My Homework Helper.com

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Introduction

ABSTRACT

According to Dr. Howard Gardner, of Harvard University, there exist multiple areas of intelligence not widely recognized by the academic community. 'My Homework Helper' is a dynamic website devoted to providing elementary school students with stimulating, interactive, multimedia-enriched lessons that they can view at home, free of charge, to reinforce lessons taught in the classroom. These lessons will be specifically designed to engage as many learners as possible in accordance with Dr. Gardner's Multiple Intelligences Theory using Flash based animation, sound and interactivity. In addition, Richard E. Mayer's theories on multimedia instruction will be used as a template to create the most effective multimedia lessons possible for the 'My Homework Helper' application.

EDUCATION THEORY

On April 16, 2005 the Associated Press reported that Jayne Gibbs, "a veteran principal and school administrator," was suspended while school officials investigated allegations that she helped students cheat on the Pennsylvania System of School Assessment test. Ms. Gibbs allegedly gave her eighth graders the answers to the questions in order to raise their scores on the standardized test. (Principal Accused…) Earlier in the month, representatives for the state of Connecticut announced that they were preparing a federal lawsuit challenging the legality and constitutionality of President Bush's 'No Child Left Behind'

education law. Attorney General for the state, Richard Blumenthal, stated that the law is "outrageously wrong. It's bad education policy, but it's also blatantly illegal" while claiming the law requires states to spend millions more than the federal government provides for test development and school reform programs (Connecticut to challenge…). Helping students to cheat and the No Child Left Behind law are just the latest examples of a "teaching to the test" mentality that is indeed leaving many children behind. They are symptomatic of the continuing crisis we face in our educational system today.

In 1983, Dr. Howard Gardner, of Harvard University, offered an entirely new way of thinking about education in his book, <u>Frames of Mind: The Theory of Multiple Intelligences</u>. Dr. Gardner's theory (MI theory) proposed the existence of seven distinct intelligences (expanded to eight in 1999) that exist in every person to varying degrees and strengths. These are the intelligences Dr. Gardner recognized:

1. **Logical – Mathematical:** Ability to discern numerical patterns; to effectively think with numbers; classify information and make inferences/reason.
2. **Linguistic:** Ability to use words effectively when speaking and writing; being sensitive to the power, meaning and flow of words.
3. **Musical:** Ability to appreciate and play with rhythm, pitch and timbre; appreciation of musical form/expressiveness.

4. **Spatial:** Strength in visual/spatial reasoning, sensing patterns, and orienting oneself, or thinking based on those patterns.

5. **Bodily-Kinesthetic:** Ability to sense, interpret and create patterns involving the whole body.

6. **Interpersonal:** Ability to interpret and accurately respond to the moods/behaviors of others.

7. **Intrapersonal:** Understanding one's own feelings (awareness of personal strengths and weaknesses) and the ability to act on that understanding to guide behavior.

8. **Naturalistic:** Ability to make sense of nature's complexities, to classify aspects of nature and sense relationships within and between those patterns.

(Multiple intelligences theory…)

Dr. Gardner's MI Theory has grown in acceptance over the years and it is now possible to find many articles written by educators espousing the merits of teaching for multiple intelligences. In addition, my survey results show that persons filling out the survey identified with more than one form of intelligence, often selecting several. This would indicate that a new method of teaching that includes stimuli to engage more than one learning type is necessary. Indeed, 94% of survey respondents preferred instruction that included visual and auditory

stimuli to traditional, text-based, instruction. The question then becomes, how to deliver such instruction? One excellent solution is Multimedia.

MULTIMEDIA INSTRUCTION

Multimedia instruction can offer a wide range of engaging lessons that go beyond traditional text-based learning with the inclusion of video, animation, sound, and interactivity. In this way, learners can be taught in a variety of different ways, simultaneously.

Richard E. Mayer details this promise of Multimedia instruction in his book Multimedia Learning. Mayer begins his exploration into the benefits of Multimedia Instruction by stating, "instructional messages should be designed in light of how the human mind works." By this, he believes that human beings process information in a two-channel system. The first channel handles verbal material (text and auditory stimuli such as narration) and the second channel handles visual material (pictures and animation). Using this principle, it is easy to see why Multimedia Instruction can be such a powerful teaching tool, since it can stimulate both channels simultaneously.

Cognitive Theory of Multimedia Learning:

Mayer further explores the dual channel system with the Cognitive Theory of

Multimedia Learning. This three-part theory includes the two-channel

assumption and expands to include the limited capacity and active processing

assumptions. The three assumptions as described in the book are:


DUAL CHANNELS:

Humans possess separate channels for processing visual and auditory

information.

LIMITED CAPACITY:

Humans are limited in the amount of information that they can process in each

channel at one time.

