Final Report



Church Green



IPRO 320 Teacher Knowledge Share

For the projects: Teacher Knowledge Share

Church Green

Developed for the spring semester, 2009

Information

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Abstract

The concept of professional networking is not new. Many trades have conventions, and with the world moving into the internet age, there are plenty of sites out there for professional networking in a number of fields.

The situation with education is slightly different. While some sites do exist, some limit their client base, and many have flaws. There is no current "well known" solution for education.

The aim of the Teacher Knowledge Share project is to fill this void. Teachers are busy people. Education is a real time service, but also demands other work of teachers. While at work, they can't count on getting grading, lesson plan preperation, and other tasks done.

Teacher Knowledge Share provides the professional networking system that teachers can actually make use of. In addition, administrators and counselors can make use of the system.

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Background

Client 1.1

The primary clients of the Teacher Knowledge Share site are teachers. More specifically, teachers in the K-12 range.

That said, there is also potential in the rest of the education community. Administrators and counselors have also been considered as part of our range of potential clients.

The final pool of clients is the IIT IPRO Program. Many IPROs in the education tracks create content for teachers to use to whatever end the IPRO is aimed at (sustainability for example). These are often formatted as lesson plans. As such, the Teacher Knowledge Share system makes for a good outlet for the lesson plans.

Due to an overwhelming desire (obtained from survevs) for a professional networking site for teachers to be very strictly professional, there should be no other clients.

Problems 1.2

The education world is full of busy people. Teachers, administrators, and counselors are all very busy. While at work, they are limited in what paperwork gets done. Most teachers grade assignments and tests and prepare lesson plans outside of the school schedule.

At any point in time, there are plenty of teachers for every subject working across the planet. A fair amount of the lessons that they teach will be the same. As a result, most lesson plans for a subject (like 12th grade english) will tend to be very similar. Despite this, each teacher recreates this already created work in the time that (s)he is already low on.

Yet another problem comes from the education system itself. In large systems, it is hard to ensure that each facility has the right people to teach the right classes, and in small systems, it is not always feasible to have enough of a variety of teachers as to cover all subjects. In either case, teachers often wind up teaching subjects that they were not prepared for by their degrees.

There are a few options for good solutions to these $_1$ are:

problems, but in any case, even the solution will take some measure of time. Any good solution will not only solve the main problems, but also provide multiple functions in a single location, so as to really save time.

1.3 State of the Art

In general, professional networking websites do exist. Some of them are very good. Unfortunately, the general professional networking sites, by virtue of not being specific to the education field, tend to be so big that their size gets in the way. They contain too much unrelated content, which is time consuming to sort through.

A better option is a site dedicated to the education field. These, too, exist. Many of them are not well set up. They tend to be confusing, and the desired content is hard to find. Most likely, this is a case of a developer assuming that the network would create itself within the technology provided.

These sites are also cluttered. All of them use advertising as a means of income, and some of them are covered in ads to the point of annoyance. This kind of distraction and annoyance is very much able to drive away clients.

Finaly, many of the existing professional networking sites are simply poorly done. They are not well organized, fail at usability, and have very few users as a result.

In addition to professional networking sites, there is always the option of going to existing social networking sites like MySpace[3] and Facebook[4]. These systems have existing networks, and work very well. They are not exclusive, however, and not well set up for things other than social networking (like sharing lesson plans).

1.4 History

First Semester 1.4.1

Before this (Spring 2009) semester, the Teacher Knowledge Share project created two systems, and did some measure of research, including a focus group at Queen of Peace High School[5].

The first system was created in the Spring 2008 semester. Based on the need for documents to be uploaded and shared, the team chose a wiki system. This system did not serve the purposes of a professional network very well, and was scrapped by the Fall 2008 semester team.

Second Semester 1.4.2

In Fall 2008, after scrapping the wiki inherited from the Spring 2008 team, work began on a new system. The new system was built on the Drupal Content Management System[6]. Items inherited by the Spring 2009 team

- Prototype Web Application
 - User Account Control system
 - Lesson plan uploading
 - Calendar
 - Forums
- Research Data
 - Online survey data
 - Queen of Peace focus group data

For the Spring 2009 semester, the team chose to continue the path of the Fall 2008 team. The previously mentioned application was kept and expanded.

1.5 Ethical Issues

The Teacher Knowledge Share project encountered only a few ethical issues. The issues that were encountered are, however, quite important to the team, the project, anyone who supports the project, and any current and future members of the Teacher Knowledge Share site.

1.5.1 User Privacy

The first major issue is user privacy. This issue comes up in every situation where users create accounts with any system (including, but not limited to websites).

Users are provided with accounts. These accounts contain some information about the user (including username, password, and an email address). This information, along with any other information provided by the user, must be kept private, except in cases where the information exists for the purpose of sharing and/or public display (ie the username).

In cases where information provided by users is to be used in a public way, it is also important to ensure that doing so makes sense, and that the user is aware that such a thing will occur.

1.5.2 Copyrights

Remaining ethical issues deal with copyrights. As a website, and therefore a public display medium, the issue of copyrights is always something to pay attention to. In this case, there are two major concerns to address.

Since one of the major purposes of the Teacher Knowledge Share site is to display content uploaded by users (lesson plans), it is important to ensure that permission is obtained to display that content. Users are required to allow the site to display the lesson plans that they upload in order to be allowed to upload them.

In addition to the users' copyrights, there is also always the potential with user generated content for the

users to upload something containing copyrighted material over which they do not have permission or control. Material posted in violation of any copyright law will, naturally, be removed on discovery.

In general, ethical behavior provides users with a positive impression of the site. It is important to continually use good and ethical practices in order to avoid alienating users.

Objectives

Semester Goals 2.1

In general, the goals of the Teacher Knowledge Share project are aimed at improving the lives of teachers by making things easier and more convenient. The goals for the site are:

- Help teachers avoid redundant work
- Provide teacher tested & approved lesson plans
- Save teachers time
- Improve the quality of education

The specific objectives for the Spring 2009 semester of the project are:

- Perfect the site
 - Improve aesthetics
 - Improve usability
 - Implement "groups" system
- Repeat research to validate desirability and check
- Transition from prototype to live
- Develop marketing procedures
- Import content from SMILE to seed the system

2.2 Goal Details

Perfect The Site 2.2.1

As previously mentioned, the Fall 2008 semester of Teacher Knowledge Share developed a functional prototype that can perform the basic tasks of the system. The next step is to make the site workable.

The main issue with a website is usability. No matter what content and/or functionality exists, it is useless until the user can find it and use it. Additionally, if users 3 for teachers' continuing education.

become frustrated with bad usability, they are likely to avoid the site in the future.

