Computer-Based Modeling of K-12 Faculty Activities: A Case Study

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Computer-Based Modeling of K-12 Faculty Activities: A Case Study

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A thesis

presented to

the faculty of the Department of Computer and Information Sciences

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Master of Science in Computer and Information Science with a concentration in Applied Computer Science

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by

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August 2012

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Keywords: teacher evaluation, computer-based modeling, XML, accountabilities management
ABSTRACT

Computer-Based Modeling of K-12 Faculty Activities: A Case Study

by

Amanda Kyker

This thesis sought to lay the foundation for an application for tracking K-12 teacher activities. Its primary contribution is a descriptive model of K-12 activities. The work’s starting point, the Faculty Activities System project, is an ETSU initiative that seeks to produce a tool for university-level academic accountabilities management. It was possible to adapt the FAS project’s data model for K-12 activities. The resulting model was validated by experts in the field of education and teachers and administrators across Tennessee.

A second strategy for model validation, using national and state legislation and expert recommendations, determined that the model did well at capturing teachers’ professional growth and contributions to the school and community, but fell short at capturing student improvement, the learning environment, teaching strategies, portfolios, and self-assessment. The data model was realized as a multi-file XML schema, which was tested for well-formedness and validity using a sample data document.
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CHAPTER 1
INTRODUCTION

Accountabilities management has become common in contemporary education. In accountabilities management, administrators task employees with specific outcomes that help to fulfill that organization’s goals [Lewis]. Outcomes related to student achievement, community outreach, research, and securing funding typify the expectations that contemporary educational systems put on teachers at all levels of the educational process.

Federal legislation mandates the use of accountabilities management in education. The No Child Left Behind (NCLB) Act requires teachers to ensure that students make “adequate yearly progress.” The Individuals with Disabilities Education Act (IDEA) requires that students with any type of disability be taught in the least restrictive environment. The Family Educational Rights and Privacy Act (FERPA) requires teachers to protect sensitive information about students [FERPA].

Accountabilities management for educators, however, is problematic. Different institutions, authorities, and accrediting agencies task educators with different responsibilities. For example, while the No Child Left Behind Act requires that teachers be “highly qualified” to receive a license to teach, each state can define its own requirements for licensing [Simpson]. These requirements differ from state to state and also frequently change [Simpson].

Discipline-specific requirements necessitate consideration as well. The Tennessee Department of Education, for example, sets curriculum standards by grade level and subject [Standards]. This includes standards for mathematics, science, reading, social studies, art, English, technology, foreign languages, health, service learning, and vocational courses, such as agriculture, business technology, health science, and family and consumer sciences [Standards].
One strategy for implementing accountabilities management in education uses computers to track teacher activities. One such application for activities tracking, Digital Measures’ Activity Insight, is used by colleges and universities to “keep track of the activities [teachers] accomplish, such as the teaching, research, and service information found on their CVs” [Digital]. Activity Insight supports the creation of various reports, including annual activity reports, promotion and tenure documents, and accreditation. A second, Sedona CRM, was developed for business schools by the Sedona Corporation. Sedona CRM “pulls in data from [the] core system and other applications and consolidates all accounts and services for individuals and households, measuring their profitability in the process” [Sedona]. Business students learn to use this tool to identify customers at risk of defaulting on loans, target of new customers, and increase retention.

This thesis sought to lay the foundation for an application for tracking K-12 teacher activities. This work’s primary contribution is a descriptive model of K-12 activities: one that asks teachers to describe all that they do as part of their work, rather than just selected accountabilities. Such an application could help schools achieve Futernick’s goal of implementing “a more promising approach to accountability” – one that “would require all members of a system, regardless of one’s authority, to be mutually obligated to one another” [Futernick]. It would give administrators a clearer vision of what teachers actually do: one that could enable administrators to set realistic goals for teacher achievement while helping them to ensure that teachers have the support they need to succeed.

The starting point for this work, the Faculty Activities System (FAS) project, is an East Tennessee State University (ETSU) initiative that seeks to produce a tool for university-level academic accountabilities management. The project’s goals include the development of a
comprehensive, user-friendly, flexible, and trustworthy system for data capture that provides the following functionality [Pfeiffer]:

- the automated generation of multiple customized forms for data entry to the level of individual colleges, departments, and even individual faculty members—forms whose language can be changed to match the language of their users, regardless of department;
- the use of configurable constraints on the forms’ items and built-in checks on internal data flows to audit the validity and plausibility of the data being entered;
- the use of an institution’s chain of command to allow that institution’s administrators to limit the extent to which these customizations can be applied, in order to maintain the integrity of key institutional processes; and
- an interface that allows users with no programming expertise to configure the forms’ content and language.

Because K-12 educators do many of the same tasks as college professors, it was possible to adapt the FAS project’s data model for K-12 activities.

The resulting model was similar in many key ways to the FAS data model. The FAS’s models for faculty information, scholarship, service, professional activities, awards, and non-instructional activities were largely unchanged, while models of instructional, contract, and grant activity were modified for K-12 teachers. The K-12 model, like the FAS model, was realized using a Venetian blind design pattern, using much of the same code. Like the FAS model, it was also checked for well-formedness and validity using a sample document with test data in each of the model’s categories.

The K-12 model was validated by experts in the field of education. Three of this work’s advisors, Drs. April Blakely, Virginia Foley, and Pamela Scott critiqued various versions of the
K-12 model, recommending changes to various activities and alternative wordings for the K-12 environment. A second round of critiques was provided by Tennessee teachers and administrators using interviews and online surveys. A third round of evaluation assessed how well it captured the concerns of national and state legislation, as well as the recommendations of educational experts. The model did well at capturing teachers’ professional growth and contributions to the school and community. However, the model falls short at capturing student improvement, the learning environment, teaching strategies, portfolios, and self-assessment—due in part to a desire to reduce the model's complexity and avoid the incorporation of data that was already being collected through other means.

The resulting K-12 data model was implemented using a multi-file XML schema. Much of the logic that was used to confirm the well-formedness and validity of the FAS data model implementation was used to test the K-12 implementation.

To further improve the model, research could be done to address the weaknesses present in the model. Implementing the model in a formalism other than XML might be a worthwhile venture as well. Eventually, it will be necessary to update the model as requirements change. It would also be interesting to see if the FAS data model could be useful outside of the field of education. Such endeavors would likely require a similar amount of effort as modifying the FAS data model for the K-12 level.

The surveys of Tennessee teachers and administrators also yielded an overview of educator attitudes towards Tennessee's new model of K-12 teacher evaluation. Teachers said they enjoyed having their strengths and weaknesses identified, and they enjoy the opportunity to communicate with administrators. Administrators enjoy encouraging teachers to improve and
observing teachers in their classrooms. However, both teachers and administrators dislike the large amount of paperwork and the frequency of evaluation for experienced teachers.

One principal, moreover, stated a concern about losing the district’s most effective teachers due to the nature of the new evaluation process. Many seemed to echo the sentiment that experienced teachers should not be evaluated as often or, at the very least, should be evaluated differently. These, however, are concerns that only the Tennessee DOE can address.
CHAPTER 2

BACKGROUND

The work described here is concerned with teacher evaluation in the United States – primarily in the state of Tennessee. It sought to produce a realistic, descriptive model that could be realized as a computer application. Work toward this goal started with reviews of federal, state, and de facto standards for teachers’ activities.

Reviews of federal legislation included the No Child Left Behind Act, the Individuals with Disabilities Education Act, and the Family Educational Rights and Privacy Act. Reviews of states’ legislation governing K-12 education included Virginia, Rhode Island, Arizona, and Tennessee. The final set of reviews focused on recommendations by educational authorities for effective teaching, including activities that are typically overlooked in teacher evaluation: e.g., bus duty; hall monitoring; communicating with parents; safeguarding students’ privacy; and safeguarding student welfare, including reporting suspected drug or physical abuse.

K-12 Teacher Accountabilities, As Defined By Federal Legislation

The No Child Left Behind Act

The No Child Left Behind (NCLB) Act of 2001 is described by Ryan Cooper as containing “the most sweeping changes to the Elementary and Secondary Education Act (ESEA) since it was enacted in 1965” [Cooper]. According to Simpson et al., NCLB seeks to “ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education, and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments” [Simpson]. The act’s guiding principles include “stronger accountability for results, increased flexibility and local control, expanded options for parents, and an emphasis on teaching methods that have been proven to work” [Cooper].

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NCLB includes three major provisions. The first is annual testing. As of 2006, states were required to give yearly state-wide tests in reading in math to all students in grades three through eight. Students must also be tested once during grades ten through twelve. While each state selects its own test, these tests must align with that state’s academic standards. As of 2008, students were required to take science examinations once during elementary school, once during middle school, and once during high school [Cooper]. Results are to be tabulated by race, socio-economic status, special education status, and fluency in English, in order to “measure not just overall trends, but also gaps between, and progress of, various subgroups” [Cooper].

NCLB’s second provision involves academic improvement. The Act makes schools, school districts, and states accountable for improving students’ academic achievement. Popham says that schools and districts must “increase substantially the number of students who score at ‘proficient-or-better levels on a state’s NCLB tests’” [Popham]. The Act emphasizes “closing the achievement gap between high- and low-performing students and children and youth from disadvantaged groups and minority populations” [Simpson].

All states must set a “minimum performance threshold” that all students are expected to reach [Cooper]. States must raise this level gradually and in equal increments. The goal is to have every student attain a desired level of proficiency by the end of the 2013-14 academic year [Simpson]. Popham states that if “those schools that receive [Elementary and Secondary Education Act] funds fail to achieve their AYP targets for two consecutive years, they are placed on an improvement track laden with increasingly severe sanctions” [Popham]. If the problems persist, more drastic measures will be taken, eventually leading to “reconstitution of the school” [Cooper].
The Act’s provisions for academic improvement address the education of special needs students. According to Popham, “the most important thing teachers need to understand about the instruction and assessment of students with disabilities is that the education of all but a very small group of those children must be aimed at precisely the same curricular targets teachers have for all other students” [Popham]. Although “academic content standards” must be the same for all students, students with “severe cognitive disabilities” may be held to different “academic achievement standards (performance levels)” and assessed by alternative means [Popham].

The Act’s third provision involves teacher and paraprofessional qualifications [Cooper]. As of the end of the 2006 academic year, “every public school teacher has to be highly qualified, which means that a teacher has been licensed (including alternative routes) and had demonstrated a high level of competence in the subjects he or she teaches” [Cooper]. In order to become licensed, teachers must demonstrate knowledge of pedagogy as well as content. The level of difficulty of the licensure examinations and the minimum passing score vary from state to state.

Teachers are “expected to have expertise in the subject area in which they are teaching, along with the skills to teach what they know” [Simpson]. States may establish their own definitions of what “highly qualified” entails, subject to several requirements. All teachers must have a bachelor’s degree and “demonstrate competencies in each content area as defined by their state” [Simpson]. Elementary school teachers “must pass a rigorous state knowledge and skill exam” [Simpson]. Secondary school teachers must pass a comparable exam or “hold an academic major or coursework equivalent, advanced degree, or advanced certification credentials” [Simpson]. Experienced teachers must meet the same requirements as new teachers or state requirements for competency. Alternative licensing routes are also permitted by NCLB.
Paraeducators such as teaching assistants “are of vital importance in implementing Individualized Education Programs and supporting students with special needs in inclusive environments” [Simpson]. NCLB requires paraeducators to have either completed an associate degree, completed two years at an institution of higher learning, or passed “a rigorous state or local assessment that demonstrates knowledge and skills needed to assist in teaching reading, writing, and math” [Simpson].

NCLB requires educators to use practices that are founded upon “scientifically-based research” [Simpson]. These practices must meet high standards and be proven to “reliably yield positive results” when used correctly [Simpson]. The U.S. Department of Education has created the What Works Clearinghouse “to provide teachers and others with a reliable and proven source of scientific evidence regarding effective and scientifically supported educational methods” [Simpson]. The Clearinghouse’s Design and Implementation Assessment Database and its related validation process are used to ensure that methods are supported by sound research.

In 2011, the U.S. Department of Education allowed states to apply for flexibility regarding specific requirements of NCLB “in order to better focus on improving student learning and increasing the quality of instruction” [DOE]. This flexibility is given in exchange for “rigorous and comprehensive State-developed plans designed to improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction” [DOE]. Currently, eleven states, including Tennessee, have been given flexibility.

The Individuals with Disabilities Education Act

In 1990, Congress passed the Individuals with Disabilities Education Act (IDEA), a law that protects the rights of students with disabilities [Cooper]. IDEA requires that “a free and appropriate public education” be determined on an individual basis [Cooper]. The law also
states that special needs students should be given an individualized education plan that “states the child’s levels of educational performance, short-term objectives and annual goals, services to be provided, and criteria and schedules for evaluation and progress” [Simpson]. Teachers, parents, special educators, and other professionals that work with a child must all be involved in the creation of that child’s IEP. Older students with special needs must have “an individualized plan for making the transition from school to work or additional education beyond high school through age twenty-one” [Simpson]. Students with disabilities must be taught in the least restrictive environment, meaning that “students with disabilities should be educated with children who are not disabled to the greatest extent appropriate” [Simpson].

Family Educational Rights and Privacy Act

A third influential federal law, Family Educational Rights and Privacy Act [FERPA], requires the safeguarding of students’ educational records. Permission for the release of information contained in students’ educational records must be granted by parents or guardians. Parents or guardians may also inspect their children’s education records at any time. Although schools may release directory information without permission, including names, addresses, telephone numbers, birthdates, honors, and awards, they must first inform students’ parents and guardians and give them a reasonable amount of time to object to the release [FERPA].

