

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Information Technology



Bachelor Thesis

**A web application for online private tuition: analyses
and design of prototype**

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BACHELOR THESIS ASSIGNMENT

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Informatics

Thesis title

A web application for online private tuition: analyses and design of prototype

Objectives of thesis

The main objective of the thesis is to design and evaluate a prototype of a new web-based application for private tuition. The goal is to make a prototype of an application that will allow students to search for a private tutor over the Internet.

The partial objectives of the thesis are such as following:

- To make a comprehensive literature review of the current state of the art of collaborative education platforms and trends in online private tuition and web development.
- To analyse and design a prototype of a web-based application for online private tuition.
- To evaluate the proposed application and make final recommendations.

Methodology

The theoretical part will consist of a thorough literature review of academic papers, professional books and company resources to search for secondary data and current development methods and tools. The thesis will employ basic scientific methods such as analysis, synthesis, comparison, induction and deduction. The practical part will comprise a user requirement analysis and a prototype design. Following on comparison with similar applications and evaluation and final conclusion will be formulated.

The proposed extent of the thesis

30 – 40 pages

Keywords

Web application, prototype, design, online private tuition, sharing economy, peer-to-peer.

Recommended information sources

Binder, Thomas, and Pelle Ehn. Design Things, MIT Press, 2014. ProQuest Ebook Central, <https://ebookcentral-proquest-com.infozdroje.czu.cz/lib/czup/detail.action?docID=3339317>.
Edwards, Anne, et al. Rethinking Teacher Education : Collaborative Responses to Uncertainty, Taylor & Francis Group, 2002. ProQuest Ebook Central, <https://ebookcentral-proquest-com.infozdroje.czu.cz/lib/czup/detail.action?docID=242068>.
Sundararajan, A., 2014. Peer-to-Peer Businesses and the Sharing (Collaborative) Economy: Overview, Economic Effects and Regulatory Issues. Available from: https://smallbusiness.house.gov/uploadedfiles/1-15-2014_revised_sundararajan_testimony.pdf
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Declaration

I declare that I have worked on my bachelor thesis titled "A web application for online private tuition: analyses and design of prototype" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 12.03.2019 _____

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A web application for online private tuition: analyses and design of prototype

Abstract

This Thesis work mainly concentrated on evaluation and design of a new web based application for online tuition. The goal is to make a prototype of an application that will allow learners search for teacher and collaborate online using best features to improve educational study methods. Classroom is the place where students get knowledge from teachers but after research new trends show up and available for users. Moreover, new trend of Online Private Tuition was adopted for Czech Republic and local currency. Results that are underestimated were studied again and were formulated during Thesis work. A web application was successfully designed and waiting for Coders to take a look. At the same time words were picked up to improve Coders and Host manager's work. For more details, Appendix has been filled with extra Figures that will also help during development. All trends were studied during 2018-2019 years and were inserted with references to source.

Keywords: Web application, prototype, design, online private tuition, sharing economy, peer-to-peer.

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1 Introduction

Based on author's personal experience in English speaking class, students and teachers can officially collaborate during the class or separately allocated time for the consultation. Student's common questions about exams, subject features or some nuances related to thesis are sometimes simply gets forgotten. On my experience was mentioned that better to write reminders for you or communicate via internet where all the "spoken" words will be recorded.

Another typical problem with collaboration is already mentioned lack of time for each student. Class full of students are a little difficult to manage and organize the timetable for each of them. All the paper works and assignments could be moved to one web page with the online access and sharing tools.

With online collaborative learning, the aim is not to replace the teacher, but to use the technology primarily to increase and improve communication between teacher and learners, with a particular approach to the development of learning based on knowledge construction assisted and developed through social discourse.

Google Drive- opportunities to collaboratively edit documents and worksheets open up a world of possibilities for interactive classroom activities and projects.

Skype- This popular, widely known platform provides for group meetings tools that can be particularly effective for remote participants to come together.

Podio- is a website that provides a social-media-like experience to collaborators who wish to share information, documents and collaborate as effectively as possible.

The web application works on the collected/shared data and knowledge of users. Each subject or global topic should have heading, description and status. Teachers will have

opportunities to control their subject, give some advice to student or add the amendment into topic.

Known system of communication “Skype” will formulate the platform for an individual class/exercise with teacher/master. Also recommended to build website using WordPress because with many plugins website works better.

2 Objectives and Methodology

2.1 Objectives

The main objective of the thesis is to design and evaluate a prototype of a new web-based application for private tuition. The goal is to make a prototype of an application that will allow students to search for a private tutor over the Internet.

The partial objectives of the thesis are such as following:

- To make a comprehensive literature review of the current state of the art of collaborative education platforms and trends in online private tuition and web development.
- To analyse and design a prototype of a web-based application for online private tuition
- To evaluate the proposed application and make final recommendations.

2.2 Methodology

The theoretical part will consist of a thorough literature review of academic papers, professional books and company resources to search for secondary data and current development methods and tools. The thesis will employ basic scientific methods such as analysis, synthesis, comparison, induction and deduction. The practical part will comprise a user requirement analysis and a prototype design. Following on comparison with similar applications and evaluation and final conclusion will be formulated.

3 Literature Review

To develop such online web application for collaboration, first it is necessary to understand the way it works and which indispensable tools could be added for convenience. Since it is a relatively new era of internet, educational part must have to improve and move forward with electronic evolution.

In this literature review all the indispensable aspects will be detailed.

3.1 Collaborative education

Collaborative education is an e-learning technique by which one or more students, teachers and/or individuals jointly learn research and share an educational course. Collaborative learning enhances the typical educational approach by allowing remotely connected peers and individuals to collaborate in real time through technological aids and resources.

A computer/technology-based collaborative learning approach was primarily conceived to bridge the gap between similar co-learners and teachers. Collaborative learning is generally achieved through a collaboration system that provides real-time communication and cooperation among several users. Each student or teacher can interact and collaborate with the others in real time through instant messaging, voice, video or a combination of communication solutions. Students can share, collaborate and work on different tasks and assignments through a web-based portal. Based on online research, some advantages of online collaboration were discovered.(Technopedia, 2016)

The discussions are text based, not oral. So all written suggestions could stay online until the chop and changes.

Not less important part that they are asynchronous: participants can log in at any time, and from anywhere with an Internet connection;

Many discussion forums allow for ‘threaded’ connections, enabling a response to be attached to the particular comment which prompted the response, rather than just displayed in chronological order. This allows for dynamic sub-topics to be developed, with

sometimes more than ten responses within a single thread of discussion. This enables participants to follow multiple discussion topics over a period of time.(Brown, 2017)

Through collaborative learning, we expect students to clarify ideas, views, and opinions through their discussion forums under the strict active collaborative learning requires made by instructor/teacher. It includes creating and handling meaningful learning experiences that stimulate students to think through actual and existent problems.

