Assignment 1
System Analysis
Georgia Virtual School

by
Alva Hartry
EDD 8006 - CRN 32755
System Analysis and Design

Nova Southeastern University
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Abstract

This paper will authenticate the system design of a virtual school at the Georgia State Department of Education. It will address resources of the system, stakeholders that compose the system, environmental conditions/issues that internally and externally compact the system, and history of the system. Furthermore, it totally explains the system by showing elements and relationships, interdependency, vision, and learning paths. Moreover, the relation to learning theory will be identified. After description and related theory, the macro, mega, and micro components of the system are diagramed and explained. Finally, the assessment of the system will be presented. The assessment will describe how the system evaluates itself, the self efficacy measures, and the change procedures.

System Analysis

Georgia Virtual School

Introduction

Defining success for education seems to be more difficult. To achieve useful result for success today and in the future, there needs to be a paradigm shift from an emphasis on means and activities to a focus on result and value (Kaufman, Watkins, & Leight, 2001). The state of Georgia realizes the need for change and has implemented a way to reach all students.

The Georgia Virtual School (GAVS) is a school, which is operated under the Georgia State Department of Education (GADOE). Its purpose is to provide an online alternative learning environment for the students of Georgia's public school who need assistance in completing coursework that is difficult to obtain due to several factors. Some factors may include scheduling conflicts, homebound circumstances, or course unavailability. In addition, GAVS collaborates with the Georgia Department of Education Credit Recovery Program to give students and opportunity to retake courses in which they were not previously successful. Furthermore, there are many online math resources which are designed to enhance or supplement through remediation and enrichment.

Context

Resources

The Georgia Virtual School aligns itself with the Southern Regional Education Board (SREB) for implementation and consideration of the potential costs elements when planning from year to year. Based on the previous year enrollment, the resources for course needs of at least 5,000 one-semester student enrollments are shown in the table (Figure 1) below (SREB, 2006).

Figure 1: GAVS System Resources

Administration	One full-time administrator/director level.
Teachers	Costs for full-time and part-time teachers, including salaries and benefits vary. Salary and benefits should be equivalent to compensation in the teacher's school district or to the average teacher salary in the state. How many teachers will be needed and the teacher-pupil ratio per course should be important considerations for the state virtual school.
Academic Coordinator	Two full-time coordinators, equivalent to an assistant high school principal.
Public Information	Marketing materials, programs, publications, Web site, face-face-meetings across the state.
Information Technology Coordinator	One full-time position, equivalent to a technology coordinator in a large school district, plus costs of the centralized registration system.
Student Services	One full-time position, equivalent to a district or high school guidance counselor. Costs also include software and related print materials.
Budget and Finance	One full-time bookkeeper, equivalent to a similar position in a large high school, and one full-time financial assistant. Costs also include related software, equipment, and resources.
Evaluations	Internal and external program evaluation. Formative and summative evaluations are conducted annually to provide data for accountability and for continued improvement.
Administrative Support	Two full-time administrative assistants, equivalent to comparable positions in the state department of education, to handle the clerical and day-to-day routine operations of the school.
Equipment, Software and Materials	Learning Management System (LMS). Funds should be allocated for each person on the staff for communication devices and materials.
Facilities	Offices, meeting rooms and storage areas for equipment and materials comparable to private-sector spaces where the state virtual school is located.

Community

According to Kaufman et al., 2001, to have a successful system, “input from a variety of partners and stakeholders will be necessary when defining, prioritizing, and achieving successful results”, p. 52. GAVS is a system that services 180 public school districts, several private and home schools. Currently there are approximately 5000 students enrolled in online classes there are 165 highly qualified teachers who have been trained to teach online. Of those, 61 are certified to teach one or more Advanced Placement courses (“The History”, 2010).

The stakeholders in this community are either directly or indirectly involved (Figure 2).

Figure 2: Direct and Indirect Stakeholders

Direct Stakeholders	Indirect Stakeholders
• GADOE policy makers • GAVS director • GAVS program coordinators • GAVS administrative support • GAVS media specialists • GAVS counselors • GAVS students	• Parents • Other local state agencies • Hardware and software vendors • Educational content publishers • Future students

Environmental Conditions

A virtual school does not require a complex, large physical building like a tradition brick-and-mortar school. Since no building is needed, there is no need for transportation, cafeterias, meals, libraries, gymnasium, utilities, and other service of a traditional school A state virtual school simply requires a sufficient physical location for the administration of the program, staff training and meetings, equipment and storage (SREB, 2006).

History

The Georgia State Board of Education approved the Virtual Learning Business Plan in August, 2001. This plan, know as the Georgia e-learning program, endorsed the provision of an online Advanced Placement (AP) and core curricular course to high school students. In October 2001, the Georgia virtual learning program was transferred to the Georgia Board of Education Technology Services. During this time, Georgia was participating in the United States Department of Education Advanced Placement Test Fee Program AP Nexus grant. This grant targeted increasing the number of low-income and other disadvantage students who enroll in AP courses and exams by means of online. Any Georgia high school that had 50% or greater free and reduce lunch rate qualified. Schools with less than 50% free and reduce rate also wanted their students to participate in the program and expressed the need for more core and AP courses. However, they could not qualify in the grant. Since more and more schools were interested in some type of online program, this prompted the Department to begin to expand its online program through other contracts with numerous vendors.