K-12 Teacher Accountabilities, As Defined By Selected States

K-12 Teacher Accountabilities, As Defined by the State of Tennessee

The Framework for Evaluation & Professional Growth (2004-2010). From 2004 - 2010, educators in the state of Tennessee were evaluated using the Framework for Evaluation & Professional Growth [TNDOE]. The Framework was approved by the Tennessee State Board of Education in June 2004 and was most recently revised in June 2009. The Framework, which
gave districts a means of evaluating teachers, encouraged collaboration between teachers and administrators in different schools “through a common language and common training” [TNDOE]. It provided policy makers with a common language to define excellence in teaching and a basis on which to build policies related to teacher quality. It also defined statewide expectations for teacher performance, provided a basis for the collection of data related to teacher performance, and created a common research base that Tennessee policy makers can use for discussion with policy makers from other states [TNDOE].

The Framework attempted to help teachers improve their instructional quality. It “define[d] clear levels of expectations to become knowledgeable and skilled practitioners” [TNDOE]. It allowed them to analyze and reflect on their current performance and make necessary adjustments. It “enable[d] teachers to self-assess on discrete indicators and behaviors” and “provide[d] a professional growth continuum as they transition from entry level to experienced educators” [TNDOE].

The Framework also attempted to help administrators more effectively evaluate teachers. It “define[d] what teachers should know and be able to do” [TNDOE]. It provided administrators with a guide for examining and evaluating teachers in six domains. It defined “concise measurable criteria for decision making and feedback,” and it allowed administrators to help teachers identify areas for improvement [TNDOE].

The six domains included in the Framework were planning, teaching strategies, assessment and evaluation, learning environment, professional growth, and communication. Each domain had a set of indicators that identified “expected teacher behaviors and characteristics” [TNDOE]. Each indicator was defined by criteria that were “directly aligned with three performance levels: developing, proficient, and advanced” [TNDOE]. The data that
was to be collected for each domain by the observer or evaluator is listed. In total, there were forty-four criteria.

Planning was evaluated using three indicators. Teachers were required to establish “appropriate instructional goals and objectives,” teach and evaluate students “based on an in depth understanding of the content, student needs, curriculum standards, and the community,” and use a teaching style that met the needs of diverse learners [TNDOE].

Teaching strategies were evaluated using two indicators. Teachers were to demonstrate “a deep understanding of the central concepts, assumptions, structures, and pedagogy of the content area” and to use research-based instructional practices that focus on higher-order thinking, problem solving, and “real world” applications [TNDOE].

Assessment and evaluation were evaluated using three indicators. Teachers were to use appropriate assessments to determine whether students had mastered content and to make instructional decisions, to communicate “student achievement and progress to students, their parents, and appropriate others,” and to reflect on their instructional practices by examining classroom assessments and evaluations [TNDOE].

The learning environment was assessed using two indicators. Teachers were to create “a classroom culture that develops student intellectual capacity in the content area” and “manage classroom resources effectively” [TNDOE].

Professional growth was assessed using three indicators. Teachers were to collaborate with others, to “engage in high quality, ongoing professional development as defined by the Tennessee State Board of Education Professional Development Policy to strengthen knowledge and skill in the content of the teaching assignment,” and to do their responsibilities effectively and efficiently [TNDOE]. The final domain, communication, was assessed by determining
whether teachers communicated “clearly and correctly with students, parents, and other stakeholders” [TNDOE].

The TNDOE prescribed the use of comprehensive and focused assessment. Comprehensive assessment consisted of self-assessment, a review of previously collected information, and an examination of a unit and lesson plan. It also involved observation and an examination of planning records, reflecting records, appraisal records, and classroom notes [TNDOE]. A summative report was completed and the data in that report was analyzed. Performance levels were identified, evaluation results were shared, and a future growth plan was developed.

Focused assessment required teachers to complete a self-assessment of their strengths and weaknesses, to identify “a professional goal which reflect[ed] an individual, grade, school or system area for growth,” and to follow a Professional Growth Plan [TNDOE]. This plan, which was to span more than one year, was expected to identify what knowledge a teacher was to gain and how that teacher was to use it. It was also required to include a means of measuring progress and a description of how students would benefit from the plan.

The TNDOE required evaluators to review and approve the Professional Growth Plan. This included determining whether the plan identified and addressed areas of need and would improve student performance [TNDOE]. Evaluators were also required to confirm that plans allowed for appropriate monitoring of teacher and student progress, to monitor the plan’s implementation, and to “conduct a Goal Evaluation Summative conference at the end of the evaluation period where the Focused Assessment Summative Report is completed” [TNDOE].
First to the Top. In March 2010, the U.S. federal government awarded Tennessee $501,000,000 for the purpose of making “comprehensive improvements that will better prepare students for college and careers” [First]. This initiative’s three main goals include

- improving young students’ academic readiness
- improving high school graduates’ readiness for college and careers
- achieving higher rates of enrollment and success in post-secondary education

To aid in the development of this new system, teachers were given the opportunity to participate in the Teaching, Empowering, Leading, and Learning (TELL) survey [First].

The First to the Top Act aims to use federal funds to accomplish four main goals:

- Create a new teacher evaluation system with student growth as a criterion
- Use this data to close the teacher equity gap between high-poverty/high-minority schools and low-poverty/low-minority schools
- Partner with colleges and universities to meet recruitment needs
- “Link professional development to teacher effectiveness based on student performance measures” [Programs]

It is hoped that these changes will narrow the achievement gap, increase the number of effective leaders, and increase the four-year graduation rate to 90%.

Tennessee is using partnerships with the Tennessee Higher Education Commission and the Battelle Memorial Institute to provide teachers with professional development opportunities. This provides “support for STEM (Science, Technology, Engineering, and Math) professional development for K-12 teachers, the College Access and Success Network, more effective teacher preparation programs, and enhanced stakeholder engagement and collaborations that bring together business and education to motivate teachers and students alike” [First].
The Tennessee Educator Acceleration Model. Beginning in 2011, Tennessee educators were evaluated using a new system called the Tennessee Educator Acceleration Model (TEAM). The goal of TEAM is to allow “teachers and school leaders to have an ongoing dialogue about instruction in the classroom and improving student learning” by collecting data on student performance and having administrators observe teachers multiple times throughout the academic year [TEAM].

Under TEAM, teachers are observed a minimum of four times per year. During an observation, administrators are to note teaching strategies, student engagement, and overall lesson flow. The results of each observation are then conveyed to the teacher during a post-observation conference, held shortly after the observation [TEAM].

The administrator and the teacher use a complete script of the lesson and the TEAM Rubric to identify the teacher’s strengths and areas for improvement. Successful instructional practices are referred to as Areas of Reinforcement, while areas for improvement are referred to as Areas of Refinement [TEAM]. The goal is for teachers to “walk away with specific ideas to improve their instruction, supported by targeted development opportunities, including the NIET Best Practices Portal” [TEAM].

A second criterion for gauging teacher success is student achievement. Student improvement over the year accounts for 35% of a teacher’s effectiveness rating. Such a measurement is typically made using the Tennessee Value-Added Assessment System (TVAAS), “a statistical method that compares each student’s actual growth to his/her projected growth” [TEAM]. If TVAAS data is unavailable for a teacher for the current grade level or subject he or she is teaching, this measurement is calculated using a school-wide TVAAS.
Fifteen percent of a teacher’s effectiveness rating depends on student performance on standardized tests. The Tennessee Department of Education has developed a detailed list, organized by subject and grade level, of the skills students are expected to learn [TEAM]. The questions on these tests relate to this list. Teachers are evaluated based on how well students have learned the specified skills, as indicated by their scores on the tests.

TEAM places teachers into one of five groups, based on their effectiveness ratings: Significantly Below Expectations, Below Expectations, At Expectations, Above Expectations, and Significantly Above Expectations. The rating is calculated “based on 50% qualitative data and 50% quantitative data” [TEAM]. The qualitative data is gathered from the observations, and the quantitative data is based on student improvement and student achievement.

K-12 Teacher Accountabilities, As Defined by the State of Virginia

The Code of Virginia. The Code of Virginia is educational legislation that requires teacher evaluations to be “consistent with the performance objectives (standards) included in the [Virginia] Board of Education’s Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers, Administrators, and Superintendents” [VADOE]. It also requires school boards to implement their own procedures for addressing student academic performance when evaluating teachers.

Guidelines for Uniform Performance Standards and Evaluation Criteria. Approved in 2011, the Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers outline Virginia’s newest teacher evaluation system. This document’s authors recommend evaluating teachers based on the following seven criteria:
- **Professional knowledge.** Teachers are expected to demonstrate “an understanding of the curriculum, subject content, and the developmental needs of students by providing relevant learning experiences” [VADOE].

- **Instructional planning.** Teachers are expected to plan lessons based on the Virginia Standards of Learning as well as the school’s curriculum. Teachers are to use effective “teaching strategies, resources, and data to meet the needs of all students” [VADOE].

- **Instructional delivery.** Teachers are to use diverse instructional activities in an effort to actively engage students as well as meet the each student’s needs.

- **Assessment of and for student learning.** Teachers are to gather, analyze, and use “all relevant data to measure students’ academic progress, guide instructional content and delivery methods, and provide timely feedback to both students and parents throughout the school year” [VADOE]. By assessing students’ knowledge, teachers should be better able to tailor lessons to meet students’ needs.

- **Learning environment.** Teachers are to provide students with a learning environment that is “respectful, positive, safe, [and] student-centered” [VADOE]. Such an environment is said to be more conducive for learning.

- **Professional growth.** Teachers are to behave professionally, communicate effectively, and grow professionally through activities such as classes, seminars, and workshops [VADOE].

- **Student progress.** Teachers’ work should result in “acceptable, measurable, and appropriate student academic progress” [VADOE]. This requirement relates to NCLB’s requirement for adequate yearly academic progress.
Virginia uses various means to evaluate teachers. Formal and informal evaluations are performed by administrators. One item that distinguished Virginia’s evaluation system from Tennessee’s is the use of student surveys. Students are invited to share their thoughts and opinions as well [VADOE]. Teachers also create portfolios and provide documentation regarding their adherence to the seven standards and are given the opportunity to evaluate their own performance.

The Virginia Standards of Learning. The Virginia Standards of Learning details academic standards for Virginia’s students. They are closely related to the Common Core State Standards, which are national academic standards. There are standards for each subject and each grade level.

K-12 Teacher Accountabilities, As Defined by the State of Rhode Island

The Rhode Island Educator Evaluation System Standards. In 2009, the Rhode Island Board of Regents for Elementary and Secondary Education adopted the Rhode Island Educator Evaluation System Standards. These standards were designed to “help districts build rigorous, fair, and accurate educator evaluation systems” [RIDOE]. According to these standards, an evaluation system must meet the following criteria [RIDOE]:

- Establishes a consensus regarding teacher quality
- Emphasizes professional growth and improvement
- Creates an “organizational approach to the collective professional growth and continuous improvement of groups of educators to support district goals”
- Provides quality assurance on teacher performance
- Assures “fair, accurate, and consistent evaluations”
- Allows teachers to have a developmental role in its creation and evolution
These criteria served as the basis for the creation of the Rhode Island Model evaluation system.

The Rhode Island Model. The Rhode Island Model aligns with the Rhode Island Professional Teaching Standards, the Rhode Island Educator Code of Professional Responsibility, and the Rhode Island Standards for Educational Leadership. The model calls for evaluating of teachers based on three components: student learning, professional practice, and professional responsibilities [RIDEO].

Educators in Rhode Island are expected to contribute to “student achievement and progress toward academic goals and learning standards” [RIDEO]. They must also possess the knowledge and skills necessary to augment to student learning. The last major requirement is that teachers contribute to the “school/learning community” [RIDEO]. A teacher’s ratings in the three categories are combined to “produce a final, summative evaluation rating of: Highly Effective, Effective, Developing, or Ineffective” [RIDEO].

The Rhode Island Model divides the professional practices of teachers into planning and preparation, classroom instruction, classroom environment, and assessment, reflection, and improvement. The Rhode Island model also divides educators’ professional responsibilities into four categories: “collaborat[ing] and contribut[ing] to the school community,” believing in and advocating for students, “creat[ing] a culture of respect”, and “exercise[ing] professional judgment and development” [RIDEO].

Educators in Rhode Island begin the year by completing a self-assessment, creating a professional growth plan, and setting student learning objectives. In midyear, they discuss their professional growth plan with their administrator, reevaluate their student learning objectives, and receive feedback on performance [RIDEO]. Finally, they end the year by reassessing their
professional growth plans, receiving feedback on their performance throughout the year, and obtaining their final evaluation rating.

**K-12 Teacher Accountabilities, As Defined by the State of Arizona**

**Arizona Framework for Measuring Educator Effectiveness.** Passed in 2011, the Arizona Framework for Measuring Educator Effectiveness calls for the evaluating teachers based on information gathered from classroom-level data, school-level data, and teaching performance. Classroom-level and school-level data include student scores on national, state, and district examinations [AZDOE]. Information regarding teaching performance is gathered through observations.

One distinguishing feature of the Arizona Framework is its use of two standards to assess teachers. A first standard applies to teachers who have “available classroom-level student achievement data that are valid and reliable, aligned to Arizona’s academic standards, and appropriate to individual teachers’ content areas” [AZDOE]. These teachers’ evaluations are based on classroom-level elements (33%), school-level elements (17%), and teaching performance (50%). Other teachers for whom little or no such data is available are evaluated based on school-level elements (50%) and teaching performance (50%).

