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Utilization of a High Stakes High School Graduation Exam to Assess the Impact of Agricultural Education: A Measure of Curriculum Integration

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Phipps, Osborne, Dyer, and Ball , (2008) posited that, "Agricultural education in secondary schools has played an important role in enhancing student achievement in the core subject areas…" (p. 4), while Enderlin and Osborne (1992) reported that agricultural students received higher test scores in biology than students in other science classes. However, further evaluation of this academic integration is warranted to determine which practices are most beneficial to students. This study sought to determine if there was a relationship between the number of agricultural education classes that students took and the subsequent outcomes on the Alabama High School Graduation Exam. To address the research question, binary logistic regression was employed. Results indicated that the model did predict the outcomes on the language and math portion of the exam while the model failed to predict outcomes on the social studies, biology, and reading portions of the exam. This study should be replicated using standardized tests in other states. Comparable data should be collected for students not enrolled in agriculture classes so that the groups mean scores could be compared.

Key Words: academic integration; contextualized learning; high-stakes exams

The incorporation of academics into career and technical classes, while initially proposed in the comprehensive high schools of the early 20th century, has experienced a revitalization of interest among agricultural educators. "The model for agricultural education in the public schools has changed" (Myers & Dyer, 2004, p. 47). According to Myers and Dyer (2004), the "old" model for career and technical education included a major focus on job training skills while the "new" model is more holistic in nature that includes all facets of a well-rounded education. With mandates established by federal legislation, career and technical instructors are expected to present a rigorous and challenging curriculum for their students while preparing them for both work and secondary schooling (USDE, 2010). Whether preparing for college or a career, high school graduates need to have the foundational skills to enable them to learn additional academic and job-specific skills, both at the entry-level and throughout their careers. Further, instructors have been challenged to determine what content already exists within their curriculum and develop ways to further enhance those lessons and bring out academic standards to provide a more meaningful experience for their students. According to the United States Department of Education (2010a):

> The 1994 reauthorization of the Elementary and Secondary Education Act (ESEA) established a requirement that each state set standards defining what their students should know and be able to do in critical subjects and assess whether students were mastering those standards. (p. 1)

Similarly, mandates established by the No Child Left Behind Act of 2001 (USDE, 2001) dictate that students should be prepared to meet minimum competencies set forth by the state. A major goal, according to NCLB (Title I, Sec 1001,(9)), is "promoting school wide reform and ensuring the access of children to effective, scientifically based instructional strategies and challenging academic content" (p. 1440). Specifically, the reauthorization of NCLB includes three major goals.

1. Raising standards for all students in English, language arts, and mathematics;
2. Developing better assessments aligned with college-and career-ready standards;
3. Implementing a complete education through improved professional development and evidence-based instruction models and supports.
4. (United States Department of Education, 2010b, p. 1)

In 1988 researchers working with the National Research Council (NRC) published a report entitled: *Understanding Agriculture: New Directions for Education*. This report marked a call for major change in agricultural education. The authors offered several purposes behind the study, at the top of the list was a sincere concern for "declining enrollment, instructional context, and quality of agricultural education programs" (National Research Council, p. V). The report focused on two major areas: agricultural literacy and education in agriculture. The committee posited that, "renewed commitment to and broadening of agricultural education will ensure skills and knowledge essential to the future vitality of American agriculture" (p. VII). The authors went on to elaborate on the importance of all persons become agriculturally literate. Agricultural literacy is defined broadly in that persons have some knowledge and appreciation of the food and fiber industry. This report had a myriad of recommendations. Of those, one has particular interest to this study. The authors proposed that agriculture is an excellent context for teaching science principles, especially biology. "The most significant opportunity after junior high for teaching science through agriculture comes in biology" (National Research Council, 1988, p. 14). The report reflected that through the use of real world examples and in class projects, science concepts could be more effectively taught. This could be accomplished in the agricultural classroom. The committee posited that by using curriculum integration, both agricultural literacy and science literacy could be enhanced.

Concurrent with recommendations from The National Research Council (1988), researcher Mark Balschweid (2002), conducted a case-study in which students in a high school biology class were taught using animal agriculture as a context. Balschweid (2002) noted, "The purpose of this study was to determine how high school students perceived science and agriculture after completing a traditional year-long biology class that used animal agriculture as the context" (p. 1). The study was conducted from 1993-1999. Students taught using animal agriculture as a context totaled 531. Three animal agricultural themes were used to teach biology. The themes revolved around dairy, poultry, and swine. Themes were rotated each year to the next. The teacher in the study had earned a bachelor's degree in Agricultural Education but had chosen to teach general science instead of agricultural education. His teaching of biology, using animal agriculture as a context, stemmed from a desire to teach students where their food comes from.