It is important for the Spring 2009 semester to not only attempt to streamline the site from a usability standpoint, but also to test the usability of the site in order to ensure that the desired results are attained.

Aesthetics is an issue that partially stems from usability. The way the site and all its elements look have a huge bearing on the way users see the site. Things that should be easy to find should be visibly obvious, the organization of the site should make sense, and the site should avoid being so cluttered as to become difficult.

It is also true that good aesthetics (logically organized and visually appealing sites) attract users, while bad aesthetics (ugly and confusing sites) turn users away. The site must be visually "attractive", while maintaining a professional look and feel.

The final issue that the Spring 2009 semester set out to fix was the fact that the site initially catered specifically only to teachers. While teachers are the main target userbase, other members of the educational community are also potential users of the site. They can also benefit from sharing of best practices and professional networking.

This final modification to the site is accomplished using a "groups" system. This system divides the users on the site into various groups (for example, educators, administrators, and counselors). This allows users to search within their own group in order to find more relevent results, more similar colleagues, and so on.

2.2.2Desirability & Usability Research

The Fall 2008 semester of Teacher Knowledge Share conducted two major research efforts that proved to be very useful. The first was an online survey aimed at almost anyone who would fill it out. The second was a focus group at Queen of Peace High School[5], consisting of teachers at the school.

This research had two purposes. The first was to evaluate desire for the general concepts of Teacher Knowledge Share, while the second was aimed at eliciting desired features, and thoughts about currently (at the time) planned

For the Spring 2009 semester, it was decided that more research was necessary. The first goal of the new research was to re-verify interest in the Teacher Knowledge Share concepts. This would be along the same lines as the previous semester's research, so it would effectively increase the sample size for this specific area.

Another purpose of the new research was to once again evaluate opinions of the site itself. Many things were changed during the Spring 2009 semester, so near the end, a new focus group was performed. This focus group was conducted in the MSED550 class at IIT[7], which is

This focus group also included questions regarding usability. These "preliminary" usability questions were aimed at finding general problem areas. These areas would be investigated in further detail in formal usability studies.

As an additional benefit of the focus group, the participants were registered with the site, browsed the site, and played with some of the features. To some extent, even this is a form of marketing.

2.2.3 Transition From Prototype to Live

As previously mentioned, the site, as inherited from the Fall 2008 semester, was effectively a working prototype. It had all the basic features necessary to be considered functional.

The next logical step is to turn the prototype into something marketable, something that can actually be presented as a product, instead of as an alpha, a beta, or a prototype.

The transition from prototype to live includes all the improvements to the site mentioned in *Perfect The Site* (section 2.2.1). In short, going live is the purpose of those improvements.

Going live is a major milestone in any software project. This is the point where the application is no longer just a pile of code. By going live, the site is marked as "mostly finished", meaning that only minor modifications should be needed in the future. It also means that marketing can begin.

2.2.4 Develop Marketing Procedures

If a major value of going live is the ability to begin marketing, then going live necessitates some kind of marketing strategy. As such, developing the marketing procedures that would be used to get things moving was a major goal of the Spring 2009 team.

Initially, it was unknown whether or not marketing would be able to happen. The marketing strategy was developed both to be used by the team and also to be passed on to future teams.

These marketing procedures must account for the fact that the site is currently low on users (since it is going live just this semester). Social and professional networks have their appeal because of the userbase that any new user would be joining. That makes starting things up a bit more difficult.

The procedures must also take into account certain policies of the site, including the desire for strictly professional membership and the desired method for registering users. In order to ensure that the users really are professional educators, all users who register are "unverified".

The preferred registration method involves getting a list from a school of all the teachers, counselors, and administrators that the particular school employs. These are then added to the system automatically, and the users

added this way are "verified". Any existing users on the list provided by a school are also "verified".

Marketing procedures should focus on schools instead of individuals, in order to help ensure a more professional network.

2.2.5 Seed The System With SMILE Content

To some extent, Teacher Knowledge Share provides some measure of functional continuation of the SMILE Program[8], which ended in 2006. While the purpose of Teacher Knowledge Share is different, there is a commonality in the warehousing of lesson plans for access via the internet.

Since one of the main issues with starting a professional network is the lack of a network, it helps to be able to provide some level of content initially to seed the system. This content comes from the plans currently residing with the SMILE program.

The plans existing with the SMILE Program need to be collected, formatted and uploaded to the Teacher Knowledge Share website. It is also necessary to have a user account dedicated to the submission of lesson plans from the SMILE Program (for acknowledgement of authorship, among other reasons).

By doing this, the initial set of users will not be visiting an empty shell of a site. Having something there to attract users is a good point to start things out at.

Methodology

Division of Work 3.1

For the Spring 2009 semester, it was noted that a majority of the students on the Teacher Knowledge Share project were computer science majors. As such, it seemed almost like too much of a workforce for the project. The decision was made early on to split up into multiple teams, one of which would focus on Teacher Knowledge Share, while the other team would focus on assisting other IPROs. More details can be found in section 4.

The teams for the Spring 2009 semester were designed so that the work, when properly divided up, would logically flow into one group or another. As a result, the division of work, at the highest level, is based on teams. Beyond that, the work was divided up sometimes based on expertise, and sometimes based on nothing (in cases where multiple people could handle a task, and there was no logical argument either way).

The additional work that was taken on (for IPRO 328, Church Green) was primarily handled by the Church Green Development Team. The Teacher Knowledge Share coding work was handled by the Teacher Knowledge Share development team. The final team, Research & Development, was tasked with publications, research, graphics work, and the marketing strategy. In some cases, the most common being graphics tasks, work was brought to the Research & Development team by one of the other teams.

The gantt chart for the Spring 2009 semester is figure 3.1 on page 6. There are three distinct sections, corresponding to the three distinct teams. Also note that the unit of time used is the week.

The remaining work for the project is the management work. This includes things like planning meetings, organizing the teams, making certain decisions, coordinating the teams, keeping tasks on schedule, and so on. This work was handled by the managers for each development team and the general manager.

3.2 Changes

For the most part, the estimates for the Spring 2009 semester (as far as tasks and times are concerned) were fairly accurate. In any case of a task not getting completed, that was anticipated and/or expected.

The biggest change was an increase in ambition approximately $\frac{1}{3}$ of the way into the semester. The marketing strategy goal, and the definitive decision to go live with the site were both added on at around this time.

Tasks related to these new areas were also well estimated, and were completed for the most part as expected.

3.3 Research

Analyzing Inherited Data 3.3.1

In order to find an initial direction, the first research task for the Spring 2009 semester was to analyze the data from the research inherited from the Fall 2008 team. The reason for this is that the data described which features were desirable to the survey and focus group participants, and which were not.

