

CHALMERS



How to Enter the Upper Secondary School Market for ICT Software

A Case Study of a Swedish E-Learning Startup

Master of Science Thesis

in the Management and Economics of Innovation Programme

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Abstract

In this master thesis it is investigated how a startup company can enter the upper secondary school market with a platform that enables teachers to create course content online and to follow the progress of students. Based upon interviews with teachers, principals, IT coordinators and a survey with more than 200 responses, it is argued that a freemium business model is the most suitable for startup companies that want to enter the upper secondary school market. This argument is supported by the current trends in the school sector in which most schools offer all their pupils computers or tablets but have a limited budget for purchasing ICT tools. By adopting a freemium business model which allows for high trialability and observability the diffusion process is aided which is an important factor for companies that want to diffuse a new technology in a new market. Another benefit of the freemium business model is that many teachers rely on ICT teachers who showcase a smorgasbord of ICT tools for other teachers and the chance of inclusion is increased if the ICT tool is freemium or free.

The focal company is Lurn, a Gothenburg based startup that has built an e-learning platform that focuses on learning models such as blended learning and formative assessment, models that are based on scientific studies of how to improve student learning. Furthermore, formative assessment is a trend most teachers are trying to incorporate today in their teaching, making Lurn's platform a good fit for the needs of teachers in upper secondary school. Another sought after feature in an ICT tool is that it is flexible enough to allow teachers to adapt the content based upon their own teaching style. Moreover, many teachers have requested throughout the study the possibility of taking part of other teacher's premade courses, which is something that Lurn should arguably pursue since it could become a major selling point for upgrading from a freemium to a premium version.

Keywords: Blended Learning, Blue Ocean Strategy, Business Model, Buying Center, Diffusion, E-learning, Flipped Classroom, Freemium


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Gothenburg, June 2014



Lisa Barrehag



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Word List

Blended learning – a learning model that combines traditional classroom methods with more modern computer based activities. Can include a mix of physical meetings and distance learning

Blue ocean - uncontested market space where a company does not have to battle competitors

Book-on-a-can - when the computer is used in a non-interactive way and does not really add any value

Business Model - describes how an organization creates, delivers and captures value

Conversion Rate – the share of users who upgrade from a free to a for pay premium subscription in a freemium revenue model

Diffusion - the process of how an innovation gains tractions and spreads within a system

E-learning - a method to improve learning by means of computers and information and communication technology

Flipped classroom – a teaching model where the students get to watch web based lectures at home and the classroom work can focus on problem-solving and more active work with the students

Formative assessment - assessment activities are applied during the learning process to enable the teacher to modify the teaching to improve the students' learning

Freemium - a basic service is offered for free but the user has to pay to get access to a full version with more functionality

ICT - Information and communications technology

ICT Teacher – a teacher that finds new ICT tools, presents them to other teachers and explains how they can be used to improve the lectures

LMS - Learning management system

Summative assessment - summarizes the students' development at one particular time, commonly through a final exam

Value curve - a curve in the blue ocean strategy that shows a firm's level on different parameters

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1. Introduction

In 2013 the Swedish Upper Secondary School consisted of 1346 schools of which 869 were public and 460 private with a total of 330 196 students (Skolverket, 2013). In April 2014 the results of the 2012 PISA (Programme for International Student Assessment) was released which indicated that the results of Swedish 15 year old students had worsened and for the first time the Swedish results were below the OECD average in reading, math and science. (Skolverket, 2014)

Many explanations have been given for these bad results and some argue that more rostrum teaching would be the solution to the problem (Björklund, 2011). However, many teachers on the contrary believe that schools need to adopt more modern methods and adapt itself to a more computer-based society (Kindenberg, 2011). New methods, such as formative assessment and blended learning, have been introduced in the Swedish upper secondary school system (Skolverket, 2014b). Formative assessment can be contrasted with the traditional summative assessment in which students are assessed using exams at the end of a course, while with formative assessment the student can be assessed after each lecture by for example a small quiz. Blended learning, where traditional classroom methods are coupled with computer-based learning has also gained popularity recently. Today, there are therefore an increasing amount of e-learning providers that focus on these concepts. However, it seems as none have succeeded in achieving market dominance within the upper secondary school market in Sweden. One reason for this might be the lack of funding available for purchasing of ICT tools. Another reason could be that teachers lack the time to learn how to use new programs. These two reasons could potentially create some barriers for new actors to enter the market.

The focal company of this master thesis is Lurn AB (henceforth referred to as Lurn), which is a Gothenburg startup company that has developed a platform for e-learning which has previously been used at Chalmers University of Technology for an introductory Chinese language course. Their goal is to enter new markets such as upper secondary schools in Sweden. Lurn has currently not investigated this market opportunity and is therefore interested in learning more about what the school, teachers and students need as well as how decisions regarding purchasing are done. Hence the focus of the master thesis will be to research what e-learning tools are used today and how Lurn can structure their business model in order to cater to the upper secondary school market.

This chapter will present the origins of this master thesis as well as the purpose of it. Given the origin and purpose the research questions will also be introduced together with the scope of this paper. Finally a brief background will be given to the phenomena of e-learning as well as the focal company of this study.

1.1 Purpose and Research Questions

The focal company has an interest in evaluating market opportunities in the upper secondary school market in Sweden and how they can enter this market. The purpose of this master thesis will thus be to investigate how startups can establish themselves on the education market in Sweden. The study will therefore research which types of e-learning tools are used in Swedish upper secondary school today and how the procurement process of those works.

In order to fulfil the purpose of the master thesis the main research question will be:

How can startups, focused on e-learning, establish themselves and diffuse new technology in Swedish upper secondary school?

This question will be divided into several sub-questions, to ensure that the study covers the most important aspects of the question:

How does the diffusion process of ICT tools in upper secondary school look today?

What is the procurement process of ICT tools for Swedish upper secondary schools?

What ICT tools are used today in Swedish upper secondary schools?

Which business model is the most suitable for Lurn to enter the upper secondary school market?

What are the strengths and weaknesses of Lurn's platform in relation to what the upper secondary school market is requesting today?

Which actor should Lurn target first in order to increase their chances of a fast diffusion process in the Swedish upper secondary school?

1.2 Scope and Limitations

The scope of this study will be upper secondary schools located in Sweden. The reason for focusing on just upper secondary schools and not universities or other schools is that it gives a narrow focus which enables a deeper understanding of that segment. Moreover, the structure of the upper secondary school with separate courses is arguably a better fit for Lurn's platform than the more subject based education in elementary schools. For practical and financial reasons, the geographical scope will be Sweden. Since Lurn is based in Sweden it is appropriate to start in this market for which they are relatively well-informed regarding the education system. Furthermore, the recent crisis regarding the Swedish education makes it an interesting market with a need for improvements in order to increase the students' results.

This master thesis will not focus on e-learning that is meant for self-learning; rather the focus is on e-learning that is used in conjunction with regular classes also known as blended-learning.

The thesis will focus on evaluating business opportunities and strategies for e-learning on the market for education. However, it will not aim to analyse the results of using e-learning in school, such as if implementation of e-learning has increased average grades and so forth. The reason for this delimitation is that Lurn's e-learning model differs in significant ways from other that have traditionally been used and hence the results from these studies might not be applicable in Lurn's case.

1.3 E-learning Today

E-learning is increasingly becoming implemented in schools and today it is common for Swedish schools to have a 1:1 system, providing each student with a private computer. Ramböll Management (2006) studied how students, teachers and parents in the Nordic countries

experienced the effects of IT on the learning process and found that IT had a positive impact on the students' learning and performance. The teachers also emphasized how IT gave greater possibilities to adapt the education to each student's individual needs and qualifications. Studies regarding attitudes towards IT in school also show that a large majority of students and teachers in upper secondary schools experiences big advantages with using IT in the school work and that this number has grown significantly since the end of the 90's (Myndigheten för Skolutveckling, 2007).

Cantoni, et.al (2004) list several benefits with e-learning. For instance, it is fast and self-paced, meaning that an e-learning course can be taken when necessary and the learners can skip material they are already familiar with. It is also flexible since it works from anywhere at any time and the content can easily be updated. Moreover, by combining different types of elements, such as videos, images, quizzes, games and interactions, it can improve retention. Possibilities to provide immediate feedback are also increased. Another important advantage is that the learning material can be customized to each student's need, enabling more individual learning and giving the student more control over the learning process.

On the other hand, e-learning material requires new skills of the content producers and may be very costly to develop (Cantoni, et.al, 2004). However, in accordance with Moore's law, the cost of developing software has dropped dramatically over the past ten years and this is likely not a big problem today. A more relevant disadvantage might be that e-learning is lacking face-to-face contact and informal social interaction. It also places greater demand on the learner who has to be self-disciplined when the learning process is more free and unconstrained. Cantoni, et.al (2004) also stress that the technology must fit the user and not the contrary. If it can adapt itself to a certain context and evolve when being used, it becomes very effective and can increase the skills of the learner. Moreover, e-learning tools that exploit a rich visualization and interactivity are among the most effective since they make the training more engaging and likely to be understood (Cantoni, et.al, 2004). Govindasamy, (2002) also points out that pedagogical principles applicable to the traditional classroom should apply to e-learning as well. Features in learning management systems (LMS) should be based on pedagogical principles but it is also very important to extend these principles to align with rapid changes in technology.

Two teaching approaches related to e-learning that has gained much attention recently are blended learning and flipped classroom. Chen & Jones (2007 p.2) defines blended learning as *"a method in which the Web is the primary instruction mode, but there are a limited number of other face-to-face meetings at various points in the semester"*. In their study they compared students taking a course in a traditional setting with students who tried a blended-learning setting. They found that students working with blended learning felt that their analytical skills improved as a result of the course and that they got a better appreciation of the concepts in the course. However, the students working in a traditional setting felt more satisfied with the clarity of instructions. The final learning outcomes were similar in the two settings but by incorporating aspects of each other, both could likely be improved.

The flipped classroom could be described as a kind of blended learning and was first introduced at universities in the US during the 1990's. When using the flipped classroom model, the lectures traditionally held by teachers in the classroom are replaced with recorded videos, audio files, written material, etc. that are available on the web and that students are supposed to study before the lecture. In that way, lectures can be spent clarifying the content and working with more advanced activities (Folin, 2013). According to Flipped Institute (2013), one of the greatest advantages with utilizing a flipped classroom is that when lectures are not held during

the lessons, there is much more time for the teacher to help and actively work with the students. In that way, the teaching can be better adapted to each individual. In her study of the flipped classroom, Folin (2013) found several benefits connected to the model, such as decreased stress for the teacher and students understanding the content better and experiencing an increased willingness to learn. Another study conducted by Fors (2012) also showed that students felt that their mathematics studies became more efficient when they worked according to the flipped classroom model. Although they had to take responsibility and watch video lectures at home, they claimed that it was not very time consuming and since they managed to finish more work during the lessons, they felt that the overall time they needed to spend on mathematics was decreased.

However, Mattsson (2013) found through her research that even though students and teachers in general had a very positive attitude towards the flipped classroom, the class studied had worse results in courses where flipped classroom had been used, compared to where a traditional model was used. Furthermore, the class' result dropped compared to the average class in Sweden. One explanation for this could be that students, when passively watching a lecture and not being able to interact, could lose insights into the theory that they would get in a more traditional and interactive environment (Mattsson, 2013). Arguably, this points towards that just giving the students a Youtube video to watch is not enough, rather one must find ways to connect the flipped classroom model to other pedagogical considerations.

1.4 Lurn

The focal company, Lurn, is a startup, founded in the spring of 2013 by five Chalmers students and one student from the University of Gothenburg. Their focus is on e-learning and they have built an e-learning platform based on scientific testing on how to improve students' learning. Despite being such a new company, they managed to develop and sell one course in Chinese to Chalmers for the autumn semester 2013. Since then, they have had a few more customers and many more have shown an interest in their product. However, they have so far not managed to create a scalable business which makes the upper secondary school market very interesting to them. Given the high number of schools in Sweden and the teachers' ability to create content in Lurn's platform themselves, this could potentially be a market with many customers and low marginal cost. To decide if the upper secondary school market is a proper target market for Lurn, thorough research is needed regarding teachers' demand and usage of e-learning, to see if Lurn's offer fits well with what is requested and needed on the market.

1.5 Disposition of the Report

This report start with a literature review, presenting relevant literature on the subject of diffusion and buying behaviour. Literature regarding business model, such as the business model canvas, revenue models and blue ocean strategy, will also be presented here. After that follows a chapter describing the methods used to collect and analyse the data for this study and an explanation for why these methods were used. This chapter will also contain a critical review of the methods and the data collected. The following chapter will present the empirical findings collected from interviews, survey and secondary sources. Findings regarding procurement structure, competitors and teacher's use of ICT will be described here. After the empirical findings chapter there will be a chapter containing an analysis of the data and literature. The final chapter will be the conclusions, which also will include hands-on recommendations to Lurn. In this chapter, the research questions will also be answered.

2. Literature Review

This section will provide a description of previous research and literature that will help creating an understanding for the research findings. Due to the inductive approach utilized for this master thesis, the literature section has been gradually refined in accordance with the empirical findings. The section will start with an external perspective, focusing on diffusion with a specific focus on diffusion of e-learning. It will also describe buying behaviour in organizations. Following that, a more internal perspective, based on factors that the focal company can control, will be presented. This part will handle subjects related to business models, such as the business model canvas and blue ocean strategy.

2.1 External Environment and Market Behaviour

This chapter describes factors that are important when analysing the upper secondary school market, including diffusion theory and organizational buying behaviour. Literature regarding market behaviour has been utilized since there is no known customer for the product as of today, which makes it difficult to apply traditional theory regarding marketing of an established product.

2.1.1 Diffusion of Innovations

If the focal company shall succeed in entering a new market and manage to diffuse their product, it is important to know how diffusion of an innovation takes place. Rogers (1983, p.5) defines diffusion as “*the process by which an innovation is communicated through certain channels over time among the members of a social system*”. However, the point in time at which a member of the social system adopts an innovation differs a lot between the members. Individuals can therefore be divided into categories according to their innovativeness and eagerness to adopt innovations. If the adoption of an innovation is plotted over time on a frequency basis, it will follow a bell-shaped curve (see Figure 1). In the beginning there are few adopters in each time period but they become more and more until about half of the members of the social system have adopted the innovation. Then, the number of adopters in each time period starts to decline and continue to do so until all the individuals have adopted the innovation.