Results from the study indicated that the majority of the students did well in the class (90% reported earning an A or B). Over 85% indicated that by taking an agricultural based biology class, they had a better understanding and appreciation of the food and fiber industry. Other conclusions of interest from the study were:

> students gained a better understanding of the role that science plays in the world of animal agriculture as a result of taking a biology course that taught science using animal agriculture as the context; subject matter taught in the context of animal agriculture, from a teacher experienced in modern animal agricultural practices, can have a positive effect upon student attitudes towards agriculture and those who work in the agriculture industry, even when taught within a school corporation located in a larger metropolitan city; finally, students instructed using animal agriculture as a context for teaching biology were able to transfer general information regarding health to related subject matter in animal health as taught during the class (Balschweid, 2002, pp. 64-65).

Perceptions of Agricultural Education and the Influence on Academic Achievement

Agricultural education in the past has been considered by some as primarily vocational in nature; however, instructors have been called upon to teach a curriculum with greater emphasis on academic content (Parr, Edwards, & Leising, 2006). Myers and Dyer (2004) noted, "Teachers of agriculture in the secondary schools are being called upon to integrate curriculum that addresses standards in science, mathematics, and other content areas" (p. 44). According to Thompson & Warnick (2007a), "As graduation requirements and external pressures for accountability have increased over the past few years, greater attention has been given to the integration of academic subjects into career and technical education, including the agricultural education curriculum" (p. 75). According to Myers and Washburn, "A number of researchers (Balschweid & Thompson, 2002; Conroy & Walker, 2000; Enderlin & Osborne, 1992; Roegge & Russell, 1990) believe agricultural education, with its natural ties to the biological, chemical, and physical sciences is well-positioned to offer a rigorous and meaningful learning context for applied scientific principles" (2008, p. 27). Further, Newcomb (1995) noted that students must be prepared to use higher order thinking skills [analysis, synthesis, and evaluation] as defined by Bloom's taxonomy. Research has revealed that these higher order skills may be accomplished through agricultural education (Parr & Edwards, 2004). However, further evaluation of this academic integration must take place to determine which practices are most beneficial to students. "Agricultural educators realize that their instructional programs and student learning activities must reflect the dynamic and ever-changing industry of agriculture" (Phipps et al., 2008, p. 7). Efforts must be made to determine if integrating academics into career and technical classes is making a difference in student preparedness for meeting minimum requirements on high stakes standardized tests.

Several researchers have suggested that academic performance and achievement is influenced by agricultural education. Phipps, Osborne, Dyer, and Ball (2008) posited, "Agricultural education in secondary schools has played an important role in enhancing student achievement in the core subject areas…" (p. 4), while Enderlin and Osborne (1992) reported that agricultural students received higher test scores in biology than students in other science classes. According to No Child Left Behind legislation, students' progress in science will be assessed during their school career multiple times (Myers & Washburn, 2008). Due to this, standardized test performance will play a major role in school funding and student graduation (Hamilton, Stecher & Klein, 2002).

Subsequently, much research relying on perspectives of both students and teachers who have participated in science or math integrated agricultural classrooms has been done. Other research noted a marked difference in scores between standard education students and agricultural students on National Assessment of Education Progress (NAEP) science tests. The National Center for Education Statistics (NCES) identified in its 2010 document, *Science Achievement and Occupational Career/Technical Education Course taking in High School: The Class of 2005*, that concentrators in agricultural education outscored non- concentrators. The NCES noted:

Among graduates earning 0.00–1.00 core science credit, concentrators in five occupational program areas (agriculture; business support and management; computer and information science; engineering technology; and manufacturing, repair, and transportation) scored higher on the NAEP science test than non-concentrators (scores of 130–142 vs. 123). (pp. 4-5)

States have been given options from the federal government in developing standards that ensure that students are ready for college and career. According to the USDE, states may either:

> upgrade their existing standards, working with their four-year public university system to certify that mastery of the standards ensures that a student will not need to take remedial coursework upon admission to a postsecondary institution in the system; or work with other states to create state-developed common standards that build toward college and career readiness. (United States Department of Education, 2010b, p. 1)

The field of agricultural education has undergone many changes in recent decades and subsequently the focus of agricultural education research has followed suit. In 2005, 27 influential professionals involved in agricultural education met to develop a National Research Agenda for agricultural education and was revised in 2011 (Doerfert, 2011). An agenda containing six national research priorities has been developed. According to Doerfert, a "key outcome" identified by the agenda included "Accurate and reliable data that describe the quality and impact of educational programs and outreach efforts at all levels [that] will be distributed to respective decision groups (e.g. students, parents, administration, industry, policy makers)" (p. 24) . This research represents an attempt to fulfill this aspect of the agenda.