After analyzing this data, it was determined that a number of things needed to be changed. These changes formed part of the Spring 2009 objectives.

3.3.2 Competition

Research into our potential competition was conducted for multiple reasons. The first was to see how much there was. The second reason was to figure out what the competition was doing right and/or wrong.

Teacher Knowledge Share can not claim to be better than the competition without knowing anything about the competition. This information helped verify some of the objectives for the Spring 2009 semester.

The data can be found in appendix D.1

3.3.3 State of the Education System

Research was conducted to gather some facts about the education system. The value in this case is data that can support marketing operations in the future. To some extent, this research affected the marketing strategy.

Another result of the research was the revelation of a new reason to use Teacher Knowledge Share. In addition to being busy, teachers sometimes teach subjects that they are not used to or trained in, usually by necessity.

The data can be found in appendix D.2

3.3.4 Aesthetics

The aesthetics research was conducted because the team wanted to get a feel for good and bad ideas, as well as $_{5}$ color schemes, and layout reasoning before making heavy

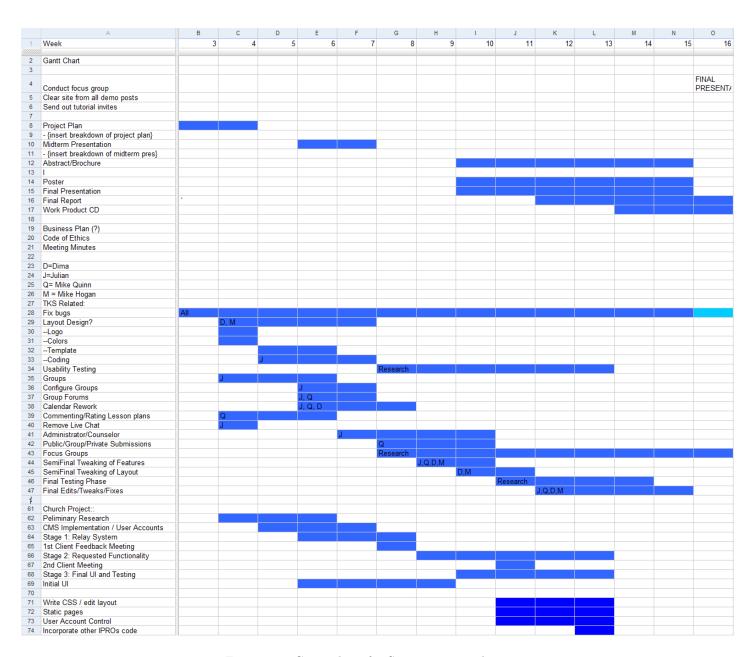


Figure 3.1: Gantt chart for Spring 2009 work

modifications to the site that was inherited from the Fall 2008 team.

The website, as of this report, does reflect concepts covered by this research. The layout and color scheme, as well as a number of other factors were changed.

The data can be found in appendix D.3

3.3.5 Focus Group

The focus group conducted during the Spring 2009 [7] had multiple purposes, and had a decent amount of planning involved. The first purpose was to determine whether or not the Teacher Knowledge Share concept was desired on a high enough level to warrent continuing the project.

The focus group also involved the features of the site. Information was gathered about desirability of certain features, as well as some basic usability data about them.

The last benefit of the focus group was the fact that, at the end, a number of teachers were registered for the site, and had been exposed to it enough to get a taste.

The data can be found in appendix D.4

3.3.6 Usability Study

One of the objectives of the Spring 2009 team was to take the site live. Going live with major usability issues would not be wise, and can ruin a reputation before it can even be built.

After the basic usability data was gathered from the focus group, the site was put through more formal usability testing. This testing could then provide information about the state of the site.

Due to time constraints, the usability study was not heavily pursued. Only 2 people participated by the end of the Spring 2009 semester, and the late timing left little time to act on the data. For the most part, though, there was nothing so major as to prevent the site from going live.

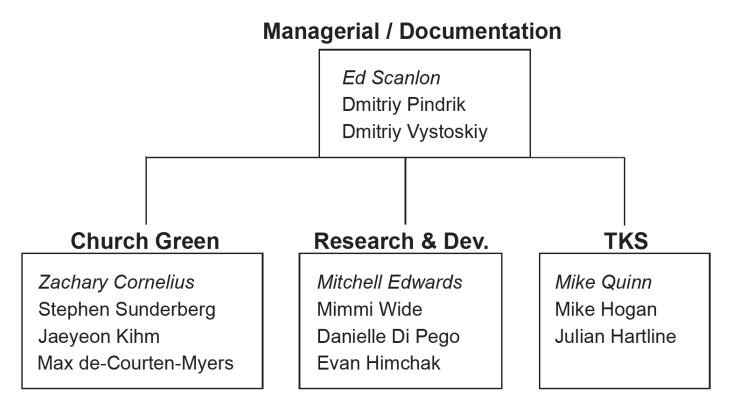


Figure 3.2: Work breakdown structure for Spring 2009

Team Structure & Assignments

4.1 Team Structure

In *Division of Work* (section 3.1), the work breakdown structure can be found. The structure of the team is also visible in the work breakdown structure.

Because of the desire for multiple unrelated projects to be ongoing at the same time, it made sense to attempt to differentiate the projects as much as possible. Each project became a development team.

There were a total of 2 development teams. One team worked on the Church Green site, which was completed for IPRO 328[9]. The other development team handled the coding for the Teacher Knowledge Share project.

In addition to that, there was a third team by the name of Research & Development. This team performed the vast majority of all research conducted this semester, and also worked to develop a number of graphics, presentations, and the marketing strategy.

The last team is not really a team, so much as a formality surrounding three people. It is listed in the work breakdown structure as Managerial/Documentation. This group included the General Manager, who was responsible for the entire Spring 2009 team, as well as two Project Managers. Each Project Manager was part of one of the development teams.

Included in the responsibilities for the Mangerial team were tasks like planning meetings (in class meetings and informal weekend meetings), tracking progress, ensuring balanced division of work among team members, and for the Project Managers, speaking for their individual teams.

4.2 Changes

For the Spring 2009 semester, there were no changes made to the team structure at any point. The system, which is based on standard corporate models, is very sound, and functioned perfectly.

This system helped avoid a number of potential problems faced by other teams, and as such, any change would have to have substantial reasoning behind it to be justified

4.3 Contributions

4.3.1 Ed Scanlon

Title

General Manager Responsible for the entire Spring 2009 team, and the fate of all work being done

Work Completed

Ed was responsible for the planning of every Tuesday and Thursday meeting, as well as tracking progress of the entire team. He was also responsible for making decisions such as communications protocols, team structure, and some of the semester goals.