3.1.1 Issues of collaborative education

With the achieving independent web application for both of the sides some natural issues may show up and should be envisaged.

Students come to the educational experience with different expectations and backgrounds. As a result, there are often major cultural differences in students with regard to participating in discussion-based collaborative learning that in the end reflect deep differences with regard to traditions of learning and teaching. Thus teachers need to be aware that there are likely to be students in any class who may be struggling with language, cultural and epistemological issues, butnotin online classes, where students can come from anywhere and this is a particularly important issue.

In many countries, there is a strong tradition of the authoritarian role of the teacher and the transmission of information from the teacher to the student. In some cultures, it would be considered disrespectful to challenge or criticize the views of teachers or even other students. In an authoritarian, teacher-based culture, the views of other students may be considered irrelevant or unimportant. Other cultures have a strong oral tradition, or one based on „story-telling“, rather than on direct instruction.(William, 2000)

Online environments then can present real challenges to students when a constructivist approach to the design of online learning activities is adopted. This may mean taking specific steps to help students who are unfamiliar with a constructivist approach to learning, such as sending drafts to the instructor by e-mail for approval before posting a ‘class’ contribution.

Thus there are two main strengths of this model:

When applied appropriately, online collaborative learning can lead to deep, academic learning, or transformative learning, as well as, if not better than, discussion in campus-based classrooms. The asynchronous and recorded ‘affordances’ of online learning more than compensate for the lack of physical cues and other aspects of face-to-face discussion;

Online collaborative learning as a result can also directly support the development of a range of high level intellectual skills, such as critical thinking, analytical thinking, synthesis, and evaluation, which are key requirements for learners in a digital age.

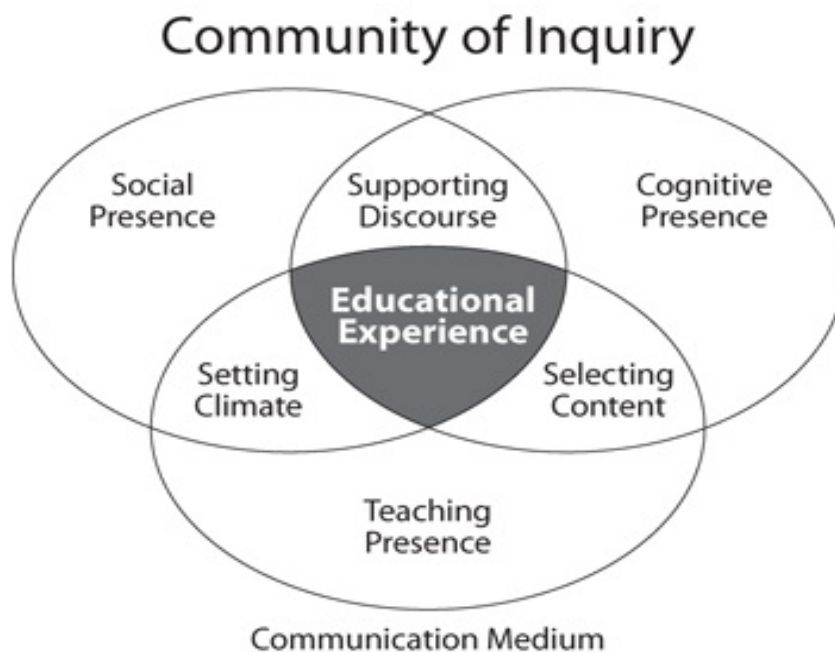


Figure 1:Community of Inquiry Image: © Terry Anderson/Marguerite Koole, 2013

However, there is enough evidence that collaborative learning can be done just as well online, which is important, given the need for more flexible models of delivery to meet the needs of a more diverse student body in a digital age. Also, the necessary conditions for

success in teaching this way are now well known, even though they are not always universally applied. (William, 2000)

3.1.2 Cooperative online classroom

For an active and beneficial collaborative learning required instructor/supervisor to fill made forms, create new tasks, check/grade students for their interests. Instructor of the subject may take all authority and make changes via tools provided by creator, designer and coder. It includes creating and handling meaningful learning experiences based on previous or present experiences that stimulate students to think through actual and existent

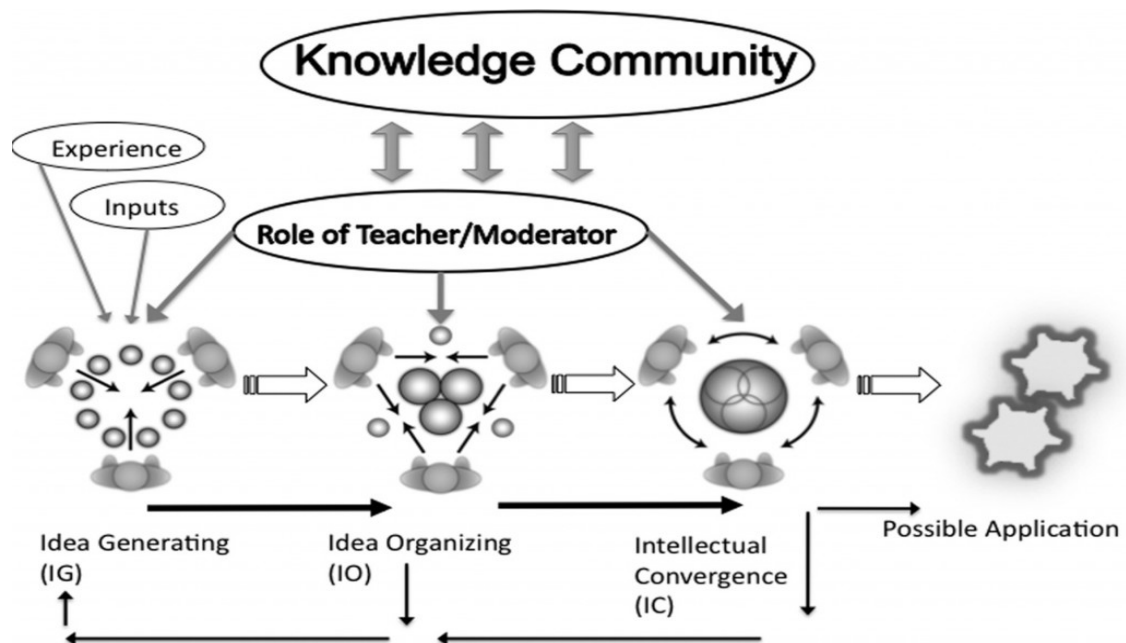


Figure 2:Harasim's pedagogy of group discussion (from Harasim, 2012, p. 95)

The working system may have different educational working strategies such as Jigsaw technique which involves separating a task into subtasks. Intense competitiveness is not inborn, but in our society, it often seems to be because it is learned so early and is so pervasive. Undoubtedly, for most of us, it is communicated and fostered by the family and the media. But, one of the major places where it has been taught, indirectly but systematically, is the classroom.(Preller, 2009)

Role of a teacher is so important in online Collaborative Learning that cannot be underestimated by the creator and designer of web page. Therefore, this design of an application was based on general knowledge and research of an author. For each web application made for University or for private tuition, in any case proper research has to be

done. Moreover, students who have some ideas to help can use Usability laboratory for detailed study, error detection and more. Another serious aspect of designing and creating web application for a study are students who will be using it in daily needs of finding answers for a question, having necessary information and news from the Supervisors. That is why before designing the customary web application; most of the popular for 2018 social networks were studied and analyzed for the Prototyping.