By 2003, many courses were offered with other vendors. After convening for a state level meeting, many educators expressed interests in the state having its own virtual school so that everyone could have access to it. Therefore, on May 4, 2005, Governor Sonny Perdue signed the Georgia Virtual School bill, O.C.G.A. 20-2-31 into law. This launched the first official state virtual school.

Presently, GAVS offers a wide variety of a wide range of course to high school students. Course offering include 78 core curriculum, AP, and elective courses with 198 variations. These variations also include SAT preparation, each meeting Quality Core Curriculum/Georgia

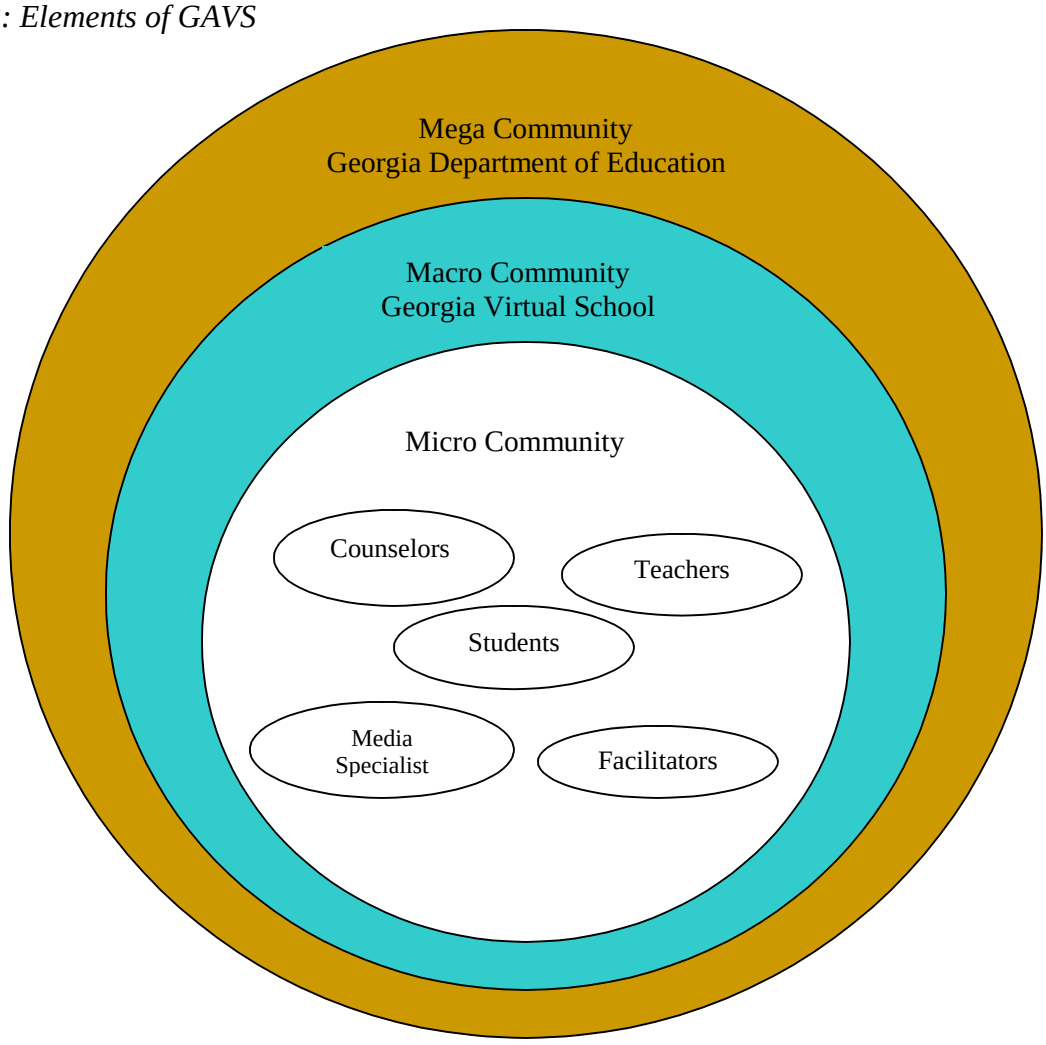
Program Standards or College Board Standards. The courses are offered in semester or block format to meet the scheduling needs of local districts.

Description of the System

Elements and Relationships

A system approach to educational planning and achievement begins with the society as a whole. The analysis begins with the sum total of parts working independently and together to achieve results. (Kaufman, et al., 2001). The GAVS is a system, which includes a director, coordinators, administrators, curriculum developers, technology specialists, counselors, media specialists, teachers, and public, private, and home schooled students. GAVS's mega, macro, and micro communities are shown below in Figure 3.

Figure 3: Elements of GAVS



Interdependence

Interdependence means that parts of the system depend on one another. They are coordinated and linked together according to a plan ("System Analysis and Design", 2010). The GAVS is a combined system that functions at levels of independence and interdependence. Funding and policy is determined by the GADOE, and many decisions are made at the top. These decisions are then passed down and implemented accordingly. The director of the virtual school positively manages resources so that all stakeholders benefit. The program coordinators oversee the technology growth, collaborate with other local and state agencies, and supervise all information technology applications, databases, systems, functions, and staff. Also, along with the student support department and department chairs, the program coordinators, develop and create specific courses.

Vision

Mastery of 21st century skills occurs through intentional instructional design, direct instruction of quality curriculum and meaningful assessments. Virtual schools naturally are well-equipped to provide expanded and innovative learning opportunities. It is critical that virtual school leaders embrace a 21st century skills vision for all those who are teaching and learning online to build on their strengths and achieve outcomes that matter for their students (NACOL, 2006).