Other tasks completed include:

- Monitoring external discussion board
- Uploading agendas to iGroups
- Final compilation/editing of the Project Plan
- Advising Church Green Development Team on database design
- Substantial work on the final presentation
- Searching for information about organizations that had awarded the SMILE site
- Most of the writing, compilation, and editing of the final report

4.3.2 Dmitriy Pindrik

Title

Project Manager - Teacher Knowledge Share Development Team Dmitriy was responsible for the Teacher Knowledge Share Development Team, and its progress. He also was responsible for the informal weekend meetings.

Work Completed

- Teacher Knowledge Share segment of the gantt chart
- Gathering inherited research data
- Meeting with Usability Lab specialist to set up the usability study
- TKS concept art

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- IRB for usability testing
- Midterm presentation work
- Creating questions for focus group
- Preparing survey material for focus group
- Analysis of focus group data
- Writing for the final report
- Creating the usability survey
- Running the usability testing
- Rework of the final presentation

4.3.3 Dmitriy Vysotskiy

Title

Project Manager - Church Green Development Team Dmitriy was responsible for the Church Green Development Team, and its progress. He also was responsible for the informal weekend meetings.

Work Completed

- Church Green segment of the Gantt chart
- Writing for the project plan
- Meeting with IPRO 328 members
- Layout & CSS for Church Green website
- Slideshow feature for Church Green website
- Writing for the final presentation

4.3.4 Mitchell Edwards

Title

Team Manager - Research & Development Mitch was responsible for the Research & Development Team and its progress, as well as obtaining and handling requests from the development teams. He was also responsible for the informal weekend meetings.

Work Completed

- Meeting with members of IPRO 328
- R&D task list
- Briefing on inherited research data
- Involved in creation of midterm presentation
- Some work on brochure
- Contacting IIT Office of Community Outreach

- Involved in presentation for the focus group
- Involved in creation of poster
- Writing for final report

4.3.5 Michael Quinn

Title

Development Head - Teacher Knowledge Share Development Heads share responsibility with the Project Managers.

Minute Taker Responsible for meeting minutes for Tuesday and Thursday meetings

Server Administrator Responsible for administration of the Teacher Knowledge Share server

Work Completed

- Budget
- Writing objectives for Teacher Knowledge Share site
- Work on lesson plan rating system
- Work on external discussion boards
- Setting up subdomain for Church Green Development Team to use
- Work on Top Contributors module
- FTP setup for Church Green
- Random lesson plan algorithm
- Proofreading of all deliverables/documents
- User creation script
- Verified/unverified user roles
- Work on front page of website
- Work on lesson plan pages of website
- VIP user role
- Work on notifications system
- Testing and bug fixes
- Database setup for Church Green
- IPRO Day scheduling
- Recommendations document
- TKS dump for work product CD

4.3.6 Zachary Cornelius

Title

Development Head - Church Green Development Heads share responsibility with the Project Managers

Work Completed

- Researching Church Green data acquisition units
- Work on server for Church Green project
- CakePHP installation
- Work on database for Church Green project
- CSV file processing script
- Bug fixes for Church Green project
- Site forms for Church Green project
- General touchups to Church Green website

4.3.7 Julian Hartline

Work Completed

- Work on external discussion boards
- Work on inherited survey data
- Bug fixes and minor modifications to Teacher Knowledge Share site
- Work on Groups system
- Work on Featured module
- Teacher Knowledge Share website layout work
- CSS bug fixes
- Documenting Drupal modules
- "Jumpstart" slide show for next semester's team

4.3.8 Michael Hogan

Work Completed

- Writing for project plan
- Writing for midterm presentation
- Importing SMILE lesson plans to Teacher Knowledge Share website
- Reviewing poster
- Reviewing final presentation
- Assistance with brochure printing
- Compiling contact list for future semesters

4.3.9 Jaeyeon Kihm

Work Completed

- Analyzing bug tracking tools
- Investigating SMILE lesson plans
- Importing SMILE lesson plans to Teacher Knowledge Share website
- Work on static website for School Green
- Putting Google Maps[10] on Church Green website

4.3.10 Maximilian De Courten-Myers

Work Completed

- Some work with CakePHP
- Work on user account control system for Church Green
- \bullet Work on MySQL[11] database design for Church Green
- Delegation of SMILE lesson plans for importing to Teacher Knowledge Share website
- MySQL database creation
- Work on incoming data script for Church Green

4.3.11 Stephen Sunderberg

Work Completed

- Writing for project plan
- Work with CakePHP
- Work on user account control system for Church Green
- Importing SMILE lesson plans to Teacher Knowledge Share site
- Color sets for Church Green website
- Work on School Green website CD
- Assistance with brochure printing

4.3.12 Danielle Dipego

Work Completed

- Work with inherited research data
- Contacting professor and some students for focus group
- Preparing brief for focus group
- Work on midterm presentation
- Confirming dates and times for focus group
- Work on focus group presentation
- Work on Church Green logo
- Work on poster

4.3.13 Evan Himchak

Work Completed

- Writing for project plan
- Analysis of inherited research data
- Ethics presentation
- Market research for continuing education, home school, rural schools
- Write-up of market research
- Researching teacher data

4.3.14 Mimmi Wide

Work Completed

- Analysis of inherited research data
- Color research
- Competition research
- Work on midterm presentation
- Creation of brochure
- Church Green logo
- Poster

Budget

5.1 Planned Budget

Budget						
Category	Amount	Description				
Web Hosting \$150		Hosting for the Teacher Knowledge Share site				
Printing	\$80	For miscellaneous printing costs throughout the semester				
Research Compensation \$400		To purchase items with which research				
		participants may be compensated				
Travel \$100		For travel costs involved in performing research				
Total	\$730					

5.2 Expenditures

	Cost							
Category	Amount	Description						
Web Hosting	\$135.50	Hosting for the Teacher Knowledge Share site						
Research Compensation \$10.00		Compensation for usability testers						
Total	\$145.50							

Code of Ethics

6.1 Main Principle

To develop an online professional networking website for the purpose of improving the day to day lives of teachers.

6.2 Canons

6.2.1 Copyrights

Canon

Copyrights exist for the purpose of encouraging innovation, and as such, must be respected.

Pressure

- Desire for content
- Desire to please users (and thereby allow submission of copyrighted material)

Risk

• Copyright violations are taken very seriously. The entire project is at risk if willing violations occur.

6.2.2 Working With Existing Agreements

Canon

Existing agreements are binding, and the customer is valued. Breaking agreements should never be necessary.

Pressure

- Desire to update website (features)
- Need to implement changes (ie. change in some law that affects the site)

Risk

• Changes that occur may change a situation such that existing terms of use, privacy agreements, and the like might be violated.