**InTASC Model Core Teaching Standards.** Educators in Arizona are evaluated based on the InTASC Model Core Teaching Standards, of which there are 10. These standards are divided into four groups. The first of the four groups, “The Learner and Learning,” includes three standards [AZDOE]. Teachers must implement “developmentally appropriate and challenging learning experiences” with the recognition that “patterns of learning and development vary individually across the cognitive, linguistic, social, emotional, and physical areas” [AZDOE]. Also, teachers are to use their understanding of diversity to create “inclusive learning
environments that enable each learner to meet high standards” [AZDOE]. Finally, teachers must encourage “positive social interaction, active engagement in learning, and self motivation” [AZDOE].

The second group, content, includes two standards. A teacher must understand “the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches” and create “learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content” [AZDOE]. Teachers must also encourage creativity and collaborative problem solving.

The third group, instructional practice, includes three standards. Teachers must use multiple methods of assessment to “engage learners in their own growth, to monitor learner progress,” and to guide decision making [AZDOE]. Teachers are expected to help students reach demanding educational goals through their knowledge of “content areas, cross-disciplinary skills, and pedagogy” [AZDOE]. Finally, teachers are to use a wide array of instructional strategies.

The final group, professional responsibility has last two standards. Teachers should engage professional development, evaluate their teaching practices and the effects of their choices, and make changes as deemed necessary [AZDOE]. Teachers also should obtain leadership roles and collaborate with others to best serve students.

K-12 Teacher Accountabilities, As Defined by Selected Authorities On Primary And Secondary Education

James Cooper

In “Those who can, teach,” Cooper enumerates other more basic responsibilities that teachers have toward their students. They include teaching students the curriculum and social skills; knowing the “routines for their particular school” and “how to administer those routines”; knowing the locations of a school’s key resources; and knowing how and of whom to request the
supplies they need [Cooper]. Teachers should be well acquainted with “their administration, their fellow teachers, and especially their students” [Cooper]. Teachers must make lesson plans, “build complete units, design bulletin boards, devise an evaluation system, and make up and grade short- and long-term tests” [Cooper].

According to Cooper, “the degree of the children’s success as learners is the best measure of a teacher’s success or failure” [Cooper]. There is a close relationship between the effectiveness of instruction and the level of student learning. While many schools provide teachers with some instructional materials, these can be dated or simply uninteresting to students. Teachers may get additional resources from other teachers, and some schools even have curriculum specialists. Most often, however, teachers have to develop their own materials. One third grade teacher who Cooper cited spends hours deciding “which approach to use to teach ten minutes’ worth of material” [Cooper].

Teachers are also responsible for classroom safety. Cooper says that a “great majority of schools, whether kindergarten or high schools, are organized with the expectation that the teacher will be ‘in charge’ of the class” [Cooper]. Part of this includes enforcing school rules. Students are accustomed to being taught by teacher who know how to control them, “usually rather effortlessly” [Cooper]. Because students can detect uncertainty and hesitancy, teachers should be resolute in administering discipline.

Cooper gives guidelines to follow when a student’s behavior could result in expulsion or suspension. First, “students must be notified (either in writing or orally) of the nature of their offense and what the intended punishment is” [Cooper]. The school must clearly explain to students the evidence used to attest to the offence. Finally, “the school must give the students an
opportunity to refute the charges before a fair and impartial individual with decision-making authority” [Cooper]. Only then may a student be suspended or expelled.

Students’ use of drugs or alcohol is one of the more serious issues in classroom management. Cooper says that all schools are “subject to the Safe and Drug Free Schools Act, which is now part of the No Child Left Behind Act of 2001” [Cooper]. The law’s goal is to “provide safe, disciplined, and drug-free environments conducive to learning by eliminating violence in and around schools and preventing illegal drug use on school property” [Cooper]. Teachers should discuss suspected drug use with counselors, who are trained to manage such problems. Counselors can also offer “advice on both the legal aspects of the situation and ways to assist the student” [Cooper]. Schools should have clear drug and alcohol policies. All infractions should be handled consistently.

Teachers must maintain an appropriate social distance from their students, a task that can be difficult. Teachers should not “hide their insecurities by acting harshly strict and extremely businesslike”, nor should they “seek to break down all barriers between themselves and their students” [Cooper]. Keeping an acceptable social distance is especially important in regard to sexual attraction between teachers and students. This could be the result of a new teacher’s increased need for affection or a student’s becoming emotionally attached. Teachers should use caution in such instances because rejecting and embarrassing the student could be damaging.

Teachers are responsible for interacting with their students’ parents and guardians. Cooper says that teachers and parents should be partners because both are “working to help the child become a more fully developed person, and both want the child to be happy, sensitive, intelligent, and well-balanced” The ideal parent/teacher relationship is “cordial, constructive, and characterized by mutual respect” [Cooper].
According to Cooper, teachers are “responsible for ensuring the safety and well-being of their students in their own classrooms and work spaces and in the activities they oversee” [Cooper]. This includes field trips and extra-curricular activities, such as band and sports. Cooper states that teachers “are also liable if they do nothing when they observe a student in some potentially dangerous act the eventually turns out to be harmful” [Cooper]. Teachers should try to anticipate potentially dangerous situations, supervise students, take extra precautions, make rules, and give warnings to prevent student injury.

Cooper states that, “in addition to preventing harm to students under their supervision, teachers also have a legal responsibility to safeguard students from abuse and neglect at the hands of their parents and other adults” [Cooper]. Almost all states include physical, mental, or emotional injury and sexual molestation or exploitation in their laws defining abuse. Schools typically outline the proper means of reporting suspected child abuse or neglect for teachers in faculty handbooks. A teacher does not have to know for certain that a child is being abused to file a report. All reports are kept confidential as a means of protection.

Kim, L. Becky, and Ryan J. Naugle

Naugle et al. describe teacher effectiveness as “a multifaceted picture of how the learners in their charge grow under their direction” [Naugle]. To effectively evaluate teachers, they suggest using an evaluation system modeled after Kirkpatrick’s four level model of training evaluation. The four levels in this model are reaction, learning, behavior, and results. Naugle et al. state that this “model of evaluation has been the most reviewed and applied guide to assessing the effectiveness of training in the adult world of work since its inception in 1959” [Naugle].

The reaction level deals with how students feel about their instructor, the material being taught, and the educational experience in general. The authors say that student reactions to
instruction should not be ignored, as typically happens, but instead should be assessed with well-designed instruments when students are old enough, “peer or supervisor observation of student classroom reactions”, and by student interviews, “using a random sampling process when practical” [Naugle].

The next level, knowledge, deals with the knowledge students have acquired, the skills in which students have improved, and the attitudes that have been changed due to instruction [Naugle]. The amount of knowledge acquired is determined through assessment. Rather than examining each educator individually, the authors recommend comparing them with others. This would provide recommendations for those regarded as ineffective, and it would “aid in the identification of helpful factors to communicate to those still in training or just entering the teaching profession” [Naugle].

The third level, behavior, deals with “whether participants who had completed training used the new knowledge, principles, or techniques on the job” [Naugle]. The authors likened this to students’ ability to follow instructions, write letters, and make change for a dollar. Some states such as Kentucky mandated performance assessments that require students to show that they can do such tasks. However, before this could happen, teachers would need to be trained in administering such assessments.

The final level deals with the training’s desired results. In the case of education, this would be “continued learning, the formation of a basis of learning to build on, the development of skills to apply their learning, and the life acquisition of skills and learning to carry what they have gained in school outside of it to build a better life for themselves and their community” [Naugle]. The authors state that while performance testing may not be the best means of
measuring results, it is a step in the right direction. To fully assess results, it is important that an array of assessment tools be used [Naugle].

**Piera Gravenor**

Following a careful examination of teacher evaluation methods throughout the United States in 2011, Gravenor had six recommendations for improvement:

- Creating a culture of learning and growth for teachers
- Separate assessment for novice teachers
- Use of multiple measures of effectiveness
- Incorporation of a student achievement component
- Establishing National Board Certification for teachers
- A connection to professional development

To create a culture of learning and growth, Gravenor recommends focusing on “discussion, transparency, and a mutually understood vision of the mission of the district” [Gravenor]. She also says that administrators should “structure the professional development process in such a way that teachers choose what they want to learn, encourage them to join groups with similar mindedness, and provide people ample time both during and after the school day for meetings” [Gravenor].

While Gravenor says that “authentic rigor in any evaluation is necessary to make the process relevant and useful,” she recognizes that the limited human and financial resources of some schools may make this difficult. Because of this, she recommends use of National Board Certification. To become certified, teachers would have to complete a portfolio, videotape themselves teaching, and complete assessments. Completing these requirements, according to one National Board certified teacher, “resulted in a deeper understanding of effective pedagogy
in the classroom and highlighted the need for regular self-reflection” [Gravenor]. This teacher also states that the action research component of the certification “added a direct link to the academic improvement and achievement of individual students” [Gravenor].

Gravenor recommends having a separate evaluation for non-tenured teachers that provides “a clear, well mapped process that will give them a strong foundation upon which to build a successful career [Gravenor]. Such a system should focus on determining whether a new teacher has mastered the “foundations of good teaching based upon the district’s standards” [Gravenor]. It also needs to be “based upon a formative approach, with each evaluation carefully connected to the appropriate professional development to assist that novice teacher reach higher levels of efficiency, yet customized to meet the specific professional needs of each particular teacher” [Gravenor].

To incorporate student achievement into the evaluation process, Gravenor recommends using value added assessment, such as the Tennessee Value Added Assessment System. She says that “many believe that [Value Added Assessment] could be the first step to changing the arbitrary benchmark cut-off scores currently used to label schools as In Need of Improvement” [Gravenor]. She warns, however, that to be effective, it is important that Value Added Assessment be only “one of a variety of measurements” [Gravenor]. Gravenor says that this is “the best way to know when the evaluation system is getting closer to the truth – or regressing” [Gravenor].

Gravenor says that multiple methods for measuring teacher effectiveness are required to provide an accurate picture of their ability. She recommends using portfolios, peer assessment, self-evaluation, and action research. Doing this, she says, will “lead to a fairer and more accurate evaluation which in turn leads to better placement of teachers, targeted professional
development and support, the possibility of rewarding those teachers deemed highly effective, and an application of tenure that is authentic” [Gravenor].

Finally, Gravenor says that relating “professional development to the data garnered from a fair and reliable teacher assessment process to address specific needs brought to light is integral in completing the circle of teacher efficacy” [Gravenor]. Teachers should develop individualized professional development plans and “meet, discuss, and collaborate on the larger school goals for professional development” [Gravenor]. In order for such a system to be taken seriously, however, it is important that high stakes be placed on the final evaluation, with positive and negative consequences for positive and negative assessments.

Models For Faculty Activities

The Faculty Activities System

The Faculty Activities System (FAS) was designed to collect and store information about ETSU professors’ activities as a means of academic accountabilities management. The FAS’s data model is divided into nine main sections:

- Faculty Information, which contains vital data on an employee and his or her appointment to the university’s faculty.
- Instruction, which includes sixteen subsections for teaching-related responsibilities: ordinary and clinical instruction assignments, culminating experiences, advising, visiting and guest instructor duties, coordinator duties, independent studies, field experiences/internships, program development/modification, course development/modification, teaching materials, special student programs, supervision of graduate assistants/teaching assistants, library assignments, and assignments involving the University School, ETSU’s experimental K-12 school.
• Contracts, which includes subsections for internal contracts, external contracts, and proposal developments.

• Grants, which includes subsections for internal grants, externals grants, and proposal developments.

• Scholarship, which contains subsections for print or online publications, presentations, creative activities, software applications, intellectual property, action research, and other works in progress. These subsections vary greatly in content, the largest being creative activities, which includes further subsections for musical arrangements, compositions, digital media, performances, recordings, and visual artwork.

• Service, which is divided into eight subsections:
  o Institutional service, including administrative and assessment-related activities, committees, faculty senate, campus organizations, student recruitment and retention, peer mentoring, colleague support, resource management, student learning outcomes assessment, event planning and organizing, and other activities;
  o Professional service, including assessment-related activities, professional association memberships, editorial services, memberships in editorial boards, publication and grant review, juror/adjudicator, curator, event planner or organizer, continuing education unit instructor, speaker, lecturer, and other activities;
  o Community service, including speeches, lectures, demonstrations, performances, memberships in a board of directors, civic projects, event planning and organization, and other community services;
Five additional subsections accounting for patient and client services, K-12 services, government services, and consulting:

- Professional activities, including certifications, licensures, and professional development;
- Awards, including fellowships and awards garnered by student advisees; and
- Non-instructional assignment, which is Tennessee’s equivalent for sabbaticals.

The FAS data model includes several key cross-cutting features. One, a description/outcomes field, allows instructors to indicate the significance of their actions. Another is a seven-part activity status model, which allows users to indicate if an activity is underway, suspended, in initial evaluation, approved, recurring, open, or concluded, using synonyms for these states that are specific to each activity.
CHAPTER 3

METHODOLOGY

Goals
This work sought to create a descriptive model for K-12 teacher evaluation that could be realized as a computer application, used for evaluating teachers in Tennessee, and readily adapted for changes in assessment. Information regarding student test scores was excluded from the model because this information is typically collected in other databases. To combine data from these other sources, an extract-transfer-load tool, like Microsoft’s Integration Services, could be used [Integration].

Methods

Creation of an Initial Data Model

The creation of a K-12 data model began with a careful examination of the FAS project’s data model and the creation of a list of concerns pertinent to K-12 educators. Much of this model was also relevant to elementary, middle, and high school teachers. The resulting list included fourteen major categories:

- Faculty Information. This category documents basic information about a teacher, such as name, faculty identification number, and appointment information.
- Instruction. This documents the courses a teacher is teaching, including special delivery methods, special content, and type of course. Teachers can also record whether they helped develop teaching materials, modified a course or program, served as a coordinator or some sort, or supervised a student teacher.
- Academic Assignment. This documents teachers’ academic assignments, including subject and grade level.
• Scholarship. This documents teachers’ written publications, presentations, and action research. Any visual or performing arts are accounted for as well.