Consequently, the objective of GAVS is to develop and deliver standards-based, online resources to expand students' educational opportunities and 21st century skills so that they can compete in a global society. GAVS wants to make certain that all students experience learning in a convenient and meaningful way.

Learning Paths

GAVS has position and placed several learning paths in place. For one, all its instructors must successfully complete a virtual training course. In this course, teachers address the address the pedagogy of online learning and instruction as well as the policies and procedures specific to Georgia Virtual School. Trainees who successfully complete the online learning program are then given the opportunity to mentor with an experienced online instructor before teaching their own courses. This helps assure the quality and consistency of online instruction. In addition, AP instructors are required to successfully complete AP training before teaching Georgia Virtual School program's AP courses

Relation to Learning Theory

Curriculum

Constructivism calls for the elimination of a standardized curriculum (Tam, 2000). Instead, it promotes using curricula customized to the students' prior knowledge. Also, it emphasizes hands-on problem solving. According to Huang (2002), constructivism learning theories hold importance when developing education environments. The six key elements to implementing constructivist theory into courses are "interactive learning, collaborative learning, facilitation of safe learning environments, authentic learning that has real world relevance, learner-centered learning, and high quality learning that causes learners to determine the authenticity and quality of information received" (p. 32). Hence, the constructive learning theory is the primary underlying principle for the GAVS. With online learning, this school creates a genuine, collaborative learning environment that provides distance education services to students.

Instructional Strategies

During the last ten years, considerable interest has been paid to the design of constructivistic learning environments (Karagiorgi, Y., & Symeou, L., 2005). According to (Hoover, 1996), Constructivist instructional design aims to provide generative mental construction "tool kits" embedded in relevant learning environments that facilitate knowledge construction by learners. Compared to traditional instructional systems approaches of designing instruction, constructivism makes a different set of assumptions about learning and suggests new instructional principles.

Some effective instructional strategies used by the Georgia Virtual School include a collaborative project-base design, clear expectations and requirements of the course, specific deadlines, outline of course requirements. Courses are designed so that specific objective relate to real-world tasks. Given as an example by Bednar, 1992, he says that the overall goal is not to teach someone about specific math concepts, but it is to teach someone how to think like a mathematician.

Learning Materials

For course development and acquisition, it is essential that a Learning Management System (LMS) on which to place and offer online courses is used. Other materials that are essential are computers with Internet access, printers, software, mobile phones, or long-distance telephone service.

Mega Community

Society

The mega community is where the system resides. The Georgia Department of Education oversees all aspects of public education in the state. Presently, it employs 420 people. The department education enforces educational laws and policies. It also administers state and federal education funds to make sure they are appropriately distributed. The state superintendent heads

the GADOE and reports to the governor. The superintendent also serves as the chief executive officer for the State's Board of education. The department is divided into five offices: Education Support and Improvement' Finance and Business Operations; Policy and External Affairs; Standard, Instruction, Assessments; and Technology Service.

Location

Being a part of the governing body of the state of Georgia, the GADOE is located in state's capital, Atlanta, Georgia. The physical address of the department is 1954 Twin Towers East, Atlanta, GA 30334. The department is close in vicinity to the state capitol which is in the heart of downtown Atlanta.

Discernable outcomes

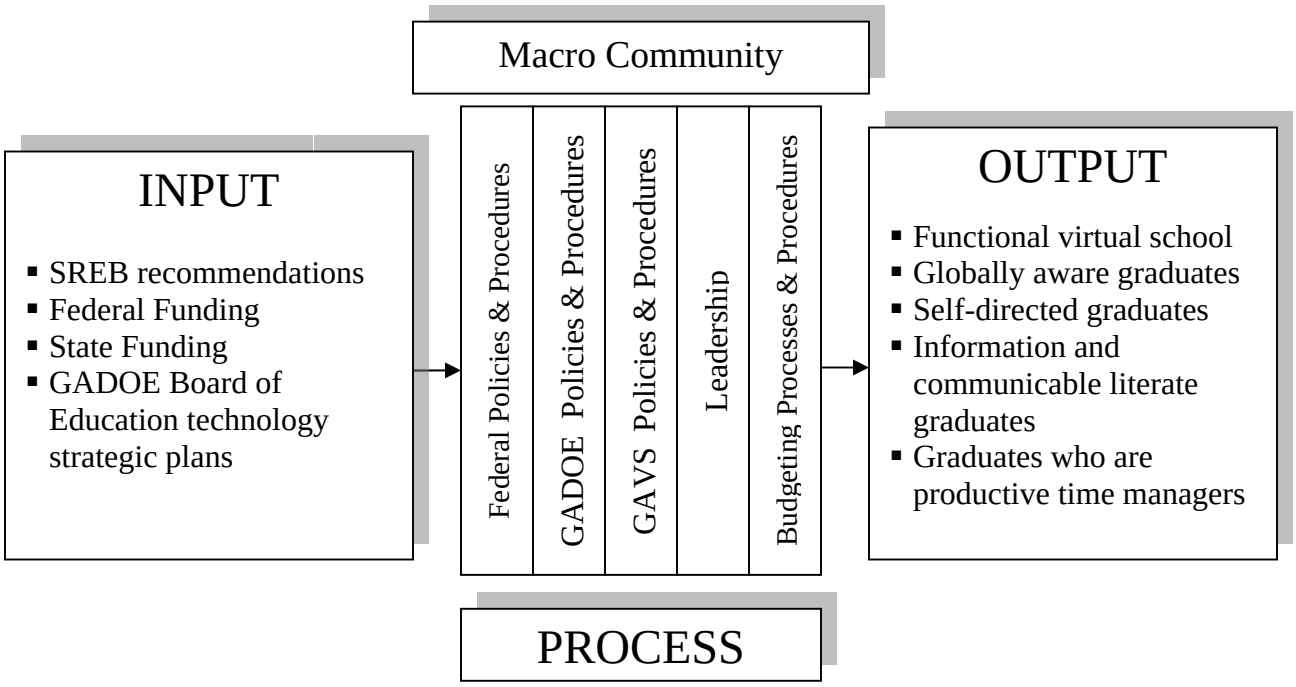
In the United States, 40% of high schools do not offer a full college preparatory curriculum. Schools lacking advance courses are more likely to be in rural or low income areas (NACOL, 2006). By designing a virtual school, the Georgia State Department of Educations want students to have more choices and increased access to higher level and rigorous learning through online learning. Students seeking high level science, math, languages, and other courses that may not be available in their local school system, now have the opportunity to enroll online. Students may get ahead in their courses or take previously failed classes as well.