6.2.3 Quality

Canon

As a project dedicated to an application, quality is an important virute that should be adhered to.

Pressure

- Time constraints discourage testing
- Time constraints also discourage bug fixes

\mathbf{Risk}

• A low quality product is a sign of a low quality team. Should things go downhill, the likelyhood of success for the project goes down massively.

6.2.4 User Privacy

Canon

Users of interactive, account creating websites trust that certain information, when stored, will be secure. It is the responsibility of anyone who collects such information to be prepared to secure it.

Pressure

 Modifying the system is harder than just using user emails for user names.

Risk

- Users may feel insecure about public display of emails and avoid the site as a result.
- Emails displayed publicly can result in unsavory behavior (spamming, stalking, etc).

6.2.5 User Copyrights

Canon

For a site that specializes in uploading and sharing of user generated content, it is important to ensure the protection of the users' copyrights over their material.

Pressure

- Sharing content with 3rd parties can help publicize the site.
- Additional future features may use user generated content in new and unanticipated ways.

\mathbf{Risk}

- If users' ownership over their own content is not respected, many will avoid making it available.
- Allowing copyright violations (as in 3rd party use of content stored on the site) is "enabling", and is illegal.

Results

Research Findings 7.1

7.1.1 Analyzing Inherited Data

The data inherited from the Fall 2008 semester of Teacher Knowledge Share was mostly from a focus group and surveys asking about the desirability of the site as a whole, as well as specific features.

From this research, the conclusions brought out were that the calendar feature of the site (an event planner, effectively) was very much not desired. This research also made it clear that teachers want their professional network to be strictly professional.

As far as the proejct as a whole is concerned, the data suggested that the Teacher Knowledge Share project is desired. Teachers do like the idea of a tool like this.

7.1.2Competition

In attempting to identify and study the competition, it was determined that the competition is very limited.

Existing sites have a number of problems, including ads, clutter, poor organization, and usability issues. Most of the existing sites have very limited userbases. The competition just doesn't seem to "get it".

In addition, most of the major players tend to be local, so they only cover their general area. Teacher Knowledge Share is not limited by location. We can, however, still leverage our location, since there is no major market presence in the Midwest by any competitor.

State of Education System 7.1.3

The research into the state of the education system was mainly aimed at getting a feel for the way things are set up. It did reveal some potentially useful information,

In public and private schools, approximately half of the teachers are math and science teachers. In rural schools and home school situations, the number changes. Home school teachers are almost all math and science teachers (since one person tends to teach everything). In simply improving the site.

the case of rural schools, the number of math and science teachers drops a bit below half.

This information suggests that home school and rural school teachers are more likely to have the needs that would bring them to the Teacher Knowledge Share site.

7.1.4 Aesthetics

The aesthetics research was aimed at getting the entire team familiar with some basic color and layout principals, especially pertaining to websites. The details can be seen in appendix D.3.

The basic result of this research is its use by various members in the work that was done on both the Teacher Knowledge Share and Church Green sites.

7.1.5Focus Group

As was mentioned earlier, the focus group for Spring 2009 has multiple purposes. One purpose was to re-affirm the results from the inherited survey data, which showed the desirability of the site. The group did, in fact, affirm that the site is desired, and also that the features are in line with what they would be looking for.

Additionally, the focus group allowed for the collection of some basic usability data. This data identified minor problems with the site, but nothing major came up.

Finally, the focus group included registering the participants. Not only were users added to the site, but real teachers have been given a taste of the system. This serves as a form of marketing.

7.2Accomplishments

There are four things that the Spring 2009 team considers to be major accomplishments. The first is a long list of improvements that have been made to the site. These include color changes, layout changes, functional changes, bug fixes, content uploading, and a fair deal more.

The second major accomplishment is the focus group. This was essential to both re-affirm the validity of the Teacher Knowledge Share concept, and also to ensure that the Spring 2009 semester was on the right track.

The third accomplishment is the marketing strategy developed this semester. Due to time constraints, this strategy has not been put to action, but it will be left for future semesters as part of the recommendations of the Spring 2009 team.

The fourth accomplishment is probably the most major. The Teacher Knowledge Share site is live and ready for marketing. While it is hardly perfect, no application is. There is no major project that can be formed around

7.3 Objectives

7.3.1 Completed

The tasks completed for the Teacher Knowledge Share project are:

- \approx 120 lesson plans uploaded
- Discussions with the IIT Office of Community Outreach
- Usability study approved, 2 studies performed
- Website modifications:
 - Aesthetics, usability & functionality
 - Top Contributors system
 - Groups system
 - Ratings system
 - Focus group
 - Marketing strategy
- The website created for IPRO 328, Church Green meets requirements

7.3.2 Remaining

- The site is not perfect (no application is)
- IPRO featured accounts never happened, due to no response from other IPROs
- The marketing strategy was never put to use

7.4 Ethical Issues

For the Spring 2009 semester, no major ethical issues came up at any point in time. The only issues that needed to be considered are those covered in section 1.5.

The issues mentioned in that section were discussed and considered, but no issues actually appeared during the course of development.

Obstacles

Obstacles Encountered 8.1

As with any project, the Teacher Knowledge Share project did encounter some obstacles during development and research. Two general obstacles were the possibilty that teachers could reject the concept and the potential for the education system to be a barrier to marketing.

Among the more specific obstacles was the difficulty of setting up the focus group. There were a lot of details that had to be covered, in addition to getting permission and having a study to perform.

Another obstacle was the task of importing SMILE lesson plans. The sheer volume of lesson plans contained in the SMILE database is large enough to present quite a challenge.

In addition to the difficulties of setting the focus group up, the team also encountered the problem of server performance issues during the focus group itself. When registering many users at once, the server went down for a short time.

The final and most major obstacle is the need to jumpstart the professional network. Professional and social networks tend to be popular because when a site has a large userbase, new users are constantly attracted to the community. The difficulty arises when a new site wants to build itself up to that point. There is no community initially to attract new users.

Solutions 8.2

The amount of SMILE lesson plans and the difficulty of setting up the focus group were not issues that needed solutions. They were simply difficulties that were encoun-

The solution to the potential marketing barrier that the education system could become was to contact the Office of Community Outreach. Through this office, schools could be contacted.

The solution for the server issues comes from two parts. The first part of the problem was the existence of the Church Green development project on the same 18

server. The other issue is simply the hardware that the server runs on. This semester, no measures were taken to improve the server.

Finally, in order to jump-start the professional network, the team imported lesson plans from the SMILE program. These provide a foundation, and also a level of content that could hopefully attract users.

Prevention 8.3

Obviously, the server issues could easily be prevented by solving the problem. As mentioned, no action has been taken to change the type of server used, or to move to any different kind of hosting plan.