During a collaborative learning session, students not only work on academic assignments but also get to develop their social skills and learn together what improves their relationships with others in the class. Not only group work has to be appreciating, but every person/student needs some space for his own answer that might differ from the group answers to understand each way of student think. Being able to become accustomed collaborative learning into your teaching plan successfully will allow your students engage and involve themselves more actively in the learning process rather than be passive students.

3.2 Prototyping

Before starting to design and set up the web-page it would be better to make sketches on paper or either on prototyping platform.

A prototype is a draft version of a product that allows you to explore your ideas and show the intention behind a feature or the overall design concept to users before investing time and money into development. A prototype can be anything from paper drawings (low-fidelity) to something that allows click-through of a few pieces of content to a fully functioning site (high-fidelity)(Johanson and Arvola, 2017).

Although the difference between sketches, wireframes, and prototypes is not always clear, there are differences in their intentions(Figure 3). Bill Buxton, in his book *Sketching User Experiences*, provides a list of descriptors that help explain the differences;

Differences between Prototypes and Sketches:

Sketch	Prototype
Evocative	Didactic
Suggest	Describe
Explore	Refine
Question	Answer
Propose	Test
Provoke	Resolve
Tentative	Specific
Non-committal	Depiction

Figure 3: usability.gov (Prototype and Sketche differences)

There is an on-going debate about using low versus high fidelity prototyping and how much a prototype should resemble the final version of your design. Both have been found to be basically equivalent in finding usability issues (Walker et al 2002). With that said, there are things to consider when trying to decide which option is best for your project:

Low-fidelity prototypes are often paper-based and do not allow user interactions. They range from a series of hand-drawn mock-ups to printouts. In theory, low-fidelity sketches are quicker to create. Low-fidelity prototypes are helpful in enabling early visualization of alternative design solutions, which helps provoke innovation and

improvement. An additional advantage to this approach is that when using rough sketches, users may feel more comfortable suggesting changes.

High-fidelity prototypes are computer-based, and usually allow realistic (mouse-keyboard) user interactions. High-fidelity prototypes take you as close as possible to a true representation of the user interface. High-fidelity prototypes are assumed to be much more effective in collecting true human performance data (e.g., time to complete a task), and in demonstrating actual products to clients, management, and others.

3.3 Mobile and Web application

For most of the mobile device users, both the mobile apps and the web apps look and work the same way with a very little difference between them. The choice between these two types of apps has to be made only when you have to decide whether to develop a user-centric app or an application-centric app.

Mobile apps are more expensive to develop. However, they are faster and more efficient, as they work in tandem with the mobile device they are developed for. Also, they are assured of quality, as users can access them only via app stores online.

Web apps may result in higher costs of maintenance across multiple mobile networks. Also, there is no specific regulatory authority to control quality standards of these apps.

Before starting to design it must be obvious platform for using. Cross platform for mobile and computers might get long to design all details. Team work could be useful in such a job (Chheda, Dhaval, 2016).

Here are some of the key differences between two:

Web Application **needs** active internet for it to work on your devices. Mobile App works without an active internet.

Web Application **cannot use** the resources provided by the system (It can only use as much as provided to the browser) which mobile application can use as much as it requires.

Also because web application cannot use the resources provided by the system. It requires the service setup to the cloud to connect to the remote database for all the purpose. Mobile application can use the database provided by the system, in an android it is SQLite database used by SQLite developers. With respect to the UI designing web applications are hard to design since each and every browser ,ever device differs a lot and lot of screen size are needed to be taken into factor ,also it lacks any framework guidelines. UI of mobile application has a definite guideline and are kind of restrictive to some extent.

3.4 Collaborative applications and process of designing

Collaboration in the classroom helps students process and deepen knowledge. Students also develop important real-world skills like problem-solving, communication, teamwork, and leadership. Online tools and resources have made it easier for teachers to instruct students, and for students to collaborate with those teachers and with other students or parents.

When you choose the right tools, incorporating technology can further enhance student collaboration and learning outcomes.

This chapter will mostly describe the system thinking and design of a web application for collaboration.

Until the new electronically era, internet access was generally moved from personal computers to the portable devices like tablets and smart phones. Of course it is necessary to admit that evolutionary process is accelerating and bringing new features for users.

With the accessibility to many software users make their own applications using feedbacks and new opportunities provided by the developers.

Basic system work of a web application is recommended to build in PHP or other preferable programming language such as Java or Python. Furthermore, it is not easy to find necessary domain for a new website. Since the thesis was written in Czech Republic

we can have an example (edenstudium.cz) that is accessible on online domain shops.(Netim-domains, 2019)

Next steps are to create all management plan and list of Emails. Group of people who managed to create the web application by sketches must communicate frequently and have some working place to able to respond to the process of creation.

3.5 Online Private Tuition

A Private Tuition web site comes from England where they have famous name and used to teach learners upcoming subjects or art. During last 14 years there has been a sharp rise in private tutoring for learner from infant school to university. Research from Sutton Trust found that more than a quarter of state-educated 11 to 16 year olds in England and Wales prefer private tutoring. Private tuition web sites are very useful thinks most of the parents who have tried them once, research shows that they are done in the best available way.

- Chairman Sir Peter Lampl said “Tuition means those who can afford it are able to give their children significant advantage over those that cannot.” Almost half of the 2.381 children asked used tutors to help with work in general, while a third was studying for a particular test, which means that for any existing trouble in learning, private tutor with knowledge could help to teach. (theguardian, 2018)

Many parents are hiring the best tutor for their children to assist in their studies. Furthermore, will be described the main difference between Private tuition and University degree. For now, there are some benefits that will show up during private study. It is advantage of private tutoring that education will come to your door. It is very important due to every student uses their Personal Computers when online educational web sites give you chance to increase your knowledge using your computer. Online Private tuition gives learners the opportunity for learning a subject or basic concept before it is discussed. With Private tuition model learning any subject becomes quite easy. Students can quickly gain command over their subject which will increase their efficiency. The main advantage of this method is that it creates a better image of student among the teachers and all class because he is already updated with new topic.