According to NACOL, 2006, virtual schools inherently are well-equipped to provide expanded and innovative learning opportunities so that there is mastery of 21st century skills. Completing online courses allow students to gain global awareness. For example, a Chinese course offered by GAVS permits students to learn about the language and culture. A native speaking Chinese teacher teaches the course (Grizzle, 2009). According to Mr. Jim Heap (2010), Program Coordinator, this course "employs a task-based language-learning curriculum that

focuses on enhancing basic communication skills and cross cultural, global awareness and understanding. (Grizzle, 2009). Other 21st century outcomes that are evident that students gain from taking online classes at GAVS are problem-solving skills, information and communication literacy, time management, and self directed learning.

Mega Input-Process-Output

Figure 4: Mega Input-Process-Output



Boundary

There are boundaries with the federal and state funding. With drastic cuts in education at the state and local level, there are boundaries with the federal and state funding for the virtual instructional programs

Macro Community

Organizational Environment

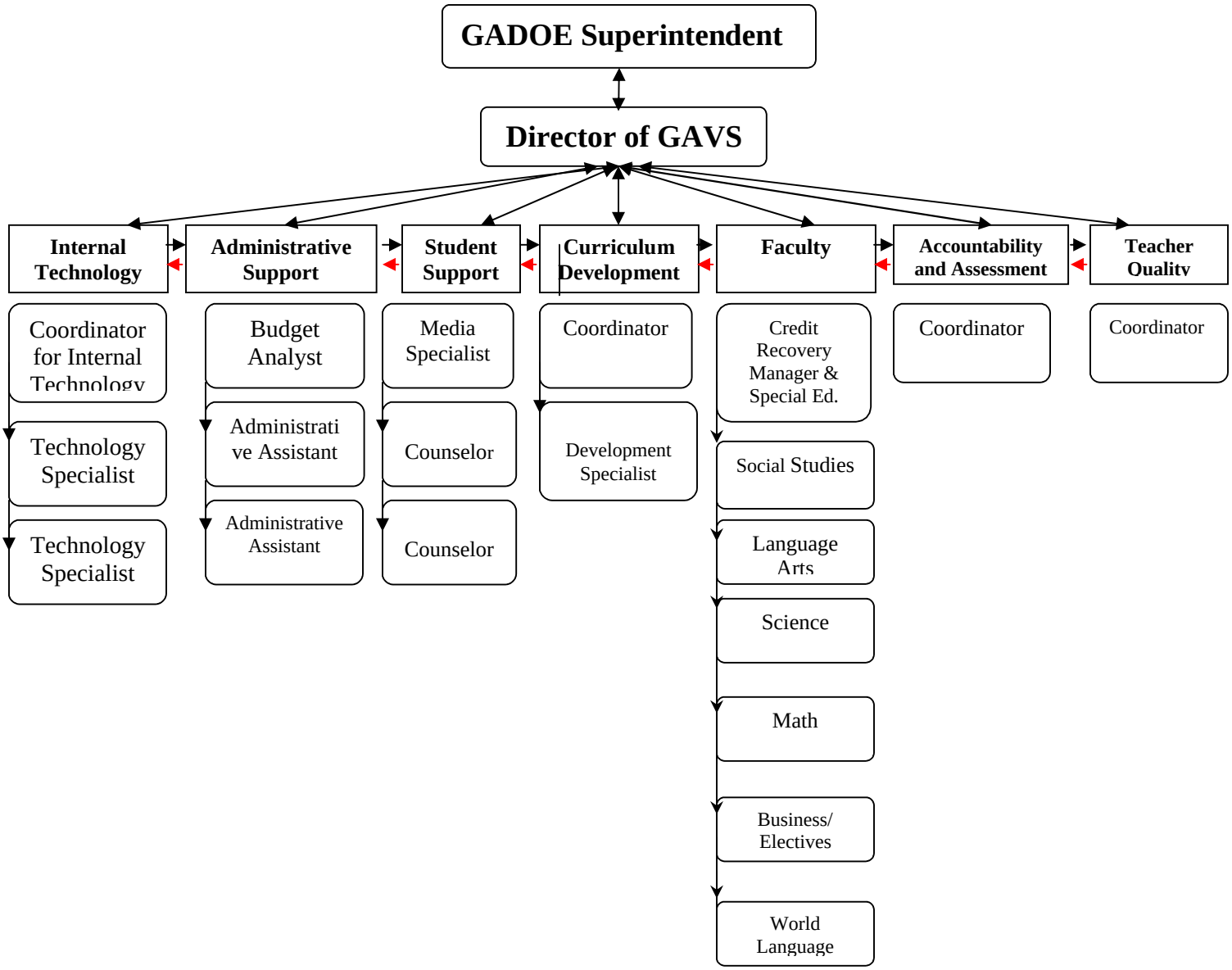
A macro community is an education institution with various members (Kaufman, et al., 2001). The GAVS is the macro community. So that students can compete in a global community