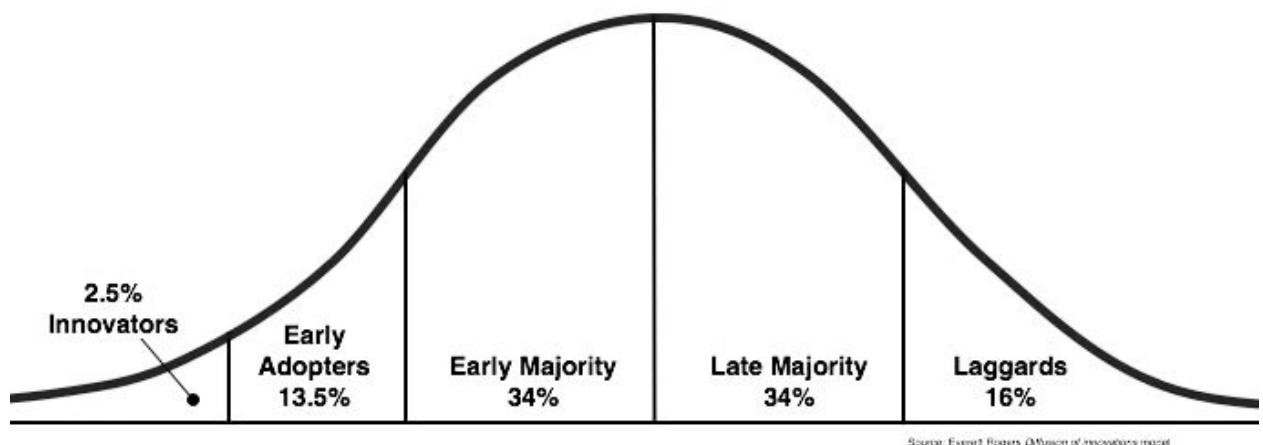


Figure 1, Rogers' (1983, p.247) diffusion curve

The first category in Roger's diffusion model is the innovators. These individuals like to try new ideas and also enjoy the risk connected to trying something new. Innovators usually also control substantial financial resources in order to be able to handle setbacks and absorb the

potential losses of unprofitable innovations. These people are important for the diffusion process since they bring innovations from outside the social system's boundaries and launch them inside the system.

The second category of adopters is the early adopters. They are more integrated in their social systems than innovators and therefore have a high degree of opinion leadership within the system. They are not too innovative compared to the average member of the system and they can therefore be trusted role models for other members. Thus, their biggest role in the system is to decrease uncertainty about new innovations. Change agents often look at these individuals for help to speed up the diffusion process.

The third category is the early majority, where the individuals adopt a new idea just before the average member of their system. These individuals serve as important links between early adopters and those who are relatively late to adopt a new idea and therefore bring connection into the diffusion process. Members of the early majority are generally more careful and take longer time to completely adopt an idea than early adopters. They prefer not to lead but at the same time not be the last ones to try new ideas.

The fourth category in Roger's model is the late majority. The individuals belonging here are more sceptical about new innovations and they may only adopt because of economic necessity and pressure from peers and their social network. The resources an individual in this category possess are usually scarce and this means that they don't feel safe to adopt a new idea until almost all uncertainty about it is gone.

The last category to adopt an innovation is laggards. They are often isolates in their social network and primarily interact with others with traditional values. Suspicion and resistance to innovation are common characteristics of a laggard and just as for late majority, the laggard's scarce resources is often a reason that these individuals have to be cautious before adopting a new innovation that might fail.

Rogers (1983) also describes five attributes which largely decide how fast an innovation is going to be adopted. Important to note is that it is not the actual performance of these factors that decide about the diffusion process, but rather the receiver's perception of the attributes. The first important attribute is relative advantage which refers to how much better an innovation is perceived than the one it replaces. Compatibility is another important attribute which shows the degree to how much an innovation is compatible with existing values and needs. The third characteristic is complexity which refers to how difficult to understand and use an innovation is perceived. Trialability is about how much an innovation can be tested and experimented with before adoption. Finally, there is observability which is the degree of how visible the results of an innovation are to others. For fast diffusion to take place, it is important that the focal company takes into account that all of these five attributes should be as high as possible, except complexity which should be low.

2.1.2 Opinion Leadership

The rate of diffusion is highly dependent on opinion leaders, who are people who are able to informally influence other people's attitudes about innovation and thus have a big impact on whether they adopt or not (Rogers, 1983). The reason the diffusion curve is shaped like an s is actually due to the time opinion leaders adopt and activate diffusion networks in their social system. Most individuals in a social system have no opinion leadership at all while a few have a great deal of it. Typical characteristics of opinion leaders are that they are more exposed to mass media than their followers, they have higher socioeconomic status and they have more contact

with change agents. Moreover, they often participate in social activities and make themselves accessible for their followers. Finally, they are generally more innovative than their followers and in order to keep their recognition as innovation experts, they usually adopt new ideas before the followers.

However, this does not mean that opinion leaders have to be innovators. Rogers (1983, p.284) states that *“when a social system’s norm favor change, opinion leaders are more innovative, but when the norms do not favor change, opinion leaders are not especially innovative”*. In conservative systems, innovators are often looked upon with suspicion and they are not respected by other members. Innovators are too change oriented and unrealistic as role models in systems like these and are therefore poor opinion leaders in these systems. Thus, the adopter category of an opinion leader is dependent on their positions relative to the system’s norms. In addition, the nature of the innovation that is diffusing affects the influence of the opinion leader. For a low-uncertainty innovation, innovators are usually opinion leaders, while for a high-uncertainty innovation, opinion leaders are found in a later adopter category that is more cautious.

2.1.3 Diffusion of E-Learning

When it comes to the diffusion process of e-learning, Comacchio and Scapolan (2004) states that literature often claim that the main reason why firms adopt e-learning is that they expect to gain some economic benefit from it but this view fails to take into account other important factors affecting the decision. Another reason organisations adopt an innovation is the bandwagon pressure, meaning that the pressure to be innovative will increase when there is a great number of adopters. The bandwagon effect occurs when potential adopters think that an innovation will become successful and that they will lose competitive advantage if they do not adopt. Furthermore, Gwebu and Wang (2007) investigated how the individual factor motivation affected the diffusion process and their pilot study showed that the companies that had the highest employee motivation also were the ones with the highest level of e-learning diffusion. The motivation among the employees was divided into two categories, extrinsic and intrinsic. Intrinsic motivation was experienced when a person felt enjoyment from using the e-learning system while extrinsic motivation came from the perceived usefulness and ease of use of the system. Perceived ease of use was also found to be heavily influenced by the perceived enjoyment (Gwebu and Wang, 2007).

Regarding adoption of e-learning among academics, most people belong to one of two groups (Hegarty, et al, 2005). Either they fall into the early adopters’ category, which is risk taking regarding technology, or they belong to the late adopters who prefer slow or no change. Burdett (2003) found that early adopters used ICT in a more advanced way, including features such as web-page quizzes, online discussions etc. They also believed that ICT could improve learning and were interested in using innovative technologies. Late adopters, on the other hand, tended to not use ICT at all or when they did, only as a mean to give students information. There are many barriers to adoption of ICT and most of these are related to organizational or cultural change. Some of these barriers are organizational resistance to change, lack of shared vision, slow implementation pace and difficulties in keeping up with technological change (Berge & Muilenburg, 2000).

Salmon (2005) further explains how the introduction of ICT in education has passed through two stages. At first it was thought of as an electronic classroom and was a new way of doing something familiar. Even though the physical environment for the teaching and learning process was changed, the pedagogical approach used was still the same as before. However, when the

second phase came, it introduced new ways of using learning technologies which enabled new methods that were not possible in the classroom. In the second phase, traditional classroom approaches are also combined with e-learning to form new ways of meeting the objectives and purposes of learning (Salmon, 2005). Teachers, however, are usually reluctant to move from phase one to phase two, since it means they will have to change their teaching methods and they therefore want a deep understanding for how the change will affect the quality and result in benefits. Another problem is that teachers who do not have any experience in e-learning believe that it is more about technical innovation than pedagogical innovation (Salmon, 2005).

Jacobsen (1998) discovered that the use of technology in education is related to computer confidence. Early adopters tended to use the computer in their everyday life more than the mainstream faculty and were also more eager to quickly try new technology. They were also more confident when confronted with IT problems and they used communities to expand their knowledge much more than mainstream faculty did. Moreover, they seemed to be driven by intrinsic motivation and sometimes used their own money to purchase software when the institutional budget did not allow it. Another interesting finding from Jacobsen's (1998) study was that all the early adopters were willing to help their mainstream colleagues to introduce IT in their teaching. The reason the mainstream faculty were more reluctant to using IT in their teaching was that they did not see the advantages with it. In order for them to use the new technology, they wanted to see proven value and that students wanted it. The lack of easy-to-understand just-in-time training and support was also a problem to them.

Nichols (2008) further explains that when it comes to diffusion of e-learning, faculty concerns is a very important factor and faculty usually perceive changes to traditional pedagogies with suspicion. One reason for this could be time-commitment and workload issues since academic staff often are supposed to add e-learning and other innovations to their already demanding responsibilities. Therefore, a gentle strategy to minimise uncertainty among faculty should be used when dealing with change. Nichols (2008) also found that successful diffusion of e-learning in an institution depended heavily on the managerial context. Those institutions where e-learning were represented at top-managerial level experienced the most rapid diffusion of it, while lack of top-level support resulted in ambiguity whether e-learning was worth investing time on and also that faculty were missing a clear vision and strategy. In addition, Nichols (2008) proposes that the following factors are important for the diffusion of e-learning:

- E-learning represented in centres of power
- Strategic ownership and acceptance for e-learning
- Readiness for e-learning, including a culture of open communication and innovative teaching
- Policy and systems aligned with e-learning activity
- Professional development
- Dynamics of change since smaller institutions adopted e-learning faster

One interesting observation from the study is that the perception that e-learning was expensive did not seem to have a big effect on the diffusion of e-learning. Those institutions that had managed to diffuse e-learning successfully had gained a critical mass of teachers using e-learning, meaning that they had engaged the early and late majority on Rogers' diffusion-curve (Nichols, 2008). Elton (1999) also stresses the importance of critical mass when introducing innovations. However, he argues that the critical mass is not only about the number of people who are involved in the innovation but also a question about the involvement of the infrastructure, such as management, resource allocation and services. He also points out how

most innovations can diffuse successfully when their effects on the system as a whole are seen as insignificant. They may then start diffusing in a small way and disappear after a while but they usually contribute to a lot of learning, so that they can reappear later in larger scale. Thus, the introduction of an innovation should not be on too large a scale but neither on too small a scale (Elton, 1999).

Salmon (2005) describes how there are two ways of introducing e-learning in traditional education. One is through large-scale centralization while the other one involves slower, more incremental change which gradually involves all staff members. An interesting finding from Nichols' (2008) study was that the most successful strategy differed between large and small institutions. In larger institutions, a large-scale centralization basis was more likely to lead to successful diffusion while smaller institutions benefited more from incremental staff-based change. However, to understand how e-learning can be introduced in traditional education one need to know how the organization processes a buying need and which actors are involved.

2.1.4 Organizational Buying Behaviour

Since the target customers of the focal company's product are upper secondary schools, literature regarding industrial buyers is arguably relevant as it is in line with Webster & Wind's (1972, p.12) description of industrial buying:

“Industrial buying takes place in the context of a formal organization influenced by budget, cost and profit consideration. Furthermore, organizational (i.e., industrial and institutional) buying usually involves many people in the decision process with complex interactions among people and among individual and organizational goals.”

In the context of upper secondary schools the profit motivation is evident in the case of private schools as it is typically organized in the form of a public company (Lundahl, Arreman, Holm, & Lundström, 2013) but while public schools may not have profit as the overarching goal, they still operate with the necessity of conforming to budget requirements.

Webster & Wind (1972) presents a general model for how to analyse the buying decision of an organization. The model is based upon the assumption *“that organizational buying is a decision-making process carried out by individuals, in interaction with other people, in the context of a formal organization”* (Webster & Wind, 1972, p.13). Further the authors add four classes of variables that influences the decision; individual, social, organization and environmental. These variables are then broken down into task and nontask which is illustrated by Table 1. Furthermore the buying process can be characterized by five steps, (1) Identification of need; establishment of specifications; identification of specifications; (3) identification of alternatives; (4) evaluation of alternatives; and (5) selection of suppliers (Webster & Wind, 1972).

Table 1 Classification and Examples of Variables Influencing Organizational Buying Decisions (Webster & Winder, 1972, p.13)

	<i>Task</i>	<i>Nontask</i>
Individual	Desire to obtain lowest price	Personal values and needs
Social	Meetings to set specifications	Informal, off-the-job interactions
Organizational	Policy regarding local supplier preference	Methods of personnel evaluation

Environmental	Anticipated change in price	Political climate in an election year
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The individual is at the centre of the buying process and can have various roles such as user, influencer, decider, buyer and gatekeeper. The role of the influencer is closely related to Rogers' (1983) description of opinion leadership, while gatekeeper are persons who decide which path information in an organization will take (Reid & de Brentani, 2004). The buyer is responsible for the order process and the identification of suppliers, while the decider often is the person with the final say in the process (Töllner, Blut, & Holzmüller, 2011).

While the motivations and interactions of the individual members are complex, one can view their interactions as a form of problem-solving process in which a problem can be solved through a buying action (Webster & Wind, 1972). A key part of the model is that *“Organizational buying behaviour is a complex process (rather than a single, instantaneous act) and involves many persons, multiple goals, and potentially conflicting decision criteria”* (Webster & Wind, 1972, p.13). The implications of this for the focal company is that the target customer of upper secondary schools cannot be thought of as a single entity and it is therefore necessary to map out the surroundings and inner workings of it.

The social variable is closely related to the individual's complex interactions and interpersonal relationships, but as noted by Webster & Wind (1972) it is an important factor for marketing strategists to analyse. The organization, which is composed of actors and their actions, is then embedded in an environment with influences from the organization on matters such as political, social and economical. The authors further add that it is vital to identify the institutions that can exert forces on the target customer. North (1994) describes how institutions play a role in shaping economic performance by setting the rules of the game for the players which is in line with the argument of Webster & Wind (1972). Thus it is relevant for the focal company that this thesis identifies the institutions that might affect the rules of the game and thereby affect the buying process.

The need for differentiating between task and nontask motives of the actors is due to the fact that while the task of an individual is to be objective and carefully balance the pros and cons of an offer and then select the most suitable offer given the needs of the organization, it is possible for a person to be influenced by other factors such as personal (nontask) motives. Webster & Wind (1971, p.19) writes that:

“In the unlikely event that two or more potential vendors offer products of comparable quality and service at a comparable price, then the organizational buyer may be motivated by purely personal, nontask variables such as his personal preferences for dealing with a particular salesman, or some special favor or gift available from the supplier.”

Thus, when giving recommendations to the focal company, one needs to include aspects such as the individuals' nontask motives. These motives may be difficult to generalize but it gives an academic foundation for discussing the personal motives of teachers.