• Grant. This documents grant applications in which teachers were involved.

• Service. This documents teachers’ service to their school, discipline, and community. It includes student activities, such as coaching and club mentorship.

• Administration. This documents administrative tasks, such as scheduling, chairing committees, serving on leadership teams, serving as a grade level or department chair, working on school improvement plans, and leading professional development.

• Professional. This documents work towards licensures, certificates, and degrees, as well as other professional development activities.

• Faculty Award. This documents such awards as teacher of the month or year.

• Student Award. This documents awards given to a teacher’s students, such as most improved or outstanding student.

• Fellowship. This documents fellowships, such as the Woodrow Wilson Teaching Fellowship.

• Non-instructional Activities. This category allows teachers to document activities such as monitoring bathrooms, hallways, and cafeteria, and bus duty.

• Intellectual Property. This documents teachers’ intellectual property, such as books instructional materials created for use in their classrooms.

• Academic Interest. This documents teachers’ preferred discipline(s).

Validating the Data Model Through Expert Review

This first K-12 model was reviewed by Dr. Virginia Foley, Dr. Pamela Scott, and Dr. April Blakely. Dr. Foley is an assistant professor for the Educational Leadership Policy Analysis
department at ETSU. Dr. Scott is the chair of that department. Dr. Blakely, formerly Teacher Leader for Support Services at ETSU’s University School, is the Undergraduate Coordinator for Curriculum and Instruction at Eastern Kentucky University. On their advice, the following modifications were made to the initial data model:

- **Instruction.** A year element was added to instructor/instruction. An “If Applicable” was added to the Credit Hours element, as some high schools may not use credit hours. Under Special Content, a Laboratory element was added to account for laboratory courses. The Visiting Instructor and Guest Instructor sections were deleted, and sections called Other Field Work and Methods Supervision were added.

- **Academic Assignment.** This section was deleted.

- **Scholarship.** The Action Research subsection was moved before the Performing Arts subsection.

- **Grants.** The distinction between internal and external funding was eliminated, as there was concern that most K-12 educators would not need it.

- **Service.** A new subsection, General Service, was created to account for other service activities not otherwise accounted for. The Support for Colleague and Resource Management subsections were deleted.

- **Intellectual Property.** This section was deleted.

Finally, the model’s language was modified slightly for the K-12 environment. The resulting data model was much more concise and consisted of only twelve major sections.
Validating the Data Model Through Surveys and Interviews

Surveys and interviews with administrators and teachers from all three grand divisions of the state of Tennessee—East, Middle, and West—were conducted to further refine the model [TNHistory]. The goal was to include about the same number of participants from each division.

Two sets of survey questions, one for administrators and one for teachers, were created with the help of Drs. Blakely, Foley, Pfeiffer, and Scott. The first four questions of each set of surveys were demographic questions, asking about experience and degrees. The remaining questions aimed to discover what teachers and administrators like about Tennessee’s teacher evaluation system and what they felt needed to be changed.

This initial survey was then piloted with a small group of teachers and administrators in summer 2011. Apart from answering the questions on the surveys, participants were asked to express their thoughts and opinions about the questions. As a result of this discussion, many questions were clarified, simplified, or deleted. These changes included modifications related to the changeover from Tennessee’s older Framework for Professional Evaluation and Growth to the new TEAM model for teacher evaluation.

The surveys proper were conducted via SurveyMonkey from January to April 2012. Participants were invited using e-mail. The web address of the teacher survey was https://www.surveymonkey.com/s/R7KG3JH, and the web address of the administrator survey was https://www.surveymonkey.com/s/RSZDC5D. Data from these surveys was supplemented by interviews of administrators and principals in the Johnson City, Carter, Hawkins, Sullivan, and Unicoi County school districts.
Validating the Data Model Through Analysis of The Literature

The data model was also checked for conformity with federal, state, and expert guidelines for K-12 instruction. This check was conducted using a traceability document with three major sections, each of which was further divided into subsections: NCLB, IDEA, and FERPA for federal legislation, Tennessee, Virginia, Rhode Island, and Arizona for state legislation, and Cooper, Naugle et al., and Gravenor for experts.

Under each subsection, a respective list of requirements and suggestions was generated. This list was then divided into two categories: Captured By Model and Not Captured By Model. Special notes were made to indicate those requirements only partially captured by the model. Requirements not captured by the model in any way were also indicated with notes.

Validating the Data Model Through Implementation

The K-12 data model was implemented using XML for the following reasons:

- Data entered by users can be validated through restrictions provided by the XML standard.
- XML schemas are relatively easy to modify as requirements change.
- The FAS data model was written in XML, allowing much of the code present in the FAS data model was reused with minor modifications.

Significant changes made to the original code and new code not present in the FAS model were examined and approved by Dr. Pfeiffer.
CHAPTER 4

DATA

Survey Data

Participants in this study included 288 teachers and 49 administrators, most having ten or more years of experience and a Master’s Degree or higher. A relatively even distribution of teachers from all grade levels participated, with eleventh grade teachers having a narrow majority. Most of the administrators participating in the study were principals, but twenty percent of the respondents were assistant principals.

When asked what aspects of their work teachers felt it was important to evaluate, some of the most common responses were as follows:

- Completion rates for Individualized Education Plans
- Preparation/Planning
- Assessment
- Student Learning and Growth
- Classroom Management
- Professional Development
- Teaching Methods
- Instructional Quality
- Adherence to State Curriculum
- Student Engagement and Motivation
- Knowledge About Standards
- Content Knowledge
- Professionalism
• Interaction With Parents/Guardians

• Collaboration With Colleagues

Opinions were divided as to whether the Tennessee Framework for Evaluation and Professional Growth fairly and accurately depicted the work of teaching. Several teachers stated that the Framework was particularly problematic when evaluating kindergarten, first, second, and third grade teachers as many of the rubrics are not applicable to them. Some also disliked what they referred to as the “one size fits all” ideology. Others said they felt it was too objective, and some thought it too difficult to achieve good scores in all categories given the limited amount of time allotted for observation.

Teachers identified many positive aspects to the evaluation process, including assessment of differentiated instruction, identification of strengths and weaknesses, increasing awareness of instructional style, encouragement for improvement, enumeration of expectations for teachers, increased communication with administrators, accountability, and self-evaluation. Administrators also identified positives about the evaluation process, including the rubrics, observing teachers in their classrooms, helping to improve teacher effectiveness, and communicating with teachers.

Teachers felt that much could be done to improve the evaluation process, such as requiring fewer, longer observations; using fewer evaluation criteria; providing more training for evaluators; decreasing paperwork; putting less emphasis on student test scores; reducing subjectivity; and focusing more on new teachers. Administrators identified the following areas for improvement: setting more reasonable deadlines; helping teachers to better understand the rubrics; doing fewer evaluations for teachers with high scores; allowing others to evaluate
teachers to provide other viewpoints; and having an assistant principal to help with the evaluation process.

Administrators identified the following as factors that the Framework did not address but should: other teaching areas, including counseling; things done for students outside of teaching; teachers’ attitudes; and special education and related arts. When it comes to incorporating technology in the evaluation process, administrators stated they were already using laptops, iPads, the TNDOE website, audio recorders, smart phones, and electronic scoring templates. They would like to see the use of electronic rubrics and PDF documents in the evaluation process.

Finally, teachers stated that technology could be used to further enhance the evaluation process by allowing teachers to record themselves teaching, providing a means for self-assessment, providing online professional development, using a checklist system to streamline the evaluation process, providing online surveys to gather teachers’ thoughts and needs, helping with lesson planning and teaching materials, allowing teachers to complete paperwork electronically, and simplifying access to evaluation information, and allowing for more regular feedback from administrators.

**Model Quality**

The assessment of the model’s quality focused on the model’s completeness and precision of coverage.

**National Level.** The data model accounts for NCLB’s requirement for highly qualified teachers by storing teachers’ degrees, certifications, and licensures. It accounted for the act’s requirement for meeting the needs of special learners by allowing teachers to record changes and
modifications to courses and assignments. It allows for courses to be designated as foundational and advanced.

However, the model does not capture all concerns raised in national legislation. State-wide test scores and adequate yearly progress target scores are not captured. These scores, which are already stored in external databases, were excluded to minimize possible data quality issues involving duplicated data [Cong]. Apart from recording changes made to courses and teaching materials, many of IDEA’s requirements are not captured by the model, nor are FERPA’s. Individualized education plans and inclusion practices focus more on students, and information regarding student information disclosure is likely maintained elsewhere.

**State Level.** The model captures many of the requirements prescribed by Tennessee’s DOE. The planning and teaching strategies requirements of the Framework for Professional Growth and Development are partially realized in that teachers can record any new teaching materials, course changes, and field trips they plan on taking. The Framework’s professional growth requirement is well represented in that teachers can report all professional growth activities they have participated in as well as those they helped to organize for others.

The model captures various aspects of Tennessee’s education laws. The Frameworks requirements regarding assessment and evaluation, the learning environment, communication, and focused assessment are not addressed. Teachers may find entering in this much information to be stressful, time consuming, and overwhelming. TEAM’s requirements for teacher evaluation reports and TVAAS data are not modeled, nor is First to the Top’s initiative to raise graduation rates. Once again, the concern was avoiding data duplication as this information is maintained elsewhere.
The model captures a good portion of Virginia’s requirements. The Guidelines’ requirement for professional knowledge is satisfied by the recording of degrees, licensures, and certificates. The requirement for tracking professional growth is addressed by the model’s Professional Growth section, and assessment is partially modeled by the culminating experiences section. Instructional planning is also partially represented, as discussed previously.

The model does not capture the instructional delivery, learning environment, and student progress portions of Virginia’s guidelines. Also, there are no mechanisms for recording teacher evaluation results, student surveys, portfolios, or self-evaluations. These were left out so as not to overwhelm teachers and to prevent data duplication.

The model captures Rhode Island’s requirements for professional growth and contributing to the learning community. These contributions can be recorded in the model’s service section. The data model partially captures Rhode Island’s requirements for planning and preparation as described previously.

Unfortunately, the model fails to capture many of Rhode Island’s requirements, including requirements for classroom instruction, the classroom environment, reflection, assessment, and teacher improvement. Also, there are no mechanisms for storing self-assessments or student learning objectives. Again, these omissions were made in an effort to prevent overwhelming teachers and to prevent data duplication.

Arizona’s mandates regarding professional responsibility are captured by the model within the professional growth, administrative activities, and committee activity sections of the model. The requirements about teachers and content knowledge are represented as well. Unfortunately, the model fails to address requirements regarding instructional practice. Entering in the instructional practices used in each lesson would be stressful and time consuming.
Recommendations by Authorities. The model reflects many of the suggestions made by educational experts. Cooper stated that many teachers are responsible for creating their own teaching materials. He also discussed field trips and other extra-curricular activities such as sports and student organizations, all of which the model addresses [Cooper]. Unfortunately, the model fails to address classroom safety, parent-teacher conferences, maintaining a proper social distance, and reporting drug, alcohol, and physical abuse [Cooper]. Some of these, such as classroom safety, are not activities, and information regarding drug, alcohol, and physical abuse are maintained elsewhere.

Naugle et al.’s suggestions regarding the end result of student learning is partially implemented in the culminating experiences section [Naugle]. Their suggestions of taking student reactions into account, assessment, and comparisons with other teachers were not addressed.

Lastly, Gravenor’s suggestions regarding professional growth, National Board Certification, and action research have all been addressed [Gravenor]. Unfortunately, her recommendations for separate evaluations for tenured and non-tenured teachers, value-added assessment, portfolios, peer assessment, and self-evaluation were not addressed. States and federal legislation control how and when teachers are evaluated, and much of the other information is stored elsewhere.

Model Realization

The finished data model consisted of 176 XML schemas comprised of 18,108 lines of source code, 262 simple type definitions, and 521 complex type definitions. The implementation was organized into seventeen main sections:

- academic-committee-types
- academic-unit-types
- activity-recognition-types
- award-types
- campus-organization-types
- course-properties-types
- faculty-information-types
- grant-types
- instruction-types
- non-instructional-assignment-types
- professional-types
- scholarly-role-types
- scholarship-types
- service-types
- tas-base-types
- teacher-activities-taxonomy-types
- time-frame-types

Much of the K-12 data model is the FAS data model with very little modification. All changes were reviewed by Dr. Pfeiffer. Questions regarding K-12 teacher evaluation and responsibilities were addressed by Drs. Foley, Scott, and Blakely. The list of courses was populated from the course list on http://www.tn.gov/education/curriculum.shtml. Course codes were taken from http://www.state.tn.us/education/schapproval/doc/ed2356_2011_12.pdf.

A Venetian blind design pattern was used [Sun]. A schema that conforms to this pattern defines all other elements by reference to globally-defined types, such as list elements. The
pattern’s advantages include multiple file handling and the reusability of all defined types. The pattern’s principle disadvantage is that encapsulation is limited due to exposing types [Sun]. The schema addressed this disadvantage by using compound names that differentiate between names according to the types of activities they characterized.

A 1,845-line test document was used to confirm that the model validates the test document. The test document tested elements from every single schema. However, although some elements are specified as optional, only some empty cases were tested. DOMPrint, an open-source XML parser, was used to complete the validation on a computer running Windows 7. The validation process takes little more than a second.
CHAPTER 5
ANALYSIS

The goal of this work was to create a descriptive model for K-12 teacher evaluation that could be realized as a computer application, used for evaluating teachers in Tennessee, and readily adapted for changes in assessment. The resulting model is very descriptive. Also, it has been realized in XML, making it easily adaptable. While many aspects of the model make it suitable for evaluation purposes, there are areas in which the model requires improvement before using it for teacher evaluation.