a rigorous virtual school was established. Members of the community include people who are engaged in the daily business operations at the GAVS. The staff members include the director, coordinator of internal technology, curriculum developers, accountability, and teacher quality coordinators.

Hierarchy of Authority

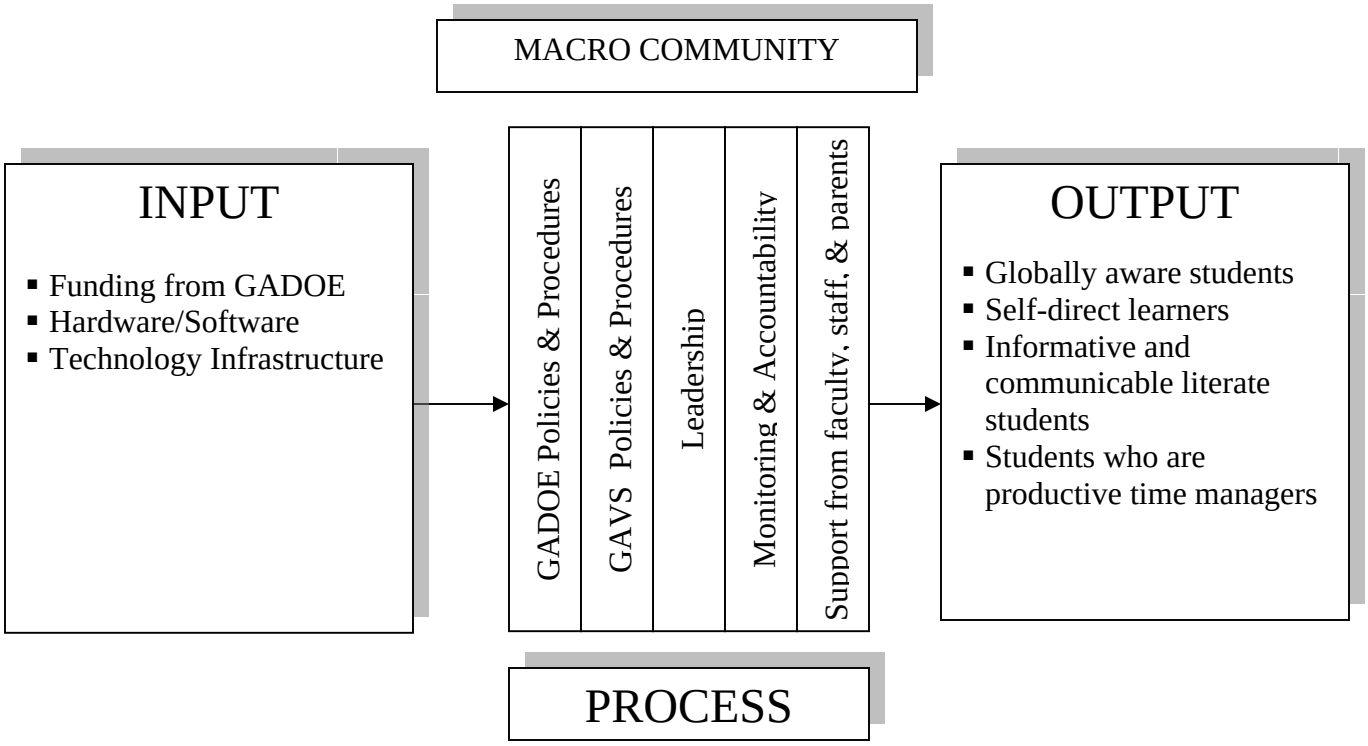
GAVS is under direct supervision under the Georgia Department of Education which is led by the state superintendent of schools. The school has a director, which oversees internal and programs coordinators, support staff, curriculum developers, and faculty. The organizational chart (Figure 5) below shows a hierarchy of this macro community.

Figure 5: Hierarchy of Macro Community



Macro Input-Process-Output

Figure 6: Macro Input-Process-Output



Boundary

There are boundaries in terms of budget restraints. State funding may be limited for online FTE funded seats.

Micro Community

Immediate stakeholders

At the micro level there are counselors, teachers, facilitators, media specialists, faculty, and students. The most immediate stakeholders are the students. Students enrolling in online courses at GAVS come from Georgia school districts, home schools, charter schools, and private schools.