Figure 2, Buying center (Webster & Wind, 1972, p.15)

The buying center is composed of all actors that can influence the decision and a model of how one can structure the buying process is presented by Webster & Wind (1972) and illustrated by Figure 2. The first layer is the environment composed of economic, political, legal, physical, technology and cultural determinants. The second layer is the organization in which determinants of buying behaviour are located. The third layer is the actual buying center in which a group process takes place. The group process is influenced by the individual participants and together all of these entities shape the buying decision. For this thesis it is relevant to use this model of buying center to present an idealized version of the upper secondary school buying center and surrounding environment, as to provide a theoretical background for the recommendations to the focal company.

In summary organizational buying behaviour is a complex process in which a buying center is charged with the task of fulfilling an organization's buying need. While the task might be more or less clearly defined and aligned with the task given to the individuals, the individuals may still have nontask motives that influence their behaviour. Furthermore the individuals are embedded inside an organization that is affected by outside factors such as institutions and social norms.

2.2 Internal Environment and Business Development

This chapter will cover factors that the focal company can directly influence such as the choice of business model and focus of the value proposition.

2.2.1 Business Models

A business model performs two vital functions according to Chesbrough (2007); value capture and value creation. Bowman & Ambrosini (2000) define value creation in terms of use value, which is subjectively defined by the user based usefulness of the product or service and exchange value, which is the amount paid by the buyer. Further, Bowman & Ambrosini (2000, p.9) argue *“that value capture, the realization of exchange value, is determined by the bargaining relationships between buyers and sellers”*. Lepak et al (2007) also suggest that one should analyse value capture and creation on three different levels which are societal, organizational and individual. Thus, using these concepts it is possible to articulate the activities in a firm's business model and to highlight the beneficiaries of certain products or services.

Business model innovation is an important aspect that companies need to focus on according to Chesbrough (2007), who state that it is no longer possible for a firm to only focus on innovation in terms of technology and R&D. Further, he states that *“a better business model often will beat*

a better idea or technology”. Although Chesbrough (2007, p.1) exemplifies this with PC manufacturer DELL which has not fared well lately (Mellor, 2014), the researchers agree on the premise that business model innovation is an important part of a firm’s competitiveness.

2.2.2 Business Model Canvas

The Business Model Canvas (BMC) was introduced by Alexander Osterwalder in 2004 in his Master thesis as a way of illustrating a company’s business model. It has since then been adopted by many startups as well as established firms, such as Nestlé and GE, (Osterwalder, 2013) as a way of strategizing around possible business models. The relevance of the BMC for the focal company is that it allows one to map out how certain factors impact one’s business model.

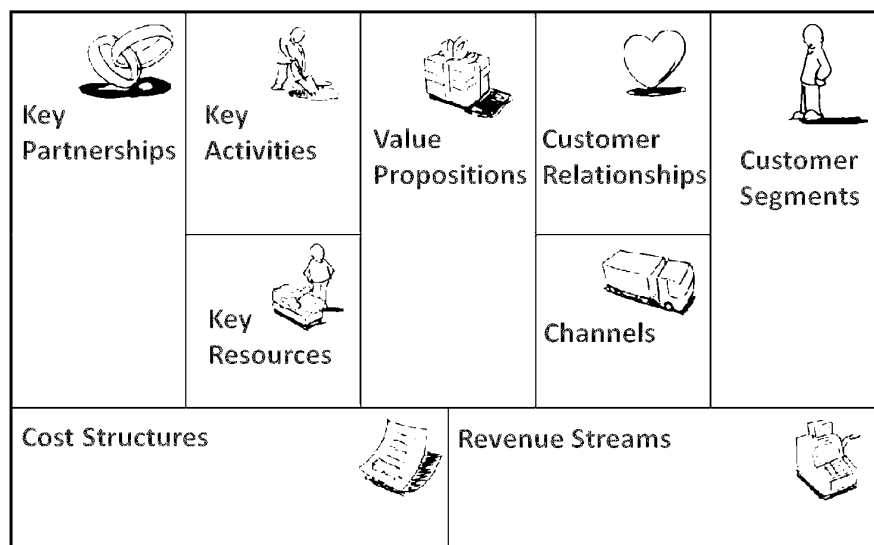


Figure 3, Structure of the business model canvas (Osterwalder & Pigneur, 2010)

The main point of the framework (see Figure 3) is to illustrate what value proposition a company can provide to a target customer and what is needed to support that value proposition. When used by startups there is an emphasis on filling the canvas with hypothesis that can be tested by various means. By filling the business model canvas with hypothesis and then testing if they can be supported or rejected it is possible to iteratively find a working business model that is also scalable. For software startups it is especially important that the business model is scalable which means that it can increase revenue without a linear increase in costs. (Osterwalder, 2013)

Osterwalder & Pigneur (2010) define the building blocks of the BMC in the following way.

- Customer Segment
 - The Customer Segments Building Block defines the different groups of people or organizations an enterprise aims to reach and serve. It is suggested that one should group customers in accordance to their needs and that an offer should be tailored for each group.
- Value Proposition
 - The Value Propositions Building Block describes the bundle of products and services that create value for a specific Customer Segment. This is the reason for why a customer selects one company over another in order to fulfil their needs.
- Channels

The Channels Building Block describes how a company communicates with and reaches its Customer Segments to deliver a Value Proposition. This is the interface between the company providing a product or service and the customers and entails everything from webpages to retail stores.

- **Customer Relationship**
The Customer Relationships Building Block describes the types of relationships a company establishes with specific Customer Segments. The relationship can be automated if no human interaction is needed or personal if human interaction is necessary.
- **Revenue Streams**
The Revenue Streams Building Block represents the cash a company generates from each Customer Segment (costs must be subtracted from revenues to create earnings). There are two major types of revenue according to Osterwalder and Pigneur (2010); transaction revenue from one-time payments and recurring revenue from subscriptions.
- **Key Resources**
The Key Resources Building Block describes the most important assets required to make a business model work. These can be physical, intellectual, human or financial depending on what is needed to deliver the value proposition to the customers.
- **Key Activities**
The Key Activities Building Block describes the most important things a company must do to make its business model work. To use DELL as an example again, their key activity is supply chain management while for McKinsey it would be problem solving.
- **Key Partnerships**
The Key Partnerships Building Block describes the network of suppliers and partners that make the business model work. Companies may create strategic alliances with other companies in order to optimize their business model or reduce risk.
- **Cost Structure**
The Cost Structure describes all costs incurred to operate a business model. Here one can take into account fixed and variable costs but also economies of scale and scope.

Blank & Dorf (2012) argue that a repeatable and scalable business model is required to transform a startup to a regular company. Therefore, the business model canvas inclusion is relevant for the focal company as it allows one to map out the different activities in the search for a successful business model.

2.2.3 Freemium as a Revenue Model

There is a wide variety of revenue models depending on which market one is serving and the preferences of the customers. For example one can monetize a platform using advertising, selling licenses, fixed price, subscription, freemium etc. However from the empirical data it was concluded that Freemium was arguably the most suitable revenue model and it will therefore be described more in depth than the other revenue models. (Business Model Now, 2014)

Freemium is a popular revenue model among startup companies (or revenue stream using the nomenclature of the business model canvas framework) (Miller, 2009) and the term freemium is

a combination of “free” and “premium” (Bekkelund, 2011). Venture capitalist Wilson (2006) describes in a blog post it as:

“Give your service away for free, possibly ad supported but maybe not, acquire a lot of customers very efficiently through word of mouth, referral networks, organic search marketing, etc, then offer other premium priced value added services or an enhanced version of your service to your customer base.”

Examples of companies using this model are Spotify, a music streaming service (Gobry, 2011) and Evernote, which allows you to store your data in the cloud (Darlin, 2009). Evernote (Libin, 2010) claims that they can break even on their costs if they have a conversion rate of 1%, meaning that if 1% of their free users switch to the premium service it is sufficient in order to sustain their business.

The freemium model is enabled by several factors, one of which being that the cost of delivering a web based service through the Internet is continually decreasing because of Moore’s Law. Moore (1965) observed that given the historical data available in 1965 that the density of transistors had roughly doubled every year while the cost for each transistor had decreased. His prediction in 1965 was that in 1970 the cost of an individual transistor would be 10% of the 1965 cost. This forecast has been dubbed Moore’s law and Moore (Kanellos, 2003) later changed his forecast to a doubling of the number of transistors on a single chip every two years. The impact of this is that the cost of delivering a digital service is constantly decreasing. This makes freemium a viable alternative for companies in order to grow their customer base and thereby increase the pool of users who might convert to the premium version.

Another factor that can explain the rise of freemium as a business model is that companies no longer need to invest in their own hardware and hosting for their service. Companies such as Amazon sell their spare capacity to others who then pay only for the capacity that they utilize. (Asay, 2014) This enables smaller companies to benefit from the economies of scale experienced by larger companies such as Amazon and thereby achieve a lower cost than had been possible if the smaller company had invested in their own servers. Economies of scale also impact the company that utilize freemium as a business model according to the CEO of Evernote (Libin, 2010) since the increasing the share of paying customers will decrease the marginal cost for all users.

Bekkelund (2011) lists the following propositions in regards to how to succeed with a freemium business model. The propositions are based on interviews with companies such as SurveyMonkey, Google and venture capitalists working with freemium-based companies.

- Proposition 1. Long-term success with freemium relies on having a culture of free.
- Proposition 2. Churn is higher among the free users than among the paying customers.
- Proposition 3a. The fundamental customer value dimension in freemium is in-use value.
- Proposition 3b. Significant in-use value of the free version leads to increased customer acquisition.
- Proposition 3c. Significant in-use value of the free version leads to increased customer engagement.
- Proposition 3d. Too high in-use value in the free version can lead to cannibalization of the premium offering
- Proposition 4. Better customer service leads to longer customer retention.
- Proposition 5a. Giving free access to a valuable service is an antecedent of goodwill.

- Proposition 5b. Goodwill is an antecedent of word-of-mouth.
- Proposition 6. Including a viral loop increases the growth rate
- Proposition 7a. Having a free version decreases perceived risk.
- Proposition 7b. Increasing perceived value in the free version decreases perceived risk.
- Proposition 7c. The lower the perceived risk of the free version, the more likely consumers are to try the service.
- Proposition 8. Customer engagement value is at the core of understanding the value of customers when using freemium.
- Proposition 9. A users likelihood of converting increases over time.
- Proposition 10. The longer a user is allowed to use a service for free, the higher the lock-in.

Bekkelund (2011) also highlights that the companies that have succeeded with a freemium business model view their free offerings as a marketing tool in order to attract paying customers. However it is also noted that unless the company that employs this business model have a large addressable market it might not be viable as conversion rates are often low. Further the author also suggests that the most important metric for a company to measure is the lifetime of active users since as noted by Evernote CEO Phil Libin, the longer a user use a service the more likely it is that they will convert and start paying. Thus as a user invest more time and create content in a service, the more valuable it becomes to them and thereby increases the chance of them converting. However the business model canvas and freemium does not paint a complete picture of all factors that affect a company, one also needs to analyse the intended market with regards to competitors and their value propositions.

2.2.4. The Blue Ocean Strategy

To analyse the data that has been collected in this thesis an analytical framework is needed from which it is possible to give guidance to the focal company. Kim & Mauborgne (2005) have presented a strategy that firms can use to find and create new markets, the blue ocean strategy. They make a distinction between a red and a blue ocean, where a red ocean is the known market space where industry boundaries are defined and companies compete for the biggest share of existing demand. A blue ocean, on the other hand, is defined by unexplored market space and opportunities for demand creation and growth. In a blue ocean, the rules of the games are not yet set and therefore the competition becomes irrelevant (Kim & Mauborgne, 2005). Historically, strategic thinking has been focused heavily on the competition-based red oceans. Nevertheless, blue oceans have continuously been created and to only focus on red oceans results in a risk to miss out on new market space. Moreover, established markets are often characterized by increasing price wars and shrinking profit margins and customers are increasingly selecting brands based on price only. This further increases the incentives to find new markets where the profitability is higher. To create a blue ocean is always connected to some risks but to increase the chances of succeeding Kim & Mauborgne (2005) propose a couple of frameworks that can be utilized.

The Strategy Canvas

An important tool when creating a blue ocean is the strategy canvas. The strategy canvas consists of a diagram with a value curve, showing a company's relative performance on different competition factors within its industry. The horizontal axis shows factors that the industry is currently competing on and considers important, while the vertical axis shows the level that the industry offers its customers on all of these factors. Traditionally, firms try to become profitable by outcompeting competitors on existing factors but to successfully create a

blue ocean, firms instead need to shift focus from competitors to alternatives and redefine the problem the industry is focusing on (Kim & Mauborgne, 2005). In this way, a new value curve can be created within the strategy canvas and the market can be increased since it attracts new customers that were not targeted before. By contrast, if a company's value curve is the same as its competitors, it is likely stuck in a red ocean with fierce competition. Figure 4 shows an example of how Cirque du Soleil managed to create their own value curve by focusing on parameters that had not previously been competitive factors among circuses and at the same time eliminating factors that customers were not really demanding.

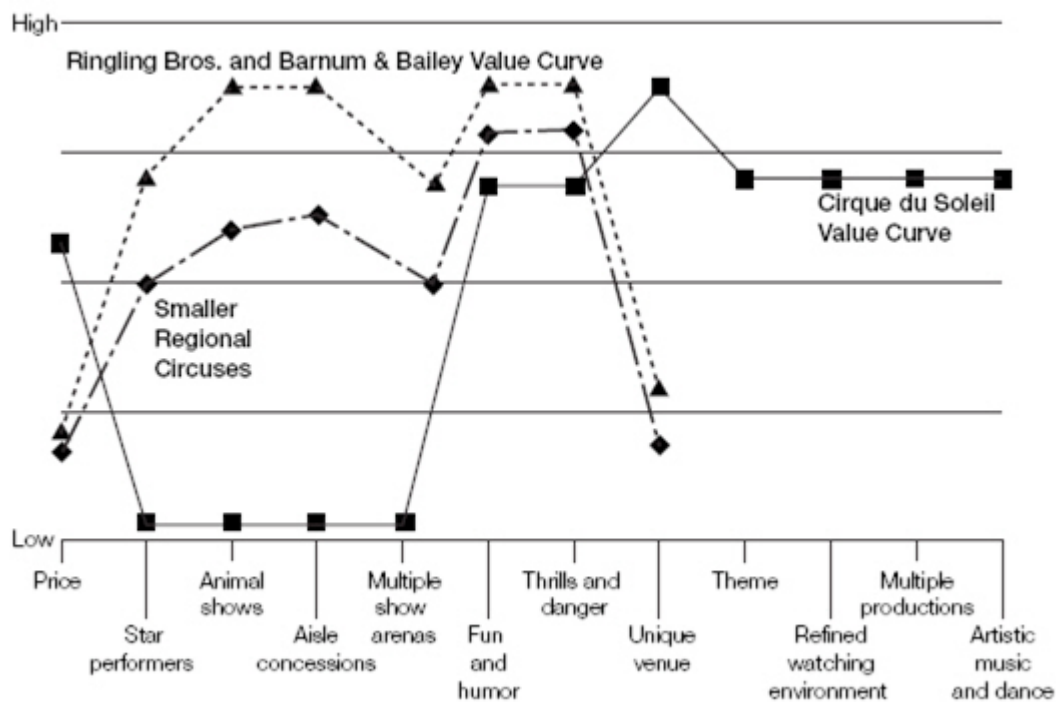


Figure 4, Strategy canvas of Cirque du Soleil (Kim & Mauborgne, 2005 p.40)

The Four Actions Framework

When creating a new value curve, the four actions framework, see Figure 5 can be utilized to create new markets and break the trade-off between differentiation and low cost. To change the strategic logic and business model of an industry, Kim & Mauborgne (2005) argue that the following four questions should be considered:

- Which of the factors that the industry takes for granted should be eliminated?