ACTIVE PROCESSING:

Humans engage in active learning by attending to relevant incoming information,

organizing selected information into coherent mental representations, and

integrating mental representations with other knowledge. Mayer displays the

cognitive theory of multimedia learning in the following diagram:
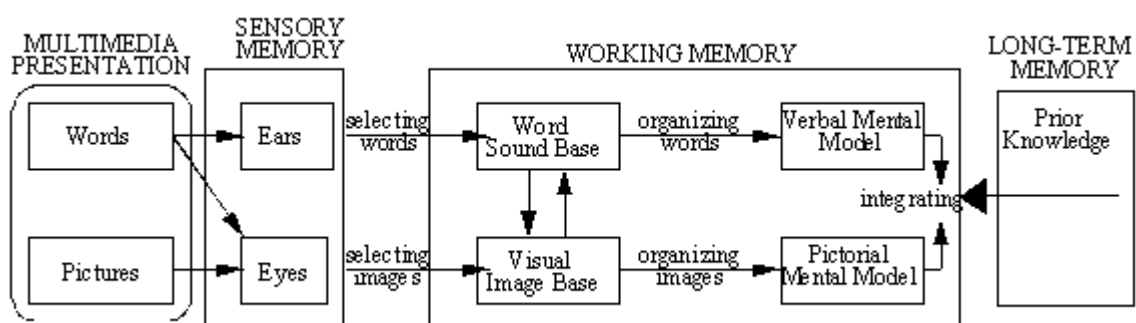
Essentially, Mayer believes that humans use this process to break down messages into a basic mental structure that they can then interpret and add to their long-term memory. If we create effective multimedia lessons that strive to integrate into this system of learning, Mayer believes students will better understand the material. Furthermore, they will be better equipped to transfer the knowledge to other applications, instead of simply retaining and then regurgitating memorized information. So the question then is, how to create effective multimedia instruction?

Mayer answers the previous question with five separate concepts that were proven (through testing) to enhance multimedia instruction and form effective multimedia lessons. As the names imply, Mayer is most interested in the transferability of knowledge gained by multimedia instruction. Thus, all five concepts end in "for transfer." Mayer tests for retention as well (which could be considered the more traditional testing method) however, it is in multimedia instruction that transfer capabilities really shine over more one-dimensional instruction. This is significant because transferable knowledge (knowledge that can be applied to more than one situation) is far more permanent and useful than simple retention of facts.

SPATIAL CONTIGUITY EFFECT FOR TRANSFER:
Spatial contiguity effect, simply put, shows that knowledge transfer is greater

when multimedia lessons feature corresponding words and pictures that are placed near each other rather than far apart. This reinforces the information since the learner can view the meaningful image as they absorb the text or narration relating to it.

TEMPORAL CONTIGUITY EFFECT FOR TRANSFER:

This concept proves that transfer of knowledge is greater when "corresponding animation and narration segments are simultaneous (or alternating short segments) rather than successive." Basically, this is very similar to the previous concept, in the sense that, once again visual and verbal elements must be placed close together (in time for this effect).

COHERENCE EFFECT FOR TRANSFER:

This effect shows that there is better transfer of knowledge when "extraneous words, sounds, and pictures are excluded rather than included." In essence, this means that everything within the lesson needs to be very concise and elements that do not serve the purpose of reinforcing the lesson actually pull attention away from the lesson.

MODALITY EFFECT FOR TRANSFER:

Mayer demonstrates in this concept that there is better transfer of knowledge when "words are presented as narration rather than as on-screen text." The idea

behind this principle is based on the two-channel system of the cognitive theory of multimedia learning. By delivering the verbal information as narration, only the first channel is used to process the information, leaving the visual channel free to absorb pictures, animations and other visual elements. When the verbal information is presented as text on-screen then it must first go through the visual channel (along with all the other visual stimuli), thus giving all the 'work' to one channel while the other is idle.

REDUNDANCY EFFECT FOR TRANSFER:

Here, transfer of knowledge is better when "words are presented as narration rather than as narration and on-screen text." What this means is, that 'doubling up' the verbal information with on-screen text and narration actually dilutes the understanding with redundancy (the extra version is extraneous).

(Mayer)

While Mayer makes some excellent points in his book and his proven techniques for effective multimedia instruction will be a valuable resource for constructing the lessons for the 'My Homework Helper' application, his theories exclude certain individuals, such as the blind or the deaf. I believe it necessary to violate the Redundancy Effect, for example, by including both narration and on-screen text in order to make lessons more accessible.

To build the lessons for the 'My Homework Helper' application, a mix of Mayer and Gardner's theories will be used. By taking the best of both approaches, the 'My Homework Helper' application will benefit from the very latest theories of instruction.