Theoretical Framework

At the base of the theoretical framework for this study is pedagogical philosophy of contextualized learning which traces its roots to constructivism. Doolittle and Camp (2003) described constructivism as ". . . the belief that learners construct their own knowledge from their experiences" (p. 2). To that end, Berns and Erikson (2001) stated that, "In this teaching and learning model, students construct their own knowledge by testing ideas based on prior knowledge and experience, applying these ideas to a new situation, and integrating the new knowledge gained with pre-existing intellectual constructs" (From Behaviorism to Constructivism and Contextual Teaching and Learning section, ¶ 2). Contextualized learning theory places a great deal of importance on providing students with authentic examples and situations in which they can interact and manipulate in a fashion that brings meaning to their learning (Dworkin, 1959; Haury & Rillero, 1994). Fosnot (1996) echoed this perspective when she referred to the contextual educator as one who ". . . gives learners the opportunity for concrete, contextually meaningful experience through which they can search for patterns, raise their own questions, construct their own models, concepts and strategies" (p. ix). To this end, Buriak, McNurlen, and Harper (1996) posited, "The best way for learners to learn how to use knowledge in multiple contexts is to have the experience of applying knowledge in multiple contexts" (p. 32).

Relying on the aforementioned framework, it seems reasonable to believe that approaching education from a contextualized teaching and learning perspective, i.e., where students are provided hands-on, true-to-life situations as a context for understanding abstract principles, should be an effective and beneficial method for improving student achievement.

Purpose of the Study

With increases in accountability for academics, industry credentialing, and post- secondary training, as mandated by Carl D. Perkins Act (USDE, 2006), career and technical educators must produce empirical evidence of compliance. This study represented an attempt to accomplish this mandate by exploring the relationship between academics and agricultural education classes. The purpose of this study was to examine the connection between academics and agricultural education. More specifically, the study sought to determine if there is a relationship between the number of agricultural education classes that students took and the subsequent outcomes on the Alabama High School Graduation Exam (AHSGE).

Competencies in core subjects are assessed by the Alabama High School Graduation Exam. Edwards & Ramsey (2004) noted:

> if significant associations [between agricultural education and core subjects] exist that could be demonstrated with substantial empirical rigor, then it is more likely that stakeholders, including decision makers who set priorities and allocate resources, would be inclined to learn more about secondary agricultural education and its potential for positively enhancing student achievement in select core subjects

Phipps et al. (2008) stated, "Agricultural educators must participate in testing and school accountability imperatives to ensure that their programs remain viable and important to the overall objectives of the school" (pp. 14-15). As proposed by Edwards and Ramsey (2004), empirical data must be analyzed to determine if career and technical teachers are being successful in making academic standards salient in their teaching, thereby increasing the likelihood that their students will pass high stakes tests such as the Alabama High School Graduation Exam. The identification of positive relationships could make legislators and administrators realize that agricultural education programs could be viable options to traditional science classes or, at minimum, a substantial complement to traditional core academics. Such a substitute option could be beneficial especially to kinesthetic learners.

The following research question guided the study: Can outcomes on the AHSGE be predicted by the number of agriscience classes that a student completes?

Methods

The methodology for this study involved taking an existing measure of academic ability, AHSGE, and attempt to predict group membership based on the number of agricultural classes that were taken by each student. Group membership in this context was defined as the passing group or the failing group. Therefore, the dependent variable was outcomes on the AHSGE, (pass/fail) and the independent variable was the number of agricultural classes that each student had taken.

Participants

For the purpose of this study, data was collected from three public school systems in central Alabama. The three school systems were chosen based on the fact that each of the systems offered agricultural education as an elective class and had very active agricultural education programs. Each of the three school systems were in rural areas. It is recognized that no results obtained through this study may be generalized beyond the three school systems that comprised the convenience sample from which the data were collected. Participants were enrolled in agricultural education classes in 2010. The population for this study was made up of 264 agricultural education students grades nine through twelve.