These are factors that the industry has long competed on but that do no longer bring value. They might even detract from value but the industry takes them for granted. This question can help finding ways to cut cost by eliminating features that customers do not even want.

- Which factors should be reduced well below the industry's standard?

These are factors, such as products or services, which might have been overdesigned to outcompete rivals. However, the company might be overshooting since the customer does not demand such high performance and thus the cost becomes unnecessary high. Therefore, this question can also help in eliminating or reduce certain costs.

- Which factors should be raised well above the industry's standard?

There may be compromises that the industry is forcing the customer to make and these could be eliminated by focusing on what the customers really need. This question could be an aid in increasing buyer value and creating new demand.

- *Which factors should be created that the industry has never offered?*

These factors could be completely new sources of value for customers that the industry does not know about yet. The question can help create new demand and shift strategic pricing of the industry.

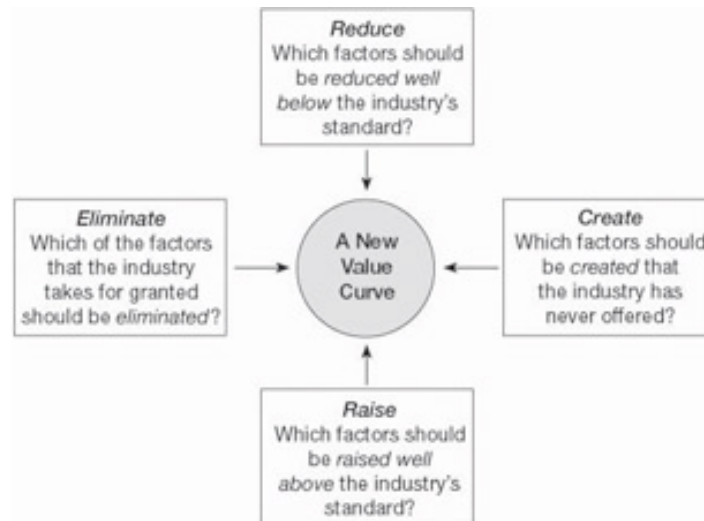


Figure 5, The four actions framework (Kim & Mauborgne, 2005 p.29)

The four action framework (see Figure 5) can be applied to the strategy canvas to get a new look on the industry. By asking the four questions stated above, the company can decide what to eliminate, what to reduce, what to raise and what to create. When all factors have been analysed, a new value curve can be created. Kim & Mauborgne (2005) suggest that a good value curve should be defined by three characteristics; focus, divergence and compelling tagline. Focus means that a company should not make equal efforts in all key factors of competition since that may result in unnecessarily costly business models. Rather, they should choose the few most important to focus on. Since they should not look at competitors but instead at alternatives, it is also likely that their strategy will diverge from competitors'. On the strategy canvas, this means that their value curve will stand apart from industry's average profile. Finally, a good strategy should have a compelling tagline, which is a phrase that clearly sets the strategic profile and is simple and memorable for customers.

4. Method

This chapter presents the process for how the study has evolved and describes the methods used to collect data. It also presents how the sampling has been done and critically assess the quality of the data.

4.1 Research Process

The research process was in no way linear but instead included different activities going on at the same time. However, there were also some important milestones that marked when an activity was finished. These milestones included the completion of a planning report, reaching 200 respondents in the survey and the completion of a first draft of the report.

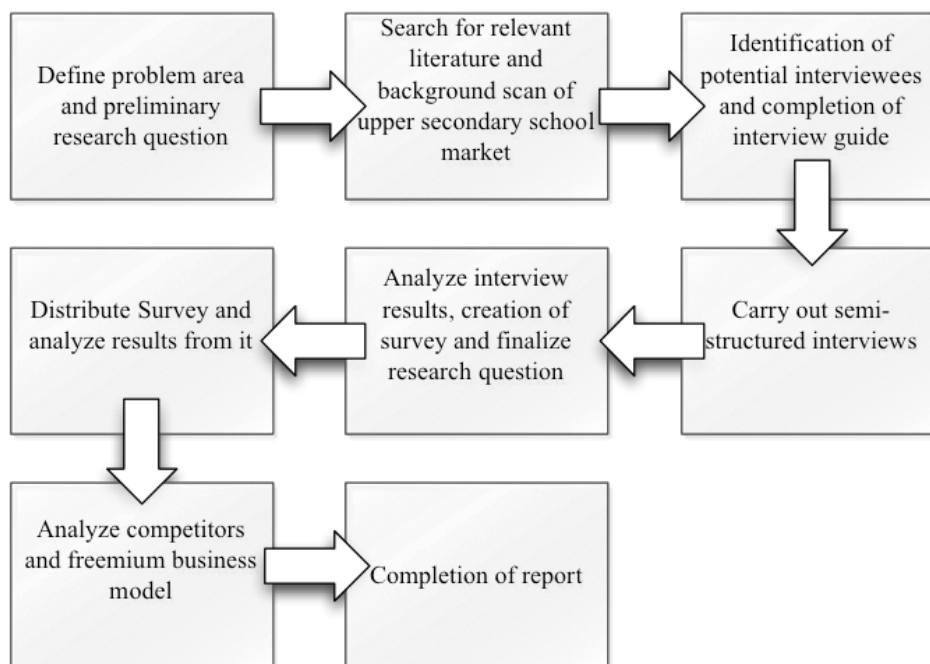


Figure 6, Conceptual sketch of the work process for the study

The first step in the research process (see Figure 6) was to define a problem area to investigate and to formulate preliminary research questions. This was done by discussing with Lurn what they wanted to know and what their primary goal with this study was. The scope and research area were also discussed with the supervisor in order to find an interesting research focus that would fit Lurn as well as contribute to the academic research in general. After the preliminary research focus was set, the search for relevant literature and previous research began. At the same time, a first scan of the upper secondary school market was also done, in order to get some background information and prepare for the interviews. This was done by reading blogs and relevant Facebook group posts, as well as more formal reports within the area.

The first market scan also led to identification of potential interviewees, many of whom were found through Facebook, blogs or articles. 48 persons were contacted and 19 of these agreed to participate in an interview. The interviews were carried out in a semi-structured way and an interview guide was prepared in advance, which included questions regarding use of ICT, change willingness within the school, decision processes within the school, a complete

interview guide is available in Appendix A. The interviews were carried out over four weeks and the results were continuously analysed and later used for the creation of a survey. The survey was sent out to the teachers that had been interviewed and they were also asked to spread the survey within their schools. Respondents were also found within Facebook groups and when the efforts had resulted in over 200 responses, the results from the survey were summarized and analysed, for a complete overview of the survey data see Appendix B.

The next step of the research process was to identify and analyse competitors to Lurn, and to investigate what business model that might be most suitable for Lurn. In this step, complementing questions were sent out to teachers regarding the size of their budget and their authority to freely make decisions about what to buy. The information from these questions could then be used to decide upon a proper revenue model for Lurn. Many competitors were also discovered, mainly through the interviews and the survey, where the respondents could fill out all the ICT tools that they used. There were 86 different programs mentioned in the interviews and survey but a majority of those could quickly be decided as no relevant competitors since their focus was very different from Lurn's. Those that seemed more similar were analysed further according to specific characteristics and the business models they used were also investigated in order to be able to decide upon a proper business model for Lurn.

4.2 Research Strategy

This study was performed in an inductive way, which according to Bryman & Bell (2011) means that theory is the outcome of research and that data is collected prior to formulation of theory and hypotheses. In a deductive study, on the other hand, the research begins with formulation of hypotheses based on what is known about the subject. These hypotheses are then compared to the results of empirical studies and either confirmed or rejected. Since no initial hypotheses were stated for this study and the author's knowledge within the research area prior to the data collection was limited, the inductive strategy was deemed more suitable than a deductive one.

An inductive strategy is often connected to qualitative research (Bryman & Bell, 2011), which tends to be more concerned with words than, as in the case with quantitative research, numbers. An iterative strategy is commonly used, where the research questions are constantly refined as more data is collected and analysed. The approach for this study has indeed been a qualitative one since the methods to collect data has focused on interpreting patterns and understanding the views of the people involved, rather than gaining lots of quantifiable data. Semi-structure interviews with open ended questions is a common qualitative method and has in this study been used in order to get the most important information and points of view of the interviewees.

However, a method that is usually more associated with quantitative research (Bryman & Bell, 2011), namely a survey containing closed answers, has also been used. In this study it can be seen more as a complement to the qualitative methods, since the number of responses were only 200, which is a quite small sample in quantitative research. The survey also contained some questions that could be answered more openly and which gave further interesting insights to the study.

Since this study to a large extent is concerned with people and their behaviour, it has been of high importance to use interpretivism as epistemological view. Interpretivism is a view that requires the researcher to understand the subjective meaning of social action and it argues that studies of the social world require a different logic than studies of natural sciences (Bryman & Bell, 2011). Closely connected to interpretivism is constructionism, which is an ontological

position. Constructionism, which has been applied in this study, assumes that social phenomena and the meaning of them are continuously constructed and revised by social actors through social interaction.

4.3 Research Design

Contrary to the research method, which simply is a technique for collecting data, the research design is the framework which sets the structure of the whole research process, including collection and analysis of data (Bryman & Bell, 2011). The chosen research design decides the importance given to factors such as expression of causal connections between variables and ability to generalize to a larger group of individuals than those participating in the research. Thus, it is important to choose a research design that will make a good fit with the area of investigation.

The research design applied for this study has been a case study. According to Bryman & Bell (2011) a case study concerns the complexity and nature of the case in itself and many well-known studies in business and management has been built on case studies. A case study can handle a location, a person, an event or an organization. In this study, the case regards an organization, Lurn, and how they should act to succeed on the upper secondary school market. A case study has the benefit that it enables an in-depth study of the subject and it is often a suitable approach when the case is of interest in its own right or when something unknown is explored. Eisenhardt (1989) also explains how a case study is quite objective when it comes to building theory, since the focus of the research lays on the data. Moreover, theory developed from case studies has a high chance of being novel, testable and empirically valid due to the intimate linkage with empirical findings (Eisenhardt, 1989). Finally, a case study is characterized by thick descriptions and multiple sources, such as interviews, observations and secondary sources (Bryman & Bell, 2011), which are characteristics that fit very well with the purpose of this research. Therefore, a case study was deemed the most suitable research design for this study.

However, one drawback with a case study is that it often has low external validity, since one case usually is quite unique and the results from it are hard to generalize to other contexts (Bryman & Bell, 2011). In this study, Lurn is one unique case but it is likely that the results are at least somewhat applicable on other similar startups, since findings regarding e-learning in upper secondary school are general and collected from many different instances. If this should not be the case, it still does not affect this study very much since the study's primarily goal is not about producing generalizable findings.

4.4 Data Collection and Analysis

The data was collected from primary as well as secondary sources. The methods used for collecting the primary data included 19 semi-structured interviews and a survey. Semi-structured interviews are often useful in qualitative research, when the aim is to find out about the interviewee's points of view and interpretations and the gathered data does not have to be quantifiable (Bryman & Bell, 2011). Secondary sources were found by using Google Scholar, the Chalmers library and through blogs and Facebook groups. Primary and secondary data were collected during the same time period so that the findings from them could complement each other and help contributing to the researchers' knowledge.

4.4.1 Interviews

The purpose of the semi-structured interviews was twofold. Firstly, the interviews focused on exploring how teachers use ICT in their teaching today and what they felt were missing in the

tools available to them. Secondly, there was also a focus on identification of buying patterns and decision makers within public upper secondary schools. Teachers, principals, ICT-specialists and people from procurement units were all represented among the interviewees in order to get information from people with different perspectives and expertise. The interviewed teachers and principals were primarily chosen according to their interest in ICT and how far their schools had come in working with e-learning. The ones who seemed more innovative and open to change were deemed more suitable to interview since they probably could give the most relevant information for the purpose of this study.

The interviews lasted between 20 and 80 minutes and were carried out in three different ways, face-to-face, Skype and, in one case, telephone. The face-to-face interview was preferred since they allow the researcher to observe more nuances through body language etc. but in many cases not possible since the interviewees were spread out over a big part of Sweden. In those cases, a Skype interview was deemed the next best alternative that also had the benefit of being less time-consuming. By using Skype and a webcam, some of the drawbacks with conducting a telephone interviews were eliminated, such as not being able to see the respondents' reactions or not being sure that the person replying is the one you really want to reach (Bryman & Bell, 2011). Table 2 shows a summary of all the interviews conducted with teachers and other relevant persons. Interviews with Lurn representatives were done continuously as the researchers had access to them throughout the study.