The Internet further allows widespread integration of these new multimedia-teaching methods and provides a virtual classroom that all can enjoy. 'My Homework Helper' will be an application designed to deliver this new form of instruction. The following strategies will be used to engage the various intelligences. They will be balanced with Mayer's theories of multimedia instruction to deliver the most effective lesson possible to engage the greatest number of learning styles as possible:

- **Linguistic:** Inclusion of textual elements and verbal problems.
- **Logical-Mathematical:** Inclusion of problem solving and strategy elements.
- **Bodily-Kinesthetic:** Inclusion of sports related games as teaching aids.
- **Spatial:** Inclusion of graphical elements and animation.
- **Musical:** Inclusion of sound, music and narration.
- **Interpersonal:** Inclusion of "virtual" companion characters, narration.
- **Intrapersonal:** Inclusion of personalization, referring to user by name.

- **Naturalistic:** Inclusion of natural elements, such as landscapes, animals and trees.

Technology Description

SYSTEM STRUCTURE

'My Homework Helper' is a website built using Macromedia's Flash Application. Flash offers a wide range of opportunities for dynamic, interactive, and engaging instruction on the Internet. In addition, Flash can "communicate" with a variety of external systems using various technologies such as XML, PHP and MySQL databases. Phase One of 'My Homework Helper' will make use of Flash's capabilities to create dynamic menus, store variables (to attain personalization, the user's first name will be asked for and stored) and to load external Flash lessons per user request. Phase Two of 'My Homework Helper' will link to external databases to offer teachers, parents, and administrators customized feedback for every student's progress for the online testing process.

FLOWCHARTS

The first flowchart (figure 1) represents the basic workflow of Phase One of the 'My Homework Helper' application. Upon loading the opening page of the site, the user will be asked for their first name (this value will then be stored within the application as a global variable referenced throughout the application for personalization) and they will then choose the grade for which they need help (only second grade will be available for the prototype). On each grade's individual page, the student will have their choice of lessons from the various

content areas (second grade will include lessons from Reading & Language Arts, Mathematics, Social Studies, and Science).
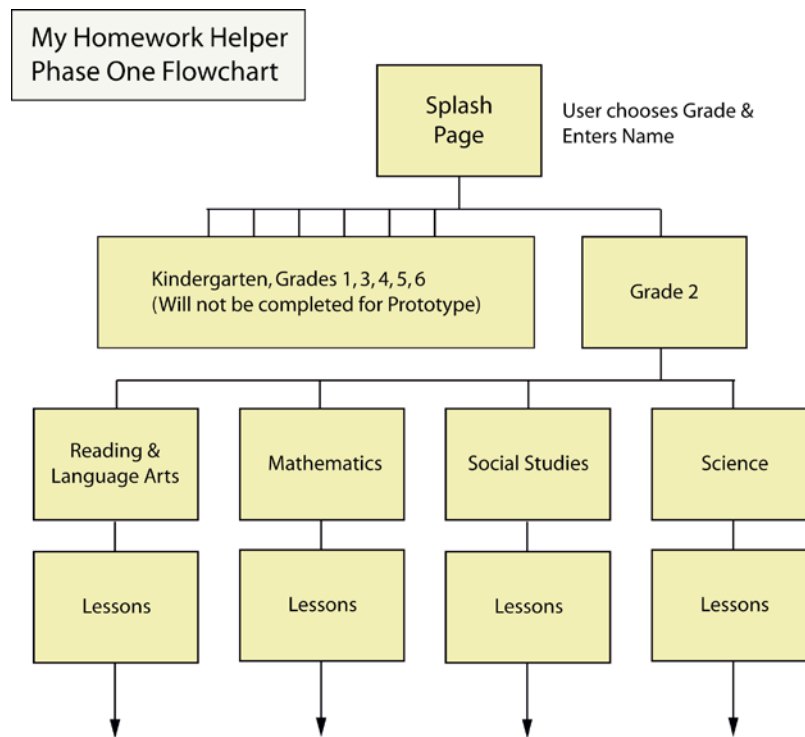

figure 1

The second flowchart (figure 2) represents the basic working model used for individual lessons in the 'My Homework Helper' application. Upon loading the requested lesson the user is presented with an introductory screen that states the goals and objectives for the lesson. The user then continues on to the lesson itself. Each lesson will follow the formula presented by Section A where the learner is presented with one part of the multimedia lesson which is followed by an interactive question or activity that the user must answer correctly to proceed with the lesson. If the user answers incorrectly they will be asked to try again

