## Theoretical Grounding for Design

The theoretical grounding for this design combines features of both the constructivist and objectivist paradigms. The design team for this technology device has envisioned its use with authentic and meaningful learning activities. However, because this device will be incorporated into a public elementary school, which is organized within a primarily objectivist paradigm, and because the users are students who require individualized instructional and behavioral programs, there are concessions to objectivist learning environments.

| Constructivism | | Objectivism | | | |
|---|---|---|---|---|---|
| Meaning is created by individuals. Learning is an active, creative, and contextual response to experiences and interactions. There are multiple perspectives of the world and events. The focus in a constructivist classroom is on the learner. The teacher acts primarily as a facilitator. Learning is shaped by prior knowledge and is based on inquiry, exploration, and reflection. | | Instruction is based upon selective reinforcement of behavior. Learning is defined as evincing particular responses to environmental cues and stimuli. It is both observable and measurable. The focus in an objectivist classroom is the acquisition of predetermined knowledge and skills. The teacher is the transmitter of knowledge and skills, and the student is the receiver. | | | |
| Anchored Instruction Model<br>This is a form of technology-based learning. Learning occurs within a narrative: the anchor, which presents a case study or problem. All necessary data for solving the problem are embedded in the problem-solving modules. Learning is generally collaborative. Interactive, branching multimedia are used to promote understanding and realism. | Authentic Learning Model<br>Learners are involved in applying practical, everyday knowledge and skills in realistic situations. There is a focus on collaborative activities, contact with expert sources, and generalization of learning. | ARCS Model<br>This model focuses on learner motivation by gaining and maintaining the learner's attention, making learning relevant to the user, ensuring that the learner can achieve the objectives in the time allowed, and promoting a sense of satisfaction with the results. | Behaviorist Model<br>In behaviorism, knowledge is transmitted from the teacher to the student. Behavior-ist instruction is based upon lesson plans which focus on critical information that all students must master. Learning is evaluated in terms of "passing" or "failing" predetermined goals and objectives. | Individualized Instruction<br>Both instruction and learning are based upon assessment of needs and strengths. Each student receives instruction in areas of particular weakness. | Systems Approach<br>This model programs instruction, using computers and multimedia, to meet predeter-mined goals and objectives. Instruction is modified to fit the learner's dynamic needs. |

References

Anchored instruction. (n.d.). Virginia Polytechnic Institute, College of Education Design Shop Web site: http://www.edtech.vt.edu/edtech/id/models/anchored.html

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Index of learning theories and models. (2007, November) Retrieved November 2, 2007 from the Learning-Theories.com Web site: http://www.learning-theories.com/

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Kruse, K. (n.d.). The magic of learner motivation. Retrieved November 11, 2007 from the E-Learning Guru Web site:

