link them to school. The original tenants of middle school suggest that students should utilize these years to explore a variety of interests and engage in those that provide positive reinforcement. How many students who drop out of school or become disengaged with learning have never found a passion for some area of school?
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