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Department of Computer Science and Software Engineering**

**Proposal Report
Phase 1**

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A report submitted in partial fulfillment of the requirements of SOEN 342.

Concordia University

October 2022

TABLE OF CONTENTS

1.	ABSTRACT.....	2
2.	PART 1: Market Analysis.....	2
2.1.	Succès Scolaire comparative study.....	2
2.2.	Tutorax comparative study	3
2.3.	Tutorat Pro comparative study.....	3
3.	PART II: E-Academy Presentation.....	4
3.1.	Proposed work.....	4
3.2.	OG features:.....	4
3.3.	Additional features.....	6
3.4.	What the platform offers and how is it different from the existing products.....	7
3.5.	Elicitation Technique #1: Brainstorming.....	8
3.6.	Elicitation technique #2 - Background study.....	10
4.	REFERENCES.....	13

ABSTRACT

E-Academy is an integral part of online tutoring. There are many web-based tutoring systems that are widely available nowadays, but our challenge is to easily integrate the system into a smart educational tutoring system where student and tutor will get necessary support based on the requirements of the users. These services rely on a web-based system that allows access to all materials of the educational process and make them electronically available on the Internet to all students and tutors. The design of the system is a critical part of the educational process as it reflects its use. In this paper, the design of an e-academy system is described in which different techniques are explored and compared. Moreover, the designed system provides a way for students, tutors and parents to access various functions, such as one-on-one meetings with tutors and checking on student progress to improve the learning process once registered.

PART I: Market Analysis

- **Succès Scolaire comparative study**

Succes Scolaire [1] is a bilingual multipage website that has both a virtual school platform, offering online classes, and a tutoring platform, offering extra tutoring sessions. In both cases, and with a few exceptions given the wide array of services, this website targets elementary and high school students as well as their parents. Tutors are also continually encouraged to apply via a three-step process explained on the tutoring platform.

The main features of Succes Scolaire are extensive, but standard in the sense of normal, expected, without any exceptionally innovative narrative in regards to mission, pedagogy, or presentation of services. For instance, the price bracket is around 43\$ to 50\$ which is comparatively decent.

On the School Success Academy platform, there is a valuable and personalized paying portal option, accessible via registration and login buttons. The registration button leads to a form to be completed mostly by the parent. Services are differentiated by sessions (summer, fall and winter), subjects (miscellaneous but typical for the targeted age groups) and more technical course options such as online or individual courses, etc.

The tutoring platform acts a bit like a mirror to the first platform, except that an emphasis is placed on the recruiting of tutors as well as the attribution of tutors, via 2 very visible buttons

on the top right-hand side of its home page. The services are differentiated by types (including a branch for athlete students), by subjects, by city and by online options.

- **Tutorax comparative study**

Tutorax [3] is a website designed to request tutoring services. The main features behind the website are multiple pages informing the user about the tutoring service, an application form to request becoming a student, and an application form for a user to request a tutor. First, the information page displays all the necessary information about the tutoring service that will be given to any student such as the topics offered by the tutors, the company policy that applies to students and tutors, the fee associated with the tutoring, and a user review section. The fee for the tutoring services depends on the school level of the student and if the tutoring is done remotely or in-person. The fee associated with remote tutoring is 39\$/h and is independent of the student level, The fee for in person tutoring varies with the student education level: 45\$/h for elementary and high school tutoring ,and 47\$/h for in person cegeg and university level tutoring.

Second, the application form to become a tutor features a simple form that requires the tutor's address, name, contact information , last school report and the tutor resume. In addition, the page also displays the information regarding the acceptance criteria, rules to be respected and a brief description of the position.

Finally the last form is used by a user to fill in the details such as name, contact information, address, topic , study level required and a brief message about the student's difficulties.

- **Tutorat Pro comparative study**

Tutorat Pro is a platform that students of all levels of education can use to request tutoring help in french. The website initially prompts the student in need to enter their name, education level as well as their contact information so that a professional can contact them and assign them a tutor suitable for their needs.