(their total score will drop by 1 point with each incorrect response). A correct response will be rewarded two points and it will send the learner to a feedback screen where they will be congratulated (by the name they entered when they began the application) and reminded why the answer was correct. The learner will then have the option of repeating the previous section or of continuing on to the next section. This module (Section A) will be repeated with new content and questions until the lesson is complete. Upon completion of the lesson, the learner will be congratulated by name and given their lesson score. The user will also have the option of repeating the lesson.
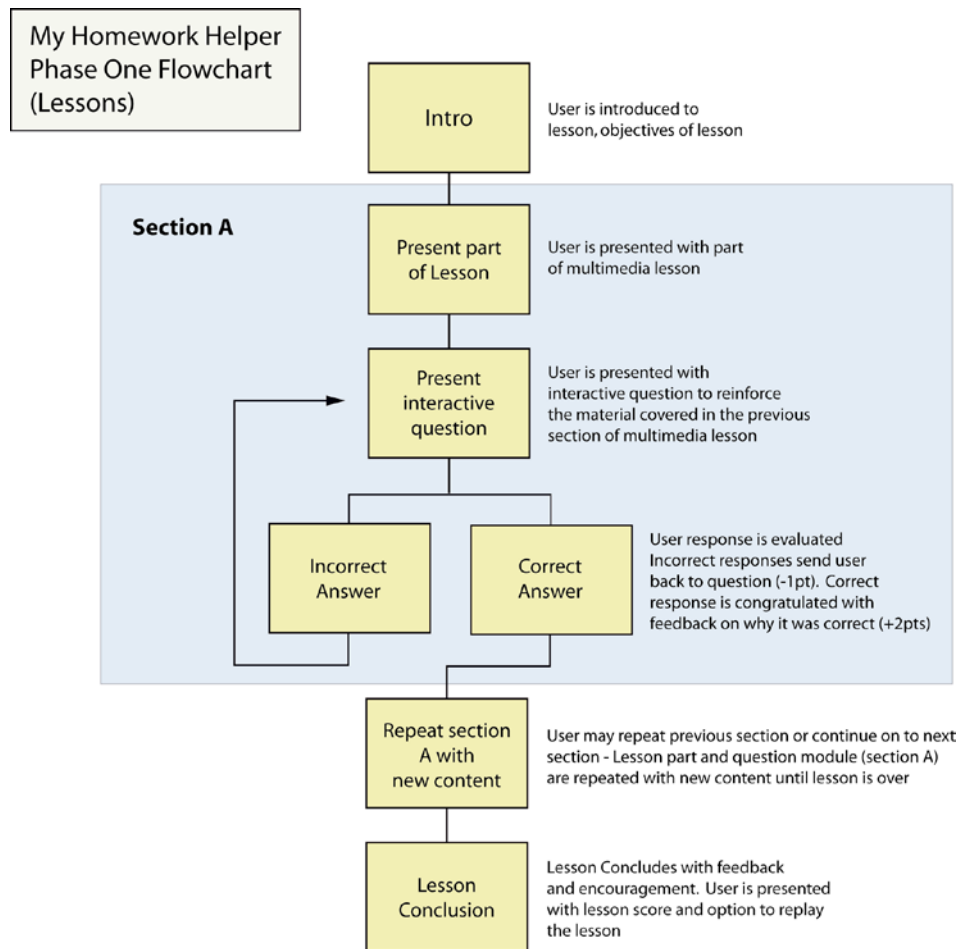
My Homework Helper
Phase One Flowchart
(Lessons)

Intro — User is introduced to lesson, objectives of lesson

Section A

Present part of Lesson — User is presented with part of multimedia lesson

Present interactive question — User is presented with interactive question to reinforce the material covered in the previous section of multimedia lesson

Incorrect Answer

Correct Answer

User response is evaluated Incorrect responses send user back to question (-1pt). Correct response is congratulated with feedback on why it was correct (+2pts)

Repeat section A with new content — User may repeat previous section or continue on to next section - Lesson part and question module (section A) are repeated with new content until lesson is over

Lesson Conclusion — Lesson Concludes with feedback and encouragement. User is presented with lesson score and option to replay the lesson

figure 2

THE APPLICATION

1. Introductory Animation

The introductory animation to the 'My Homework Helper' application is shown
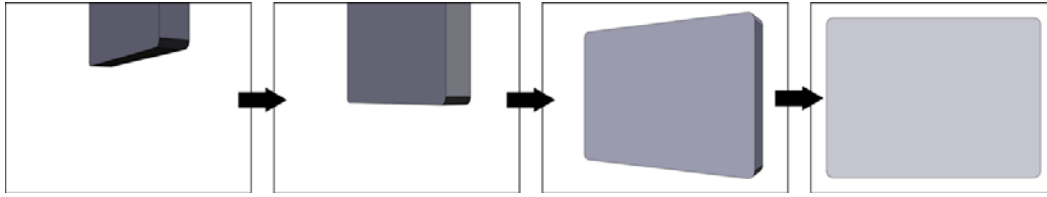
in figure 3 below:

figure 3

The animation was created using Electric Rain's Swift 3D application for specific purposes. By giving the 'My Homework Helper' website a sense of depth and movement, spatial and bodily-kinesthetic learners can be instantly engaged. Also, the sense of dimension gives the application a unique quality that sets it apart from other applications on the Internet; a very important quality when trying to compete for a child's attention. Three-dimensional animation is also used for the transitions between the main interface screen and the grade level sections. The lessons within the 'My Homework Helper' application will also feature 3-D animation as an instructional tool.