Instrumentation

The Alabama High School Graduation Exam was used as the instrument to record academic achievement. According to the Alabama State Department of Education (2003), "the test is given to assess students' mastery of content defined as 'fundamental', a requirement for receipt of an Alabama high school diploma". The exam tests mastery in five curriculum areas: Language, Mathematics, Social Studies, Biology, and Reading.

Validity of the Alabama High School Graduation Exam was assessed by a panel of experts. According to a report from the Alabama State Department of Education (2003), "Teachers from more than 100 school systems from across the state worked in various phases of test development and validity checks for more than four years to make certain this goal was met" (p. 2). However, after an extensive and exhaustive quest both through internet search and contacting Alabama State Board of Education personnel, no reliability coefficient was found for the AHSGE.

After obtaining permission from Auburn University's Institutional Review Board, the researcher began the data collection process. The researcher sent a formal request asking for participation and information concerning this research project. The request was made to four school systems in Alabama. Of the four, three were willing to participate in the research project. The agricultural education teachers in each system were asked to secure a copy of the Final Status Report detailing pass/fail status on the AHSGE in the spring of 2010 for their system. From the Final Status Report, the teachers were asked to identify agriscience students that had participated in their respective programs. Teachers then assigned each of their students a code number. Using that code number, the student's test outcomes were recorded for each section of the AHSGE. The teachers then consulted their student records and determined how many agricultural classes each student had completed. The data was retrieved from the teachers by the researcher and entered into SPSS.

Data Analysis Procedures

Test data detailing passing or failing scores for each of the agriculture students were tabulated with the number of agricultural courses completed by each student. A binary logistic regression analysis was performed to determine if there was a relationship between the number of agricultural classes that a student took and subsequent outcomes on the Alabama High School Graduation Exam. "Logistic regression tests the ability of a model or group of variables to predict group membership as defined by some categorical dependent variable" (Mertler & Vannatta,2010 p. 304). Mertler and Vannatta (2010) indicate that logistic regression is more flexible than other types of analyses in that, "predictor groups do not have to be normally distributed, linearly related, or have equal variances within each group" (p. 290). The authors went on to state, "Logistic regression tests the ability of a model or group of variables to predict group membership as defined by some categorical dependent variable" (Mertler & Vannatta, p. 304). Further, in order to meet the requirements of the binary logistic regression, the dependent variable must be recorded as dichotomous. The dependent variable for this study was pass/fail on each portion of the AHSGE. Logistic regression also allows for the use of both ordinal and continuous independent variables. The independent variable in this case was ordinal in that it was the number of classes taken by a student.

An alpha level of 0.05 was set *a priori*. The appropriate measure of effect sizes when considering logistic regression is the odds ratio and has been included in the data tables.

Findings

Reading

Regression results indicated that the overall model of predictors was not reliable in distinguishing between pass and fail on the AHSGE reading portion. Regression coefficients are presented in Table 1. While the test did not indicate that the variable predicted AHSGE outcomes in reading; results indicated that the probability that a student would pass the reading portion of the AHSGE did increase with the number of agricultural classes taken. The probability for passing when a student took 1 class = .71, 2 classes = .79, and 3 classes = .86. Number of agricultural classes was not a statistically significant ($p > 0.05$) predictor of pass/fail on the reading portion of the AHSGE.

Table 1

Regression Coefficients for Reading

	B	*Wald*	*df*	*p*	Odds Ratio
Number of Agricultural Classes	.47	3.36	1	.07	1.59

Language

Regression results indicated that the overall model of predictors was reliable in distinguishing between pass and fail on the AHSGE language portion. The model correctly classified 64.1% of the cases. Regression coefficients are presented in Table 2. Results indicate that the probability that a student will pass the language portion of the AHSGE did increase with the number of agricultural classes taken. The probability for passing when a student took 1 class = .59, 2 classes = .71, and 3 classes = .80. Number of agricultural classes was a statistically significant ($p < 0.05$) predictor of pass/fail on the language portion of the AHSGE.

