

Vision Document A+ Academy

Phase II

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1. Introduction

1.1 Purpose

The purpose of this document is to list, analyze and elaborate on high-level requirements and features of the A+ Academy platform. The document further defines the different types of stakeholders and their responsibility in the product life cycle development process and its target uses. The product overview and product features are also touched on and elaborated on. Features are detailed with use case diagrams at the end of this document.

1.2 Scope

This document concerns itself with the A+ Academy platform with details such as features and functions. Furthermore, it applies to the different stakeholders and users of this platform and the risks associated with the software life cycle development process of this product.

1.3 Definitions

Educational Content - Information in any format (text, image, video) or any combination of which is deemed educational by stakeholders

Student - A user that uses the platform to consume educational content provided through the system

Parent - Person that is a guardian to one or more students using the platform

Tutor - A user on the platform that provides educational content to students and can interact with students to aid them in the consumption of said content

1.4 References

[\(2022\) A+ Academy Comparative Analysis, Phase 1](#)

2. Positioning

2.1. Business Opportunity

Ever since the Covid-19 pandemic started, education has been transitioning to a digital landscape. Because of this, tutoring services have to adapt as well. A+ Academy aims to offer online tutoring services in a way that is different from existing platforms. We will do this by adapting previous systems to keep the aspects that work and leave out the ones that don't work. In addition, we will take suggestions from industry leaders in order to supplement our system, meeting the needs of students and tutors. These suggestions will take a market-based approach to the tutoring industry.

2.2. Problem Statement

The problem of	Proper education is both expensive and hard to find. Conventional tutoring can be effective, but it is not accessible to everyone financially and it is not guaranteed to be successful, as every individual learns and understands concepts in different ways.
Affects	This affects both the students trying to expand their knowledge and the tutors who wish to share theirs.
The impact of which is	As a result, it is difficult for people who wish to improve in certain domains to find adequate and consistent support at a reasonable price point.
A successful solution would be	to offer different services than typical 1-on-1 tutoring that are less costly but still allow tutors to be compensated fairly. With respect to quality of the education, a successful solution would be to offer a larger network of tutors, each with their own unique teaching approach, to ensure that each student can find a tutor whose teaching style is compatible with the way they learn. To address the consistency of the students' support, a successful solution would be to allow students to get answers to their specific questions on demand.

2.3. Product Position Statement

For	A+ Academy is a solution aimed towards all Canadian students and tutors
Who	who wish to have a quality learning/teaching environment all while being economically viable.
A+ Academy	is a tutoring swiss army knife composed of a marketplace and discussion board
That	that provides various services working harmoniously to provide affordable quality tutoring.
Unlike	<ol style="list-style-type: none">1. Unlike typical tutoring platforms such as School Success,2. Unlike other tutoring marketplaces such as Super Prof,
Our product	<ol style="list-style-type: none">1. tutors are not directly assigned to students, allowing students and tutors alike to find the optimal match.2. A+ Academy offers cheaper group sessions, as well as access to an online Learning Forum [™] which allows students to asynchronously receive answers to their questions from any qualified tutor.

3. Stakeholder Descriptions

3.1. Stakeholder Summary

Name	Description	Responsibilities
Instructional Coordinator	Stakeholder that is knowledgeable about the academic expectations of Quebec's Ministry of Education.	Ensuring the curriculum conforms to the Minister of Education's criteria. Providing the curriculum to A+ Academy. Provide maintenance to their curriculum.
Investors	Investors will invest in A+ Academy. They will provide funds that will go to resources and employees.	Investors will attend meetings to follow along with the creation of the e-academy. They will approve funding and make sure the product is marketable and profitable.

3.2. User Summary

Name	Description	Responsibilities	Stakeholder
Tutor	A person who has significant tutoring experience.	Tutors will work through the company to run tutoring sessions and answer questions on the website.	Instructional Coordinator
Student	A person that is a student.	A student pays for the services offered by A+ academy. They attend tutoring sessions and participate in forum discussions.	Instructional Coordinator
Parent	A parent is the guardian of a student.	A parent pays for the services offered by A+ Academy. They organize tutoring sessions for their child to attend and monitor their child's account.	Instructional Coordinator

Guest	An individual who is interested in tutoring opportunities (either as a student or tutor).	A guest explores the platform and will sign up as a student or tutor depending on their needs.	Instructional Coordinator
Administrator	A person with more privileges that is involved with running A+ Academy.	Administrators ensure that all scheduled tutoring sessions occur. They also validate tutor credentials to allow tutors to begin working.	None

3.3. User Environment

A+ Academy is a website to be used by tutors, students, parents, and administrators. A+ Academy will start as a website and an app version for mobile may be created in the future. On the app version of A+ Academy, users will be able to download course curriculums and quizzes to study when they don't have Wi-Fi. This website can only be accessed with an internet connection on mobile and PC. So if there is Wi-Fi outdoors or on a plane then the website can be accessed and users can attend tutoring sessions.