2. Main Interface Screen

Upon completion of the introductory animation, the user is brought to the main interface screen, displayed below in figure 4. Please refer to the labeled descriptions for information on the content of the page.
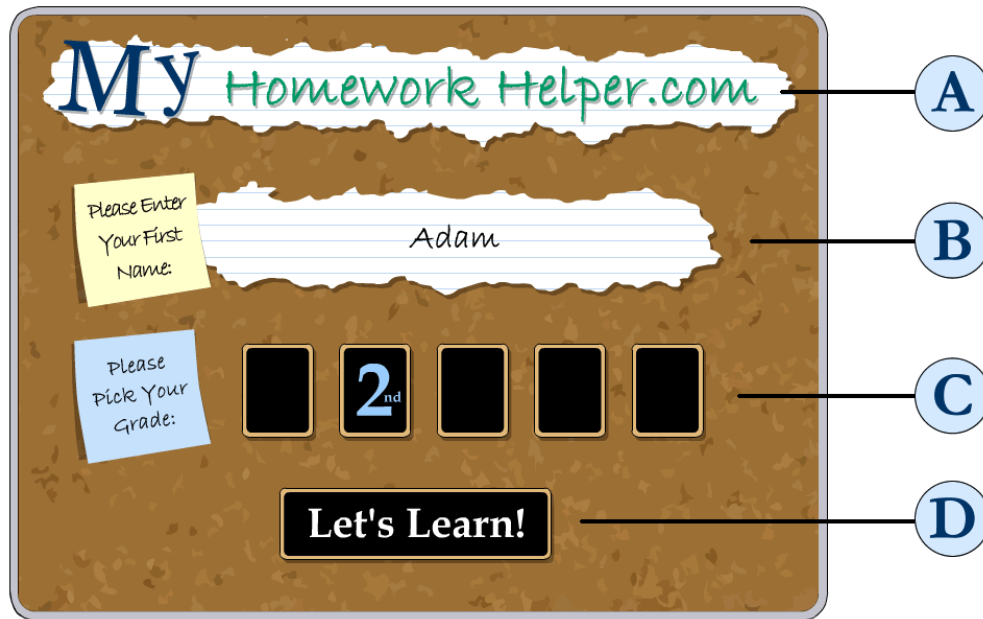
figure 4

A) **The 'My Homework Helper' Logo** – The 'My Homework Helper' logo was

specifically designed to convey a casual meaning. By placing the words

over what appears to be a scrap of loose-leaf paper, the logo imparts a

message of non-conventionality, which is exactly the kind of instruction

featured by the 'My Homework Helper' website. In addition, the logo's

casual design is meant to assure users that the 'My Homework Helper'

website is a welcoming, pressure-free tool for learning.

B) **Personalization Section (Name Input Section)** – Before entering the

lesson areas, the user is asked to input his or her first name. This value

will then be stored within the 'My Homework Helper' application as a

global variable. This name variable will then be used within the individual

lessons to engage intrapersonal learners and to personalize the learning

experience for all users.

C) **Grade Selection Section** – After entering his or her first name, the user

will then be asked to choose the grade for which they would like to receive

lessons. The 'My Homework Helper' prototype will only feature second

grade lessons, therefore, only that grade will be selectable.

D) **Enter Button** – Upon entering a name and choosing a grade level, the

user will click this button to enter the grade specific lesson area. As

mentioned previously, this will trigger a transitional, 3-D animation while

the application loads the appropriate grade section.

3. **Sample Grade Level Screen**

After entering a first name and choosing a grade level, the user is brought to

the appropriate grade-level screen (second grade is displayed in figure 5).

Please refer to the labeled descriptions for information on the content of the

page.

figure 5

A) **Grade Marker** – This marker, backed by the "friend" that hosts that grade level (an owl handles second grade) tells the user which grade section they are in. The "friend" is included specifically to engage interpersonal and naturalistic learners, and more generally, to provide the narration and teaching for the lessons.

B) **Lessons Menus** – These menus feature the lessons from the various subjects covered in the specific grade level. As the user rolls over each menu section, the available lessons drop down for the user to select.

C) **Lesson Area** – This is the actual lesson area. As the user selects lessons from the drop down menus, each lesson will be loaded into this area. Phase Two of the 'My Homework Helper' application will feature homework assignments in this area as well.

D) **Home Button** – The user may click the home button at any time to return to the main interface screen. A 3-D transitional animation will occur between the screens.

E) **Advertising Space** – In order to meet the operating costs of the 'My Homework Helper' application, advertisements from appropriate, "kid-friendly" companies will be displayed in this area. The ads will be displayed in a static or rotating manner.