http://www.e-learningguru.com/articles/art3_5.htm

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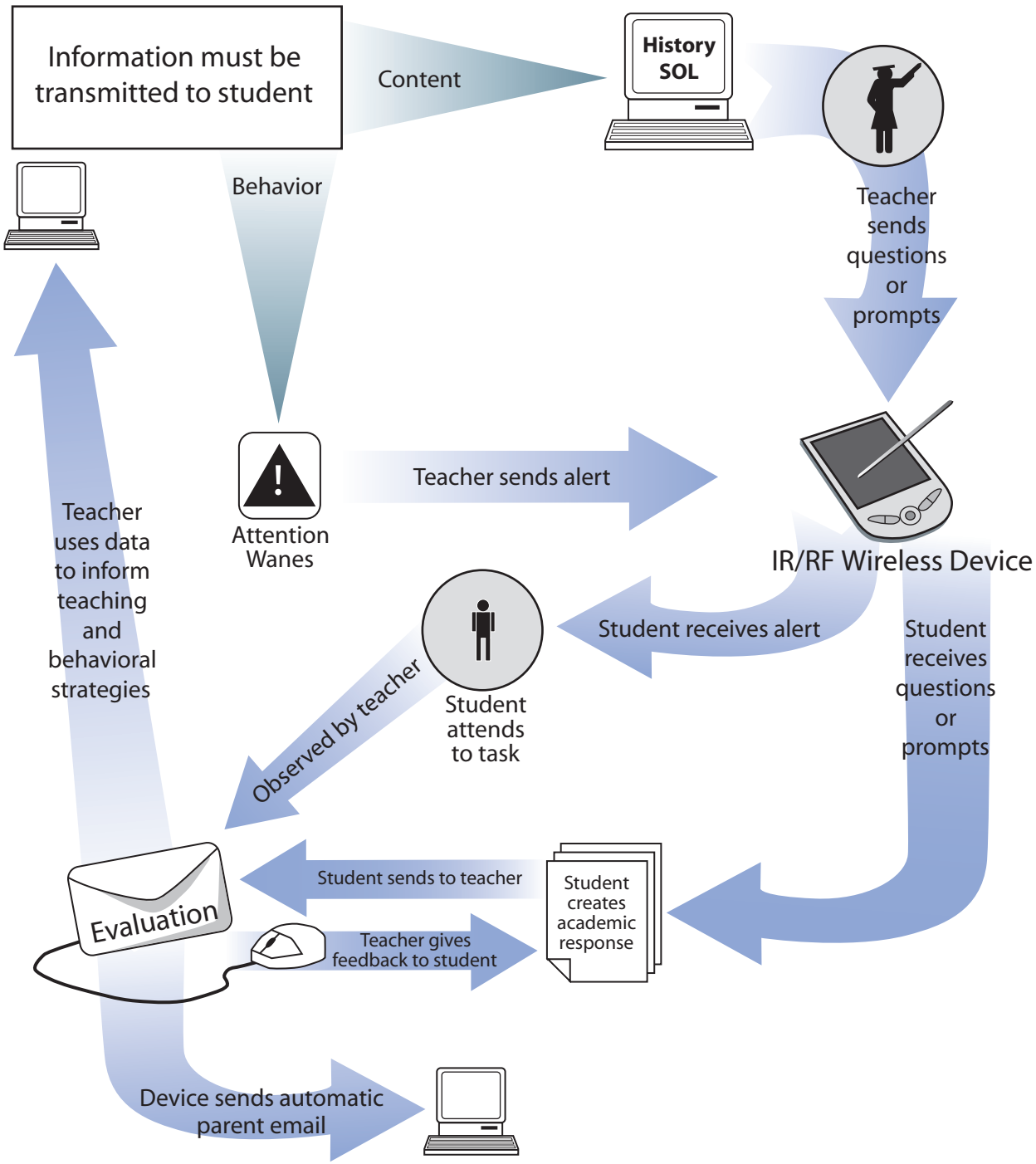
# Concept Model



ADHD/Gifted

# Content Inventory

*Targeted Information is Highlighted in Green

| Topic | Subtopic | More Details | URL for more information | User with Main Access to Cached site- when |
|---|---|---|---|---|
| **Reminders** | | visual- vibration- soft sound- | | Student- Intermittent access |
| | Specific positive reinforcement messages from the teacher | This should be included as often as possible. Too often these students, and the adults around them, dwell on the negatives. Emphasis on strengths will increase positive outcomes. | http://sparksofgenius.wordpress.com/2007/04/23/great-parenting-advice-especially-for-adhd/ | Student- Intermittent access |
| | Attention | Intermittent- visual- vibration- soft sound | | |
| | | student checks & tallies | | |
| | | On task | | |
| | | Off task | | |
| | | The data automatically creates a graph of on task behavior | | |
| | | Teacher sends text message from a pool of messages | | |
| | | Specific praise- text- wow you have been working hard! | | |
| | | Quiet reminder to return to task- | | |
| | | visual | | |
| | | vibration | | |
| | | soft sound | | |
| | | Text | | |
| | Locator | When student looses device | | **Student-** as needed |
| | | If at home, parent goes to computer and activates GPS | | **Parent/ Student-** as needed |
| | | A map of the house and surrounding area indicates the location of the device with a flashing light | | |
| | | Student chosen ring is also activated | | |
| | | If at School, teacher goes to computer and activates GPS | | **Teacher/ Student-** as needed |

# Content Inventory

| | | | | |
|---|---|---|---|---|
| | | A map of the School and surrounding area indicates the location of the device with a flashing light | | |
| | | Student chosen ring is also activated | | |
| | Low Battery Alert | When battery has full charge | | **Student**- full access |
| | | Battery icon has four solid green squares | | |
| | | When battery has an hour left of charge | | |
| | | Battery icon has 3 empty squares and one yellow square | | |
| | | Battery icon blinks every 10 minutes | | |
| | | When battery has 15 minutes left of charge | | |
| | | Battery icon has four empty red squares | | |
| | | Battery icon blinks every 5 minutes | | |
| | | Text message reminds student to turn off device and recharge | | |
| | | When battery has 5 minutes left of charge | | |
| | | Battery icon has four empty red squares | | |
| | | Battery icon blinks continuously | | |
| | | Audio message tells student to turn off device and recharge it | | |
| **Virginia History VS 4** c. Explain how geography influenced the relocation of Virginia's capital | | | | Student-always |
| | | Hardships experienced by colonists at **Jamestown** | | |
| | | drinking water was contaminated | | |
| | | marshy | | |
| | | contained diseases | | |
| | | had some salt water seeping in it | | |
| | | dirty living condition | | |
| | | fire twice destroyed wooden buildings | | |
| | | **Williamsburg** | | |
| | | higher elevation | | |
| | | population of the town was growing | | |
| | | located farther from the James River | | |
| | | drier | | |
| | | safer place | | |
| | | **Richmond** | | |
| | | better location for trade | | |
| | | central location | | |
| | | safer from attack by the English | | |