Table 2 Interview Summary

Title	City	Date	Interview Type	Duration
Head of Education Department	Uddevalla	2014-02-11	Telephone	20 min
ICT Teacher #3	Gothenburg	2014-02-11	Skype	40 min
Head of IT at Education Department	Gothenburg	2014-02-12	Face-to-face	80 min
Teacher in Social Science	Torsås	2014-02-13	Skype	60 min
Innovation Advisor at ALMI	Gothenburg	2014-02-13	Face-to-face	60 min
ICT Teacher #1	Lysekil	2014-02-14	Skype	30 min
Principal #1	Torsås	2014-02-17	Skype	40 min
ICT Teacher #2	Partille	2014-02-19	Skype	30 min
Math Teacher #1	Stockholm	2014-02-20	Skype	30 min
Math Teacher #2	Stockholm	2014-02-20	Skype	30 min
Swedish Teacher	Norrälje	2014-02-21	Skype	30 min
Education Business Analyst	Gothenburg	2014-02-26	Facetime	40 min
Principal #3	Partille	2014-02-27	Skype	30 min
IT Coordinator	Kalmar	2014-02-28	Hangouts	40 min
Math Teacher #3	Gävle	2014-03-04	Hangouts	30 min
Principal #2	Gothenburg	2014-03-04	Face-to-face	60 min
Spanish Teacher	Gothenburg	2014-03-04	Face-to-face	60 min
Education Business Developer	Gothenburg	2014-03-06	Hangouts	40 min
First Teacher	Stockholm	2014-03-06	Skype	30 min

Before the interviews took place, an interview guide was developed which included themes and questions that preferably should be covered. In accordance with what Bryman & Bell (2011) suggest, the questions that were deemed most basic and comfortable for the interviewee were placed in the beginning while more sensitive ones, such as questions regarding budget and

decision making, were brought up towards the end. However, this guide was not completely followed when conducting the interviews and more often than not, the questions were asked in another order than how they appeared in the guide. Moreover, the interviewees were often encouraged to continue speaking about a subject or question which were not included in the guide from the beginning, since this generated new information and brought up aspects that had not been considered initially. This approach to interviewing is a common and encouraged method within qualitative research (Bryman & Bell, 2011). The interviews were all recorded, after permission had been given from the interviewee, in order to not miss out on or forget important aspects. Both researchers were present during the interviews but while one was leading the interview and asking most of the questions, the other one was more focused on taking notes and making sure that no important questions were missed out on. Since thorough notes were taken from each interview which clarified when interesting aspects were brought up, it was deemed that it would not be necessary to transcribe the recordings.

All the interviews were conducted over a time period of four weeks and new interviews were set up for as long as they kept bringing new insights and contributed with more information. However, after a while theoretical saturation was reached, meaning that one additional interview did not bring up much new data and that it was fairly easy to predict what the interviewees were going to answer (Bryman & Bell, 2011). It was then decided that the number of interviews was enough and that it was time to proceed to the next step of the research. The interview results were then analysed by organizing the notes from each interview into groups depending on their subject, such as change willingness, procurement process, ICT usage, etc. In that way, it became easier to quickly spot recurring themes and opinions.

4.4.2 Survey

After all the interviews had been carried out the results from them were summarized and became the basis for the development of a survey containing closed questions. Compared to interviews, a survey has the advantages that it can be sent out in large quantities at the same time, reach a geographically dispersed sample and there will be no bias due to impact from the interviewer on the respondent (Bryman & Bell, 2011). On the other hand, a survey does not give the researcher opportunities to ask probing questions and it becomes difficult to ask a high number of questions since that will diminish the response rate. In this case, the survey was used as a method to conveniently reach a widespread sample and the absence of probing questions was somewhat compensated for by for some questions including the alternative “Other”, where respondents could fill in whatever information they wanted and also by giving respondents the opportunity to attach an additional comment in the end of the survey.

The survey was distributed online through a link that respondents could click on to get access to it. The link was sent out to teachers and principals who had been interviewed and they were also encouraged to spread the survey within their schools. In addition, the link was posted in different Facebook groups, such as “Flippa Klassrummet”, “IKT-verktyg” and “Bedömning för lärande”. Without a doubt, this distribution of the survey led to a bias among the responses, since it was primarily addressed to people who were openly positive towards and interested in ICT. In this case, this was not seen as a big problem since this group of teachers is the target group for the focal company and this study is not aiming at generating completely generalizable results but rather collecting and analysing data relevant to the focal company. To make people more willing to respond, it was clarified in the posts with the links that the results from the survey would be shared with everyone who was interested. After having re-posted the link to the survey in the groups twice, the survey generated 209 responses of which 67 were representatives from upper secondary schools and 118 from elementary school.

The results from the survey were summarized in Excel and it was then discovered that the answers did not differ much between the representatives from upper secondary schools and the other teachers. It was therefore decided that the opinions of elementary school teachers also were relevant for this study, since they seemed to overlap well with the upper secondary school teachers' views. Thus, a sample of 185 respondents were used for the analysis. By analysing the survey results in Excel it was also possible to draw general conclusions about certain connections. However, since no statistical methods were used to analyse the data, the conclusions cannot be said to be the absolute truth but rather a result of an arbitrary analysis process.

4.4.3 Secondary sources

Since the time and resources for this study were scarce and collection of primary data often requires a lot of resources, much information was also gathered from secondary sources. This information was taken from books, articles, blog posts and web pages and became an aid in formulating the research questions in the beginning of the study. It also helped in developing a background knowledge of the subject before the interviews were conducted, which supposedly made the interviews more valuable. However, it is important to point out that the secondary data collection did not only take place in the initial stages of the study, rather it was an on-going activity throughout the research process. For some subjects, such as information related to the "Freemium business model", it was difficult to find people who were willing to participate in interviews and share information about the model. In those cases, the secondary sources contributed with important information for the study and became crucial for the data collection.

The data generated from the interviews and the survey also helped in identifying competitors to Lurn. 86 different ICT tools were mentioned and these were then further investigated. All the information about the competitors were taken from secondary sources such as their homepages since it would have been way too time consuming to find representatives to interview from all of them. This approach, however, made it difficult to find all the relevant information and it is important to point out that the assessment of these competitors is somewhat arbitrary. The information about these competitors became important for the further work of deciding upon an appropriate business model for Lurn.

4.5 Sampling

The subjects interviewed for this study were teachers (primarily ambitious and innovative ones who had shown an interest in testing new methods), principals, administrators, people working in municipal school administration etc. These were chosen according to their insights in procurement processes, buying patterns in schools and their experience of using ICT tools in educational purposes. The sampling method used for this study was initially convenience sampling, which according to Bryman & Bell (2011) is when you use people you have nearby or easily can get access to. This is a common approach in qualitative research, where in-depth analysis rather than representativeness is considered important (Bryman & Bell, 2011). The first people contacted were acquaintances to the researchers or administrators of Facebook groups and they became a good support in giving background information and recommending other people to talk to. In that way, snowball sampling, which is a useful approach when conducting qualitative research (Bryman & Bell, 2011), became a new method introduced in the research process. The snowball sampling approach was then used continuously throughout the interview process by in the end of each interview asking the respondent if he or she could recommend someone else who might be appropriate to interview.

The convenience sampling approach meant that a big part of the interviewees were either from Gothenburg or an area close to Gothenburg, in order to enable more face-to-face interviews. However, the focal company is searching for scalable business and thus the study needed to cover upper secondary schools in a big market, and not limit itself to schools near Gothenburg. Thus, it was decided that input were needed from various locations in order to make sure that there were not any big differences between different parts of Sweden. By primarily using the Facebook groups earlier mentioned as well as blogs and referrals, people from other parts of Sweden was therefore contacted and interviewed via Skype or telephone.

Regarding the survey, a convenience sampling method was used for this part as well and the survey was first distributed to people that had been interviewed and their colleagues. One reason for this was that no school administrator at municipality level wanted to distribute the survey as they get too many requests regarding surveying teachers. Respondents were also searched for in Facebook groups, where the link to the survey was posted. Moreover, the survey was also sent out to an email list of teachers who had tried to use flipped classroom, which was found through one of the Facebook groups. As mentioned earlier, this distribution led to a bias among the respondents but since the sampling approach meant actively searching for respondents with an interest in ICT, this was deemed as a motivated bias.

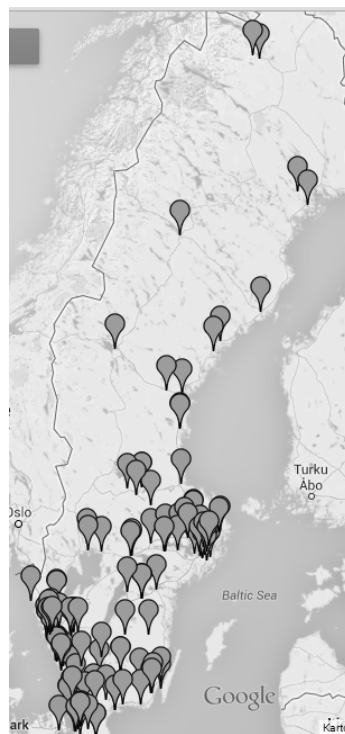


Figure 7, Map showing the distribution of the survey respondents

Just as for the interviews, the respondents of the survey came from many different parts of Sweden. This was important to get more generalizable results and to investigate if buying patterns and use of ICT differed throughout Sweden. It was also considered useful since it might help finding out if any particular area could be a better starting point for the focal company to first launch its platform. Figure 7 shows the distribution of the respondents, according to which school they work on. As could be expected, there are distinct clusters around Stockholm and Gothenburg while the respondents from the Northern part of Sweden are scarcer.

When the survey was distributed a non-response error was expected to occur. The survey generated 209 responses but the Facebook groups it was posted in together had around 15 000

members, meaning that the response rate was very low. However, the low response rate might have been due to that many of the group members seldom check the posts in the group and that the high activity in the groups led to that the post with the survey link quickly disappeared among all the new posts. Therefore, it is not probable that a majority of the 15 000 group members even saw the survey link and the number of responses can thus be considered relatively high.

4.6 Reliability and Validity

To assess the quality of the research performed, the measurements reliability and validity are often used. According to Bryman & Bell (2011) the concept of reliability refers to whether the results of a study are repeatable. However, reliability is usually connected to quantitative research and in qualitative research the concept of dependability is commonly used instead. Dependability means that records should be kept of all stages of the research process, such as selection of participants, problem formulation, interview transcripts, etc. In that way, the research process can afterwards be assessed to decide if proper procedures have been followed (Bryman & Bell, 2011). One problem with this approach is that qualitative research often generates massive amounts of data and it can therefore be very demanding to keep records of everything. In this study, 19 semi-structured interviews were carried out and it was not deemed necessary to transcribe those, which may have affected the dependability negatively. On the other hand, procedures such as sampling, approach to interviewing and completion of the survey are described fairly well, suggesting that the dependability of this study is relatively high.

The other quality criteria, validity, is more concerned with the integrity of the conclusions drawn from the research and can be further divided into concepts such as internal validity, external validity and ecological validity (Bryman & Bell, 2011). The internal validity refers to the issue of causality and if conclusions about causal relationships between variables really hold true. In qualitative research it is common to use the term credibility instead, which is about ensuring that research is carried out in accordance with good practice. A common technique to assure credibility is to use respondent validation, where people who have been included in the research are informed about the researcher's findings and interpretations so that the findings can be confirmed or questioned by someone with good insight (Bryman & Bell, 2011). In this study, respondent validation was applied by discussing earlier findings in the interviews and distributing the survey results to all the respondents. Another technique used for establishing credibility is triangulation, meaning that more than one method or sources of data is used. In this case, semi-structured interviews as well as secondary sources and a survey were used and the findings from these sources were cross-checked and found to conform. To conclude, it can therefore be said that the internal validity of this study is high.

External validity, on the other hand, is concerned with whether the results of a study is generalizable beyond the specific research context and can be said to be relatively low in this study, which often is the case when conducting case studies. However, by analysing competitors and general market conditions it can be assumed that what holds true for the focal company of this study might to some extent be true for other similar firms as well. Finally, the ecological validity is a question of whether social scientific findings are applicable on people in their everyday life and natural social setting (Bryman & Bell, 2011). Since people with different professions and experiences were interviewed and the interviews allowed for the respondents to describe their way of working and freely express their opinions and concerns, the ecological validity of this study is deemed to be relatively high.

5. Empirical Results

In this chapter results from the interviews and the survey are presented. Some of the findings are also based on secondary sources since it was not possible to get access to all of the needed information through interviews. The chapter starts with an overview regarding the use of ICT in upper secondary schools and how the procurement process works then competitors to the focal company are presented as well as their business models. Finally the focal company Lurn and its platform is presented.

5.1 External Factors

The empirical data that was collected outside of Lurn will be presented first in order to describe the upper secondary school market and competitors. The data regarding the upper secondary school was mainly collected through interviews and the survey while data regarding the competitors was collected from secondary sources.

5.1.1 ICT in Upper Secondary Schools

This chapter is based upon the findings from the interviews and questionnaire. It was found that there is a high degree of diversity regarding which applications the teachers use and that the use of ICT differ very much between schools. It was also found that there is often no guidelines regarding ICT and that a large share of the teachers are searching by themselves for new applications that can be used. Even though ICT is widely used in the overall society some teachers expressed that it is still in an early phase within the education area and teachers usually try out a new tool for a short while only to exchange it for another one to test. A few teachers also explain that today computers in the classroom are mostly used as a substitute for pen and paper and are not used as interactively as it could be.

There are two trends that stand out among the responses, namely the trends of moving towards more formative assessment and also the trend of flipping the classroom. Most teachers interviewed believe that the flipped classroom is here to stay and that more teachers will try it. It is increasingly agreed upon that the time a student spend in the classroom should be characterized by coaching and supervision, rather than lectures that the student can watch at home instead. Even though the survey clearly shows that most teachers want to be able to take part of other teachers' flipping material, some of the interviewees also stress that it is important that the flipped material get a personal touch and that the students recognize their teacher's teaching style. The methods used when flipping the classroom vary between teachers, some let students watch Youtube videos produced by other teachers, while other use different tools to record themselves when solving a problem. Some teacher also lets students take part of content through blogs and connect other programs and links to them. Regarding the formative assessment, it is evident that it is increasingly replacing summative assessment, even if tests and exams are still very common elements. Teachers apply formative assessment by having continuous meetings with students and giving each student an individual study plan and matrix connected to assignments. Many teachers also think that the use of ICT can be a great support in working with formative assessment.

The survey as well as the interview results shows that the technical competence has increased over the past years and teachers today are generally very comfortable with using computers. There are therefore greater opportunities for benefiting from use of ICT tools. However, one teacher express that teachers who want to try new methods are usually required to give proof that they work.

“Instead, it should be the teachers who want to go on using the same methods as always who have to prove that what they align well with the study plan and leads to higher results for the students” - ICT teacher 3

A few interviewees claim that education can no longer only be based on a book and instead it has to become more adapted to each individual student. Here, technology can play a big part since it facilitates the work with formative assessment and flipped classroom. Formative assessment enables the teacher to follow each individual during the course and the flipped classroom gives the students an opportunity to individually watch a lecture at home, with the possibility to pause and replay as many times as they need. However, many of the survey respondents also point out that there are some problems connected to flipping the classroom, these are summarized in Figure 8. Other was an open question and some respondents stated that students had uneven possibilities to take part of the material at home or that students forget to watch.