The rest of the issues that have come up are just part of the project. While difficult, prevention doesn't make sense, since some are expected to occur on the path that the project should follow.

Remaining Obstacles 8.4

The biggest thing that remains at this time is the need to market the site. With a strategy developed, the next course of action is to carry it out. Getting a community of people actually using the site would be a major goal for the future.

As far as the site is concerned, other than fixing bugs and such, the most major thing that can be done from here is to improve the search. Make it easier to find things. Some brainstorming has gone on to partly determine potential solutions. These solutions involve somewhat complex artificial intelligence, and as such, would be quite a challenge to implement.

Recommendations

9.1 Marketing

Over and over again, the most important thing that can be done from this point on is to market the Teacher Knowledge Share site. Now that the site is live and market ready, it is very important to do. A fully functional site without any users is, after enough time, simply a failure.

9.2 Website

9.2.1 SMILE Lesson Plans

There may be more SMILE data that could be uploaded to the Teacher Knowledge Share website. Doing so would increase the content pool that can be used to attract early adapters.

9.2.2 SMILE Link

The SMILE site, though the program has been inactive for a few years, continues to recieve traffic. As such, linking to the Teacher Knowledge Share site would provide a convenient amount of free advertising.

9.2.3 Cooperation With Other IPROs

It was the desire of the Spring 2009 team to have "featured accounts" to which other IPROs would post. These other IPROs create education related content, which is usually in the form of lesson plans. As such, it makes too much sense to avoid the issue.

Something like this also provides a nice source of content that is likely to be fairly high quality.

9.2.4 Event Announcement System

The concept of announcing and scheduling/planning events through the Teacher Knowledge Share site has been brought up multiple times. Older systems that did not perform this task well have been removed.

A new system for something like this needs to be obvious, while out of the way, and needs to be legitimately useful as a way to get the word out about events.

9.2.5 Pre-Defined Meta Fields

When uploading lesson plans, users can include meta fiels (tags) as they see fit. A useful feature would be to modify the upload form to expect the user to fill in a text box for data like "author", "title", "subject", and "grade level". This ensures that uploaded plans have, to some extent, the ability to be found.

9.3 Branding

9.3.1 The IIT Name

It has been suggested that the Teacher Knowledge Share site should connect with the IIT brand. This would be a great source of advertisement and publicity.

9.3.2 Funding

Connecting with IIT would also make the project something that IIT could consider investing in. This could potentially ensure that the site remains funded.

9.4 Searching

9.4.1 Tag Elimination Browsing

The idea of tag elimination browsing is fairly simple. When a user searches based on some word, that word is matched with existing tags. Then, it should be possible to list all tags (or some kind of "most common" set of tags) that are commonly applied to lesson plans that are also tagged with the search term.

Clicking any of these other tags should provide a list of items with the original tag and the new tag both, and a list of tags that apply to this set (which should continually get smaller).

This is a very effective way of finding things in large collections.

9.4.2 Tag Relevance Mapping

Tag Relevance Mapping is the idea that if multiple tags commonly appear together (math and algebra for example), then a search for one may accept results containing the other as somewhat relevant.

Appendix A

References

A.1 SMILE

The SMILE website is hosted at the Illinois Institute of Technology, and can be found at the URL http://www.iit.edu/~smile. This program is no longer active.

The lesson plans used to seed the Teacher Knowledge Share site were obtained from the SMILE program.

A.2 IIT Office of Community Outreach

The Office of Community Outreach is the jumping off point for marketing the Teacher Knowledge Share site. While things started to happen during the Spring 2009 semester, no real marketing was able to occur.

A.3 IIT Usability Lab

Usability testing occurred at the IIT Usability Lab. This is research that should be continued.

Appendix B

Resources

B.1 Time

Hours							
Name	Hours						
Evan Himchak	35.5						
Jaeyeon Kihm	37.0						
Mimi Wide	39.8						
Dmitriy Pindrik	44.4						
Michael Quinn	66.2						
Danielle Dipego	39.6						
Zachary Cornelius	36.0						
Maximilian De Courten-Myers	36.7						
Julian Hartline	37.0						
Michael Hogan	21.0						
Stephen Sundberh	23.4						
Dmitriy Vysotskiy	29.5						
Mitchell Edwards	42.6						
Edward Scanlon	74.2						

B.2 Money

This is the same table as the one in chapter 5.

Cost							
Category	Amount	Description					
Web Hosting	\$135.50	Hosting for the Teacher Knowledge Share site					
Research Compensation	\$10.00	Compensation for usability testers					
Total	\$145.50						

Appendix C

Acknowledgements

The Team

General Manager Ed Scanlon

TKS Project Manager Dmitriy Pindrik Church Green Project Manager Dmitriy Vysotsk

Church Green Project Manager Dmitriy Vysotskiy R&D Manager Mitchell Edwards

TKS Development Head Michael Quinn Church Green Development Head Zachary Cornelius

TKS Team Julian Hartline

Michael Hogan

Church Green Team Jaeyeon Kihm

Max De Courten-Myers Stephen Sundberg

Research & Development Danielle Dipego

Evan Himchak Mimmi Wide

The Professors

Professors Dr. Gordon Gehrs

Prof. Jim Braband

Other Assistance

Future TKS Strategy Audrey Galo

Focus Group Dr. Fluet

Students of MSED550 $\,$

Marketing Assistance IIT Office of Community Outreach

Considerable content provided by \quad SMILE Program

IIT Usability Contact Anica Jovanova

Technologies

TKS Content Management System Drupal

Church Green PHP Framework CakePHP

Database MySQL

Scripting Language PHP

Document Warehousing Google Docs

Discussion Boards PHP**bb**

Appendix D

Research Documents

D.1 Competition Research

TEACHNET

WWW.TEACHNET.COM

- better design that Teachers Network, more clean, but not as nice as Teachade
- no registration, no members
- more basic idea
- less focused at teaching and class time, more ideas for everything that surrounds it
- special updates on ideas for holidays, valentine's day for example

features:

- lesson plans
- "power tools", how-to's in regard to organization, classroom decor, end-of-year, employment, entertainment etc.
- forums for various topics
- upload of everything from jokes to lesson plans

TEACHERS NETWORK

WWW.TEACHERSNETWORK.ORG

- not as aesthetically pleasing or professional looking as Teachade
- not as much of an online community, not as much personal contact, more of a database of resources and links
- based in new york city, certain features specifically aimed towards NYC teachers, is this something we have in mind for Chicago?
- can be used both by individual teachers and school districts
- no registration necessary
- overall seems to have a broader idea than TKS

features:

- lesson plans
- grants
- online courses developed by Teachers Network, some are pretty basic e.g. "How to use internet in your classroom"
- links to other resources such as museums, journals etc.
- links to podcasts
- certain features specifically aimed at new teachers
- "How to", not only related strictly to teaching but also inregards of organization etc.
- "What's new" featuring recently added groups, lesson plans etc.