The main users will use A+ Academy to attend tutoring sessions. Tutors, students, parents, guests, and administrators will have access to different menus and features.

Log in/Create account page

Users will use this page to login and create their account. If a user is creating an account, their information will be stored in a database and a new user will be created for them. If they are logging in, the information they enter will be validated by checking the database.

Home page

The homepage for students/parents, tutors, and guests will display the upcoming sessions the user has. These will display on a calendar on the page. Users will also be able to access the video calling software by joining a session on this page. The video calling software that will be implemented is the Vonage Video API.

The admin homepage will display a list of "Cases" that will need to be assessed by the admin. This will include absent tutors or students in sessions, misconduct in sessions or on the forum, etc. They will also get to view tutor credentials to validate them as tutors.

Account page

The account page for students/parents and guests will allow them to add the courses and subjects they are taking to add a quick filter on the Marketplace page. They can also add their credit card information to pay for their sessions.

The account page for tutors will allow them to submit their CV and degrees for verification. Tutors will also be able to create ads and set their availability. They can also add their bank information to receive their compensation from tutoring.

Marketplace page

The marketplace will allow students to view tutors ads, bookmark tutors for future viewing, and book tutoring sessions. When a session is booked, it will appear in the user's calendar on their homepage since it will be linked.

Bookmarks page

The bookmarks page will display bookmarked tutors from the marketplace along with tutors that have had past sessions with students.

Resources page

The resources page will display A+ Academy's curriculum to be accessed by all users. Quizzes will also be completed on this page.

Forum page

The forum page will allow students and guests to post questions and receive answers from other students and tutors.

Direct Messaging page

Students will be able to DM tutors and view their DM's on this page. They can send documents back and forth and discuss topics.

3.4 Key Stakeholder or User Needs

Need	Priority	Concerns	Current Solution	Proposed Solutions
Tutor/student pairing	High	A tutor's teaching style may not suit the student's learning style. The tutor's availabilities may also not line up with the student's.	Matching tutors and students based on available time slots.	Allow tutors to post advertisements about themselves, their teaching style, their availabilities, etc. and let students choose which tutor best suits their needs.
Accessible tutoring to low-income families	High	It may be difficult to make money if service fees are too low.	Hiring student tutors	Group learning where students can join a group and receive

				lessons at a cheaper fee
Application process for tutors	High	Tutors must be qualified to teach the subject they are tutoring.	Tutor credentials aren't properly verified before becoming a tutor	Tutors will need to submit their CV and degree to be verified for tutoring
Tutor marketplace	Medium	Students may not have many tutors to choose from.	Students must search for tutors which is difficult	Students will be able to view a marketplace of tutors where they can easily access info and pricing of hundreds of tutors
Integrated video calls	Medium	Video calls must be on a platform that is easy and accessible to everyone	Sessions are held on Zoom or Skype	An integrated video call option eliminates external issues and sessions can be held on A+ Academy
Forum	Medium	Students sometimes have questions to ask when they are studying on their own.	Students need to wait for their tutoring appointment to ask questions.	Have a forum where students can ask questions and any tutor can respond to them.
Private chats (Student to Tutor)	Medium	Students may want to contact their tutor outside their appointment times.	Students can text or call a tutor through their phone number	Students can contact their tutor directly through the A+ Academy website.

4. Product Overview

4.1. Product Perspective

A+ Academy will be a webpage that is hosted online and linked to a database. Both the webpage and the database are hosted on a server. The users and admin interact with the UI to view or input data from the database. Through the UI, users can upload information about themselves into the database. They can also view questions, availabilities, course information, etc. The user's device must be connected to the internet in order to access the webpage and database. The website will also be linked to an external payment system in order to process membership and tutoring fees.