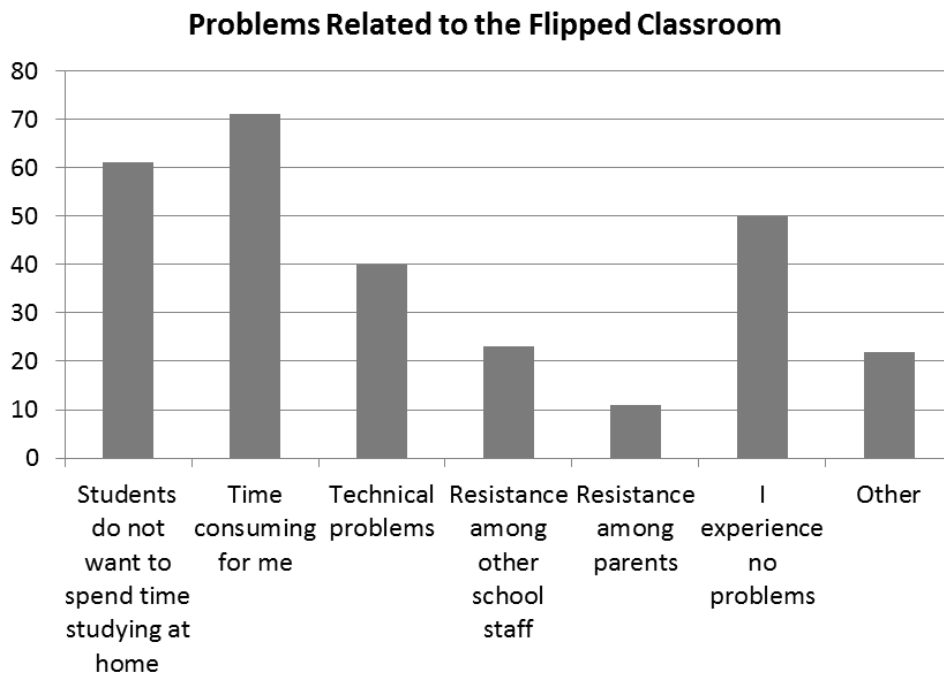


Figure 8, Problems related to the flipped classroom that were highlighted in the survey

5.1.2 Teacher Discovery Process of Software

This section is based upon the interviews and questionnaire and the purpose is to highlight how teachers find new ICT tools that can be used in their teaching profession. It was noted that there are two main ways in which teachers get in contact with new ICT tools. There is one category of teachers that are actively searching for new ICT tools, which are the ICT teachers. Part of the ICT teacher’s job assignment is to find ICT tools, present these and educate other teachers on how to use them. These teachers use different methods to gain knowledge about new tools, for instance they use Facebook and Twitter but they also visit trade shows or conferences and make field trips in order to keep up-to-date. The other group are those that state that they do not actively search for new ICT tools and these are typically the principals, for example one principal stated that teachers know what they need in an ICT tool and therefore it is better for them to search for new tools. The teachers not looking for ICT tools themselves typically get information about new programs through meetings and conversations with other teachers, primarily the ICT teachers.

One ICT teacher stated, when asked how common it is for schools to use ICT tools, that it is still uncommon and that schools complain about the lack of available tools. However the interviewee's opinion was that this is way of evading because of a lack of knowledge among principals and politician regarding the benefit of using ICT tools in schools.

“It is important that principals and other leaders take the initiative to showcase the benefits of using ICT tools and computers by using it themselves” - ICT Teacher #1

Another source for discovering new ICT tools are through online communities such as Facebook and Twitter. Several interviewees highlighted that through online communities it is possible for them to connect with other teachers and in these communities it is common for teachers to post requests for ICT tools that can help them. Likewise teachers who are pleased with a certain ICT tool often post about the tool and how they have implemented it in their teaching. One teacher also said that he started to use Minecraft in his lectures because his students wanted to use it, then students of other teachers would ask their teachers to start using Minecraft as well, making students another source for discovering new ICT tools.

Another important aspect of the discovery process is why a teacher decides to use one particular ICT-tool and the most common reason stated was that it fulfilled a need that they had perceived in their teaching. However it was uncommon for teachers to only use a single solution rather they test a wide variety of the tools that they find and compare that with their existing arsenal of ICT-tools. One popular tool that many teachers had discovered and used was Google Apps for Education as it simplified the student-teacher interaction but all used other solutions in conjunction with it.

5.1.3 Summary of Software Used

Most teachers stated that there is a wide mix of free or cheap software available to them and that they are quite satisfied with the software that they use. However, some teachers express a wish for more interactive software that enables them to better follow the students and decrease the administrative work.

The software that is used can be categorized into three distinct categories, which are for pay, freemium and free software. Typical for pay software are software suites such as Microsoft Office and municipality wide platforms such as Hjärntorget used by Gothenburg city. Hjärntorget can be described as a support platform for teachers and students, in which they can communicate with each other, see their schedule and view results from tests (Göteborgs Stad, 2014)

A common problem within the upper secondary school market is that teachers have little resources for buying new programs for testing. Therefore it is common to use free programs or programs that are cheap enough for the teacher to buy with his or her own money.

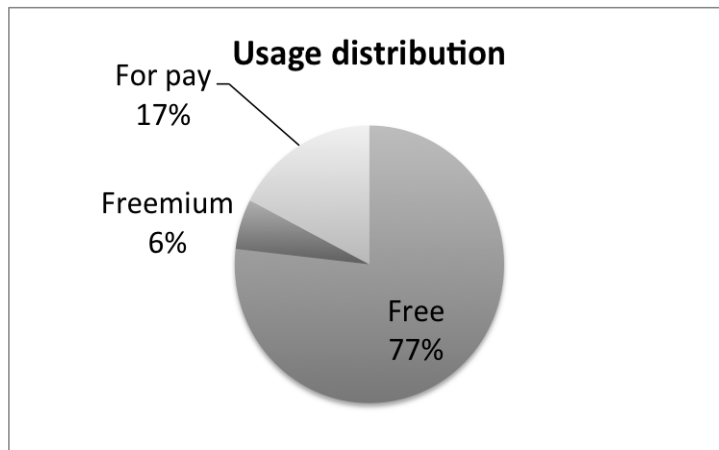


Figure 9, Usage distribution of the different payment categories

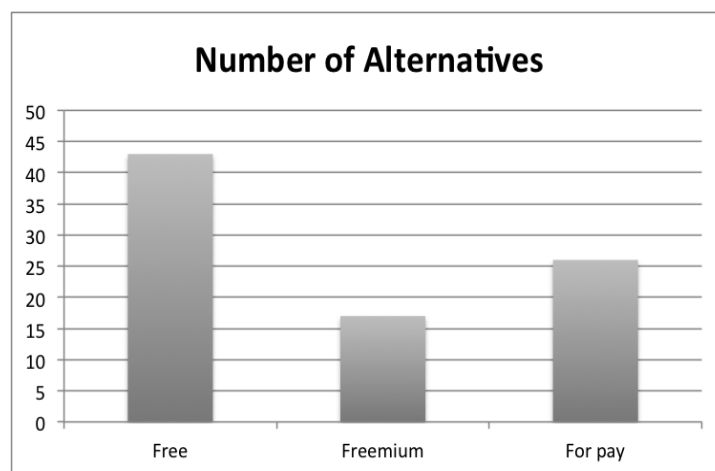


Figure 10, Number of alternatives within each payment category

As illustrated by Figure 9 and 10 most of the software that the surveyed teachers reported to have used were free with for pay second and freemium the smallest category. This was in line with what was collected from the interviews with teachers in which most stated that they mostly used free software or freemium software. The reason stated by the interviewees for selecting a particular ICT tool was mostly based on cost and that it had been recommended to them by another teacher. Further Figure 10 is based on the survey in which teachers were asked to select which ICT tools that they used and were given the possibility of adding other ICT tools that were not listed. In total 86 different ICT tools were reported as being used and 805 answer of which ICT tools were used, since it was possible to answer with several examples of which ICT tools one used.

The five most widely used programs were the following as illustrated by Table 3. The instances column tells one how many times a particular program was mentioned by the 204 teachers that partook in the survey.

Table 3, Most popular software used

<i>Instances</i>	<i>Program</i>	<i>Type</i>	<i>Cost</i>
201	Youtube	Video Sharing Site	Free
152	Google Apps	Online Office Suite	Free
90	Screencast-o-matic	Screen Recorder	Freemium
90	Socrative	Student Response System	Free
36	Khan Academy	Online Education	Free

5.1.4 Change Willingness in Upper Secondary Schools

According to one of the interviewees, a big challenge for the school is change management since the way the school system is structure has not changed very much since the 19th century. The majority of the survey respondents experienced that they usually were the first to try new methods at their schools and the survey also shows that only 6% of the teachers completely agree upon the statement that the process of introducing new ideas in their school is a fast one, see Figure 11. One of the interviewees makes the following statement:

“The process of implementing new ideas is incredibly slow. There is a lot of prestige for the teachers, who have used the same education methods for many years and are reluctant to start using computers in their education.” - Math Teacher #2

In my experience, the process of introducing new ideas in my school is fast

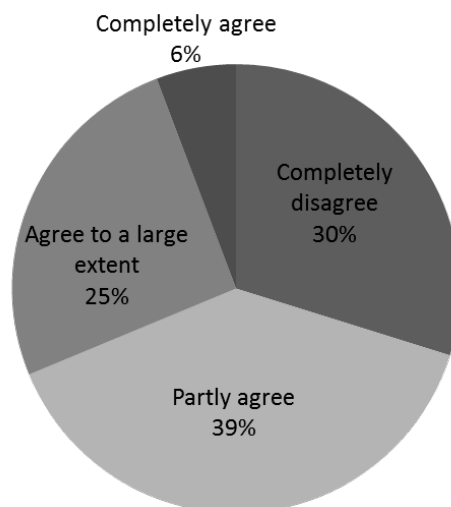


Figure 11, Perception of the process of introducing new ideas in school

Apparently most teachers have a ready structure for how to carry out their lessons and they are often not willing to change that structure. However, the change willingness appears to differ a lot depending on which school it is taking place in. One interviewee reflects upon that it probably takes longer time to introduce new methods in big, traditional schools than in smaller and newer ones. It is also commonly stressed among the interviewees that preschools and elementary schools often are more open to new ideas than upper secondary school. An explanation for this is given by one teacher who explains how children in preschool are more adaptable while teenagers in upper secondary schools have been in school for many years and have clear expectations for how the education should be carried out. One interesting observation made by Principal #2 is that the interactive digital books that exist today are usually developed for younger kids and that there are few available for upper secondary schools. According to her, this might be due to that there is much more information to take in for an upper secondary school student and when the students are supposed to read a long chapter in a history book, they prefer to have a physical book. On the same note, another interviewee claims that the students are often the most conservative ones and that they not really see the point in using ICT or formative assessment. However, after working with a new tool or method for a while they usually start to see the benefits it gives and become more positive.

Although it is generally agreed upon that the process of introducing new ideas in school is usually not very fast, there is also a common belief that there exists willingness to change and a curiosity for trying out new methods. At each school, there are usually a few individuals that are at the forefront and are very eager to test new programs, even if it is time consuming for them. Then there are a few that are very adverse and who prefers to keep on using traditional approaches and only use the computer when they are forced to. However, it appears as if most of the teachers can be placed somewhere in between these two opposing categories. This is a group that does not take many initiatives on its own but that allows itself to slowly adapt to changes. According to one teacher, the group one individual belongs to is dependent on how comfortable he or she is with using IT in general. The survey also shows a strong correlation between how comfortable a teacher is with using new technology and if he or she has tried to use ICT in school, see Figure 12 and 13.

I am comfortable with using new technology in my everyday life

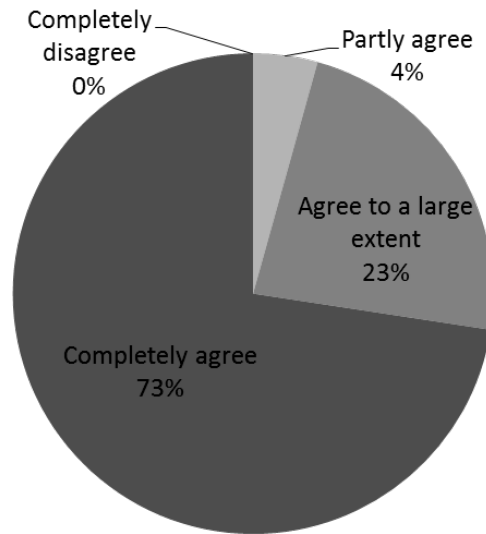


Figure 12, Teachers' confidence with using new technology

I use digital tools when I teach

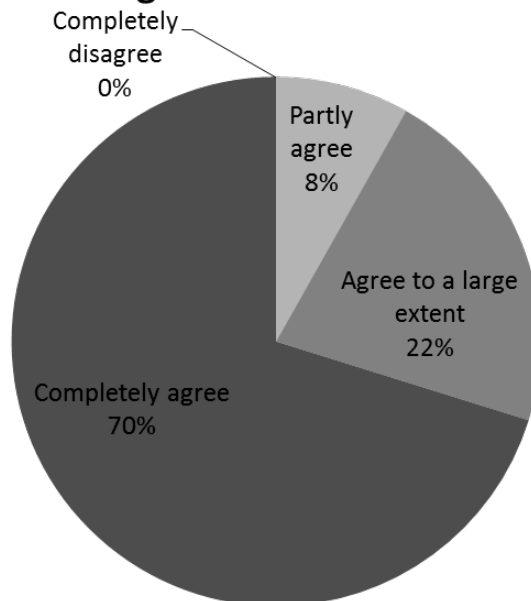


Figure 13, Share of teachers who use digital tools in their lectures

The importance the principal and school management have when it comes to change willingness and introduction of new methods is highlighted in many of the interviews. Moreover, 67% of the survey respondents fully agreed upon the statement “*It is important that the principal is driven and takes initiatives for the teachers at my school to feel positive towards change*”. One interviewee states that it is important that the principal takes initiative and shows the way; otherwise there is a risk that teachers do not feel appreciated or see the point in changing and

trying new methods. However, it is also expressed that the principal and school management might not always fully realize their importance and their influence on the teachers.

5.1.5 Teacher Demand

The functionality requested in an ICT tool varies a lot between the teachers and from the interviews it seems like there are almost as many education styles as there are teachers. One specific request stands out, however, and that is that it is very important for teachers to be able to freely design and adapt the content of their lessons. Both interviewees as well as survey respondents agree upon that, see Figure 14. The survey also shows that a striking majority wants to be able to take part of flipped classroom content generated by other teachers, which could be a result of that many teachers feel that they have little time available to prepare new material.