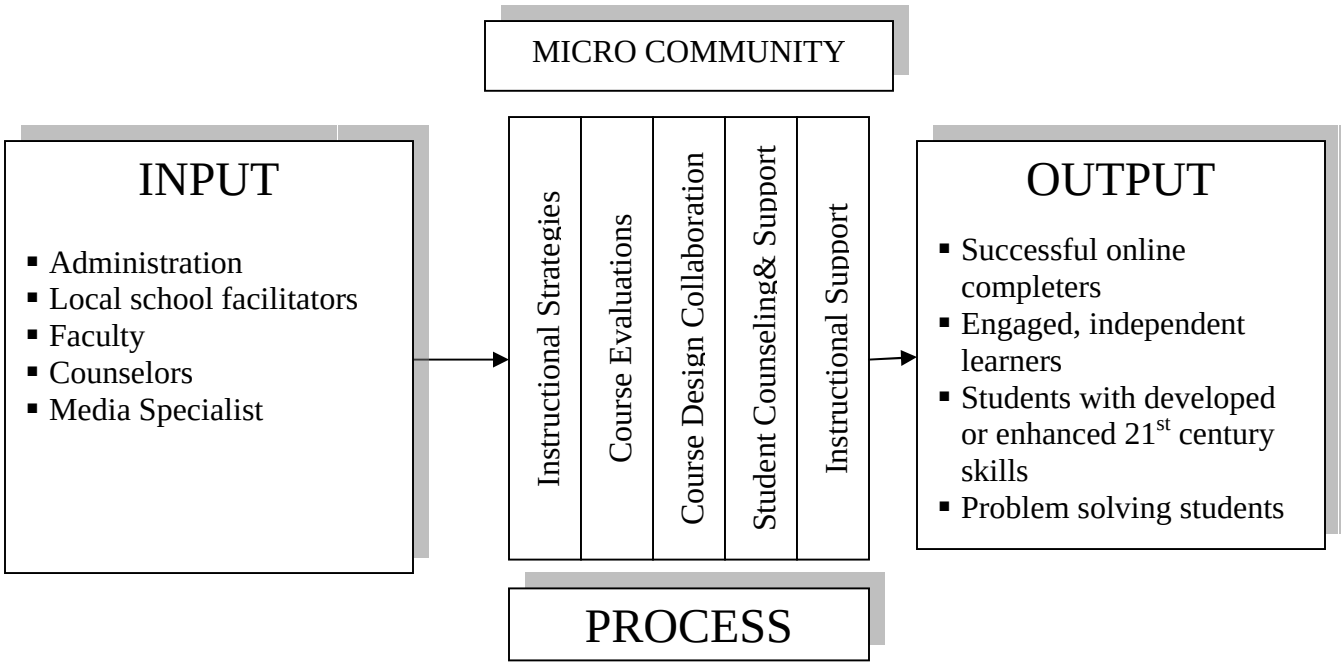
Immediate Spheres of Influence

The immediate spheres of influence include all of the personnel who contribute to the developments of the online course such as the faculty, counselors, medial specialist, technology

specialists, and program coordinators. The student's local school facilitator is also a sphere of influence.

Micro Input-Process-Output

Figure 7: Micro Input-Process-Output



Boundary

Since public school students are able to register during Phase 1, seats for students in private and home school may not be available because the enrollments in courses are based on the number of FTE-funded seats.

Assessment

Evaluation Strategies

GAVS has a coordinator that specifically deals with accountability and assessment. One responsibility of this person's is to put accountability and assessment strategies in place. This

employee also collects, analyze, and report data. Once data is desegregated, it is used to develop a school improvement plan.

. In addition to assessing GAVS's current policies and procedures, thorough evaluations or surveys from districts, faculty, students, parents, and schools are conducted. These surveys give results related to the GAVS. Moreover, yearly, employees are evaluated to ensure that employee's work quality and overall work performance meets the needs of GAVS. In addition, data is gathered to assess the number of completers and the number of courses that are may be needed or eliminated.

Cybernetic Processes

The cybernetic processes aid in the communication about the GAVS, and they provide immediate feedback about GAVS and its online courses and faculty and staff. Online surveys are used to get instant results from all stakeholders.

Change Procedures

GAVS, along with GADOE, realizes that change is very important and is a fundamental part of a well functioning system. Since its early conception, known then as Georgia eLearning, GAVS has reorganized its Virtual Learning Plan. In the reorganization process, the appointed director heads the steering committee to evaluate and then restructure areas that are needed.

Summary

The Georgia Virtual School, along with the Georgia State Department of Education, has created a virtual school that is a functioning and effective distance education program. Students from all over the state are allowed to enroll in online classes that otherwise they might not be able to take. How the state funds a state virtual school and the level of funding are the key issues that determine success (SREB, 2006). GAVS works with the Southern Regional Education Board and

solicits advice so that it stays well within its constraints when planning yearly. From the beginning launch of the virtual school until now, GAVS operates in a professional and strategic manner.

References

Bednar, A. K., Cunningham, D., Duffy, T. M., & Perry, J. D. (1992). Theory into practice: How do we link? In Duffy, T. M. & Jonassen, D. H. (Eds.), *Constructivism and the technology of instruction: a conversation*, Hillsdale: Lawrence Erlbaum Associates, 17-34.

Hoover, W. A. (1996). Constructivism. *SEDL Letter, 9*(3), Retrieved from http://www.sedl.org/ pubs/sedletter/v09n03/practice.html.

North American Council for Online Learning (NACOL), (2006). *Virtual Schools and 21st Century Skills*, Retrieved from http://www.inacol.org/research/ docs/ NACOL_21CenturySkills.pdf.

Southern Regional Education Board (SREB). (2006). *Cost Guidelines for State Virtual Schools Development, Implementation and Sustainability*, Retrieved from http://publications.sreb.org/ 2006/06T03_Virtual_School_Costs.pdf.