Many aspects of this project have value as is. The model effectively addresses professional growth and teacher qualifications. It also addressed many of the activities performed by teachers, including academic, extra-curricular, and non-academic assignments. Teachers can also record services performed for their students, school, and the community at large.

This project also demonstrated that teachers do many activities that are not typically accounted for in the evaluation process, such as student organization mentorship, coaching, and community service. Much emphasis is placed on student performance, but, according to Futernick, “standards cannot be reduced to the administration of tests and the attachment of sanctions to low test scores” [Futernick]. Futernick says that, if a problem cannot be ascribed to an individual or group of individuals, then something within the system itself needs to change [Futernick].

The model also falls short in several areas. Teachers have no means of uploading lesson plans, unit plans, classroom pictures, portfolios, self-evaluations, peer evaluations, or individualized education plans. The model does little to capture teaching and assessment
strategies. It is lacking in regard to focused assessment, reflection, and improvement plans. Including these would help to make the model much more useful in teacher evaluation.

XML worked very well as a formalism for realizing the model. XML is easily modified to account for changes in requirements. Data can be checked for well-formedness before it is entered into a database. Because the FAS data model is also written in XML, realizing the K-12 model in the same language seemed the most logical solution. However, an issue with the current model is that it does not allow for the uploading of documents and pictures.

Further research could be conducted to discover means of addressing the current model’s weaknesses or implementing the model using a tool other than XML. Also, as the requirements for teachers change, the data model will need to change along with it. It would also be interesting to see if there are fields outside of education for which a modified version FAS data model may prove useful. Most of these activities would probably require a similar amount of time and effort as this project. Updating the data model should require less effort, unless there is a large shift in requirements.
CHAPTER 6

CONCLUSION

The modified version of the FAS data model presented here, or something similar to it, could be useful in the K-12 environment. Many of the daily activities of teachers are addressed, even non-academic assignments such as bus duty. While there are issues the model fails to address, many are captured by other evaluation processes that are already in use in K-12 education. While the model does provide a good picture of what teachers do, more work would be needed before it can be truly useful for evaluation purposes.
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APPENDICES

Appendix A: Initial Data Model

- Faculty Information:
  - Name:
    - First
    - Last
    - Middle
    - Qualifiers
  - Faculty ID
  - Appointment:
    - Title
    - Department

- Instruction:
  - Instructor:
    - Course Assignment:
      - Course Number
    - Course Title
    - Topic
    - Number of Sections
    - Number of Students
    - Semester
    - Credit Hours
    - Contact Hours
    - Special Delivery Methods:
      - Fully Online
      - Partly Online
      - Web Enhanced
      - Instructional TV
    - Special Content:
      - Writing Intensive
      - Oral Intensive
      - Technology Intensive
      - Honors
      - Foundational
    - New Preparation
    - Taught Offsite
    - Description/Outcomes
  - Culminating Experience:
    - Thesis:
      - Role
      - Student
      - Title
      - Status
• Description/Outcomes

▪ Creative Activity:
  • Role
  • Grade Level
  • Student
  • Title
  • Status
  • Description/Outcomes

▪ Non-Thesis Project or Presentation:
  • Role
  • Grade Level
  • Student
  • Title
  • Status
  • Description/Outcomes

▪ Portfolio:
  • Role
  • Grade Level
  • Number of Students
  • Portfolio Type
  • Description/Outcomes

  o Visiting Instructor:
    ▪ Venue
    ▪ Dates:
      • From
      • To
    ▪ Description/Outcomes

  o Guest Instructor:
    ▪ Course Title
    ▪ Dates:
      • From
      • To
    ▪ Description/Outcomes

  o Coordinator:
    ▪ Extent of Duties
    ▪ New Assignment
    ▪ Status
    ▪ Description/Outcomes

  o Independent Study:
    ▪ Topic
    ▪ Student
    ▪ Status
    ▪ Grade Level
    ▪ Description/Outcomes

  o Field Experience:
- Role
- Grade Level
- Number of Students
- Description/Outcomes
  - Program Development or Modification:
    - Name of Program
    - Grade Level
    - Type of Change
    - Grant Supported
    - Release Time to Develop
    - Status
    - Description/Outcomes
  - Course Development or Modification:
    - Course Number
    - Title
    - Type of Change
    - Experimental Course
    - Enhancements in Delivery Methods:
      - Conventional
      - Fully Online
      - Partly Online
      - Web Enhanced
      - Taught Offsite
      - Instructional TV
    - Grant Supported
    - Release Time to Develop
    - Status
    - Description/Outcomes
  - Teaching Material Development:
    - Course(s)
    - Type(s)
    - Description/Outcomes
  - Supervision of Student Teacher:
    - Name of Student Teacher
    - Student Teacher Responsibilities
    - Status
    - Description/Outcomes
- Academic Assignment:
  - Activity
  - Status
  - Description/Outcomes
- Scholarship:
  - Written Publication:
    - Title
    - Complete Citation
    - Publisher/Venue
- Year Published
- Publication Type
- Role
- Scope
- Bases of Merit:
  - Invited
  - Expert Refereed/Reviewed
  - Peer Refereed/Reviewed
  - Other Honors
    - Honor
- Status
- Description/Outcomes
  - Presentation:
    - Title
    - Professional Meeting
    - Date Presented
    - Type
    - Role
    - Scope
    - Bases of Merit:
      - Invited
      - Expert Refereed/Reviewed
      - Peer Refereed/Reviewed
      - Other Honors:
        - Honor
    - Status
    - Description/Outcomes
  - Visual Arts:
    - Creative Activity:
      - Type of Art
      - Title
      - Collaborators
      - Status
      - Circumstance
      - Exhibitions:
        - Venue
      - Featured:
        - Venue
      - Honored:
        - By Whom
      - Description/Outcomes
    - Curatorship:
      - Type of Art
      - Title
      - Venue
• Status
• Description/Outcomes

○ Performing Arts:
  ▪ Performance:
    • Title
    • Venue(s)
    • Dates Performed
    • Performance Type
    • Role
    • Scope
    • Status
    • Invited
    • Adjudicated
    • Professional Credit
    • Commissioned
    • Description/Outcomes
  ▪ Production Design:
    • Title
    • Venue
    • Professional Credit
    • Status
    • Description/Outcomes
  ▪ Direction:
    • Title
    • Venue
    • Dates Performed
    • Scope
    • Professional Credit
    • Status
    • Description/Outcomes
  ▪ Production:
    • Title
    • Venue
    • Dates Performed
    • Scope
    • Professional Credit
    • Status
    • Description/Outcomes
  ▪ Script Writing:
    • Title
    • Scope
    • Professional Credit
    • Status
    • Description/Outcomes
• Musical Composition:
  • Title
  • Instrumentation
  • Venue
  • Role
  • Scope
  • Status
  • Commissioned
  • Reviewed
  • Description/Outcomes

• Choreography:
  • Title
  • Venue
  • Dates Performed
  • Scope
  • Professional Credit
  • Status
  • Description/Outcomes

  o Computer Application:
    • Title
    • Year Released
    • Role
    • Scope
    • Status
    • Commissioned
    • Description/Outcomes

  o Action Research:
    • Title
    • Venue
    • Role
    • Scope
    • Number of Students
    • Status
    • Description/Outcomes

• Grant:
  o Internal Grant:
    • Title
    • Grant ID
    • Grant Type
    • Role
    • Collaborators
    • Dates:
      • Start
      • End
    • Applies To:
• Instruction
• Scholarship
• Service
• Professional Development
  ▪ Status
  ▪ Description/Outcomes

  o External Grant:
    ▪ Title
    ▪ Grant ID
    ▪ Grantor
    ▪ Role
    ▪ Type of Compensation:
      ▪ Money
      ▪ In Kind
    ▪ Value to School
    ▪ Dates:
      ▪ Start
      ▪ End
    ▪ Applies To:
      ▪ Instruction
      ▪ Research
      ▪ Scholarship
      ▪ Professional Development
    ▪ Status
    ▪ Description/Outcomes

  o Proposal Development:
    ▪ Title
    ▪ Anticipated Grantor
    ▪ External/Internal
    ▪ Role
    ▪ Anticipated Value to School
    ▪ Anticipated Date of Submission
    ▪ Applies To:
      ▪ Instruction
      ▪ Scholarship
      ▪ Service
      ▪ Professional Development
    ▪ Description/Outcomes

• Service:
  o Institution:
    ▪ Accreditation, Academic Audit, or Program Review:
      ▪ Type
      ▪ Review Name
      ▪ Venue
      ▪ Role
- Grade Level
- Description/Outcomes

- **Curriculum Review:**
  - Role
  - Grade Level
  - Status
  - Description/Outcomes

- **Committee:**
  - Committee Name
  - Role
  - Grade Level
  - Status
  - Description/Outcomes

- **Campus Organization:**
  - Organization Name
  - Title/Role
  - Grade Level
  - Status
  - Description/Outcomes

- **Peer Mentoring:**
  - Type
  - Peer Name
  - Status
  - Description/Outcomes

- **Support for Colleague:**
  - Who Did You Support?
  - What Did You Support?
    - Research
    - Teaching
    - Service
  - Description/Outcomes

- **Resource Management:**
  - Title/Role
  - Resource Type
  - Status
  - Description/Outcomes

- **Other:**
  - Activity
  - Role
  - Grade Level
  - Status
  - Description/Outcomes

  - Profession:
    - Accreditation, Academic Audit, or Program Reviewer:
• Type
• Internal/External
• Review Name
• Venue
• Role
• Grade Level
• Description/Outcomes

- Professional Association:
  • Association Name
  • Role
  • Scope
  • Status
  • Description/Outcomes

- Publication Reviewer or Editor:
  • Published
  • Title
  • Type
  • Status
  • Description/Outcomes

- Juror or Adjudicator:
  • Name of Creative Activity
  • Type
  • Role
  • Invited
  • Scope
  • Status
  • Description/Outcomes

- Grant Reviewer:
  • Title
  • Type
  • Scope
  • Status
  • Description/Outcomes

- Conference, Workshop, or Seminar Organization:
  • Organization Name
  • Title/Role
  • Scope
  • Venue
  • Status
  • Description/Outcomes

- Performance:
  • Title
  • Venue
  • Date(s)
• Performance Type
• Role
• Status
• Description/Outcomes

▪ Exhibition:
  • Title
  • Venue
  • Date Exhibited:
    ▪ From
    ▪ To
  • Media
  • Role
  • Status
  • Description/Outcomes

▪ Speech or Lecture:
  • Given To
  • Topic
  • Date
  • Description/Outcomes

▪ Other:
  • Activity Name
  • Activity Type
  • Role
  • Status
  • Scope
  • Description/Outcomes

  o Community:
    ▪ Speech or Lecture:
      • Given To
      • Topic
      • Date
      • Description/Outcomes

▪ Civic Project:
  • Project
  • Role
  • Status
  • Description/Outcomes

▪ Workshop or Seminar:
  • Audience
  • Topic
  • Date
  • Description/Outcomes

▪ Performance:
  • Audience
- Venue
- Title
- Date(s)
- Type of Performance
- Role
- Status
- Description/Outcomes

**Exhibition:**
- Audience
- Title
- Type of Exhibition
- Date:
  - From
  - To
- Description/Outcomes

**Demonstration:**
- Audience
- Title
- Venue
- Date
- Description/Outcomes

**Other:**
- Audience
- Title
- Venue
- Description/Outcomes

  **Student Activity:**
  - Event:
    - Title
    - Venue
    - Role
    - Number of Students
    - Status
    - Description/Outcomes

  **Tournament:**
  - Title
  - Venue
  - Role
  - Number of Students
  - Status
  - Description/Outcomes

  **Coaching:**
  - Sport
  - Role
- Number of Students
- Status
- Description/Outcomes
- Club or Organization Mentorship:
  - Club Title
  - Role
  - Number of Students
  - Status
  - Description/Outcomes
- Administration:
  - Title
  - Status
  - Description/Outcomes
- Professional:
  - Certification:
    - Certification
    - Active:
      - From
      - To
    - Agency
    - Description/Outcomes
  - Licensure:
    - License
    - Agency
    - Active:
      - From
      - To
    - Description/Outcomes
  - Degree:
    - Degree
    - Terminality
    - Discipline
    - Projected Completion Date
    - Work Completed This Evaluation Period
  - Instructional Development:
    - Number of External Activities
    - Number of Internal Activities
    - Description/Outcomes
  - Scholarly Development:
    - Number of External Activities
    - Number of Internal Activities
    - Description/Outcomes
  - Service Development:
    - Number of External Activities
    - Number of Internal Activities
    - Description/Outcomes
• Faculty Award:
  o Name of Award
  o Awarded By
  o External/Internal
  o Award Status
  o Applies To:
    ▪ Instruction
    ▪ Scholarship
    ▪ Service
  o Description/Outcomes

• Student Award:
  o Name of Award
  o Awarded By
  o Student Name
  o External/Internal
  o Award Status
  o Description/Outcomes

• Fellowship:
  o Title
  o Awarded By
  o Award Status
  o Applies To:
    ▪ Instruction
    ▪ Scholarship
    ▪ Service
  o Description/Outcomes

• Non-Instructional Assignment:
  o Semesters:
    ▪ Fall
    ▪ Spring
    ▪ Summer
  o Venue
  o Applies To:
    ▪ Instruction
    ▪ Scholarship
    ▪ Service
    ▪ Professional Development
  o Description/Outcomes

• Intellectual Property:
  o Title
  o Role
  o Type
  o Registration Number
  o Status
  o Description/Outcomes

• Academic Interest:
Area
Applies To:
  - Instruction
  - Scholarship
  - Service
Description
Appendix B: Initial Survey Questions (Teacher)

1. How many years of experience do you have as a teacher?

2. What grade level(s) do you teach?

3. What grade levels have you taught prior to your current assignment, if any?

4. What is your highest degree?

5. What aspects of your work as an instructor would you prefer to highlight in focused assessment?

6. Do you feel that the Framework for Evaluation and Professional Growth fairly and accurately depicts your work as a teacher? If so, how? If not, why not?