TEACHNET

WWW.TEACHNET.COM

- better design that Teachers Network, more clean, but not as nice as Teachade
- no registration, no members
- more basic idea
- less focused at teaching and class time, more ideas for everything that surrounds it
- special updates on ideas for holidays, valentine's day for example

features:

- lesson plans
- "power tools", how-to's in regard to organization, classroom decor, end-of-year, employment, entertainment etc.
- forums for various topics
- upload of everything from jokes to lesson plans

D.2 State of Education System Research

Teacher Totals

CPS Teachers: 23,727

CPS data: http://www.cps.edu/About CPS/At-a-glance/Pages/Stats%20and%20facts.aspx

Chicago Archdioceses teachers: 6,589 Teachers

The total number of students in the Catholic School System was multiplied by the US public school student:teacher ratio for schools 200-399 in a city since that is about the size and location of most of the Catholic schools. (96197students/14.6 ratio)

http://nces.ed.gov/pubs2007/ruraled/tables/table3 6.asp

US Teachers: 3,240,000

Home School "Teachers": 1.1 million kids*teacher1.2 kids=920,000 teachers

According to the US census data there are an average of 3.2 people per family home which means there is approximately 1.2 kids per household or approximately 1.2 kids/home school teacher.

Rural Teachers: 739.000

More data can be found at this link or in the Research document posted on igroups.

http://nces.ed.gov/pubs2007/ruraled/tables/table3_7.asp

Math and Science Teachers

CPS: CPS Total[%elementary%MnS+%General+%Secondary%MnS=

23,727.553.008+.663+.447.27= 11,666 Teachers

Percentages were taken from the US city teacher data as an estimate for Chicago.

Chicago Archdioceses: diocesese teachers[%elementary%MnS+%General+%Secondary %MnS=

6589.553.008+.663+.447.27=3240 Teachers

The same percentages were used as the ones from CPS.

US: 1,545,914 Teachers

Home School: Assumed to be 100% @ 920,000 Teachers

Rural: Elementary MnS+Secondary MnS=

Total% elementary% MnS+%General+ total% secondary%MnS= total[%elementary%MnS+%General+%Secondary%MnS]= 739,000.487.022+656+.513.25=339,000 teachers

Chart of all the Final Data

Chart of all the Final L	Jata	
	Total	Math and Science
CPS	23,727	11,666
Archdioceses	6589	3240
US	3,240,000	1,545,914
Home School	920,000	920,000
Rural	739,000	339,000

D.3 Aesthetics Research

COLOR / LAYOUT

overwhelming

COLOR / LAYOUT



stability

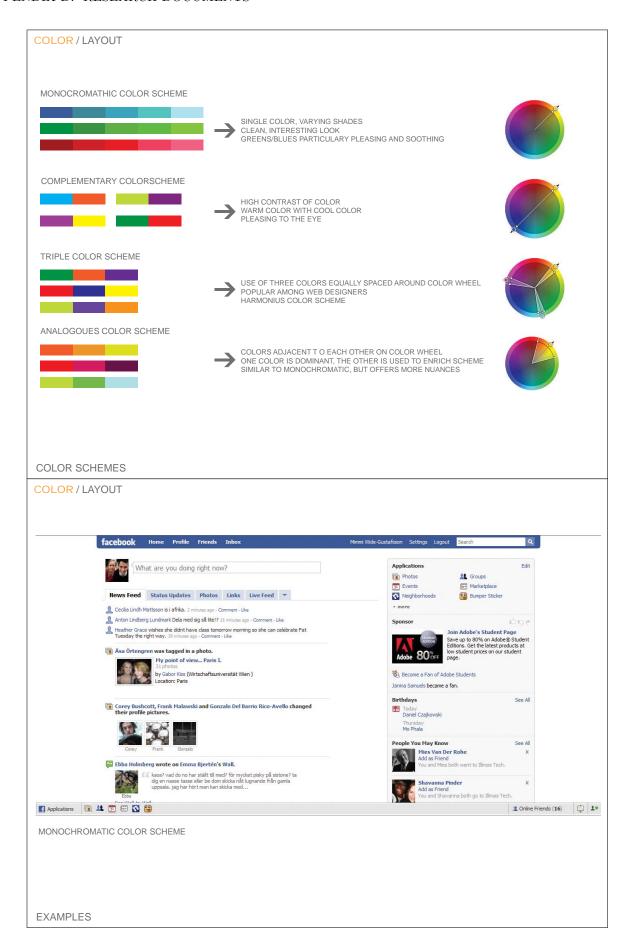


practical feeling nothing solid timeless

excitment attention effective energy love catches the eye

COLOR PSYCHOLOGY





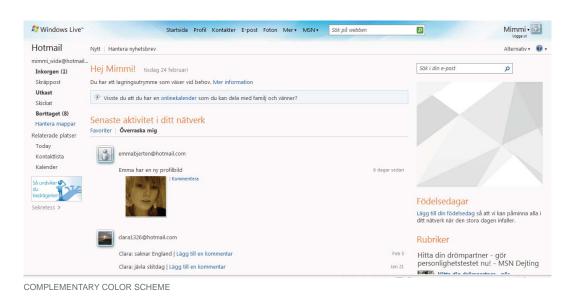




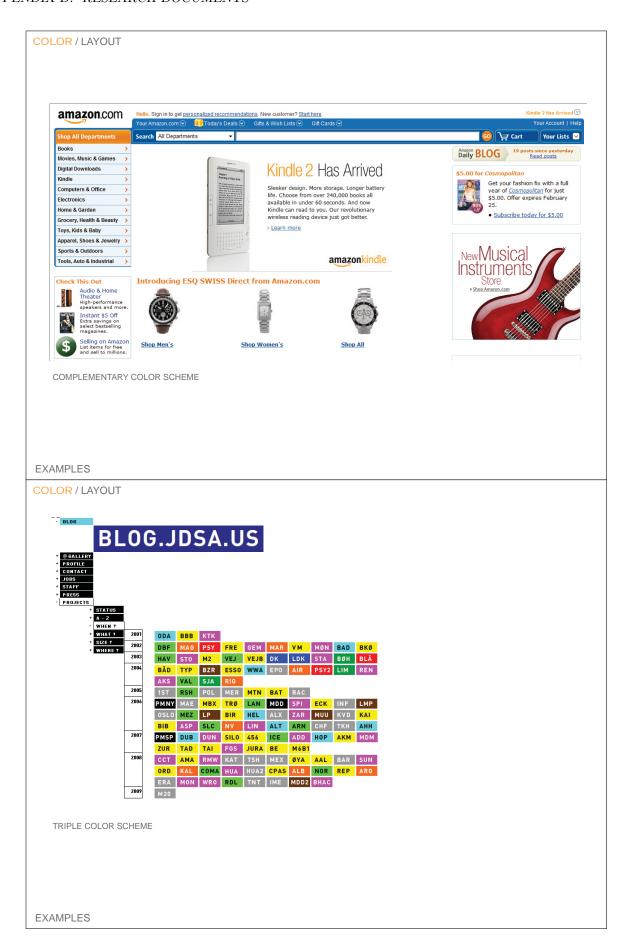
MONOCROMATHIC COLOR SCHEME

EXAMPLES

COLOR / LAYOUT



EXAMPLES



COLOR / LAYOUT

WHY IS COLOR IMPORTANT?