Table 2

Regression Coefficients for Language

	B	*Wald*	*df*	*p*	Odds Ratio
Number of Agricultural Classes	.529	5.545	1	.02	1.697

Mathematics

Regression results indicated that the overall model of predictors was reliable in distinguishing between pass and fail on the AHSGE math portion. The model correctly classified 71.8% of the cases. Regression coefficients are presented in Table 3. Results indicated that the probability that a student would pass the mathematics portion of the AHSGE did increase with the number of agricultural classes taken. The probability for passing when a student took 1 class = .65, 2 classes = .76, and 3 classes = .85. Number of agricultural classes was a statistically significant ($p < 0.05$) predictor of pass/fail on the math portion of the AHSGE

Table 3

Regression Coefficients for Mathematics

	B	*Wald*	*df*	*p*	Odds Ratio
Number of Agricultural Classes	.53	6.27	1	.01	1.71

Social Studies

Regression results indicated that the overall model of predictors was not reliable in distinguishing between pass and fail on the AHSGE social studies portion The model correctly classified 70.8% of the cases. Regression coefficients are presented in Table 4. However, results indicate that the probability that a student would pass the social studies portion of the AHSGE did increase with the number of agricultural classes taken. The probability for passing when a student took 1 class = .69, 2 classes = .73, and 3 classes = .79. Number of agricultural classes was not a statistically significant ($p > 0.05$) predictor of pass/fail on the social studies portion of the AHSGE.

Table 4

Regression Coefficients for Social Studies

	B	*Wald*	*df*	*p*	Odds Ratio
Number of Agricultural Classes	.28	1.68	1	.20	1.32

Biology

Regression results indicated that the overall model of predictors was not reliable in distinguishing between pass and fail on the AHSGE biology portion. The model correctly classified 70.8% of the cases. Regression coefficients are presented in Table 4. However, results indicate that the probability that a student would pass the biology portion of the AHSGE did increase with the number of agricultural classes taken. The probability for passing when a student took 1 class = .87, 2 classes = .91, and 3 classes = .94. Number of agricultural classes was not a statistically significant ($p > 0.05$) predictor of pass/fail on the biology portion of the AHSGE.

Table 5

Regression Coefficients for Biology

	B	*Wald*	*df*	*p*	Odds Ratio
Number of Agricultural Classes	.45	2.15	1	.14	1.57

Conclusions

Results indicated that the model generated for the reading portion was not effective in predicting the pass/fail outcome on the AHSGE ($p = .06$); however, probabilities indicated that students were more likely to pass the reading portion having taken more agricultural classes. One must interpret these results with caution. The result may be indicative of students having taken the exam multiple times, henceforth learning the exam itself, not necessarily more reading content in the subsequent agricultural classes. Further, students in the sample performed well compared to an overall average for all students in the school systems used in the study. The overall passing rate for the reading portion of the AHSGE was 52% in the systems.

Results indicated that the model did predict the outcomes on the language portion of the exam ($p = .02$). This result could supports findings from a recent study conducted by researchers at the National Research Center for Career and Technical Education (Pearson et al., 2010). Since the results from the NRCCTE study and this study coincide, more validity investigation should be performed relative to the field of career and technical education as a vehicle for improving student performance as mandated by the No Child Left Behind Act of 2001. Students in the sample performed well compared to an overall average for all students in the school systems used in the study. The overall passing rate for the language portion of the AHSGE was 38% in the systems.

Results from the regression analysis regarding the mathematics portion ($p = .01$) are comparable to a study done by the NRCCTE. The NRCCTE found that when agricultural classes were taught using math enhanced lessons, students performed better on standardized tests (Parr, Edwards, and Leising, 2006). The students were taught using existing curriculum content. The results from this study support the conclusion by the NRCCTE that the mathematics content already in the curriculum is sufficient to achieve positive results. Also, Students in the sample performed well compared to an overall average for all students in the school systems used in the study. The overall passing rate for the mathematics portion of the AHSGE was 32% in the systems.

The results from the social studies portion of the exam yielded that the model was not statistically significant in predicting outcomes on the exam ($p = .20$). The result may be indicative of agricultural classes' curriculum not being laden with historical facts other that which relate to the field of agriculture itself. Students in the sample performed well compared to an overall average for all students in the school systems used in the study. The overall passing rate for the social studies portion of the AHSGE was 51% in the systems.

Finally, the results from the biology portion yielded that the model was not a statistically significant predictor of outcomes ($p = .14$). This result should be considered when the NRCCTE completes the study regarding science integration in career and technical classes. The result from this study could be attributed to the fact that biology is a new portion of the exam. It replaced the science portion in 2010. Test makers may be still in a refining stage on this portion of the exam, and teachers may be in a learning stage as to how best to teach standards for this portion of the exam. Students in the sample performed comparable to an overall average for all students in the school systems used in the study. The overall passing rate for the biology portion of the AHSGE was 72% in the systems.