Heap, Jay http://www.gavirtualschool.org/Portals/0/podcasts/episode3/gavspodcast3.mp3 GAVS Episode 4 | Jay Heap.

Grizzle, Jason (Producer). (2009, October 9). GAVS Episode 4 | Jay Heap [Audio Podcast]. Retrieved from http://www.gavirtualschool.org/Portals/0/podcasts/episode3/gavspodcast3.mp3.

Heap, Jay (personal communication, February 22, 2001).

Kaufman, R., Watkins, R. and Leigh, D. (2001) *Useful Educational Results: Identifying, prioritizing and achieving.* Lancaster, PA: Proactive Publishing.

Mehner, Jason (2009). Applying cognitive theory in curriculum. Retrieved from http://www.associatedcontent.com/article/1899000/applying_cognitive_theory_ in_curriculum_pg3.html?cat=4.

System Analysis and Design (2009), Retrieved from http://www.scribd.com/doc/19804288/.

Tam, M . (2000). Constructivism, Instructional Design, and Technology: Implications for Transforming Distance Learning. *Educational Technology & Society, 3*(2), 50-60.

The History of the GA Virtual School (2010), Retrieved from www.gavirtualschool.org/Portals/ 0/AboutUs/History%20of%20GAVS.pdf.

Appendix A – Outside Review

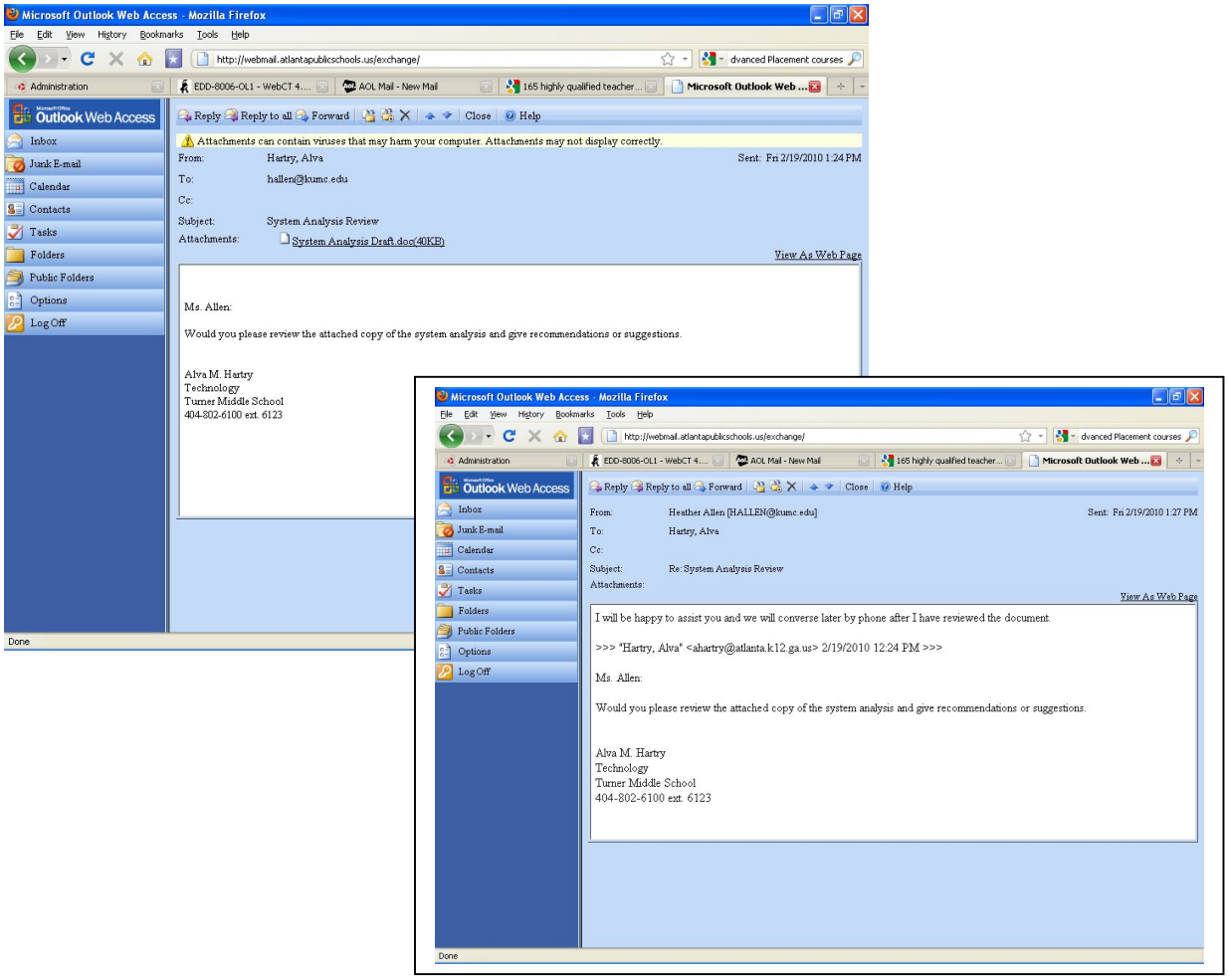
Reviewer 1

Heather Allen

Why did I choose Heather?

I chose Heather because her son took several classes at GAVS. Therefore, she has had some direct experience with Georgia Virtual School. Furthermore, Heather is a technology distance education student at Kansas University. She employed by Kansas University Medical Center, Kansas City Kansas...

Email Exchanges



Phone Conversation, Saturday, February 29, 2010 at 6:20 p.m.