The services are flexible, meaning that they offer private and group tutoring with the option of being remote or online. This allows the student to get the help they require based on their separate needs with different price point possibilities. Indeed, on the website's "prix et forfaits" page, it is mentioned that their services start from 35\$/hour, which is less than their competitors, offering an average between 40\$ and 60\$.

Furthermore, Tutorat Pro also offers some free resources for students to help them in their studies, such as an Academy, a help center page and a blog for students. Finally, if interested, people can easily apply on the website to become a tutor of their own.

PART II: E-Academy Presentation

Proposed Work:

Our system is a web-based tutoring company that allows students of all ages to get help in various school subjects. For a subscription fee paid every month, a student can have access to 1 on 1 tutoring with an instructor that is amply qualified or will be able to join a group of students that are working together on the same milestones.

OG Features:

- ***Guests***

- 1) Fill and submit a form to request to become a student.
- 2) Fill and submit a form to request an interview to become a tutor.
- 3) Fill and submit a form to request being a parent in the system linked to a student account.
- 4) Access general informations sections.

- ***Students***

- 1) Archive section containing useful information (videos, notes) related to the students class; videos made by our tutors and teachers.
- 2) Upload/download document or video from the archive section.
- 3) Students will have access to a calendar where they can see their upcoming meetings.
- 4) Meetings with tutors upon registration students will be able to select or request time slots for tutoring sessions.
- 5) A feature for students to choose their education level (elementary, secondary, college, university). Given their education level, the system can pair them up with the appropriate tutors. Some tutors work better with kids than others.
- 6) Different types of tutoring options for the student. It can be Private (one-on-one) tutoring or group tutoring where the price for private tutoring will cost more. There are also in-person tutoring or remote (virtual) tutoring.
- 7) Shared board access

- ***Parents***

- 1) A built-in mail section where parents can communicate with their children's tutors, and view the message sent by the tutors.

- ***Tutors***

- 1) Tutors will have the ability to input/choose their time slot for tutoring in a calendar-like view.
- 2) Upload/download document or video from the archive section.
- 3) Tutors will be able to post useful notes and videos to aid the student in their respective field of study or related subject.
- 4) Tutors can receive messages from students on what questions they might have so that tutors can be better prepared once the session arrives.
- 5) Initiate a shared board session with students.

- ***Administrators/managers***

- 1) **Accounts creation :**

Administrators will have the ability to authorize the creation of student accounts as well as the tutoring accounts. They can also provide temporary or permanent bans to users who violate our institution's guidelines.

- 2) **Requests management**

Administrators will have the ability to grant requisitions provided by the clients whether they are students, tutors or parents.

- 3) **Student - tutor link**

The Administrator will be able to link the tutor to the student according to each party schedule and student topic

Additional Features:

- **Guests:**

- **Chatbot :** Guests will have access to a chatbot that will help them navigate our website.
- **Reviews :** Guests will be able to see service reviews left by previous students and parents.

- **Students:**

- **Textbook Services:** A feature that allows students to rent or buy any sort of textbooks. Allow students to sell their old textbook to other students.
- **Different Tutoring Languages:** Students can choose their preferred languages for the tutoring. The appropriate tutors will be assigned to them, whether it is English or French.
- **Forum Page:** A general questions and answers section where students can post questions about any subject. The forum could be divided into subjects where the appropriate tutors can respond to the students. All posts made in the forum can be seen by all students.
- **Rate My Tutor:** A feature that allows students to leave a review/comment about their tutors. Students can leave a rating out of 5 stars, and can recommend this tutor to other students.
- **Homework help:** A special feature allowing students to request help regarding homework for any kind of subject such as science, mathematics, or history.
- **Summer school:** A program consisting of summer courses offered individually or in groups for elementary or secondary students.