Survey Results

EXPECTATIONS

A confidential survey of seventeen persons was conducted to better understand the need for the 'My Homework Helper' application. Each respondent was asked to answer the following ten questions and to share an educational experience (optional) they remembered that was either good or bad. The specific intent of the questions was to see how the respondents presently used technology for educational purposes, to determine how they've responded to traditional teaching methods, and to see what form of intelligence most respondents identified with.

RESULTS

1. What is your age?

> Average age = 31   Lowest age = 20   Highest age = 63

2. What is your occupation?

> Museum Director, Author (1), Intern (1), Drama Teacher (1), Tennis Pro (1), Museum Educator (1), Student (9), Tennis Coordinator, USTA (1), Delivery Guy (1), Grocer (1)

3. Are you a parent?

> Yes = 3 (18%)   No = 14 (82%)

4. Please check the method of instruction that you prefer:

> Instruction that includes visual and auditory stimuli = 16 (94%)
>
> Traditional, text-based, instruction = 1 (6%)

5. Do you use the Internet for research, and/or to seek answers to questions?

Yes, regularly = 14 (82%)

No, never = 1 (6%)

Occasionally = 2 (12%)

6. Do you feel that an Internet site, which allows parents to monitor their children's homework, is a good idea?

Yes = 15 (88%)   No = 2 (12%)   Not sure = 0 (0%)

7. Have you ever wanted a teacher to repeat parts of a lesson that you did not understand?

Yes = 16 (94%)   No = 0 (0%)   Not sure = 1 (6%)

8. If you answered 'Yes' to the previous question, do you think you would have viewed the lesson online if that were an option?

Yes = 12 (75%)   No = 1 (6%)   Not sure = 3 (19%)

9. Do you feel that elementary schools should offer online instruction to reinforce lessons taught in the classroom?

Yes = 16 (94%)   No = 0 (0%)   Not sure = 1 (6%)

10. Please check the categories that best describe you (brief descriptions were given):

Linguistic = 10

Logical-Mathematical = 10

Bodily-Kinesthetic = 9

Spatial = 8

Musical = 8

Interpersonal = 9

Intrapersonal = 8

Learning experiences:

Respondents shared some very interesting (and oftentimes sad stories) about

their educational experiences. Simply based on the examples shared, it is clear

that present methods of instruction are certainly leaving people behind.

CONCLUSIONS

The results of the survey strongly support the need for an application such as 'My

Homework Helper' that makes use of multimedia elements to better engage the

learner. Respondents clearly preferred instruction that engaged more than one

type of intelligence than that of traditional, text-based instruction. The last

question yielded the most interesting results. It was anticipated that one

category would tend to dominate (since a majority of the respondents were art

students) but in fact, the responses to this question were evenly distributed

among all the intelligences. This further supports the need for teaching

strategies that engage the learner on a multitude of levels.

Market Research

E-Learning has developed into a rapidly growing field. Numerous companies now offer online courses and virtual instruction that feature multimedia content. Two such companies' websites were examined for their content delivery, business practices, and history. A third website was analyzed that more closely resembled the 'My Homework Helper' prototype.

COMPANIES / WEBSITE

1. Aventa Learning

- Content: Aventa Learning delivers elementary school content in the form of Macromedia Flash lessons. These lessons include some animation, interactivity, sound and narration. The demo K-12 lessons featured on their website are not very professional looking and the narration is poor as well. The level of interactivity is very basic and there is very little user feedback. The lessons also rely heavily on text, often placed over a static background graphic.

- Company Disclaimer: "We create education and technology solutions that make a difference in the life of your organization and the lives of students. Aventa Learning is the leading education technology company for schools looking to deploy programs of virtual learning, technology supplements in the classroom, and credit recovery. We specialize in the distribution of technology based K-12 Online Courses, Classroom Resources,

Independent Study Courses, Credit Recovery and Test Preparation

Supplements for students. Our curriculum is both highly engaging and

educationally sound. In addition to the products mentioned above, Aventa

Learning's services include Custom Content Development and Training."

(qtd: www.aventalearning.com)

- Comparison to 'My Homework Helper': While Aventa Learning offers K-12

    multimedia lessons online much like 'My Homework Helper', the company

    charges for use of the lessons on an individual or institutional basis

    ($349.00 per semester course). 'My Homework Helper' will offer its

    lessons for free, covering its costs through advertising (Phase 2 will

    include database services for school systems on a for-charge basis).

    Also, Aventa's lessons are very basic, while 'My Homework Helper's'

    lessons will include far more interactivity, animation, and personalization.

2. eSchool Online

- Content: eSchool Online takes a different approach to content delivery

    than Aventa Learning does.   eSchool Online combines video footage of

    actual teachers giving lessons and interactive graphic activities to provide

    a far more engaging learning experience. Students can pause the lessons

    to perform the activities or rewind lessons to repeat sections they did not

    understand. Questions are intermixed with the activities to assess student

    absorption of the subject matter and this embedded assessment is then

displayed in a detailed record for school administrators and teachers. eSchool Online even tailors its products to each school's individual needs.