School and conventional coaching centers sometimes do not provide the opportunity to select subjects which directly impact results, the major advantage of Private tuition is that here you or your parent can choose subjects which they think could improve their kids in another way of studying. Involvement of parents into Private tuition provides the opportunity to discuss a child's progress, watch lessons together and ask for recommendations for improvement. Also there are close relationship between University study and Online Private tuition for example when it comes to applying to top schools it's not enough to be brilliant at school; there are techniques that every candidate needs to be familiar with to succeed. For example, in the case of the comprehension section of the 11+ English exams, a strong candidate might still not know how to echo the question, or how to analyse a question, techniques that are required to achieve a top mark. Now we can clarify that it is a fact of life that children argue with their parents and as much as this might be a source of frustration to parents, it's fundamentally important to a child's development, allowing him to individuate and gradually become independent. There are inevitable tensions when a parent asks their child to sit down and do their homework, and even more so when Mum or Dad floats the idea of doing some extra work in addition to homework. One of the benefits of tutoring is allow parents to skip out these tensions. Yes, there might well be objections to the tutor coming over, but it's rare for children to display the same level of opposition to a stranger as they would to a parent. (ukstudycentre.co.uk, 2019)

3.6 System Development Cycle

Last chapter of Literature reviews and we can move to designing and prototyping. System Development cycle used as a sample to fill up the needs and move forward with them. The most important task at this point is to get the clear understanding of your future website purposes, the main goals you wish to get, and the target audience you want to attract to your site. Such kind of a website development questionnaire helps to develop the best strategy for further project management.

Step №1 Gathering Information: Purpose, Main Goals, and Target Audience

With the idea and patience, you cannot build web-application besides that, information that will be filled must be analyzed before. All other steps including first will be shown in practical part of work.

Step №2 Planning: Sitemap and Wireframe Creation

At this stage of website development cycle, the developer creates the data that can give to a customer an opportunity to judge how the entire site will look like. On the basis of the information that was gathered together in the previous phase, the sitemap is created (Figure4). The sitemap should describe the relations between the main areas of your website. Such representation could help understand how usable the final product will be. It can show you the “relationship” between the different pages of a website, so you can judge



Figure 4: (Preller 2009)

how easy it will be for the end-user to find the required information or service if he starts from the main page. The main reason behind the sitemap creation is to build a user-friendly and easy to navigate website.

Step №3 Design: Page Layouts, Review, and Approval Cycle

During the design phase, your website takes shape. All the visual content, such as images, photos, and videos is created at this step. Once again, all the information that was gathered through the first phase is crucial. The customer and target audience must be kept in mind while you work on a design.

Website layout is the result of designer's work. It can be a graphic sketch or an actual graphic design. The primary function of the layout is to represent the information structure, visualize the content, and demonstrate the basic functional. Layouts contain colors, logos, images and can give a general understanding of the future product.

After that, the customer can review the layout and send you his feedback. If the client is not sure about some aspects of your design, you should change the layout and send it back to him. This cycle should be repeated until the customer is completely satisfied.

Step №4 Content Writing and Assembly

Content writing and compiling usually overlaps with other stages of website creation, and its role can't be underestimated. At this step it is necessary to put in writing the very essence, communication to the audience of current website, and add calls-to-action, content writing involves also creation of catching headlines, text editing, writing new text, compiling the existing text, etc. which takes time and effort. As a rule, the client undertakes to provide website content ready to migrate to the site. It is better when all website content is provided before or during website coding.

Step №5 Coding

At this step, you can finally start creating the website itself. Graphic elements that have been designed during the previous stages should be used to create an actual website. Usually, the home page is created first, and then all sub-pages are added, according to the

website hierarchy that was previously created in the form of a sitemap. Frameworks and CMS should be implemented to make sure that server can handle the installation and set-up smoothly.

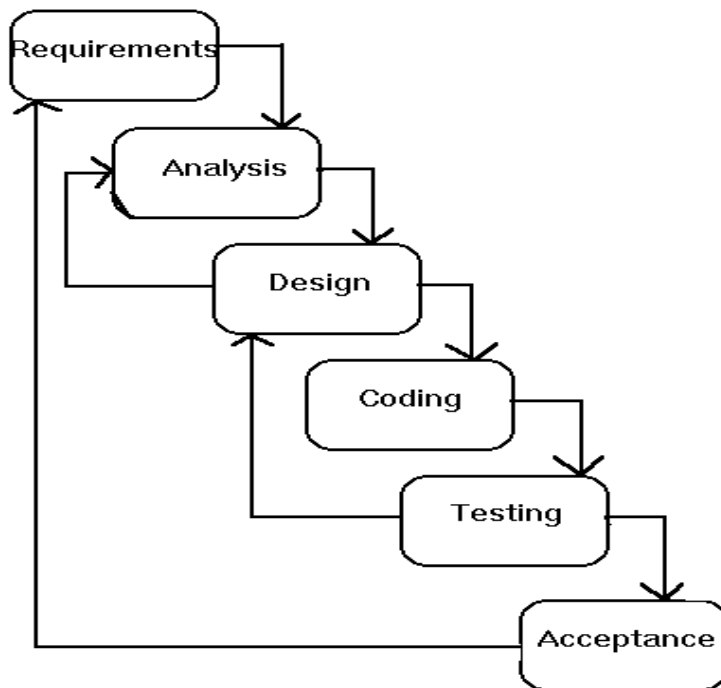
All static web page elements that were designed during the mock-up and layout creation should be created and tested. Then, special features and interactivity should be added. A deep understanding of every website development technology that you're going to use is crucial at this phase.

Step№6 Testing, Review and Launch

Testing is probably the most routine part of a process. Every single link should be tested to make sure that there are no broken among them. You should check every form, every script, run a spell-checking software to find possible typos. Use code validators to check if your code follows the current web standards. Valid code is necessary, for example, if cross-browser compatibility is important for you.

Step№7 Maintenance: Opinion Monitoring and Regular Updating

What's important to remember is that a website is more a service than a product. It's not enough to "deliver" a website to a user. You should also make sure that everything works fine, and everybody is satisfied and always be prepared to make changes in another case.



The waterfall model (Systems Development Life Cycle)

Figure 5: cz.pinterest.com/pin/215961744602037817/ (Waterfall model for creating website)

Feedback system added to the site will allow you to detect possible problems the end-users face. The highest priority task in this case is to fix the problem as fast as you can. If you won't, you may find one day that your users prefer to use another website rather than put up with the inconvenience. All provided information was taken from proxy web developers' site. (Gordiyenko, 2015)

4 Practical Part

4.1 Analyze of existing web-sites

It has been analyzed many web-sites related to “Online Private Tuition”, most well-known are: mytutor.co.uk, tutor-hunt.com and apprentus.com. First of all, let us find the most used web-sites due to amount of people visiting web-site, positive comments and existing tools. Many different web-sites or Google analyst will help us to learn more about visitors and their interests. Let us take web-site Mytutor.co.uk, which is one of the well-made web-site for Online Private tuition purposes. Author has used simple web-site where no need to register and all information given in several languages (a.pr-cy.ru).