- **Parents:**

- **Tutors' Mail for Parents:** For the parents personal log-in account, they have a section with the notes left by tutors regarding their students progress.
- **Tipping Tutors:** A feature that allows parents or students to tip their tutors as a sign of gratitude.
- **Tracking of student progress .** A place where parents can track their children's progression in the courses.

- ***Tutors:***

- **Milestones:** Tutor can create and set milestones or goals that the students have to accomplish or have accomplished which can be seen by the students and parents.
- **Tipping Tutors:** A feature that allows parents or students to tip their tutors as a sign of gratitude.
- **Tutor Biography Page:** A unique description page for every existing tutor on the platform where it talks about them. Their education, teaching/work experience, taught subjects, fun facts, etc.

- ***Administration/managers:***

- **Admin Views:** Admin will be able to view the number of registrations from students and tutors (logged in, logged off),
- **Active Status:** Admin will be able to view the status of sessions of tutors (whether they are logged in or logged off)
- **Request Views :** Admins will be able to see all the milestones, courses and requests on the website.

What The Platform Offers And How Is It Different From The Existing Products?

This E-Academy platform is an online tutoring platform where students, parents and tutors can find the necessary resources and support. Students who are in need will be put in contact with tutors. This system will differ from existing solutions due to its many original features such as a system allowing students to rent or buy textbooks from our website, an archive section containing useful information related to the students' courses, and a personal section dedicated to parents where they can see notes left by the tutors. Tutors will have additional features such as a tipping service. Parents can decide to tip the tutors in addition to their remuneration for the service they have performed. Also, tutors will be able to set milestones for students which can be viewed by the parents. This allows tutors to mark important events to be seen by the students and parents. This platform will also have a forum where questions can be posted and answered by tutors. The forum can be divided into subjects so that appropriate tutors can respond to the students' posts.

Elicitation Technique #1: Brainstorming

Brainstorming is an analysis elicitation technique which consists of thinking outside the box and to get a group of people to think about innovative ideas and solutions that might not come to mind in a more formal education session. The goal is to get as many ideas as possible and to write them all down. At the end, the ideas are combined, and the duplicate ideas are removed. There are certain rules intended to enhance the process of brainstorming: encourage wild ideas, build on the ideas of others, defer judgment, stay focused on the topic, and one conversation at a time. The goal of this brainstorm meeting is to generate tons of new ideas hence providing a platform to share views. All of the ideas were documented down below, so that everyone can see it.

Brainstorming Session

Below are some ideas and features that were brought up during the brainstorming discussion.

- 1) A questionnaire given to user to suggest an appropriate level for the subject chosen
- 2) Students and parents should be separate entities, so that students and parents can have their own separate accounts.
- 3) Schedule based decision when assigning tutors to students
- 4) group session opportunities (to be explained by agnes)
- 5) Offer the possibility of remote and in-person tutoring
- 6) A tipping system for tutors, where the students or parents can decide to give a gratuity to the tutors for the service they have performed
- 7) A forum where students, parents, and tutors can access for an online exchange of information between people about a particular topic
- 8) A self-practice session where students can access practice questions for their course
- 9) A cloud folder where students and tutors can store all sorts of documents
- 10) A milestone feature for students to mark memorable events

List of Requirements:

- Different types of accounts for the users
 - Guest
 - Student
 - Parent - A Parent account is linked to one or many Student accounts
 - Tutor
 - Administrator
- **A request system (receiving and attribution)**
 - A sign up/registration form
 - A login page
 - Offered subjects
 - Register for a course/Request for lessons for students
 - Attribution of courses to tutors
 - An online board where tutors can post contents accessible to students

How will the request system function (what is the entire process for a student to acquire tutoring)?

1. The user/guest lands on the website's home page.
2. The user/guest creates a student/parent account.
3. The student chooses which subject they want tutoring in.
4. A tutor will contact the user by email with the details of the tutoring
5. The student has one-on-one meetings with the tutor

What courses/subjects are being offered?