It is important for me to be able to freely adapt the content of my lessons

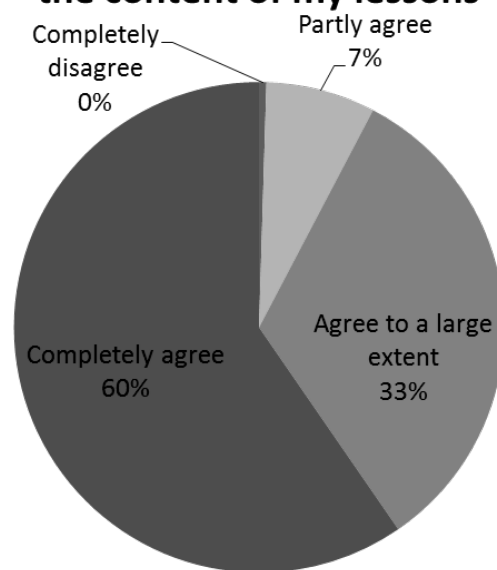


Figure 14, Teachers' wish for freedom to form their lectures as they want

Regarding the demand for a comprehensive solution, the opinions among teachers are divergent. Some feel that there is a lack of an integrated solution that fully utilizes the potential of ICT while others prefer to have a lot of small and simple tools from which they can choose the functions that fit their education style the best. One teacher explains that if a certain program is lacking some functionality, there are usually complementary tools that can provide those functions. Moreover, too much functionality might only be a drawback and one teacher expresses how he does not believe in having a lot of functions that no one recognize or understand. On the other hand, there are other interviewees who stress that the market for e-learning tools is not very well developed and that there is a lack of teaching material that uses digital tools as a natural basis.

“The e-learning tools that exist today are relatively basic and not very intelligent. There is a need for ICT-tools that are more adaptable and that utilize research about gamification.” - Head of IT at Education Department

The demand for more interactive tools is continuously expressed throughout the interviews. The term book-on-a-can (in Swedish bok-på-burk) is used by a few interviewees, meaning that the

computer is for example only used to read a pdf on a screen instead of a paper, which is not adding any value. Instead, it could take advantage of gamification, interaction and coordination to make the learning process more enjoyable and stand out from more traditional learning material. Some teachers also express a need for programs that are self-correcting and where the teacher can ask control questions connected to the material so that he or she can see if the student have watched and understood the material. Throughout the interviews there is a frequent request for programs that enables the teacher to easily see how each student is doing and that facilitates the work with formative assessment. In that way they think that the work with administrative tasks could be decreased.

5.1.6 Procurement Structure

This chapter will present the empirical results of how software is procured in the upper secondary schools. There are two distinct categories of school in the Swedish upper secondary school system, public school operated by the municipalities and free schools operated by private endeavours. Both are, however, funded by the municipalities who set the amount of money in the form of a school voucher that is assigned to each student. The system is constructed according to the fairness principle in which funding between public and free schools is supposed to be neutral meaning that the municipality cannot make a targeted investment for public schools only unless they compensate the free schools by the same amount. (Friskolornas Riskförbund, 2013) It is the municipalities that decide how much money the schools will get but when it comes to decisions about how to use the budget, each school's principal has the main responsibility. The implication of this is that schools compete for students and therefore need to be able to differentiate themselves in order to attract and retain students.

During the interviews it has become clear that it is usually the principal that approves a teacher's requests for purchases of new software tools. However, for smaller purchases such as e-books and cheaper applications, the teachers can sometimes make the purchase themselves. The principal has the main responsibility for keeping the content of the courses up to date but it is common that a teacher or ICT teacher find an interesting program that they like and then they can influence the principal regarding which tools the school ought to buy. Often, the teachers belong to a teacher group according to which subject they teach and within these groups they can discuss new ICT tools and make purchases, as long as it is not too expensive for the generally small group budget. One interviewee points out that it is seldom the principal who finds new programs, instead he or she needs to collaborate with the teachers and discuss their suggestions.

"I could require that all the teachers use the same tool, for instance podcasts, but that would probably not work well. Everyone has to collectively agree upon which working methods that are the best and the teachers are encouraged to take initiatives to try out new methods." - Principal #2

A number of teachers were asked the question of approximately how much money they could spend on digital programs without having to consult with the principal or the teacher team. Out of 59 respondent, 36 answer that they can take no such decision on their own and those who can usually do not have more than a few hundred SEK that they are allowed to spend. It is more common that the teaching team get a budget they can use in whatever way they like after discussing with each other. However, for most teams this budget does not amount to more than a few thousand SEK and then it is important to take into account that the money often should cover books and physical material as well as programs and software. Approximately half of the respondents claim that all purchases have to be discussed with and approved by the principal.

However, as long as there is money for it and the teacher can motivate why a program is needed, it seems like the purchasing requests usually get approved.

Although the principal obviously is an important actor when it comes to procurement, he or she still does not have complete power, especially not in public schools. Usually, the principal's budget is decided by the municipality and the content of the national curriculum also has to be considered. Moreover, when it comes to decisions regarding big investments, such as procurement of computers for each student, the decision is taken on the municipal level. In Gothenburg, procurement of new teaching material to public upper secondary schools goes through Göteborgs Regionen (GR), which is an organization of cooperation between 13 municipalities close to Gothenburg. GR then makes sure to purchase in a way that gives maximum discount and sometimes they can get even more discount by purchasing for many schools at the same time. However, one interviewee points out that they also need to be open for the demand from teachers and try to be at the forefront trying new methods. Nevertheless, it appears as if when one supplier has been chosen, the buyer often continues to use that supplier. According to the Head of IT at Education Department, this could be changing soon since established suppliers has been slow in developing digital tools and today there is an open field within this market.

Furthermore, specialized IT coordinators within the municipality often do the actual implementation of ICT tools and they can also be part of the procurement process when evaluating different providers. One example was of this type of procurement process was when a school district in 2011 realized that they were falling behind other school districts in ICT usage, the politicians then tasked the IT coordinator in the district with evaluating new ICT tools that could be implemented. The outcome of it was that the school district implemented one computer per students and moved all students to Google Apps for Education.

Furthermore one needs to consider the environment, which influences the upper secondary school such as institutions and other factors. One institution is Skolverket (Education Department) that is responsible for ensuring that all students gets equal access to education by setting educational goals and knowledge requirements. (Skolverket, 2013b) Another institution that is closely related is the School Inspectorate (Skolinspektion) which is a governmental agency responsible for monitoring schools and ensuring that they comply with school regulations. (Skolinspektionen, 2014) Further, another important institution is SKL (Sveriges Kommuner och Landsting) that is an association for all of Sweden's municipalities and regions which gives recommendations to its members regarding schools and other areas that are of common interest to the members (Sveriges kommuner och landsting, 2009).

5.1.7 Competitors

This chapter will present the findings regarding competitors to the focal company and is structured around direct competitors to Lurn and competitors using a freemium business model. All the information about competitors has been gathered from their respective homepages.

Direct Competitors

The competitive landscape consists of direct competitors to Lurn, providing other Learning Management Systems (LMS) that can be implemented in upper secondary schools. The modus operandi for this thesis when selecting direct competitors has been to find those solutions that provide similar functionality and that provide a free or low cost entry edition.

Competitors have been compared according to seven criteria that have been frequently mentioned during the interviews: adaptability, availability of ready-made content, functionality,

possibility to see students' progress, gamification, blended learning factor and similarity to traditional methods. Adaptability is a measure of how high the possibilities are for the teacher to create and upload her own content and to adapt the tool to her subject or lecture. Availability of ready-made content is an indicator of how much content uploaded by others there is, meaning that the teacher do not have to make everything herself. Functionality measure the amount of functionality a tool offers and if it can be used for all parts of a course or just specific elements of it. The possibility to see students' progress means that there is some testing effect included, which lets the teacher see when students have tested themselves and what their results were. In that way, the teacher can easily see what the students struggle with and what needs to be focused on in the next lecture. The gamification criteria measure how much gaming elements that are included in the tool. This could be advanced games, such as Minecraft, or more simple elements, such as quizzes with leader boards and high scores. The blended learning factor is an indicator of if the tool is supposed to be used within the classroom in combination with outside school and how well it works for that purpose. A testing effect combined with presentation material leads to a high blended learning factor. Finally, similarity to traditional methods refers to if the tool's functions could be achieved without using a computer. For example, a program presenting text on pdfs could probably be replaced by a book and a Youtube presentation showed in the classroom could be replaced with the teacher's own presentation.

Since one of Lurn's unique selling points is the possibility to see the students' progress, the focus has been on competitors with a high or medium level on this factor. Youtube, Prezi, Explain Everything are Screencast-o-matic are some popular e-learning tools according to the survey, but since they are tools for providing students with content and do neither include any testing effect, nor allow the teacher to follow how the students are doing, they are not seen as direct competitors to Lurn.

Google Apps, Office 365 and OneDrive are three similar tools frequently mentioned by teachers in the survey. They can be said to have a medium level on possibility to see students' progress since teachers can check out the student's uploaded work in the programs. However, there is no testing effect and the teacher can not follow the student's results and answers to specific question so the level is not deemed as high as Lurn's. Since the teachers and students can upload their own files, the adaptability is quite high, while the availability of ready-made content is low. The level of functionality is relatively high since different types of files can be uploaded and edited and interaction is possible. In Google Apps, it is even possible to make video calls through Google Hangouts. The blended learning factor, on the other hand, is more moderate. Although the teacher can upload material for the student to read at home, it is not the purpose of the programs and they do not really provide tasks or quizzes for the student to actively work with at home. Moreover, the gamification level is very low compared to Lurn and it is a bit similar to traditional methods since one of its purposes is to write and distribute text document.

Computer games, on the other hand, obviously have a high level of gamification and they appear to be a popular tool among teachers. Similarity to traditional methods is low since the computer obviously is crucial when using this tool. The possibility to see how students are doing is probably low to medium depending on type of game. The teacher can sometimes check top scores and statistics but it can be difficult to follow the student's work and see in what areas the student has troubles. Regarding the blended learning factor, it is deemed to be medium since it is a tool that students usually can work with from home but it generally does not provide lectures and material to study at home. The functionality could be seen as medium since it could provide different games covering much content but does not allow for much adaptability and the possibilities for interaction between teacher and student is limited.

Socrative and Khan Academy are two other tools that the survey respondents bring up quite frequently, which both provide a high possibility to see how students are doing. They both have a medium level of gamification, Socrative providing more game like quizzes and Khan Academy providing badges and points to earn. The blended learning factor can be said to be low for Socrative which is meant to be used in the classroom, but high for Khan Academy that provides tutoring videos as well as exercises. Adaptability is high on Socrative since the teachers can ask their own questions and create their own quizzes. Availability of ready-made content is lower, but there are possibilities to import quizzes from other teachers. Khan Academy, on the other hand, contains massive amounts of ready-made material while the adaptability is lower. Another ICT tool that has a very similar interface to Lurn is the language practicing tool Duolingo. Just as Lurn, Duolingo has some gaming elements since students can earn points and compete with each other. However, it is not very adaptable since teachers cannot add their own content and the program only provides language courses. Neither is the blended learning factor very high since it does not provide videos or presentation but rather is a way of testing oneself.

From the survey, new ICT tools were identified that the authors had not heard of before but still seemed like relevant competitors to Lurn. One of these was Kahoot, which is a game-based classroom response system through which the teacher can create quizzes, discussions or surveys. Public content can also be found to play with. The teacher can then see each student's answers and get an overview of the knowledge level of each individual. Kahoot is also based on blended learning in the sense that it combines traditional classroom methods with new computer based activities. However, it is not blended in the sense that it is supposed to be used in the classroom and does not provide the students with opportunities to watch lectures and practice at home. Quizlet is a similar tool, that lets the teacher create self-grading practice quizzes or choose from already uploaded material. This tool also has a high level of gamification since the quizzes can be structured as games and students can compete for the highest score. Moreover, it enables the teacher to see which students who has studied a certain study set and which tasks student struggle the most with. The tool can be used at home or in school but the possibilities to upload videos or presentations are limited so the lectures still have to be held in the classroom. Thus, the blended learning factor is not very high. Another relevant competitor is Haiku Learning, which is an interactive tool where teachers can create and share content such as videos, online projects or discussions. Students can participate actively by commenting on material, joining a discussion or giving feedback through a poll. Haiku Learning also allows for assessments that help the teacher examine what the students know and it is a quite comprehensive tool, facilitating most of the administration work the teacher must do. However, it does not really include any gaming elements so the gamification level is quite low and many elements are quite similar to traditional methods.

To conclude, it is evident that there are a lot of different e-learning tools on the market and that most of them have very different functionality and fulfil different needs (see Table 4). Many of the distinguished features of Lurn, such as adaptability, gamification, blended learning and possibility to see the students' progress are represented among the competitors. However, it seems to be very uncommon that ICT tools have a high level on all the factors described here. Although there are many competitors, Lurn seems to have found a somewhat new niche with a tool that combines a high level of blended learning factor and possibility to see how the students are doing with high adaptability and a certain level of gamification.

Table 4, Summary of competitors and their features

Program	Adaptability	Availability of ready-made content	Functionality	Possibility to see students' progress	Gamification	Blended learning factor	Similarity to traditional methods
Youtube	Low	High	Low	Low	Low	Medium	Medium
Google Apps	High	Low	High	Medium	Low	Medium	Medium
Computer Games	Low	High	Medium	Low/Medium	High	Medium	Low
Socrative	High	Medium	High	High	Medium	Low	Low
Khan Academy	Low	High	Medium	High	Medium	High	Medium
Duolingo	Low	High	Low	Medium	Medium/High	Medium	Low
Kahoot	Medium	High	Medium	High	High	Medium	Low
Quizlet	Medium	High	Medium	High	High	Medium	Low
Haiku Learning	High	Low	High	Medium	Low	High	Medium

Competitors with a Freemium Business Model

This chapter will present a selection of companies targeting various markets that utilizes a freemium business model. The companies that are included have been selected either because they were described previously in the theory chapter or because they were given as an answer in the open question in the questionnaire regarding ICT tools.

Evernote

Evernote is an online synchronized storage for notes and documents and uses a freemium model in which functionality such as online note taking and ability to upload PDFs are included. However there is a limit to how much one can upload to their service per month, there are ads and one is not prioritized for support. Evernote has one premium level at 38 SEK/month or 339 SEK/year and when upgrading, one get offline support, larger upload limit and the ability to have collaborative notes (Evernote, 2014).

Haiku Learning

Haiku Learning allows teachers to create webpages for their classes, setup wiki pages in which students can collaborate, give assignment, take attendance, etc. Furthermore, there are features targeted at school administrations that allow one to aggregate data from a school or district and to synchronize the data with SIS (Student Information Systems). There is a free version that includes 2GB of storage and allows a single teacher to create five classes with a maximum of 375 users. It is also possible for a single teacher to upgrade to a premium service with more storage and users, with prices ranging from 5-30 USD/month. For institutions the pricing range from 5-10 USD per user and month depending on institutions size with a minimum of 50 users (Haiku Learning, 2014).