As we can see from results (Figure 5) differ “views” and “visitors”. Every day www.mytutor.co.uk link visits more that 15 million people who has been identified as registered users of current web-site. Almost 42 million views every day. Moving to another web-site and compare them to see what makes them so famous. Also map shows us that built in United Kingdom web-site is very popular at home. Also we can mention that mostly English speaking countries United States of America or India also has known about Online Private Tuition. “Golden features” which mytutor.co.uk uses must be added to draft version of prototype.

Attendance statistics www.mytutor.co.uk

Attendance
Information about visitors and site views.

	Per day	month	year
Views	111 097	3 444 017	41 328 204
Visitors	42 109	1,305,385	15 664 620

Figure 6:a.pr-cy.ru(mytutor.co.uk)

Moving forward, let us analyze www.tutorhunt.com which is known by browsing all existing topics and subjects, however, every day just 17,743 visitors which makes around 7 million people mostly from United Kingdom. Tutor-hunt has been online for 15 years that will explain big variety of existing subjects and many different teachers

Another web-site for analyzing www.apprentus.com not based in Czech Republic but in Belgium, from reviews we understood that people who want to teach learners, registers in apprentus.com. Web-site has different currency and one of them is Czech Koruna. This might be very attractive to students who has money in local currency and does not want to pay extra tax for exchange. Already known web-site analyst shows that over a day 4000 visitors and 1.5 million every year uses web-site in their education. Belgium (40.3%) and Switzerland (11.1%) are majority of visitors. This may confirm that in Czech Republic learners do not trust or not interested about Online Private Tuition and positive results.

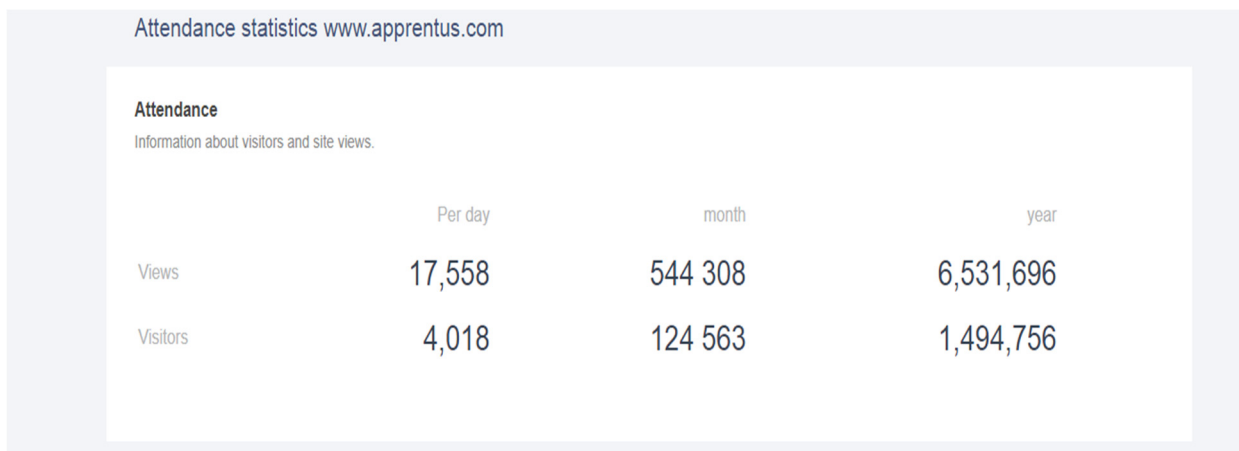


Figure 7: <https://a.pr-cy.ru/tools/traffic/?domain=www.apprentus.com>

Additionally, it was necessary to add screenshots and prove their usability. Let us have a list of Advantages and disadvantages of each web-site.

	Advantages	Disadvantages
Tutorhunt.com	<ul style="list-style-type: none"> • Many subjects allowed to choose. • Different teachers all around the world. • Verified profiles for teachers. • Possibility to make group lessons. • Zero commission. 	<ul style="list-style-type: none"> • No online classrooms- teachers may travel. • Not well known web-site. • Only one currency (Pound).
Mytutor.co.uk	<ul style="list-style-type: none"> • Live video class and possibility to Rewatch lessons. • Collaboration tools. • Low price. • Table with qualifications, availability of teacher and offered subjects. 	<ul style="list-style-type: none"> • General subjects (math, biology, chemistry). • No Information Technology subject. <p>Many subjects taught in University level are not on web-site.</p>

Table 1: Table with analyse of current existing online websites (made by Author)

Apprentus.com was the only web-site which provides with local currency and teachers around Czech Republic who may teach. Main reason to create alternative educational website is to give more experience and qualified education to learners who might struggle with school or university study program and ask for help from professional teachers. Moreover, private tuition website embraces all, starting from young age learners will be able to use primary tools and choose from various teachers who will suit their knowledge.

Mainly the target of website is to invoke people for remote study through existing opportunity and various teachers. Audience students and people who has needs in study different methods of study, languages and more will find their place on website. Reason to make such online website is ignorance of new coming trends in online tuition with improved tools and creating accomplished platform in educational purposes.

4.2 Creating Wireframe

For creating prototype many available tools were discovered. Some of them provide very simple user interface so developer can understand in few steps how to design. In next few papers high-fidelity prototyping tool will be shown. In fact, design was created from empty blank, to criticize web-site it must be obvious that template is not officially confirmed and if Coder will confirm and start to develop web-site in his own way, at the end web-site will need to have “another looks” from user perspective and manager to fill up with data such as names for subjects, create availability schedule for each Teacher, verify profiles for learners and more. Let us move to Figures and we can have basic idea how the web-site will look like.