7. What do you perceive to be the positive aspects of the teacher evaluation process? Why?

8. What would you like to be changed about the teacher evaluation process? Why?

9. What aspects of focused assessment do you find repetitive?

10. Could you envision an electronic system helping to reduce or eliminate this repetitiveness? If so, how?
Appendix C: Initial Survey Questions (Administrator)

1. How many years of experience do you have as an administrator?
2. What administrative position do you hold?
3. Which administrative positions have you held prior to your current position, if any?
4. What is your highest degree?
5. What do you like about your school’s method of teacher evaluation?
6. Are there factors that the Tennessee Framework for Evaluation and Professional Development does not address that you feel should also be considered?
7. How could your school’s method for teacher evaluation be improved?
8. What electronic systems, if any, do you use to support teacher evaluation? How do you use them?
9. What, if any, additional improvements would be good to incorporate into these systems? Why?
Appendix D: Revised Survey Questions (Teacher)

1. How many years of experience do you have as a teacher?

2. What grade level(s) do you teach?

3. What grade levels have you taught prior to your current assignment, if any?

4. What is your highest degree?

5. Please list those aspects of your work, as an instructor, that you believe are important to evaluate.

6. Did you feel that the Framework for Evaluation and Professional Growth fairly and accurately depicted your work as a teacher? If so, how? If not, why not?

7. What do you perceive to be the positive aspects of the teacher evaluation process? Why?

8. What would you change about the teacher evaluation process? Why?

9. How could technology be used to enhance the effectiveness of the teacher evaluation process?

10. How do you think the new evaluation system will affect you?
Appendix E: Revised Survey Questions (Administrator)

1. How many years of experience do you have as an administrator?

2. What administrative position do you hold?

3. Which administrative positions have you held prior to your current position, if any?

4. What is your highest degree?

5. What do you like about your school’s method of teacher evaluation?

6. Are there factors that the Tennessee Framework for Evaluation and Professional Development did not address that you feel should also be considered?

7. How could your school’s method for teacher evaluation be improved?

8. What electronic systems, if any, do you use to support teacher evaluation? How do you use them?

9. What, if any, additional improvements would be good to incorporate into these systems? Why?

10. How do you think the new evaluation system will affect you?
Appendix F: Teacher Survey Responses

The following are responses to the demographic questions of the teacher survey:

### How many years of experience do you have as a teacher?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>2.8%</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>2.8%</td>
<td>4</td>
</tr>
<tr>
<td>&gt;10</td>
<td>64.5%</td>
<td>91</td>
</tr>
</tbody>
</table>

answered question 141

### What grade level(s) do you teach? Please check all that apply.

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
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<td>36</td>
</tr>
<tr>
<td>1st</td>
<td>20.1%</td>
<td>34</td>
</tr>
<tr>
<td>2nd</td>
<td>19.5%</td>
<td>33</td>
</tr>
<tr>
<td>3rd</td>
<td>19.5%</td>
<td>33</td>
</tr>
<tr>
<td>4th</td>
<td>16.6%</td>
<td>28</td>
</tr>
<tr>
<td>5th</td>
<td>10.1%</td>
<td>17</td>
</tr>
<tr>
<td>6th</td>
<td>16.0%</td>
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</tr>
<tr>
<td>12th</td>
<td>25.4%</td>
<td>43</td>
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</tbody>
</table>

answered question 169

### What grade levels have you taught prior to your current assignment, if any?

<table>
<thead>
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<th>Answer Options</th>
<th>Response Percent</th>
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<tr>
<td>2nd</td>
<td>34.2%</td>
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</tr>
<tr>
<td>3rd</td>
<td>31.6%</td>
<td>49</td>
</tr>
<tr>
<td>4th</td>
<td>32.9%</td>
<td>51</td>
</tr>
<tr>
<td>5th</td>
<td>34.2%</td>
<td>53</td>
</tr>
<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>38.7%</td>
<td>60</td>
</tr>
<tr>
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<td>52</td>
</tr>
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<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>34.2%</td>
<td>53</td>
</tr>
<tr>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>31.6%</td>
<td>49</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>34.2%</td>
<td>53</td>
</tr>
<tr>
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<td>50</td>
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<tr>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>32.3%</td>
<td>50</td>
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answer the question 155

**What is your highest degree?**

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<th>Response Percent</th>
<th>Response Count</th>
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<td>Master’s</td>
<td>59.2%</td>
<td>100</td>
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<tr>
<td>Doctorate</td>
<td>0.6%</td>
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</tr>
<tr>
<td>Education Specialist</td>
<td>6.5%</td>
<td>11</td>
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</table>

answer the question 169
Appendix G: Administrator Survey Responses

The following are responses to the demographic questions of the administrator survey:

### How many years of experience do you have as an administrator?

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<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
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<td>0</td>
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<td>0.0%</td>
<td>0</td>
</tr>
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<td>16.7%</td>
<td>4</td>
</tr>
<tr>
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<td>8.3%</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>12.5%</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>12.5%</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>12.5%</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>4.2%</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>4.2%</td>
<td>1</td>
</tr>
<tr>
<td>&gt;10</td>
<td>29.2%</td>
<td>7</td>
</tr>
</tbody>
</table>

answered question 24

### What administrative position do you hold?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>79.2%</td>
<td>19</td>
</tr>
<tr>
<td>Vice Principal</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Assistant Principal</td>
<td>20.8%</td>
<td>5</td>
</tr>
</tbody>
</table>

answered question 24

### Which administrative positions have you held prior to your current position, if any?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>23.5%</td>
<td>4</td>
</tr>
<tr>
<td>Vice Principal</td>
<td>17.6%</td>
<td>3</td>
</tr>
<tr>
<td>Assistant Principal</td>
<td>64.7%</td>
<td>11</td>
</tr>
</tbody>
</table>

answered question 17

### What is your highest degree?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor's</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Master's</td>
<td>50.0%</td>
<td>12</td>
</tr>
<tr>
<td>Doctorate</td>
<td>8.3%</td>
<td>2</td>
</tr>
<tr>
<td>Education Specialist</td>
<td>41.7%</td>
<td>10</td>
</tr>
</tbody>
</table>

answered question 24
Appendix H: teacher-activities-taxonomy-type.xsd

```xml
<?xml version="1.0" encoding="utf-8"?>
<xs:schema
    targetNamespace="http://www.cs.etsu.edu/teacher-activities-system/teacher-activities-prototype-schema/v0.1"
    elementFormDefault="qualified"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:tas-prototype-schema="http://www.cs.etsu.edu/teacher-activities-system/teacher-activities-prototype-schema/v0.1"
>
    <xs:annotation> <xs:documentation>
    *****************************************************************
    Includes
    *****************************************************************
    </xs:documentation> </xs:annotation>
    <xs:include schemaLocation="../award-types/award-type.xsd" />
    <xs:include schemaLocation="../faculty-information-types/faculty-information-type.xsd" />
    <xs:include schemaLocation="../grant-types/grant-type.xsd" />
    <xs:include schemaLocation="../instruction-types/instruction-type.xsd" />
    <xs:include schemaLocation="../non-instructional-assignment-types/non-instructional-assignment-type.xsd" />
    <xs:include schemaLocation="../professional-types/professional-type.xsd" />
    <xs:include schemaLocation="../scholarship-types/scholarship-type.xsd" />
    <xs:include schemaLocation="../service-types/service-type.xsd" />

    <xs:complexType name="teacher-activities-taxonomy-types_teacher-activities-taxonomy-type">
        <xs:sequence>
            <xs:element
                name="faculty_information_summary"
                type="tas-prototype-schema:faculty-information-types_faculty-information-type"
            />

            <xs:element
                name="instruction"
                type="tas-prototype-schema:instruction-types_instruction-type"
            />

            <xs:element
                name="scholarship"
                type="tas-prototype-schema:scholarship-types_scholarship-type"
            />

            <xs:element
                name="grants"
                type="tas-prototype-schema:grant-types_grant-type"
            />

            <xs:element
                name="service"
                type="tas-prototype-schema:service-types_service-type"
            />
        </xs:sequence>
    </xs:complexType>
</xs:schema>
```
<xs:element name="professional"
type="tas-prototype-schema:professional-types_professional-activities-type"/>
<xs:element name="awards"
type="tas-prototype-schema:award-types_award-categories-type"/>
<xs:element name="non-instructional_assignment_summary"
type="tas-prototype-schema:non-instructional-assignment-types_non-instructional-assignment-type"
/>
</xs:sequence>
</xs:complexType>

<xs:element name="teacher-activities-taxonomy"
type="tas-prototype-schema:teacher-activities-taxonomy-types_teacher-activities-taxonomy-type"/>
</xs:schema>
Appendix I: speech-lecture-demonstration-type.xsd

<?xml version="1.0" encoding="utf-8"?>
<xs:schema
targetNamespace="http://www.cs.etsu.edu/teacher-activities-system/teacher-activities-prototype-schema/v0.1"
elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:tas-prototype-schema="http://www.cs.etsu.edu/teacher-activities-system/teacher-activities-prototype-schema/v0.1"
>
  <xs:annotation>
    <xs:documentation>
      ************************************************************
      Includes
      ************************************************************
    </xs:documentation>
    <xs:include schemaLocation="../../tas-base-types/description-outcomes-type.xsd" />
    <xs:include schemaLocation="../../tas-base-types/user-input-string-type.xsd" />
    <xs:include schemaLocation="../../time-frame-types/date-type.xsd" />
  </xs:annotation>
  <xs:complexType name="service-types_community_speech-lecture-demonstration-instance-type">
    <xs:sequence>
      <xs:element name="audience"
        type="tas-prototype-schema:tas-base-types_user-input-string-type"
        default="" />
      <xs:element name="topic"
        type="tas-prototype-schema:tas-base-types_user-input-string-type"
        default="" />
      <xs:element name="date"
        type="tas-prototype-schema:time-frame-types_yrmndy-type"
        />
      <xs:element name="description-outcomes"
        type="tas-prototype-schema:tas-base-types_description-outcomes-type"
        default="" />
    </xs:sequence>
  </xs:complexType>
</xs:schema>
name="speech_lecture_demonstration"
    type="tas-prototype-schema:service-types_community_speech-lecture-demonstration-instance-type"
    minOccurs="0"
    maxOccurs="unbounded"
  />
</xs:sequence>
</xs:complexType>
</xs:schema>
Appendix J: status-type.xsd

```xml
<?xml version="1.0" encoding="utf-8" ?>
<xs:schema
targetNamespace="http://www.cs.etsu.edu/teacher-activities-system/teacher-activities-prototype-schema/v0.1"

elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:tas-prototype-schema="http://www.cs.etsu.edu/teacher-activities-system/teacher-activities-prototype-schema/v0.1"
>
  <xs:simpleType name="status-type_status-base-type">
    <xs:restriction base="xs:string"/>
  </xs:simpleType>

  <xs:simpleType name="status-type_status-type">
    <xs:restriction base="tas-prototype-schema:status-type_status-base-type">
      <xs:enumeration value="Accepted"/>
      <xs:enumeration value="Approved"/>
      <xs:enumeration value="Awarded This Evaluation Period"/>
      <xs:enumeration value="Awaiting IP Committee Review"/>
      <xs:enumeration value="Awaiting Publication"/>
      <xs:enumeration value="Completed"/>
      <xs:enumeration value="Continuing"/>
      <xs:enumeration value="Concluded"/>
      <xs:enumeration value="Declined"/>
      <xs:enumeration value="Denied"/>
      <xs:enumeration value="Disclosure"/>
      <xs:enumeration value="Discontinued"/>
      <xs:enumeration value="Displayed/Exhibited"/>
      <xs:enumeration value="Exhibited"/>
      <xs:enumeration value="Filing"/>
      <xs:enumeration value="Final Approval"/>
      <xs:enumeration value="In Maintenance"/>
      <xs:enumeration value="In Press"/>
      <xs:enumeration value="In Progress"/>
      <xs:enumeration value="In Preparation"/>
      <xs:enumeration value="In Rehearsal"/>
      <xs:enumeration value="In Revision"/>
      <xs:enumeration value="In Rework"/>
      <xs:enumeration value="Initial Certification"/>
      <xs:enumeration value="Initial Development"/>
      <xs:enumeration value="Initial Licensure"/>
      <xs:enumeration value="Initial Preparation"/>
      <xs:enumeration value="Initial Release"/>
      <xs:enumeration value="Licensed"/>
      <xs:enumeration value="Not Renewed"/>
    </xs:restriction>
  </xs:simpleType>
</xs:schema>
```
<xs:enumeration value="Ongoing" />  
<xs:enumeration value="Open" />  
<xs:enumeration value="Pending" />  
<xs:enumeration value="Performed" />  
<xs:enumeration value="Performed and Recorded" />  
<xs:enumeration value="Presented" />  
<xs:enumeration value="Recommended by IP Committee" />  
<xs:enumeration value="Recorded" />  
<xs:enumeration value="Recurring" />  
<xs:enumeration value="Rejected" />  
<xs:enumeration value="Released" />  
<xs:enumeration value="Renewed" />  
<xs:enumeration value="Resumed" />  
<xs:enumeration value="Submitted" />  
<xs:enumeration value="Suspended" />  
<xs:enumeration value="Withdrawn" />  
</xs:restriction>  
</xs:simpleType>  
</xs:simpleType>  