- Heather said that the draft was very well formatted.

- There were some questions about one of the processes under the micro community—course evaluations. She wanted to know why I though that would be one of the processes. I explained to her that I thought that is should be because the courses should constantly be evaluated so that the school could make sure that they are meeting the needs of all students. After discussing this, we both agreed that I should leave it as is.

- Heather thought the summary did not include enough information. I need to include more an overall picture of what was discussed. She also said it was more like a conclusion. I rewrote some of it.

Appendix B – Classmate Review

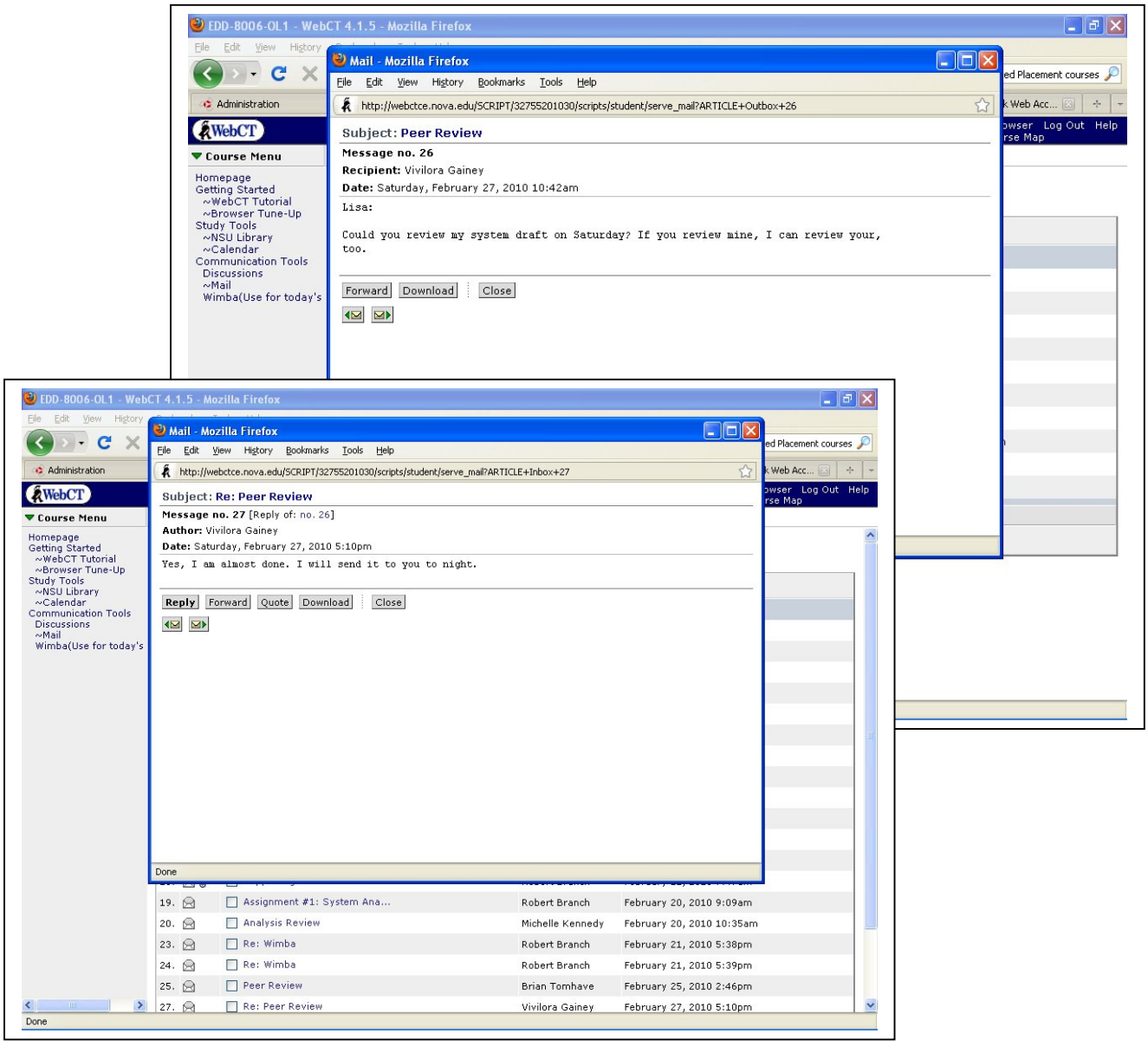
Reviewer 1

Vivilora Thompson

Why did I choose Vivilora?

Vivilora and I begin the doctoral program together. So, she is very familiar with the type of work that I can do. She is always willing to provide constructive criticism. She is an educator in Dekalb County School, Decatur, Georgia. She is presently a student enrolled in this class, completing a doctorate in Instructional Design and Distance Education.

Email Exchanges



Phone Discussion about draft:
Phone Conversation, Saturday, February 29, 2010 at 9:30 p.m.

Suggestions:

- Vivilora stated that the output from one community was the same for the mega and macro communities. She suggested that I change word “students” to word “graduates” in the mega and leave the word “students” in macro. I did change the wording because the mega community deals more with graduates than one specific student...

- Boundaries were left out under macro and micro. I wrote descriptions for the boundaries because that was a section that should have been including according to the rubric.

- The formatting for the input output process section had 3-D boxes. Vivilora suggested that I take that off. It makes the report seem overwhelming since there were already several more diagrams. I did change the boxes from 3D to shadow.