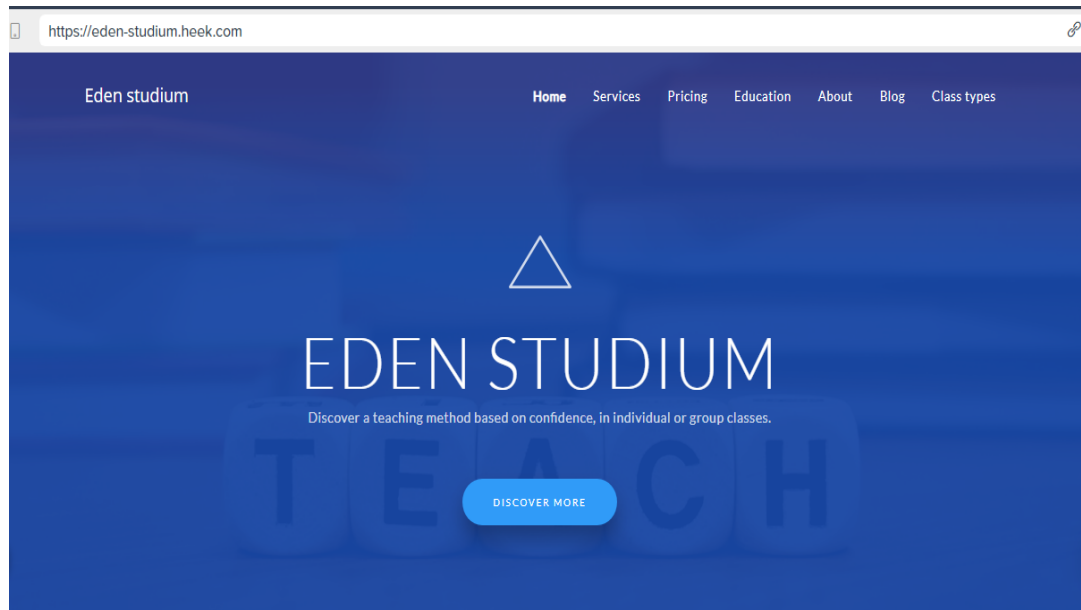


Figure 8: heek.com (Eden-studium web-site, Home page) Author

Eden-Studium was just one of available domains that were chosen as a name for web-site. We can see in bar that eden-studium.heek.com. First of all, Heek.com is a new web-based application to create Online Private Tuition web-sites and that is why exactly this web-site will be helping us in future. Moreover Heek.com will provide us to publish created web-sites for small fee; it includes acquisition of domain that was mentioned above and Premium tools such as Google Analytics to track users and general statistics of web-site. Currently (Figure7) shows us Home page and web-site was connected between each page with link. These connections can be done as well in Heek.com. Home page has included first information about current web-site which is important for new coming user or viewers. Best reviews and Teachers who has done well and got feedback from learner also can find names in Home page. Another page named Pricing will describe to learner in which ways education can be done.

For example, Online Tuition includes Skype conference with whiteboard; it is very useful in case of distant collaboration. In author opinion this might be the most used case of studying where no need to go out or come to class. These parts will remain as Online Private Tuition and teachers will collaborate with learners only via computers (Figure8). It is necessary to admit that private tuition can be done as well in classroom where students

can collaborate only with teacher in case of Private tuition or with the group of learners who will be attending class altogether.

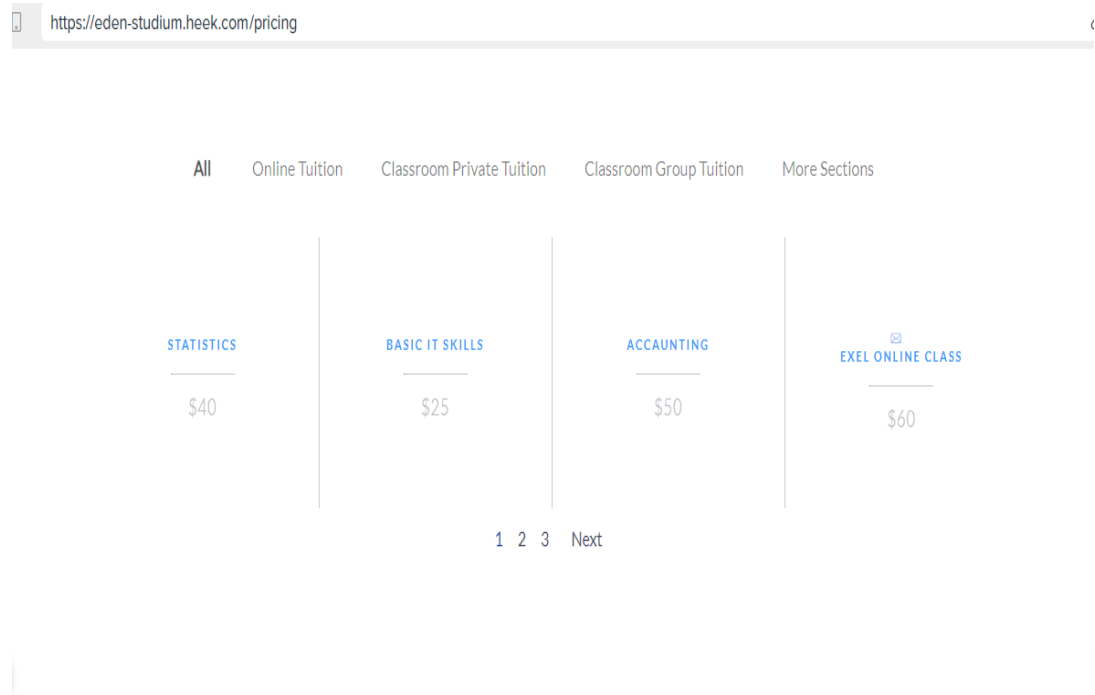


Figure 9: heek.com (Eden-studium web-site, pricing list) Author

4.3 Features for web-site

Moving forward with already existing design and templates, but before finishing the work it must be obvious that for question: What makes your web-site not ordinary and what features could help people in their study progress? For this question many popular educational web-sites could help us in progress. So far, 3 features and how to apply them will be discussed. Main feature was taken as whiteboard for collaboration in web-site. In addition online lessons will be recorded and sent to learners in video file. Purpose of this to rewatch lessons in case of misunderstanding teacher and to go over lesson again. In next (Figure 9) simple presentation in which way it could be done. In case of creating whiteboard in Wordpress well known and famous web-site builder, next few steps will help to allocate, Click in WOD then Settings, find Web Integration from list click Enable Whiteboard. Then choose Location for whiteboard for example it could be separated page just for collaboration within the page or copy the HTML link for whiteboard and send to

second person. These steps are done automatically via web-site and does not ask to share it every time.