<xs:simpleType name="status-type_work-underway_base-type">  
<xs:restriction base="tas-prototype-schema:status-type_status-type">  
<xs:enumeration value="In Preparation" />  
<xs:enumeration value="In Progress" />  
<xs:enumeration value="Initial Development" />  
<xs:enumeration value="Resumed" />  
</xs:restriction>  
</xs:simpleType>  
</xs:simpleType>  
<xs:simpleType name="status-type_work-underway_in-preparation-type">  
<xs:restriction base="tas-prototype-schema:status-type_work-underway_base-type">  
<xs:enumeration value="In Preparation" />  
</xs:restriction>  
</xs:simpleType>  
</xs:simpleType>  
<xs:simpleType name="status-type_work-underway_in-progress-type">  
<xs:restriction base="tas-prototype-schema:status-type_work-underway_base-type">  
<xs:enumeration value="In Progress" />  
</xs:restriction>  
</xs:simpleType>  
</xs:simpleType>  
<xs:simpleType name="status-type_work-underway_initial-development-type">  
<xs:restriction base="tas-prototype-schema:status-type_work-underway_base-type">  
<xs:enumeration value="Initial Development" />  
</xs:restriction>  
</xs:simpleType>  
</xs:simpleType>  
<xs:simpleType name="status-type_suspended_base-type">
<xs:restriction base="tas-prototype-schema:status-type_status-type">
  <xs:enumeration value="Delayed" />
  <xs:enumeration value="Suspended" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_suspended_delayed-suspended-type">
  <xs:restriction base="tas-prototype-schema:status-type_suspended_base-type" />
</xs:simpleType>

<xs:simpleType name="status-type_suspended_delayed-type">
  <xs:restriction base="tas-prototype-schema:status-type_suspended_delayed-suspended-type">
    <xs:enumeration value="Delayed" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_suspended_suspended-type">
  <xs:restriction base="tas-prototype-schema:status-type_suspended_delayed-suspended-type">
    <xs:enumeration value="Suspended" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_initial-evaluation_base-type">
  <xs:restriction base="tas-prototype-schema:status-type_status-type">
    <xs:enumeration value="Awaiting IP Committee Review" />
    <xs:enumeration value="In Rehearsal" />
    <xs:enumeration value="Initial Release" />
    <xs:enumeration value="Released" />
    <xs:enumeration value="Submitted" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_initial-evaluation_awaiting-IP-committee-review-type">
  <xs:restriction base="tas-prototype-schema:status-type_initial-evaluation_base-type">
    <xs:enumeration value="Awaiting IP Committee Review" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_initial-evaluation_in-rehearsal-type">
  <xs:restriction base="tas-prototype-schema:status-type_initial-evaluation_base-type">
    <xs:enumeration value="In Rehearsal" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_initial-evaluation_initial-release-type">
  <xs:restriction base="tas-prototype-schema:status-type_initial-evaluation_base-type">
    <xs:enumeration value="Initial Release" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType>
</xs:simpleType>

<xs:simpleType name="status-type_initial-evaluation_released-type">
    <xs:restriction base="tas-prototype-schema:status-type_initial-evaluation_base-type">
        <xs:enumeration value="Released" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_initial-evaluation_submitted-type">
    <xs:restriction base="tas-prototype-schema:status-type_initial-evaluation_base-type">
        <xs:enumeration value="Submitted" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_approved_base-type">
    <xs:restriction base="tas-prototype-schema:status-type_status-type">
        <xs:enumeration value="Accepted" />
        <xs:enumeration value="Approved" />
        <xs:enumeration value="Awarded This Evaluation Period" />
        <xs:enumeration value="Displayed/Exhibited" />
        <xs:enumeration value="Exhibited" />
        <xs:enumeration value="Initial Certification" />
        <xs:enumeration value="Initial Licensure" />
        <xs:enumeration value="Performed" />
        <xs:enumeration value="Performed and Recorded" />
        <xs:enumeration value="Recommended by IP Committee" />
        <xs:enumeration value="Recorded" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_approvedPerformed-performed-and-recorded-type">
    <xs:restriction base="tas-prototype-schema:status-type_approved_base-type">
        <xs:enumeration value="Performed" />
        <xs:enumeration value="Performed and Recorded" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_approved_accepted-type">
    <xs:restriction base="tas-prototype-schema:status-type Approved_base-type">
        <xs:enumeration value="Accepted" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_approved_awarded-this-evaluation-period-type">
    <xs:restriction base="tas-prototype-schema:status-type_approved_base-type">
        <xs:enumeration value="Awarded This Evaluation Period" />
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="status-type ApprovedDisplayedExhibited-type">
    <xs:restriction base="tas-prototype-schema:status-type ApprovedBase-type">
        <xs:enumeration value="Displayed/Exhibited" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type ApprovedInitialCertification-type">
    <xs:restriction base="tas-prototype-schema:status-type ApprovedBase-type">
        <xs:enumeration value="Initial Certification" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type ApprovedInitialLicensure-type">
    <xs:restriction base="tas-prototype-schema:status-type ApprovedBase-type">
        <xs:enumeration value="Initial Licensure" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type ApprovedRecommendedByIPCommittee-type">
    <xs:restriction base="tas-prototype-schema:status-type ApprovedBase-type">
        <xs:enumeration value="Recommended by IP Committee" />
    </xs:restriction>
</xs:simpleType>

    <xs:simpleType name="status-type RecurringBase-type">
        <xs:restriction base="tas-prototype-schema:status-type StatusType-type">
            <xs:enumeration value="Continuing" />
            <xs:enumeration value="In Maintenance" />
            <xs:enumeration value="Recurring" />
            <xs:enumeration value="Renewed" />
        </xs:restriction>
    </xs:simpleType>

<xs:simpleType name="status-type RecurringContinuing-recurring-type">
    <xs:restriction base="tas-prototype-schema:status-type RecurringBase-type">
        <xs:enumeration value="Continuing" />
        <xs:enumeration value="Recurring" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type RecurringContinuing-renewed-type">
    <xs:restriction base="tas-prototype-schema:status-type RecurringBase-type">
        <xs:enumeration value="Continuing" />
        <xs:enumeration value="Renewed" />
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="status-type_recurring_continuing-type">
  <xs:restriction base="tas-prototype-schema:status-type_recurring_base-type">
    <xs:enumeration value="Continuing" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_recurring_in-maintenance-type">
  <xs:restriction base="tas-prototype-schema:status-type_recurring_base-type">
    <xs:enumeration value="In Maintenance" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_recurring_recurring-type">
  <xs:restriction base="tas-prototype-schema:status-type_recurring_base-type">
    <xs:enumeration value="Recurring" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_open_base-type">
  <xs:restriction base="tas-prototype-schema:status-type_status-type">
    <xs:enumeration value="Awaiting Publication" />
    <xs:enumeration value="Disclosure" />
    <xs:enumeration value="Filing" />
    <xs:enumeration value="In Press" />
    <xs:enumeration value="In Revision" />
    <xs:enumeration value="In Rework" />
    <xs:enumeration value="Ongoing" />
    <xs:enumeration value="Open" />
    <xs:enumeration value="Pending" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_open_disclosure-filing-pending-type">
  <xs:restriction base="tas-prototype-schema:status-type_open_base-type">
    <xs:enumeration value="Disclosure" />
    <xs:enumeration value="Filing" />
    <xs:enumeration value="Pending" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_open_awaiting-publication-type">
  <xs:restriction base="tas-prototype-schema:status-type_open_base-type">
    <xs:enumeration value="Awaiting Publication" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_open_in-press-type">
  <xs:restriction base="tas-prototype-schema:status-type_open_base-type">
    <xs:enumeration value="In Press" />
  </xs:restriction>
</xs:simpleType>
<xs:restriction base="tas-prototype-schema:status-type_open_base-type">
  <xs:enumeration value="In Press" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_open_in-revision-type">
  <xs:restriction base="tas-prototype-schema:status-type_open_base-type">
    <xs:enumeration value="In Revision" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_open_in-rework-type">
  <xs:restriction base="tas-prototype-schema:status-type_open_base-type">
    <xs:enumeration value="In Rework" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_base-type">
  <xs:restriction base="tas-prototype-schema:status-type_status-type">
    <xs:enumeration value="Completed" />
    <xs:enumeration value="Concluded" />
    <xs:enumeration value="Denied" />
    <xs:enumeration value="Discontinued" />
    <xs:enumeration value="Final Approval" />
    <xs:enumeration value="Licensed" />
    <xs:enumeration value="Not Renewed" />
    <xs:enumeration value="Presented" />
    <xs:enumeration value="Published" />
    <xs:enumeration value="Rejected" />
    <xs:enumeration value="Withdrawn" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_completed-declined-discontinued-withdrawn-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Completed" />
    <xs:enumeration value="Declined" />
    <xs:enumeration value="Discontinued" />
    <xs:enumeration value="Withdrawn" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_declined-discontinued-published-withdrawn-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Declined" />
    <xs:enumeration value="Discontinued" />
    <xs:enumeration value="Published" />
    <xs:enumeration value="Withdrawn" />
  </xs:restriction>
</xs:simpleType>
<xs:enumeration value="Withdrawn" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_declined-discontinued-withdrawn-type">
<xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
<xs:enumeration value="Declined" />
<xs:enumeration value="Discontinued" />
<xs:enumeration value="Withdrawn" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_declined-finalapproval-licensed-type">
<xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
<xs:enumeration value="Declined" />
<xs:enumeration value="Final Approval" />
<xs:enumeration value="Licensed" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_presented-rejected-withdrawn-type">
<xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
<xs:enumeration value="Presented" />
<xs:enumeration value="Rejected" />
<xs:enumeration value="Withdrawn" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_published-rejected-withdrawn-type">
<xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
<xs:enumeration value="Published" />
<xs:enumeration value="Rejected" />
<xs:enumeration value="Withdrawn" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_finalapproval-declined-withdrawn-type">
<xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
<xs:enumeration value="Declined" />
<xs:enumeration value="Final Approval" />
<xs:enumeration value="Withdrawn" />
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_completed-discontinued-type">
<xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
<xs:enumeration value="Completed" />
<xs:enumeration value="Discontinued" />
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="status-type_concluded_concluded-discontinued-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Concluded" />
    <xs:enumeration value="Discontinued" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_declined-licensed-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Declined" />
    <xs:enumeration value="Licensed" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_completed-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Completed" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_concluded-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Concluded" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_discontinued-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Discontinued" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="status-type_concluded_not-renewed-type">
  <xs:restriction base="tas-prototype-schema:status-type_concluded_base-type">
    <xs:enumeration value="Not Renewed" />
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="status-choice-type_base-type" abstract="true">
  <xs:choice minOccurs="0">
    <xs:element name="work-underway" type="tas-prototype-schema:status-type_work-underway_base-type" />
  </xs:choice>
</xs:complexType>
<xs:choice minOccurs="0">
  <xs:element name="work-underway"
    type="tas-prototype-schema:status-type_work-underway_initial-development-type"
    fixed="Initial Development"/>
  <xs:element name="suspended"
    type="tas-prototype-schema:status-type_suspended_delayed-suspended-type"/>
  <xs:element name="initial-evaluation"
    type="tas-prototype-schema:status-type_initial-evaluation_initial-release-type"
    fixed="Initial Release"/>
  <xs:element name="recurring"
    type="tas-prototype-schema:status-type_recurring_in-maintenance-type"/>
</xs:choice>
"In Press"

/>  

<xs:element  
name="open"  
type="tas-prototype-schema:status-type_open_in-press-type"  
fixed="In Press"
/>  