- Company Disclaimer: "eSchool® Online is the leader in providing multiple media online professional development and K-12 curriculum courseware to large urban school districts, state departments of education and major educational publishers. The design and functionality of the courseware takes advantage of the unique customized content approach employed by the Company on behalf of its clients, and the patented feature set of eSchool® Online."

(qtd: www.eschoolonline.com)

- Comparison to 'My Homework Helper': While eSchool Online offers a very interesting package of interactive multimedia lessons, it does have its flaws. For one, the video lesson displayed on its demo was very small and hard to understand, thereby somewhat defeating the purpose of its inclusion. Also, the demo interactive activities, while engaging, could be further enhanced with more animation, sound and visual impact. Phase One of 'My Homework Helper' will not include video for the reasons listed above. High quality video is difficult to deliver over the Internet effectively and this is evident in eSchool Online's website demo. 'My Homework Helper' will focus instead on Flash interactivity and animation mixed with elements such as sounds, voice-overs, and personalization to engage the student and stimulate a broad range of learning styles. In addition,

eSchool Online charges for use of its lessons that 'My Homework Helper' (using the advertising business model) will not.

3. Sofweb Website

- Content: Sofweb was chosen for comparison to 'My Homework Helper' mainly because it offers its services for free (funded through the State of Victoria's Department of Education and Training), and its use of 3D cartoon kids immediately invokes a child-friendly environment (which is a main goal of 'My Homework Helper'). The website is broken into sections such as language, science and math with each "virtual" 3D child representing each section. Ultimately, the sections are merely links to other content providers but it remains a very useful tool to help students navigate the Internet in search of activities, and information from home.

- Sofweb Disclaimer: "The Virtual Classroom has lots of cool activities and links to help you with your homework, school projects and just for fun. Just click on the student who is looking after the area you are interested in." (qtd: www.sofweb.vic.edu.au/students/kids/vclass/)

- Comparison to 'My Homework Helper': Both 'My Homework Helper' and Sofweb are aimed at giving students a tool for help with homework assignments and lessons they do not understand, and both websites will be available to all children. Sofweb adds an element that the other two

comparison companies do not - it links each section with a "virtual" child

thus bringing an interpersonal element in that can engage additional

learners who might identify with the representation of another child sharing

the learning experience. This is a primary goal of 'My Homework Helper.'

Unfortunately, Sofweb does not offer much in the way of interactivity,

sound, or animations that are elements strongly integrated into 'My

Homework Helper.'

Business Model

Phase One of 'My Homework Helper' will adopt an advertising business model in order to meet its operating costs and expenses. 'My Homework Helper' will feature different ads for each grade section of the site (6 total sections) on a rotating or fixed basis. 'My Homework Helper' will charge fees from advertisers based on one of the following three methods (each advertiser may require a different solution):

FLAT FEES

Using this system, advertisers will be charged a flat fee (to be determined) to display their ad over a given period of time such as a month. Since different ads will be displayed for each grade level's section on a rotating basis, this should bring in sufficient revenue to cover the site's operating expenses. For example, 10 rotating ads on 6 different sections charged $35.00 a month would result in $2,105.00 a month in revenue.

TRAFFIC-BASED FEES

Under this system, advertisers will be charged based on the number of times their ads are actually displayed. CPM or cost-per-thousand ad impressions is the standard metering system used on the Internet. (Sadeh, 45) If the site becomes very successful this could be a very lucrative arrangement. Based on the previous section, if those 60 advertisers were charged 10 cents per thousand ad

impressions (viewings) and the site received 100,000 visitors daily, then ad

revenue per month would be $18,000.00. Of course this revenue would be offset

by the cost of the additional bandwidth. 'My Homework Helper' will initially

propose this system to most advertisers.

PERFORMANCE-BASED FEES

"Fees based on the number of click-throughs or call-throughs, or more generally,

fees that depend on the specific action taken by the user (cost-per-action) such

as subscribing to a service, as well as commission fees based on actual sales

(cost-per-sale), all fall under this category." (Sadeh, 45) The actual charges for

this advertising model would vary according to vendor. 'My Homework Helper'

will only incorporate this system if it is the only one a certain advertiser will adopt.

Implementation

To implement Phase One of the 'My Homework Helper' application, an initial investment of time and money will be required. The following section covers the basic operating costs and benefits included with domain registration and a dedicated server. The next section details the proposed advertising plan to generate interest in the 'My Homework Helper' website.

OPERATING COSTS AND BENEFITS

Operating costs based on quotes from www.godaddy.com:

- Domain Name Registration: (www.myhwhelper.com) $6.95 per year with purchase of ten-year registration.

- Dedicated Server: (Premium Plan) $252.52 per month with purchase of 1-year agreement.