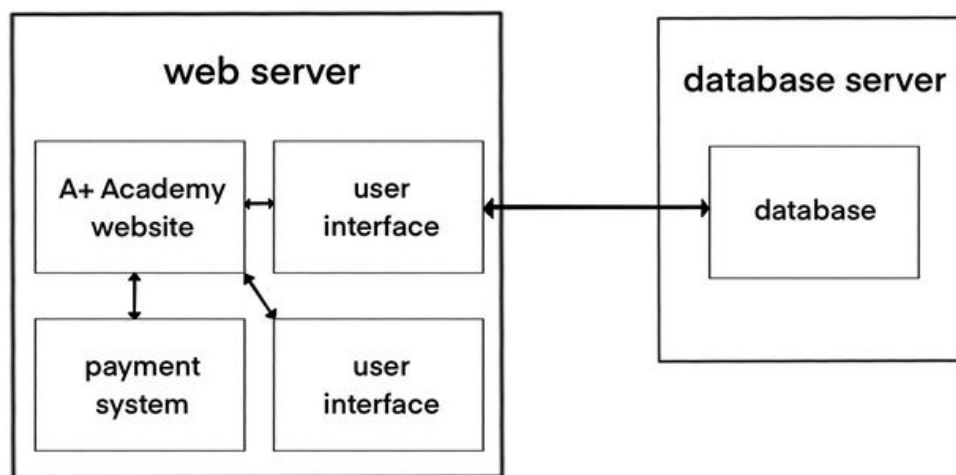


Figure 1: Interconnections between our system's components.

4.2. Assumptions and Dependencies

Assumptions	Dependencies
There will be available server space for the website to be hosted	Web server
There will be available server space for the database to be hosted	Database server
The payment system used must be available	Payment system
Vonage Video API will be available to use for A+ Academy's software	Vonage Video API

5. Product Features

5.1. Core Features

1. List of tutors

- ads/introductory videos
- hourly rates
- calendar with availability for one-on-one or group tutoring

Tutors should be able to create their personalized ads for tutoring. On their ad, tutors can include an introductory video to show users who they are, a written description to explain their methods of tutoring, and all relevant information they may want to share. Tutors can also include their desired hourly rate. A sub-feature of the tutor's ad is a calendar which displays the tutor's availability for one-on-one or group tutoring. This way users can contact tutors with specific schedule availability.

Users should also be able to search through the list of tutors and filter by topics, hourly rate range, level of education (primary/high school/college). This will make finding the right tutor easier for users.

2. Forum for group courses

- post questions/answers

Users attending group courses should have access to a forum. Students should be able to post questions and answer other students' posted questions. Each group course may have its own sub-forum so students may post questions in a more organized way (grouped by topic). To be able to have full access to the Q/A of a certain topic, students must be registered in the specified group course. This will limit anyone to post on the forum and be a benefit for users paying for courses. Also, any tutors may post answers on the forum. This will give a chance for students to receive an answer in case their own tutor does not get a chance to provide an answer.

3. Direct Messaging

- student-to-tutors

This website will also provide a direct messaging feature for quick and efficient communication between students and their tutors. Once users create an account, those students should be able to send a message to any tutor registered on the website.

4. Account creation

- student: someone that has an account and will set up tutoring for themselves
- parents: someone that has an account and will set up tutoring for their child
- tutor
 - access to internal curriculum and documents for all courses
 - create ads

Users should be able to create an account either as a student, a parent, or a tutor. Both student and parent accounts will be able to access the same features. However, the inclusion of both types of accounts helps tutors know whether they are communicating with a parent or directly to the student; during direct messaging or while giving feedback. As previously mentioned, tutors will be allowed to create ads promoting their services. They will, furthermore, have the ability to utilize and suggest quizzes to their students. Tutors' accounts will grant verified instructors access to the full particulars of all courses; allowing them to prepare the material for their classes ahead of time.

5. Guest features

- sit in a live lecture
- Restricted access to the forum/QA only view questions, not answers
- Request to be a tutor

Unregistered users (guests) will be allowed to attend a live lecture. They will not, however, be able to interact in the lecture as registered users would. They will also have restricted access to the Q&A forum; only questions will be visible. Finally, aside from the ability to register as a student or parent, guests may submit a request to become a tutor. These features are meant to give guests a preview of the system's capabilities without divulging its full potential free of charge.

6. Student profile page

- access to quizzes
- show their progress
- access to additional resources (online calculator, practice documents.)

Users registered as students, on their profile page, will have access to several quizzes in each of the courses they are taking. Their progress in each of these courses, along with their overall progress in their learning path, will be visible to them. Aside from quizzes, students will also have access to an online calculator and course-related documents: sample exams, reading material, and tests written by other tutors in that course; giving them ample material for practice.

7. Admin features

- Forum moderation
- Tutor verification
- Payment security

Some of the system's tasks will be taken care of by the Admin. It will, firstly, moderate the access to the Q&A forum; making sure guests only have partial access to the forum. Additionally, the Admin will be responsible to verify the authenticity of users requesting to become tutors. Finally, the system Admin will be in charge of payment security, which entails providing secure transactions, but also verification of payment details: valid card number, expiration date, name on card; ensuring their accuracy.