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# Content Inventory

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| | | **Maps** | ..\Colonial Maps.doc | |
| | | **Jamestown** | | |
| | | **Williamsburg** | | |
| | | **Richmond** | | |
| **Other VA History Learning Oportunities** | Early History of Virginia | | http://www.scott.k12.va.us/martha2/History%20Page.htm | Student-always |
| | Instructions for the Virginia Colony 1606 | | http://odur.let.rug.nl/~usa/D/1601-1650/virginia/instru.htm | Student-always |
| | a. explaining the importance of agriculture and its influence on the institution of slavery; | Tobacco became a cash crop- not available in England- colonists could get money for it & buy things they needed- they had lots of land - the more tobacco they grew- the more money they could earn- but they needed lots of people to plant and harvest - but didn't want to pay them- Indentured servants- worked for 7 years- slaves- worked for free for their whole lives- People from Africa were captured & forced to become slaves-**Vocabulary** - tobacco, cash crop, profitable, product, trade, labor, indentured servants, slaves, harvest, and agriculture | | Student-always |
| | d. describing how money, barter, and credit were used. | barter. Review how the colonists traded with the American Indians (First Americans) to survive during early colonization-Today- money, checks, debit cards, credit cards.- tobacco was a cash crop- green gold-used as money-for goods and services-very few had paper money and coins to pay for goods and services- credit, promised to pay after the crop was harvested & sold- no banks until 1791- **Vocabulary**- barter, trade, cash crop, credit debt, savings, products, harvest | | Student-always |
| | Library of Virginia- | Look up terms- Teacher resource | http://www.lva.lib.va.us/ | Teacher- always |
| | Facts about Virginia- (Paid site) | | http://www.enchantedlearning.com/usa/states/virginia/ | Student- teacher determines |
| Skills to be Used in teacher created | | Determine cause-and-effect relationships. | | |

# Content Inventory

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| prompts and activities. | | Compare and contrast historical events. | | |
| | | Draw conclusions and make generalizations. | | |
| | | Make connections between past and present. | | |
| | | Sequence events in Virginia history. | | |
| | | perspectives. | | |
| | | Evaluate and discuss issues orally and in writing. | | |
| | | Analyze and interpret maps to explain relationships among landforms, water features, climatic characteristics, and historical events. | | |
| **Activities** | | Teacher will create and send prepared a selection of activities on topic- student may choose | http://www.mce.k12tn.net/colonial_america/colonial_america.htm | Student- teacher determines |
| | | | http://www.smarter.com/---se--qq-costume+colonial--pt-0--tt-.html | |
| | | | http://www.theteacherscorner.net/thematicunits/colonial.htm | |
| | | | http://www.visitwilliamsburg.com/index.aspx | |
| | | | http://www.beavton.k12.or.us/jacob_wismer/fourth/colonies/virginia.htm | |
| **File of videos/ icons/ Pictures/ maps/ graphics on pertinent topics** | | | http://streaming.discoveryeducation.com/search/assetDetail.cfm?guidAssetID=31385E98-FACC-4A1A-AFE0-EF51FAF62B81 | Student- teacher determines- limited access |
| **Organization Aids** | Daily/weekly Schedule | Classes, lunch, special subjects, etc. | | Student/Teacher- Full access Parent- home access |
| | Homework | Daily and long term projects and assignments with periodic reminders for the long term assignments | | Student-Full access Parent- home access |

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# Content Inventory

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| | Quiz/Test schedule | With study reminders | | Student-Full access Parent-home access |
| | Current Grades with progress graph | | | Student-Full access Parent-home access |
| **ADHD Information** | Kid's Health for Kids | | http://www.kidshealth.org/kid/health_problems/learning_problem/adhdkid.html | Student- teacher determines-limited access |
| | Neuroscience for Kids | | http://faculty.washington.edu/chudler/adhd.html | Student- teacher determines-limited access |
| | Biographical sketches of successful adults who have (had) ADHD | Some of these links are not active so a site with biographies may need to be fixed/created | http://www.adhdrelief.com/famous.html | Student- teacher determines-limited access Parent- home access |
| | | | http://add-adhd.lifetips.com/cat/57754/famous-people-with-adhd-add/ | Parent/Teacher-access |
| | | These sites have lists of names. | http://www.adhdtexas.com/famouspeople.htm | Parent/Teacher-access |
| | | These sites have lists of names. | http://www.adult-child-add-adhd.com/categories/general/famous_people.php | Teacher- access |
| | | These sites have lists of names. | http://www.unboundpotentials.com/id111.html | Teacher- access |