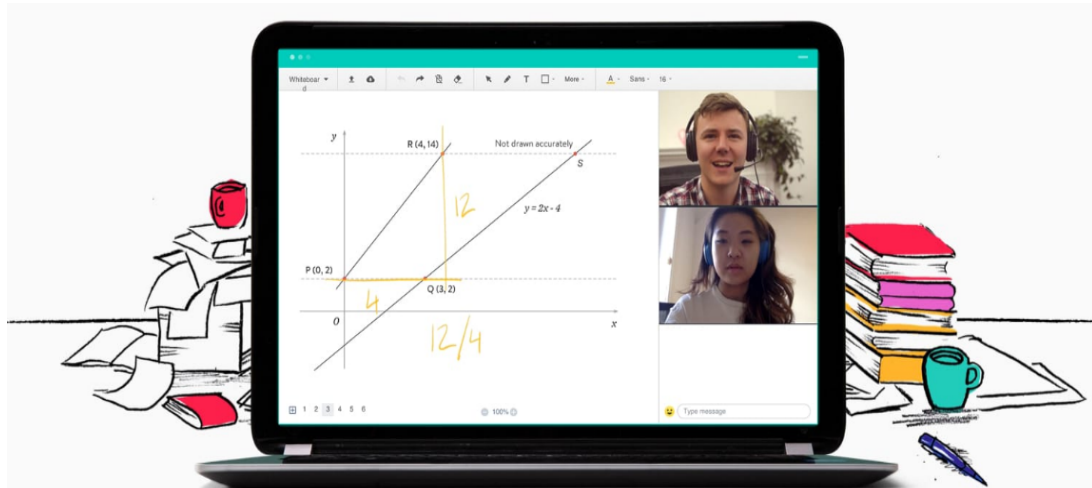


Figure 10:mytutor.co.uk/how-it-works.html Whiteboard feature

To add video calling on website WordPress will allow using free plug-ins, however, across all internet there are some trust and good services which also makes video calls and could be added as a Hyperlink. One of them is much recommended and it is www.tokbox.com which comes with use cases, could be useful in making much calls every day through website. It is just extra link in page which will be available for users, learner and teacher. (tokbox.com)

Also known tokbox with online video calls will add Html link to websites code and moreove, this service has feature to record the call which is necessary for education.

4.4 PayPal Payment

Now, moving to payment section, already known method PayPal could help us. All in all, opening new account in PayPal website not taking too much time and effort, after finishing registration short manual how to add payment button into website. Choose All Tools in

tools menu then choose PayPal Buttons. On top right side choose Create New Button and move forward. As it is described in (Figure 10) there are different buttons which could be used one of them, Buy Now which is recommended to use on educational website. Then write all information that was asked including item ID. In this case every teacher has own ID, so for every profile on website at least one payment button is necessary to start class. Then set a price for different methods of study and different study fees, including one payment for study, hourly payment and group payment for group classes. There will be for each Teachers profile at least 3 payment method using PayPal. Choose currency and on the right side button will be showed as it would be on website. Do not skip 2nd and 3rd steps after confirmation. They could be useful because PayPal will ask to allow tracking payments which will help to increase them. After creating button HTML link will be shown now just copy the code and paste it in HTML section on your browser and save the changes. To make changes again go back to PayPal website and make them there.

The screenshot shows the PayPal button creation interface. At the top, there's a section 'Choose a button type' with a dropdown menu set to 'Buy Now'. Below it, a note says 'Go to My saved buttons to create a new button similar to an existing one.' The main form has fields for 'Item name' (Gold Arbor Earring), 'Item ID (optional)' (65468), 'Price' (20.00), and 'Currency' (USD). There's a 'Customize button' section with a checked option 'Add drop-down menu with price/option' and a sub-section for 'Name of drop-down menu' (Sizes) with a table of menu options. A preview window on the right shows the resulting 'Buy Now' button.

Figure 11: <https://www.paypal.com/cz/> Author's screenshot

Payments will go straight to teachers PayPal account or to System managers' account which will be created later. Purpose is either take some time from teachers to create each account or with one account and manager who estimate all transactions from one account to another.

5 Results and Discussion

So far this is not the end, total summary what has done till here, in this thesis work at the beginning of literature review talked about Collaborative Education and their types such as Jigsaw system which was separating main task into subtasks by teacher for learners, another type of education that could be provided by teachers is directly in classroom or via internet. It was admitted that using website as an educational platform is one of the best choices for learners or their parents whose idea is to give maximum knowledge for their children to be the best. So this work has covered all trends in online private tuition such as place of origin and articles about how useful it could be. General idea of studying at home without going to school is very popular in developed countries, that is why this work declared as a new trend in Czech Republic and in CULS. Idea is simple bring the trend from England to Czech Republic. During research Author already mentioned existing local websites for Czech Republic and they are: www.apprentus.com and <https://czech-republic.teacher-creature.com/en>. Unfortunately, they do not provide enough opportunities; therefore, they do not used in daily study. For example, basic university subjects are missing at all, no helping tools for home study and classes are hold at selected place- room or classroom. Also may appear such question why online private tuition is so popular in England, -well first of all no one would choose schedule which made by others for you while online private tuition websites are more flexible this must be clear in comparison with school classes. Another feature of online education that some people cannot afford university studies but able to buy private lesson which are low price. Moving forward with positive aspects on website first learner able to contact teacher for consultation and if learner will agree with policy they can straight move to booking the class.

Benefits in technological environment are grand to not mention them. Start with computer that is personal for learner and all information studied can be easily saved. Website allows uploading, downloading and sharing data. It works simply on designed website by coders and designers. Features that provide Eden-studium are equal to another website in internet. In section Features it was detailed how to add whiteboard or how to make calls via website using plug-ins to build or extra services that are available online and stands for

their quality. “Toolbox” is called must have for latest websites related to collaborative education.

Some words about this work, it can be found many useful links for prototyping and making sketches, system development cycle which is supporting in case of loose the way to end, trends in private tuition and in addition Authors design with comments. Also it had to be said that System life-cycle will explain that without finishing first step no way to move to second.

<p>Strengths</p> <ul style="list-style-type: none"> • Customer-centric design and messaging box • Quick and easy Log in process • Good educational experience 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Lack of mobile support • More effective marketing tactics • Waiting for build
<p>Opportunities</p> <ul style="list-style-type: none"> • New tools • Online transactions • New study method 	<p>Threats</p> <ul style="list-style-type: none"> • No competitors • Poor marketing • Bad written code

Table 2: Swot Analyses of Eden-studium website

From Swot Analysis (Table 2) some internal and external aspects must be detailed, so Strengths consist designed website based on previous analyses, customer-centric design which will help learners to navigate on website and look for services more efficient. Every user has own profile and with one click user log in and out from website with saved data online. Good education could only be provided with teachers who have many certificates and confirmation of good knowledge of subject.

Weaknesses so far shows what has to be done in future, for example; website’s design and prototype has been done but Coder may choose his own way and application to create and base website online, also after creating website proper advertisement has to

be done to popularize website according to opportunities that are provided. Tools that have been chosen are optimal and do all hard work in online collaboration such as whiteboard and online calls. According to tools and website generally new methods of study will be formulated and used. Website provides 3 methods; Online Skype conference with whiteboard and recording option, private tuition with learner and group class in classroom. Threads so far, Eden-studium does not have competitors on Czech website's so all comparisons could be done with foreign platforms. If coder will not able to create proper website work has to be frozen until new Coder takes the work.