Language	Math	Science	Computer Science	History
English	Algebra	Physics	Artificial intelligence	African History
French	Calculus	Chemistry	Web development	US History
Spanish	Statistics	Biology	Mobile development	World History

Elicitation Technique #2 - Background Study

Background study is an artifact-driven elicitation technique where a great deal of knowledge acquisition is involved. This elicitation technique provides the necessary information before meeting the stakeholders. In the comparative study, we experimented with different online sources such as Succès Scolaire, Tutorax and Tutorat Pro. This allowed us to be more familiar with the organization, the domain and the system-as-is. Analyzing the differences and the similarities of the above-mentioned systems provided basics and relevant details before meeting the stakeholders. In other words, the background study is a prerequisite to the stakeholder-driven elicitation technique, interviews.

One of the main objectives of the interview is to cover the who, what, where, when, why, how. Based on the background study, here's a list of questions to the selected stakeholders that will help prepare better focussed interviews.

Who questions?

- Question: Who will make use of the E-Academy platform?
Expected answer: Guests, students, parents, tutors, and administrators will make use of this service.
- Question: Who will benefit from the service?
Expected answer: The students and the tutors will benefit from the service's outputs.
- Question: Who will be informed of the outcomes of someone utilizing the E-Academy platform?
Expected answer: Guests, students, tutors and administrators will be informed of the outcomes of someone utilizing the platform.

- Question: Who can I talk to find more about this?

Expected answer: Everyone who had access to our platform and our social network.

What questions?

- Question: What information do I have regarding this service?

Expected answer: E-Academy is a platform where students and tutors may get the help that they need. The website connects students and/or parents who need assistance with tutors that wish to provide their service.

- Question: What assumptions do I have about this service that I need to confirm?

Expected answer: The users should be able to create their appropriate accounts. Students should be able to request for lessons and attribute their course to tutors.

- Question: What is the purpose of this service?

Expected Answer: The purpose of the E-Academy platform is to ensure that all students acquire the necessary skills and competencies to their academic path.

- Question: What will be the eventual outcome of this?

Expected Answer: There could be an increase in the student's academic performance. It is also an opportunity for tutors to provide their service.

- Question: What information must be recorded?

Expected Answer: The number of registrations from students and tutors, status of faculty members (online or offline), status of sessions (milestones), courses and requests must be recorded.

Where questions?

- Question: Where would the user be physically when using this functionality?

Expected Answer: We offer multiple types of service that can be accessible in multiple ways. There will be an archive section containing useful information such as notes and videos from tutors which can be accessible remotely. There will also be tutoring in-person and summer school.

- Question: Where will the outcomes be visible?

Expected Answer: For the parents persona log-in account, there will be a part with remarks made by the tutor on the student's progress.

- Question: Where will I find the necessary information of the tutor?

Expected Answer: A tutor description page will be implemented for each tutor.

When questions?

- Question: When will this service be used?
Expected Answer: This service will be used when students want to improve and acquire the skills and competencies to their academic path.
- Question: When will the online whiteboard feature be used?
Expected Answer: The virtual whiteboard will be used when students and tutors may want to write and interact in real time through the website.

Why questions?

- Question: Why do we need this service?
Expected Answer: This system will be distinct from existing solutions due to its many unique features, including a system that allows students to rent or buy textbooks from our website, an archive section containing useful information related to the student's courses and a personal section dedicated to parents where they can view notes left by tutors.
- Question: Why will tutors be interested in this specific platform?
Expected Answer: A tipping service system will be implemented for commissions. Tutors can receive tips from students or their parents.

How questions?

- Question: How can someone make use of this service?
Expected Answer: Students can rent textbooks on our platform. Tutors can post recorded videos related to their course which can be accessible by students. Parents can also see the notes left by the tutor.
- Question: How can a student/parent know the credibility of the tutor?
Expected Answer: There will be a RateMyTutor page where students and parents can review and comment on the tutors.
- Question: How can a student contact a tutor outside of the sessions?
Expected Answer: A forum page will be implemented where students can post their questions which will be answered by tutors on the forum.

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