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| **Strategies** | ADHD Benefits- | Energy to do much! Incredible creativity, Hyper focus in areas of interest, Ability to think "Outside the Box" often a well developed sense of humor | http://www.drhallowell.com/press/detailedbio.html | Teacher/Parent - Home access |
| | Know your strengths & use them | | | |
| | Good sleep habits | | http://web4health.info/en/answers/adhd-sleep-enough.htm | Teacher/Parent - Home access |
| | | | http://www.lifespan.org/services/childhealth/research/studies/sleep-adhd.htm | Teacher/Parent - Home access |
| | | | http://www.4-adhd.com/article1.html | Teacher/Parent - Home access |
| | Good nutrition | | http://www.nlci.com/nutrition/ | |
| | Organization | Students need to find a way to help themselves organize. | http://www.addvance.com/add_friendly/org_strategies.html | Student/Parent/teacher full access |
| | | | http://www.squidoo.com/organizeADHD/ | Teacher full access |
| | | | http://ezinearticles.com/?Teacher-Tips:-Organizing-Your-ADHD-Students&id=4035 | Teacher full access |
| | Positive Self Talk | | http://www.mayoclinic.com/health/positive-thinking/SR00009 | Teacher/parent- full access |
| | | | http://www.healthyhabits.com/SelfTalk.asp | Teacher/parent- full access |
| | | | http://www.2imaginethis.com/positive_self_talk.shtml | Teacher/parent- full access |
| | Self advocacy | This is for older students but parents & teachers can begin planting the seeds to self advocacy much earlier. | http://www.healthcentral.com/adhd/teen-adhd-40351-5.html | Teacher/parent- full access |

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| | Stress relief | | http://school.familyeducation.com/learning-disabilities/treatments/37812.html?detoured=1 | Student- Intermittent access |
| | Brain Gym | | http://www.braingym.org/ | Teacher/parent- full access |
| | Brain Gym- PACE Exercises | | http://esl.about.com/od/englishlessonplans/a/braingym.htm | Student- Intermittent access |
| | Brain Gym Resources | | http://www.braingym.com/ | Parent/teacher full access |
| **Other Reminders- visual- vibration- soft sound-** | Water Break | 1 per hour | | Student- Intermittent access |
| **Visual/vibration Prompts** | | Teacher will send prompts from a prepared list (or impromptu) as needed | | Student- teacher determines |
| | 2 minute exercise break | These would be - small motor movements that can be quietly executed without disturbing others- Large movement breaks would be initiated by the teacher- the student could have a limited number of cues per several hours to let the teacher know when a large movement break is needed. | | Student- Intermittent access |
| **Productivity Tools** | MS Office for Pocket PCs or Palm OS | For Productivity - word processing & Spread sheets & Presentation - Student would use these to create projects and assignments | | Student-always |
| | Classical Instrumental Music | There would be pre determined set of instrumental classical music choices. | http://www.i-waveonline.com/index.htm | Student-always |
| | | Research has found that instrumental musical arrangements at 60 beats per minute has therapeutic effects. | http://www.cqcapd.state.ny.us/Danweb/pastissues/oldissues/2003/Power%20of%20music.htm | Teacher/parent- full access |

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| | Paint/ doodle program | this could help the student as they are listening, thinking about the topic, and/or working on an assignment | | Student- teacher determines- limited access |
| | Camera | Take pictures to illustrate projects or help cue student | | Student- teacher determines- limited access |
| | voice/sound Recorder | Could record classes for notes or music/ spoken words for a project. | | Student- teacher determines- limited access |
| | Visual timer | this software provides a visual way to know just how much time is allotted for an activity and how much time has passed at any moment. | http://www.timetimer.com/products.php | Student-Full access |
| | | | | |
| **Parent/Teacher Resources** | About.com- lists of many websites | | http://childparenting.about.com/od/attentiondeficitdisorders/ | Teacher/Parent - Home access |
| | | | http://www.adhd.com/index.jsp | Teacher/Parent - Home access |
| | | | http://www.chadd.org/AM/CustomPages/home/CHADD_Home.htm?CFID=5949003&CFTOKEN=29957358&jsessionid=f2301886971194852261921 | Teacher/Parent - Home access |
| | | | http://school.familyeducation.com/learning-disabilities/treatments/37809.html | Teacher/Parent - Home access |
| | | | http://www.celebrate-adhd.com/index.html | Teacher/Parent - Home access |
| | | | http://www.ricklavoie.com/aboutrick.html | Teacher/Parent - Home access |