- Total Operating Costs: **$253.10 per month**

Benefits of godaddy.com's dedicated server (premium plan):

- 2 x 120GB disk drives

- 2000GB initial bandwidth (enough for an estimated 2,000 users per month – based on 100MB per user)

- Extra 2000GB bandwidth per month (Add $87.00)

- 2GB SDRAM

- Pentium 4 CPU

- Red Hat Fedora Core 2 OS

ADVERTISING PLAN

In order to garner initial interest in the 'My Homework Helper' application a mix of marketing strategies will be used. To begin with, repeated direct mailings of the website's description and value will be sent to Directors of Curriculum for schools in the greater Philadelphia area. Since the site is a free service, this should generate users from word of mouth and teacher recommendations.

In addition, cooperative marketing on the Internet such as banner ad exchanges with various companies with similar products can be utilized. This will be coupled with traditional advertising in publications such as Instructor Magazine, "the leading magazine for grade school educators."

While an initial investment of time and money will be required to implement these strategies, they will eventually be paid for over time by the site's advertising revenue generated through banner ads.

Timeline

The 'My Homework Helper' prototype application will be constructed over a period of 21 weeks. This first eleven weeks will include time for research, the creation of flow charts, and the development of the overall design of the application. The last ten weeks will be devoted to the construction of the working prototype. Please refer to the following chart for a more detailed timeline of the development process:

Week	Date	Project Phase	Tasks
Week 1	4/4	Research	Development of Idea
Week 2	4/11	Research	Development of Idea
Week 3	4/18	Research / Writing	Initial Concept Proposal Complete
Week 4	4/25	Research / Writing	Survey Results Complete
Week 5	5/2	Research / Writing	Partial Research Project Proposal Complete
Week 6	5/9	Research / Writing	Flow Charts and Storyboards of Project Complete
Week 7	5/16	Development	Read Multimedia Learning
Week 8	5/23	Development	Finish Reading Multimedia Learning, 3 Page Synopsis Complete
Week 9	5/30	Development	Design & Creation of Graphic Elements for Project
Week 10	6/6	Development	Design & Creation of Graphic Elements for Project
Week 11	6/13	Development	Non-working Prototype Complete Research Proposal Complete
Week 12	7/11	Development / Construction	Work on Infrastructure and Programming of Project
Week 13	7/18	Development / Construction	Work on Infrastructure and Programming of Project

Week	Date	Project Phase	Tasks
Week 14	7/25	Development / Construction	Work on Infrastructure and Programming of Project
Week 15	8/1	Development / Construction	Work on Infrastructure and Programming of Project
Week 16	8/8	Development / Construction	Working Prototype Complete with 1 Lesson per Subject
Week 17	8/15	Development / Construction	Add Lessons to Working Prototype
Week 18	8/22	Development / Construction / Testing	Add Lessons to Working Prototype Test Working Prototype
Week 19	8/29	Development / Construction / Testing	Add Lessons to Working Prototype Test Working Prototype
Week 20	9/5	Development / Construction / Testing	Add Lessons to Working Prototype Test Working Prototype
Week 21	9/12	Completion of Project	Completion of Project

Success Criteria

While there are several areas of achievement that could be met to declare a project a success, such as financial goals, 'My Homework Helper' will focus on more meaningful results for its success criteria. These criteria include usability and the number of viewers of the site.

USABILITY

A major element of every project's success rate is the usability of the project. This will be especially true of the 'My Homework Helper' application. The project will have achieved its goals if children are able to navigate the website and its lessons effectively, and if they actually learn by using the site. Phase Two of the project will include assignments that dynamically report student progress. This will certainly display the application's effectiveness. However, public opinion is typically the best indicator of a project's success, and the number of viewers eventually making use of the site will best measure 'My Homework Helper's' effectiveness.

NUMBER OF USERS

Certainly, if even one child benefits from the 'My Homework Helper' website, that should be considered a success. However, one of the goals of the 'My Homework Helper' application is to help as many children as possible, and to deliver the same quality of education to these children regardless of income or

background. The hope is that 'My Homework Helper' will reach in excess of ten thousand children a month by the end of its first year of existence. This spread of users would reflect the project's usability and worth, since it would mostly be a result of positive word of mouth.

Conclusions

Multimedia Instruction has certainly developed into a new educational tool. Many companies have contributed curriculum to the field in various ways. However, as Richard E. Mayer demonstrates in his book <u>Multimedia Learning</u>, multimedia instruction is effective only if constructed properly. This is where 'My Homework Helper' will differentiate itself from other multimedia instruction. 'My Homework Helper' will pay special attention to the various intelligences outlined by Dr. Howard Gardner, while maintaining the proven methods for multimedia instruction outlined by Richard E. Mayer. If successful, the 'My Homework Helper' application could very well usher in a new method of teaching, designed for many and available to all.

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