Implications and Recommendations

While the limitations of this study do not allow for any cause and effect relationships to be insinuated, the results are certainly worthy of contemplation. Further, it is recognized that many variables that contribute to student success or failure on the AHSGE were outside of the control of this study. However, with such weight being put on accountability of instruction and accountability being operationalized in the form of student performance on standardized tests, career and technical education must continue to evaluate means to enhance student scores on high stakes exams such as the AHSGE while not losing sight of its raison d'etre (Parr, Edwards, & Leising, 2008). This study was done to explore a facet of the current relationships between agricultural education and student performance on standardized high stakes tests. Research cited in this study as well as the data presented provides evidence that warrant further investigation into how agricultural education may best enhance scores on standardized tests; however, one must realize that a multitude of variables must be in place for such models to succeed. The most important of those variables is an agricultural instructor willing to break the mold of the old vocational agricultural class and learn how to enhance the curriculum and bring out concepts that are on standardized tests. Career and Technical education as a whole should grasp empirical research studies that suggest career and technical education has a place in preparing students for standardized tests. Edwards, Leising, & Parr (2002) stated, "Student achievement, using standardized tests, is "the coin of the realm" in education today" (p. 5).

Recommendations for future research

1. This study should be replicated using standardized tests in other states. If this were accomplished, generalizations as described in this study would not be so narrow in scope.
2. Limitations as described in this study should be addressed. Data detailing student variables such as other academic classes and remediation classes should be collected. Analysis such as an ANCOVA should be used. This could lead to more statistical power by accounting for variance of the other predictors (academic classes, diploma track, remediation classes).
3. Comparable data on standardized tests should be collected for students not enrolled in agriculture classes while collecting data on agricultural students, then the group mean scores can be compared.

Several interesting findings were noted with regards to the results of this study. First, the field of agricultural education is latent in the study of both plant and animal biology. Many agricultural class curriculums are largely composed of the study of plant and animal anatomy and environmental science. One would think that students who are enrolled in a curriculum so saturated in biology principles would fare well on a biology test such as the biology section of the AHSGE, however; the results indicated that there was no statistically significant relationship between passing the biology portion of the AHSGE and number of agriculture classes taken. This was admittedly a perplexing finding. To address this, a list of explanations is noted. Any of these or combinations thereof could have led to these findings. 1) The biology portion of the AHSGE is not a reliable gauge of academic achievement in biology 2) Agriculture teachers students in the sample population are not being taught with rigorous biology standards 3) Biology standards taught in agricultural classes are not aligned with content tested by the biology portion of the AHSGE.

According to Dr. Joseph Morton, Alabama State Superintendent of Education, the Alabama State Department of Education voted unanimously on a resolution to approve the proposed Alabama Student Assessment Protocol. The proposal included phasing out the Alabama High School Exam, replacing it with end-of-course tests. The memorandum notes that,

> Since then [September 10, 2009], events have occurred on both the state level and the national level that necessitate a change to the expected implementation dates for these changes, not the least of which are the current financial situation and the uncertainty about the timing of

> the reauthorization of the Elementary and Secondary Education Act of 1965 (currently known as No Child Left Behind), which impacts our state's accountability system. ([State School Superintendant], personal communication, , January 21, 2011)

The expectation is that ninth graders of 2011-2012 will be the last cohort to be required to pass the AHSGE in order to receive a diploma. According to an article in the Birmingham news (Leech, 2009), the ACT will also be part of the new state testing package. The article noted,

> The state also will require all 11th-graders to take the ACT college entrance exam, along with a writing assessment. The state will pay the $75 fee for students to take the ACT once. If students are not satisfied with their scores, it will be their responsibility to pay to take it again. (para. 9)

The state of Alabama is apparently only changing the measure of achievement by using yet another standardized testing instrument, the ACT. St. Ambrose (387 A.D.) said, "When in Rome, do as the Romans do" (Christiansen, 2000, p. 1). It appears Rome believes the only way to measure achievement is through test scores. Regardless whether we agree or disagree with standardized testing as the form of determining student achievement in the United States, it is at the forefront of education today. Until other methods are developed that show clear and definitive ways to assess achievement it will continue to be the "coin of the realm" (Edwards, Leising, & Parr 2002, p. 5).

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