.COLOR IS THE FIRST THING REGISTERED BY PERSON VISITING WEBSITE

.IF THE COLOR IS DISPLEASING YOU MAY LOSE THAT PERSON INSTANTLY

.IF THE WRONG COLOR IS CHOOSEN IT MIGHT CONVEY THE WRONG MESSAGE

.COLOR DO AFFECT THE MOOD OF THE VIEWERS

IMPORTANCE

COLOR / LAYOUT



COLOR / LAYOUT

FACEBOOK AND MYSPACE - THE TWO LEADING ONLINE NETWORKING SITES

SIMILAR IDEAS IN REGARD TO LAYOUT/COLOR SCHEME DIFFERENT DEGREE OF SUCCESS IN THIS AREA

FACEBOOK



VERY CLEAN AND SIMPLE GOOD DESIGN EASY TO READ

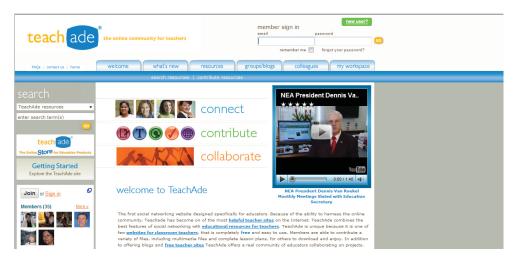
MYSPACE



TOO MESSY HARD TO READ TOO MANY ADVERTISMENTS

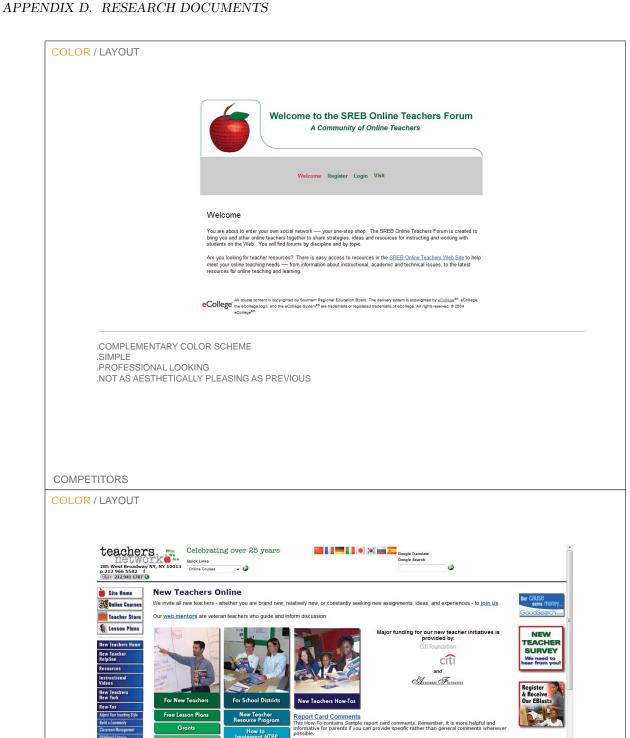
LAYOUT

COLOR / LAYOUT



COMPLEMENTARY COLOR SCHEME "TYPICAL" LAYOUT OF FUNCTIONS .PROFESSIONAL LOOKING .AESTHETICALLY PLEASING

COMPETITORS



.MONOCHROMATIC/ANALOGOUES COLOR SCHEME

How to Implement NTRP

New Teacher Resource Program—NYC

For New Teachers

.TOO BUSY

LOOKS MESSY, NOT AS PROFESSIONAL .NOT AESTHETICALLY PLEASING AT ALL .DESIGN NEEDS TO BE MORE UNIFORM

COMPETITORS



HOW CAN WE IMPROVE TKS?

IN TERMS OF COLOR:



INTEGRATING A COMPLIMENTARY COLOR TO THE STRICT MONOCHROMATIC SCHEME MAY ADD A MORE INTERESTING TOUCH TO THE SITE AND DRAW MORE ATTENTION

COLORS SUCH AS BLUE, GREEN AND GREY TEND TO NOT BECOME OVERPOWERING AND SHADES OF THESE SHOULD THEREFORE BE USED AS THE MAIN COLOR

THE BACKGROUND SHOULD STAY WHITE

CONCLUSIONS / SUGGESTIONS

D.4 Focus Group

Usability Survey Results (12 Total Surveys)

How easy is it to sign up and log in?

How easy is it to join a group?

How easy is it to comment/rate a lesson plan?

Do you use calendar software such as Outlook or Google Calendar?

Would you like Google Calendar to be integrated into our site?

Would you post your own lesson plans?

How appealing is the apperance of our site?

How likely would you be to use this site in the future?

General Interest Results (12 Total Surveys)

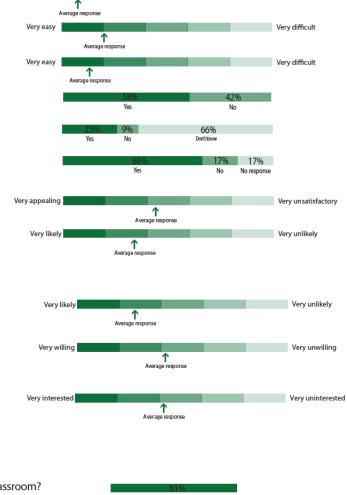
How likely are you to utilize content from this site in your classes?

Would you be willing to upload lesson plans created by you to the site and share them with other registered teachers?

Would you be interested in collaborating with other teachers to jointly develop a new lesson plan or classroom activity?

What is the relative importance of the following stated purposes of the TKS site from your personal perspective as a potential user?

- a) Access to classroom-tested lesson plans and activites for use in my classroom?
- b) Ability to share best practices and teaching issues with fellow teachers through forums/discussion boards?



Bibliography

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- [6] Drupal is a registered trademark of Dries Buytaert
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