5.2. Other Product Requirements

- The platform should handle at least 10000 people accessing the website at the same time.
 - high priority
 - medium risk - might cause slow downs or page not to open for some users
 - benefit: support for lots of clients
- A+ Academy's website should include a user manual page.
 - medium priority
 - low risk - doesn't threaten system functionality
 - benefit: speeds up learning time for user

- effort: low
- A+ Academy should provide an admin email to contact for problems/concerns.
 - medium priority
 - low risk - doesn't threaten system functionality
 - benefit: improves user experience
 - benefit: helps the admin team to find and improve problems
- A+ Academy should be accessible through an internet browser.
 - high priority
 - risk: high - website is not accessible otherwise
- A+ Academy should not allow full forum access to non-members.
 - high priority
 - risk: medium - people using features without paying
 - benefit: guests can still see what the website offers in terms of features
- The A+ Academy video chat should connect students and tutors within 10 seconds.
 - low priority
 - risk: low - video chat will just take longer
 - benefit: students and tutors save time
 - benefit: students and tutors are satisfied with quick function times
- The payment system should not accept invalid card payment information.
 - high priority
 - risk: high - people using features without paying
 - risk: high - system renewing subscriptions for expired cards

6. Risk and Feasibility

Risks assessment	Risk Type	Proposed mitigation
Hackers, fake tutors, or students' accounts can scam or trick people into giving information or accessing data directly.	Domain specific	Implement a multi-factor authentication to verify users when they login. During sign-up, have a multi-step identity verification such as certification, identity pieces like driver license. Having a report system to report any malicious or suspicious users in order to have their accounts terminated and permanently banned (IP or MAC address ban).
Sign-ups and logins to accounts from bots (non-human)	Domain specific	Implement a bot verification technique such as a captcha to distinguish human versus machine input. Having a forced password reset after a certain number of failure attempts to login can also be an option as well as enforcing a strong password requiring different characters and length.
Server or database failure causing data corruption due to a hacker, outage, etc.	Domain specific	Implement backups for servers and databases as well as cybersecurity for data protection, integrity, and confidentiality in case of an attack. In case of a breach, information should be wiped out and backup should be used with a reviewed security.
Dispersion of physical location of the team can prevent communication, proper management, and cohesion, hence hindering performance and software quality.	Process related	Implementing a clearly defined communication platform for developers to share progress, communicate and work together in order for everyone to stay on the same page.
Personnel turnover in the development team.	Process related	Having frequent meetings to share progress allows all participating members to be aware of other people's work. Therefore, during a turnover, another person can perform the same tasks or instruct the new replacement member. Documenting work under a strict format helps preserve information for future work that may seem similar or any rework. A tight project management oversight is also beneficial for developing solutions to issues and assigning resources in case of a turnover.
Poor estimation of development time for complex features as well as bad organization for development can cause delays.	Process related	Creating a comprehensive project timeline that can be subjected to revision and using scrum and agile methods for development. Having people with similar project experience give their feedback for time deliverables can also benefit

		staying on schedule.
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Technical Feasibility

The A+ Academy software will require servers (both database and web) to run and will need to be connected to the internet to access these servers. These required resources are accessible to the A+ Academy team. The team has technical skills in web programming and some capabilities in database management. A+ Academy's web technology is easy to alter and maintain.

Our developers will be using scrum methods to develop A+ Academy. This way, the project can be easily broken up into small iterations. Tasks can be broken down and separated efficiently. They can also be sorted by priority to make sure that the most important tasks are done on time, and the least important ones are done later. If there are delays, then tasks can be easily moved to the next iteration.

Organizational Feasibility

Many stakeholders will be involved in the organization of the A+ Academy production and maintenance. The administration team will keep the organization of the website in check, making sure that users are following through on their meetings and that tutors are qualified. Instructional coordinators will communicate with admins to ensure that the proper curriculum is being followed.

In order for the admin and instructional coordinators to stay organized, there will be a documented curriculum shared between both of them. It will be available for viewing by the tutors. This makes it easy for the groups to be on the same page about what is being taught.

Financial Feasibility

A+ Academy will have a high initial cost in order to first develop the system, such as paying the engineers to build the system, acquiring the servers to host the system, and further costs in marketing the product. Returns will also have to account for maintenance costs for activities, such as monitoring system performance, assuring system security, and other such activities. Considering the many features the website will provide—forums, tutor ads, video calling, memberships, and more—there will be a high budget for the website's features. Money will be made through memberships, investors, tutoring, and advertisements. The website is expected to reach hundreds of tutors and students when it is released, at which point revenue is expected to exceed maintenance costs and cover initial development costs over a period of one year.

7. Use Case Diagram