<xs:element  
name="concluded"
/>  
</xs:choice>  
</xs:restriction>  
</xs:complexContent>  
</xs:complexType>
<xs:complexType name="status-type_concluded_finalapproval-declined-withdrawn-type">
  <xs:complexContent>
    <xs:restriction base="status-type_base-type">
      <xs:choice minOccurs="0">
        <xs:element name="work-underway"
          type="status-type_work-underway_in-preparation-type"
          fixed="In Preparation" />
        <xs:element name="suspended"
          type="status-type_suspended_delayed-type"
          fixed="Delayed" />
        <xs:element name="initial-evaluation"
          type="status-type_initial-evaluation_submitted-type"
          fixed="Submitted" />
        <xs:element name="concluded"
          type="status-type_concluded_finalapproval-declined-withdrawn-type" />
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_inprep_delayed_recurring_completed-discontinued-type">
  <xs:complexContent>
    <xs:restriction base="status-choice-type_base-type">
      <xs:choice minOccurs="0">
        <xs:element name="work-underway"
          type="status-type_work-underway_in-preparation-type"
          fixed="In Preparation" />
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="status-type_inprep_suspended__displayedexhibited__inrework_concluded-discontinued_type" final="#all">
  <xs:complexContent>
    <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
      <xs:choice minOccurs="0">
        <xs:element
          name="work-underway"
          type="tas-prototype-schema:status-type_work-underway_in-preparation-type"
          fixed="In Preparation"/>
        <xs:element
          name="suspended"
          type="tas-prototype-schema:status-type_suspended_suspended-type"
          fixed="Suspended"/>
        <xs:element
          name="approved"
          type="tas-prototype-schema:status-type_approved_displayed-exhibited-type"
          fixed="Displayed/Exhibited"/>
        <xs:element
          name="open"
          type="tas-prototype-schema:status-type_open_in-rework-type"
          fixed="In Rework"/>
        <xs:element
          name="concluded"
          type="tas-prototype-schema:status-type_concluded_concluded-discontinued-type"/>
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="status-type_inprep_suspended_inrehearsal_performedrecorded_-_-concluded-discontinued_type" final="#all">
  <xs:complexContent>
    <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
      <xs:choice minOccurs="0">
        <xs:element
          name="work-underway"
          type="tas-prototype-schema:status-type_work-underway_in-preparation-type"
          fixed="In Preparation"/>
        <xs:element
          name="suspended"
          type="tas-prototype-schema:status-type_suspended_suspended-type"
          fixed="Suspended"/>
        <xs:element
          name="initial-evaluation"
          type="tas-prototype-schema:status-type_initial-evaluation_in-rehearsal-type"
          fixed="In Rehearsal"/>
        <xs:element
          name="approved"
          type="tas-prototype-schema:status-type_approved_performed-performed-and-recorded-type"/>
        <xs:element
          name="concluded"
          type="tas-prototype-schema:status-type_concluded_concluded-discontinued-type"/>
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_inprep_suspended_awaitingIP_recommended_-_-disclosure-filing-pending_declined-licensed_type" final="#all">
  <xs:complexContent>
    <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
      <xs:choice minOccurs="0">
        <xs:element
          name="work-underway"
          type="tas-prototype-schema:status-type_work-underway_in-preparation-type"
          fixed="In Preparation"/>
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>
<xs:element
    name="suspended"
    type="tas-prototype-schema:status-type_suspended_suspended-type"
    fixed="Suspended"
/>  
<xs:element
    name="initial-evaluation"
    type="tas-prototype-schema:status-type_initial-evaluation_awaiting-IP-committee-review-type"
    fixed="Awaiting IP Committee Review"
/>  
<xs:element
    name="approved"
    type="tas-prototype-schema:status-type_approved_recommended-by-IP-committee-type"
    fixed="Recommended by IP Committee"
/>  
<xs:element
    name="open"
    type="tas-prototype-schema:status-type_open_disclosure-filing-pending-type"
/>  
<xs:element
    name="concluded"
    type="tas-prototype-schema:status-type_concluded_declined-licensed-type"
/>  
</xs:choice>
</xs:restriction>
</xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_inprep_suspended_released_-_inrevision_concluded-discontinued_type" final="#all">
    <xs:complexContent>
        <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
            <xs:choice minOccurs="0">
                <xs:element
                    name="work-underway"
                    type="tas-prototype-schema:status-type_work-underway_in-preparation-type"
                    fixed="In Preparation"
                />
                <xs:element
                    name="suspended"
                    type="tas-prototype-schema:status-type_suspended_suspended-type"
                    fixed="Suspended"
                />
                <xs:element
                    name="initial-evaluation"
                    type="tas-prototype-schema:status-type_initial-evaluation_released-type"
                    fixed="Released"
                >
            </xs:choice>
        </xs:restriction>
    </xs:complexContent>
</xs:complexType>
<xs:element name="open"
    type="tas-prototype-schema:status-type_open_in-revision-type"
    fixed="In Revision"/>
</xs:element>

<xs:element name="concluded"
    type="tas-prototype-schema:status-type_concluded_concluded-discontinued-type"
    fixed="Concluded"
 />
</xs:choice>
</xs:restriction>
</xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_inprep_suspended_submitted_accepted-awaitingpublication_published-declined-discontinued-withdrawn_type" final="#all">
    <xs:complexType>
        <xs:complexContent>
            <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
                <xs:choice minOccurs="0">
                    <xs:element name="work-underway"
                        type="tas-prototype-schema:status-type_work-underway_in-preparation-type"
                        fixed="In Preparation"/>
                    <xs:element name="suspended"
                        type="tas-prototype-schema:status-type_suspended_suspended-type"
                        fixed="Suspended"/>
                    <xs:element name="initial-evaluation"
                        type="tas-prototype-schema:status-type_initial-evaluation_submitted-type"
                        fixed="Submitted"/>
                    <xs:element name="approved"
                        type="tas-prototype-schema:status-type_approved_accepted-type"
                        fixed="Accepted"/>
                    <xs:element name="open"
                        type="tas-prototype-schema:status-type_open_waiting-publication-type"
                        fixed="Awaiting Publication"/>
                    <xs:element name="concluded"
type="tas-prototype-schema:status-type_concluded_declined-discontinued-published-withdrawn-type"/>
</xs:choice>
</xs:restriction>
</xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_inprep_suspended_submitted__-_declined-discontinued-withdrawn_type" final="#all">
  <xs:complexContent>
    <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
      <xs:choice minOccurs="0">
        <xs:element
          name="work-underway"
          type="tas-prototype-schema:status-type_work-underway_in-preparation-type"
          fixed="In Preparation"
        />
        <xs:element
          name="suspended"
          type="tas-prototype-schema:status-type_suspended_suspended-type"
          fixed="Suspended"
        />
        <xs:element
          name="initial-evaluation"
          type="tas-prototype-schema:status-type_initial-evaluation_submitted-type"
          fixed="Submitted"
        />
        <xs:element
          name="concluded"
          type="tas-prototype-schema:status-type_concluded_declined-discontinued-withdrawn-type"
        />
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_inprogress_-_submitted_accepted_-_presented-rejected-withdrawn_type" final="#all">
  <xs:complexContent>
    <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
      <xs:choice minOccurs="0">
        <xs:element
          name="work-underway"
          type="tas-prototype-schema:status-type_work-underway_in-progress-type"
          fixed="In Progress"
        />
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>
<xs:element
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    type="tas-prototype-schema:status-type_initial-evaluation_submitted-type"
    fixed="Submitted"
/><xs:element
    name="approved"
    type="tas-prototype-schema:status-type_approved_accepted-type"
    fixed="Accepted"
/><xs:element
    name="concluded"
    type="tas-prototype-schema:status-type_concluded_presented-rejected-withdrawn-type"
/></xs:choice></xs:restriction></xs:complexContent></xs:complexType></xs:complexType name="status-type_initial-certification_-_-_-continuing-renewed_-_-not-renewed_type" final="#all"><xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
    <xs:choice minOccurs="0">
        <xs:element
            name="approved"
            type="tas-prototype-schema:status-type_approved_initial-certification-type"
            fixed="Initial Certification"
        />
        <xs:element
            name="recurring"
            type="tas-prototype-schema:status-type_recurring_continuing-renewed-type"
        />
        <xs:element
            name="concluded"
            type="tas-prototype-schema:status-type_concluded_not-renewed-type"
            fixed="Not Renewed"
        />
    </xs:choice>
</xs:restriction>
</xs:complexType>
</xs:complexType name="status-type_initial-licensure_-_-_-continuing-renewed_-_-not-renewed_type" final="#all">
    <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
        <xs:choice minOccurs="0">
            ...
        </xs:choice>
    </xs:restriction>
</xs:complexType>

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<xs:element name="approved"
    type="tas-prototype-schema:status-type_approved_initial-licensure-type"
    fixed="Initial Licensure"/>

<xs:element name="recurring"
    type="tas-prototype-schema:status-type_recurring_continuing-renewed-type"/>

<xs:element name="concluded"
    type="tas-prototype-schema:status-type_concluded_not-renewed-type"
    fixed="Not Renewed"/>

</xs:choice>
</xs:restriction>
</xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_inprogress_delayed_
    _-continuing-recurring__completed-
    discontinued_type" final="#all">
<xs:complexContent>
<xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
<xs:choice minOccurs="0">
<xs:element name="work-underway"
    type="tas-prototype-schema:status-type_work-underway_in-progress-type"
    fixed="In Progress"/>
</xs:choice>
<xs:element name="suspended"
    type="tas-prototype-schema:status-type_suspended_delayed-type"
    fixed="Delayed"/>
</xs:restriction>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="status-type_inprogress_delayed_-_-_completed-discontinued_type" final="#all">
   <xs:complexContent>
      <xs:restriction base="tas-prototype-schema:status-choice-type_base-type">
         <xs:choice minOccurs="0">
            <xs:element name="work-underway"
                type="tas-prototype-schema:status-type_work-underway_in-progress-type"
                fixed="In Progress"/>
            <xs:element name="suspended"
                type="tas-prototype-schema:status-type_suspended_delayed-type"
                fixed="Delayed"/>
            <xs:element name="concluded"
                type="tas-prototype-schema:status-type_concluded_completed-discontinued-type"/>
         </xs:choice>
      </xs:restriction>
   </xs:complexContent>
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<xs:complexType name="status-type_-_-suspended_-_-continuing_-_-completed-discontinued_type" final="#all">
   <xs:complexContent>
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                fixed="Suspended"/>
            <xs:element name="recurring"
                type="tas-prototype-schema:status-type_recurring_continuing-type"
                fixed="Continuing"/>
            <xs:element name="concluded"
                type="tas-prototype-schema:status-type_concluded_completed-discontinued-type"/>
         </xs:choice>
      </xs:restriction>
   </xs:complexContent>
</xs:complexType>
<xs:complexType name="status-type_awarded_continuing_completed-declined-discontinued-withdrawn_type" final="#all">
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      <xs:choice minOccurs="0">
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          type="tas-prototype-schema:status-type_approved_awarded-this-evaluation-period-type"
          fixed="Awarded This Evaluation Period"/>
        <xs:element name="recurring"
          type="tas-prototype-schema:status-type_recurring_continuing-type"
          fixed="Continuing"/>
        <xs:element name="concluded"
          type="tas-prototype-schema:status-type_concluded_completed-declined-discontinued-withdrawn-type"/>
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
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<xs:complexType name="status-type_inprogress_suspended_completed-discontinued_type" final="#all">
  <xs:complexContent>
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      <xs:choice minOccurs="0">
        <xs:element name="work-underway"
          type="tas-prototype-schema:status-type_work-underway_in-progress-type"
          fixed="In Progress"/>
        <xs:element name="suspended"
          type="tas-prototype-schema:status-type_suspended_suspended-type"
          fixed="Suspended"/>
        <xs:element name="concluded"
          type="tas-prototype-schema:status-type_concluded_completed-declined-discontinued-type"/>
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="status-type_- - - - _continuing_- _completed-discontinued_type" final="#all">
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      <xs:choice minOccurs="0">
        <xs:element name="recurring"
                    type="tas-prototype-schema:status-type_recurring_continuing-type"
                    fixed="Continuing"/>
        <xs:element name="concluded"
                    type="tas-prototype-schema:status-type_concluded_completed-discontinued-type"/>
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_- - - - _inprogress_- _continuing_- _completed-discontinued_type" final="#all">
  <xs:complexContent>
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      <xs:choice minOccurs="0">
        <xs:element name="work-underway"
                    type="tas-prototype-schema:status-type_work-underway_in-progress-type"
                    fixed="In Progress"/>
        <xs:element name="recurring"
                    type="tas-prototype-schema:status-type_recurring_continuing-type"
                    fixed="Continuing"/>
        <xs:element name="concluded"
                    type="tas-prototype-schema:status-type_concluded_completed-discontinued-type"/>
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
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  <xs:element
    name="work-underway"
    type="tas-prototype-schema:status-type_work-underway_in-progress-type"
    fixed="In Progress"
  />
  <xs:element
    name="recurring"
    type="tas-prototype-schema:status-type_recurring_recurring-type"
    fixed="Recurring"
  />
  <xs:element
    name="concluded"
    type="tas-prototype-schema:status-type_concluded_completed-discontinued-type"
  />
</xs:choice>
</xs:restriction>
</xs:complexContent>
</xs:complexType>

<xs:complexType name="status-type_-_-_-_-_-_-_continuing_-_-completed_type" final="#all">
  <xs:complexContent>
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      <xs:choice minOccurs="0">
        <xs:element
          name="recurring"
          type="tas-prototype-schema:status-type_recurring_continuing-type"
          fixed="Continuing"
        />
        <xs:element
          name="concluded"
          type="tas-prototype-schema:status-type_concluded_completed-type"
          fixed="Completed"
        />
      </xs:choice>
    </xs:restriction>
  </xs:complexContent>
</xs:complexType>

<xs:simpleType name="status-type_positive-result-type">
  <xs:restriction base="tas-prototype-schema:status-type_status-type">
    <xs:enumeration value="Accepted" /><xs:enumeration value="Approved" />
    <xs:enumeration value="Awarded This Evaluation Period" />
    <xs:enumeration value="Completed" />
    <xs:enumeration value="Displayed/Exhibited" />
    <xs:enumeration value="Exhibited" />
    <xs:enumeration value="Final Approval" />
  </xs:restriction>
</xs:simpleType>
<xs:enumeration value="Denied"/>
<xs:enumeration value="Discontinued"/>
<xs:enumeration value="Rejected"/>
<xs:enumeration value="Withdrawn"/>
</xs:restriction>
</xs:simpleType>
</xs:schema>
VITA

AMANDA R. KYKER

Personal Data: Date of Birth: June 16, 1985
Place of Birth: Johnson City, Tennessee
Marital Status: Single

Education: Public Schools, Washington County, Tennessee
B.A. English Education, Summa Cum Laude, Tusculum College,
Greeneville, Tennessee 2009
M.S. Computer Science, East Tennessee State University, Johnson
City, Tennessee 2012

Professional Experience: Teaching Associate, East Tennessee State University, College of
Business and Technology 2011 – 2012
Teaching Assistant, East Tennessee State University, College of
Business and Technology 2009 – 2011
Work Study, Tusculum College, English Department, 2004 – 2009

Honors and Awards: Member of the Upsilon Pi Epsilon honor society
Member of the Sigma Tau Delta honor society
Member of the Alpha Chi honor society