6 Conclusion

The main objective of the thesis is to design and evaluate a prototype of a new web-based application for private tuition. make a comprehensive literature review of the current state of the art of collaborative education platforms and trends in online private tuition in order to understand how web application was created and which tools were used, there are detailed explanation of the whole process from designing and developing the system called Eden-studium. The goal is to make a prototype of an application that will allow students to search for a private tutor over the Internet.

Starting from the beginning the idea was not to bring trends and make education more available for learners, this message has come with study of Collaborative Education in general. Author has mentioned all trends and aspects of online tuition which has popularity in England during 2019, based on analyses in practical part of Thesis it was clear that more than 3 million people (Figure 5) uses private tuition every month and this result cannot be underestimated. CULS coders and managers could take a look at work that is done and make their conclusions about this project. So far Figure (2) shows how this knowledge could work and lead into big project made by CULS. More pictures are available at last section of Thesis in Appendix. Attached pictures will formulate general idea of prototyped web application and will allow Coders to build website.

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8 Appendix

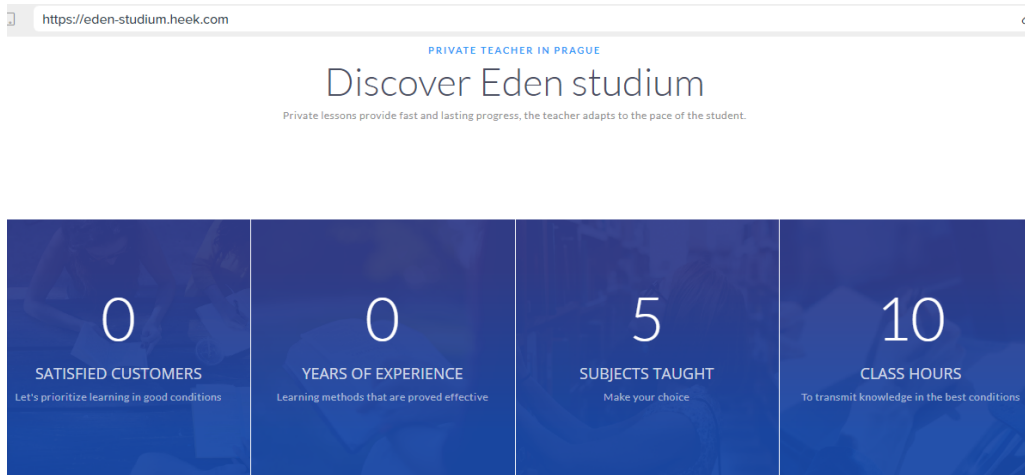


Figure 12: eden-studium.heek.com Home page Author's screenshot

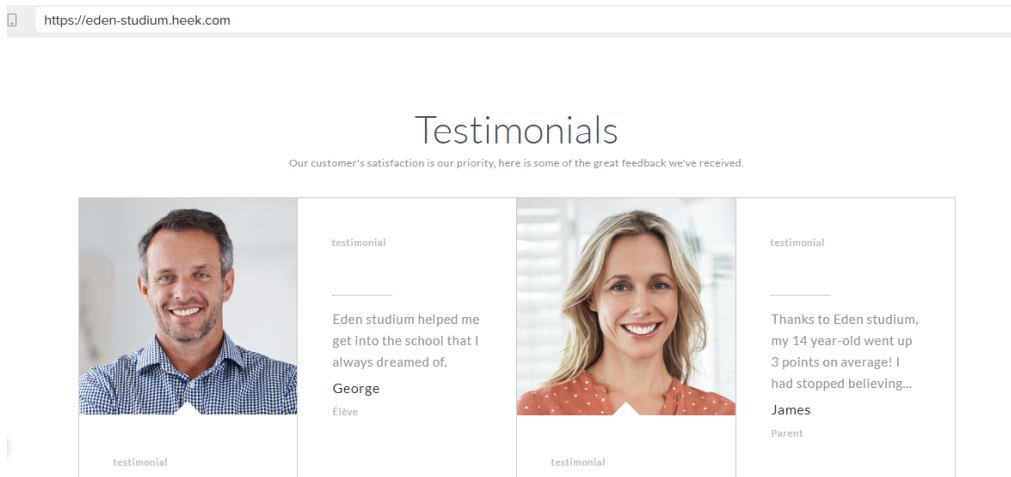


Figure 13: eden-studium.heek.com Home page – feedback stand Author's screenshot



I'm Anna Doe, nice to meet you!
History teacher

I like people, teamwork, human interaction, and what I want more than anything is fixing things and helping the others.

Experience

Teacher

2015-2017 - CHICAGO HIGH SCHOOL

This is the description of your experience. You can modify it by clicking on it directly. You can tell your visitors a bit about what you achieved

Teacher

2010-2017 - CHICAGO HIGH SCHOOL

This is the description of your experience. You can modify it by clicking on it directly. You can tell your visitors a bit about what you achieved

Education

Master of science

2009 - UNIVERSITY OF PENNSYLVANIA

This is the description of your diploma. You can modify it by clicking on it directly. You can tell your visitors a bit about what you learnt.

BBA

2007 - UNIVERSITY OF PENNSYLVANIA

This is the description of your diploma. You can modify it by clicking on it directly. You can tell your visitors a bit about

Figure 14: eden-studium.heek.com Profile page Author's screenshot



Private lessons

Private lessons from 30 min to 1h30 are adapted to all levels: beginners, intermediates, advanced. Private lessons are adapted to your needs and offer a great way to progress rapidly.

SHOW MORE

Group classes

Group classes offer a healthy motivation as each progresses individually. All our classes allow you to progress further and are adapted and personalized to meet each and everyone's needs. There are three types of classes: beginners, intermediates, advanced.

SHOW MORE



Online Class

Leainers and tutors see each other via live video - great for building rapport. Upload essays or past papers, and work through examples together on the whiteboard

SHOW MORE

Figure 15: eden-studium.heek.com Profile page- Class types Author's screenshot

Frequently asked questions:

How does Eden-studium works?

Eden-studium is an online tutoring platform where you can find teacher with the subject of your choice and attend classes through virtual and group classroom.

What do I need to start lesson?

To achieve successful knowledge during lesson, there are technical requirements you have to follow. Connect to web application through personal computer. Use browser to reach the website in case of problems with screen change browser to Google Chrome. Some antivirus might block camera and microphone features, make sure you disable antivirus during class. Have connection at least 6MB.

How do students contact teacher?

Students have different ways to contact teacher, go to teacher's profile and send a message. Book individual lessons: it is possible to book class via calendar that is in Teacher's profile. Check for available time and buy a lesson.

How to publish my profile for teacher?

Simple registrations on website then indicate subject you teach, your availability and price per hour and class. It is important to fill all the information in your profile, so students might get as much information as possible (presentation, studies, experience, photos, hobbies).