Mentimeter

Mentimeter is a tool that allows a presenter to show the participants a question and have them vote on it. It was one of the tools that the teachers in the questionnaires reported to have used in the classroom and it got six mentions in total. The free version allows the presenter to have an unlimited number of questions and participants who respond to the questions. Further the premium version is priced at 99 USD per month and allows the presenter to export the results to Excel, ability to style the questions in accordance with one's brand and to have more complex question types such as 100-point method (Mentimeter, 2014).

Spotify

Spotify is a music streaming service that allows its users to listen to music for free on computers and mobiles but with breaks between songs for advertisements. There is also a limitation to the functionality that is provided in the mobile. Further there is a premium service that allows one to listen to unlimited number of songs and to play music offline on computers and mobiles for a fee of 99 SEK/month. (Spotify, 2014)

Glogster

Glogster can be used by teachers to create interactive webpages in which they can embed videos and text for presenting different topics. Two teachers reported that they had used Glogster in the questionnaire through the open question regarding usage of ICT tools. The free version limits the number of student accounts that can be managed to ten but it is possible to add more with more limited rights as well. The premium version allows one to manage more students and there are three pricing levels depending on the number of students per teacher. The basic version which allows 30 students per teacher cost 39 USD per year, the next pricing point is 95 USD per year for 125 users and teacher and the top tier pricing point is 390 USD for 250 students and 10 teachers (Glogster, 2014)

Summary of Freemium Business Models

Table 5 summarizes the empirical findings regarding freemium business models. When counting the number of pricing tiers, group and business pricing is counted as a single additional pricing tier. The market that the product is assigned to is based upon the marketing description from each respective company website.

Table 5, Companies using a freemium business model

<i>Name</i>	<i>Type</i>	<i>Market</i>	<i>Number of Pricing Tiers</i>	<i>Price Range</i>
Evernote	Online note taking	Consumer	2	50 USD/year
Haiku Learning	Webpage creator	Educational	3	60-120 USD/year
Mentimeter	Interactive questionnaire	Business and Education	3	1200 USD/year
Spotify	Music streaming service	Consumer	2	180 USD/year
Glogster	Webpage creator	Educational	4	39-390 USD/year

5.2 Internal Factors

This section will present the focal company Lurn and its' e-learning platform and how it can be used by teachers. The data is based on interviews with representatives from Lurn and their application to Venture Cup.

5.2.1 Lurn Company Presentation

Lurn is a Gothenburg based startup that was founded in 2013 and has developed a web based learning platform. As an organization Lurn consists of six former and current students from Chalmers University of Technology and Gothenburg University. An external chairman has also been recruited who has previously worked as the Senior Vice President for SKF and CEO of SKF in China. The customers of the platform Lurn provides are currently corporations and

universities and it is sold as Software as a Service, which means that customers pay a monthly linear fee based on the number of users. One of the customers are Chalmers University of Technology that used the platform for an introductory course in Chinese in the fall of 2013, in the end evaluation of the course 95% of the students stated that they wanted to use Lurn in other courses.

The focal company is currently focused on developing what has been internally referred to as Lurn 2.0 which will include further improvements to the admin view, improved statistics on student performance and a strengthening of the spacing effect. The goal is to make it easier for content creators to create new courses and to enable them to closer track the progress of the students using the platform. The improved spacing effect will coupled with the other improvements provide a greater benefit for organizations using Lurn for more than one course as it implies that the organization will be using Lurn long term as opposed to only for a single course. The development is done by Lurn themselves but they utilize external content delivery service providers in order to be able to scale their platform with increased demand.

5.2.2 Lurn Platform Overview

The platform is structured in such way that a content creator has free reign regarding the content in lectures. For example it is possible to add Youtube clips and then have multiple choice questions or open questions relating to a video that will be automatically corrected when the user submits their answers. The content creator only needs to add their questions and answers; the platform will then provide the correct structure for it when it is presented to the students. However the overall platform is fixed and cannot be customized by each content creator and it can be likened to a template that the content creator utilizes to create his or hers lectures (see figure 15).

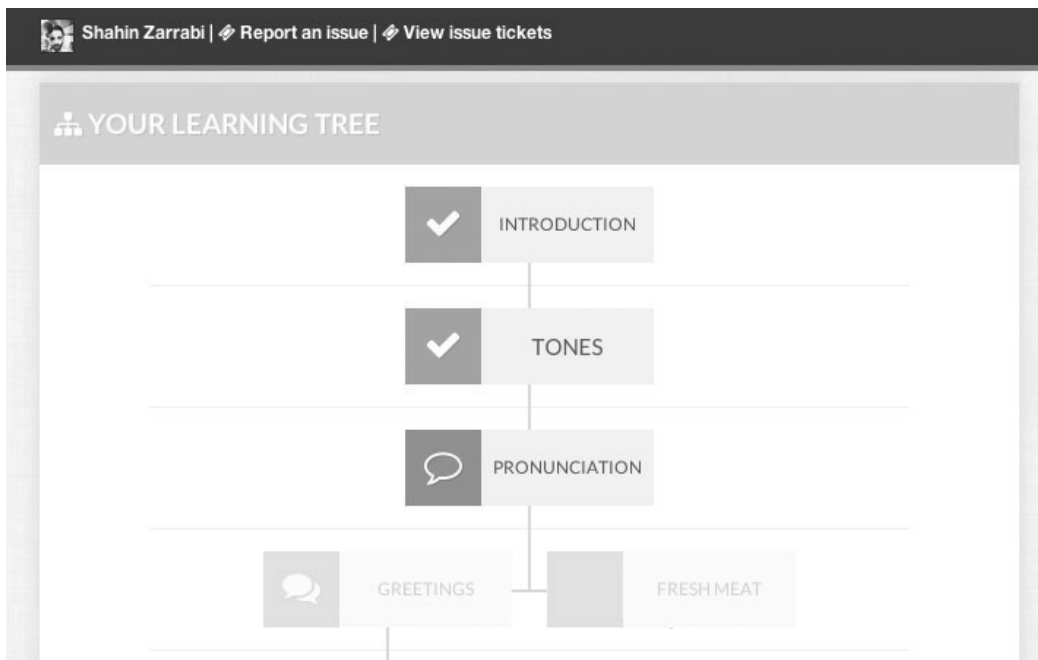


Figure 15, Overview of learning progress within the platform

The structure of how the information presented for students is based on theories regarding blended learning, rapid learning and knowledge management. The teacher or admin of a course creates all the content themselves but are provided with clear guidelines for how to group lessons and tasks in order for students to internalize the information based on research in pedagogy. The design of Lurn is also based around two psychological phenomena called

spacing effects and testing effects. Spacing effect implies repetition of previous material with increased intervals over time in order to achieve better retention of the material. Testing effect is as the name suggests testing of students on the material that has been presented as it has proven to have a positive effect on memory retention due to active recall. Thus there is a pedagogical background to the structure of the platform and information presented to students as to improve the learning effects (see Figure 16).

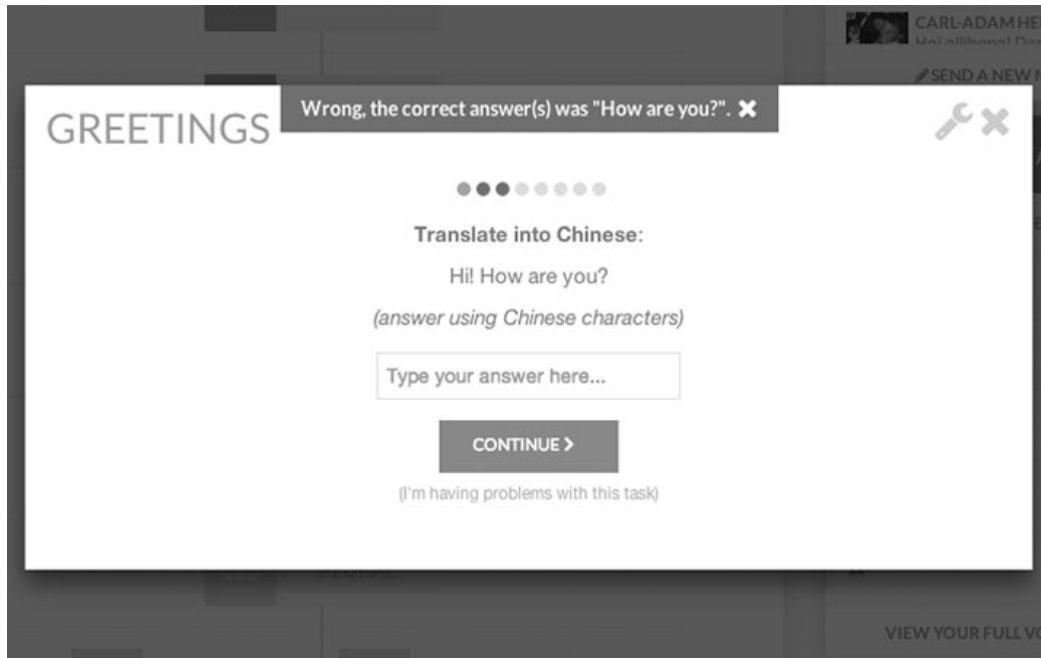


Figure 16, Example of a task

Lurn does not provide any ready-made content for content creators, the first time one logs in to the platform one is greeted with a blank slate regarding content. However, Lurn does provide a quick start guide that provides an overview of how to get started and some tips regarding how one should phrase questions as well as the how difficult they should be. In the future, when more teachers have started using the platform, it is also possible that they will be able to share their content with other teachers. The platform is centred on the concept of blended learning, which means that the platform is supposed to be used outside class in conjunction with regular classes in which students get to meet their teacher. This will enable the teachers to move passive elements of their teaching to the platform so that they can be more active and focus on helping students while in class.

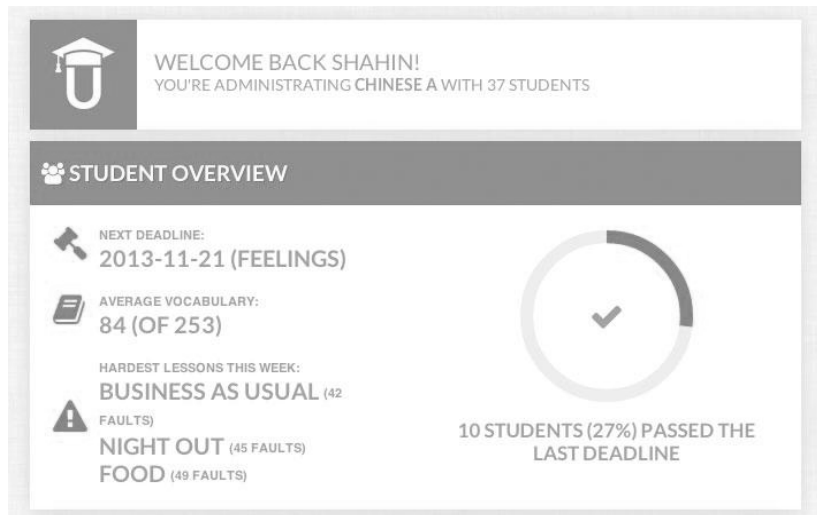


Figure 17, Possibility for teachers to see how their students are doing

Another feature of the Lurn platform is that is possible for the teacher to follow the progress of the students (see Figure 17) taking a course as to gauge how well the students have comprehended the material and to see if anyone is missing deadlines. The teacher can add multiple deadlines in a course that makes it possible for students to overview all tasks that needs to be completed in one single view. One way of encouraging students to complete their assignments before the deadline is by adding a gamification element to the platform. The content creator assign points to each task and when a student has answered it correctly the points will be added to the student's total score. If the teacher has enabled the feature it is possible for the students to track their and others progress through the high score list.

6. Analysis of Empirical Data

This section will present an analysis of the upper secondary school market and how Lurn should structure their business model in order to achieve traction in the market.

6.1 External Environment and Market Behaviour

In this chapter, the external factors will be analysed by comparing the empirical data with the theory surrounding diffusion, buying centres and freemium.

6.1.1 Diffusion

Most of the adopter categories Rogers (1983) describes seem to be represented within school. The innovators seem to be few, which might be partly due to that innovators usually control substantial resources and in school the resources are often very limited. Early adopters are probably more common and many of the ICT teachers fall into this category. They are not too innovative compared to other teachers and it appears as if teachers consider them a good help for introducing new programs and decrease uncertainty about them. One of the two biggest categories within upper secondary school is arguably the early majority, since both interviews and survey express that there exists a willingness to change but most teachers are still cautious and wants to let someone else start out. Another big group is, just as Roger's (1983) diffusion curve reflects, the late majority. This is evident since change usually takes a lot of time in school and some interviewees also bring up the fact that there is a lot of prestige involved, connected to the traditional methods that many teachers have been using for a long time. This group might start to change first when they get new directives from principal or management. Finally, there appears to be quite few laggards among the teachers. As one teacher expresses, most staff are somewhat open to change but there are always a few who does not want anything new at all.

When it comes to the five characteristics that Rogers (1983) claims affect the diffusion process, Lurn's platform seems to fulfil most of the prerequisites for fast diffusion. Although the relative advantage is somewhat difficult to analyse now, given that the platform is not yet very well-established, it is likely to be quite high based on the fact that 95 % of the students who tested it for one course wanted to use it again. It also covers many of the factors that the empirical results show that teachers demand. The compatibility with existing norms and technology is probably high as well, since there appears to be a general trend towards more blended learning and flipped classroom and the technology today is advanced enough to easily manage interactive tools. Complexity should be low and Lurn is supposed to be easy to use for everyone. However, for people with less computer experience it might be more difficult to use, so it is important for Lurn to simplify the admin interface as much as they can in order to achieve diffusion among the later adopter categories. Regarding trialability, it could be quite high provided that a freemium model is used, which is one of many arguments for using such a model. However there is a difference between Lurn and for example Youtube since Lurn requires more time and effort for the teacher to understand and use in the classroom. Therefore it is important that the teachers are convinced of the benefits of using Lurn and one way of achieving this could be to have premade content available showcasing the possibilities of using the platform. Finally, observability might be a little bit lower since it is difficult for outsiders to quickly see the results of the innovation. However, if the teacher can show that her class gets better results when using Lurn, the observability could be dramatically increased. To conclude, there appears to be opportunities for Lurn's platform to succeed on the upper secondary school market.

Diffusion of E-learning

The diffusion process of e-learning is obviously quite dependent on the computer confidence of the people in the system of diffusion and the survey shows a striking relationship between computer confidence and use of ICT in the education. A big majority of the survey respondents are comfortable with using computers so ignorance does not seem to be a big problem.

However, the survey was mainly distributed to people found on Facebook, blogs etc. and most of the respondents experienced that they usually were the first ones to try out new tools in their school. This is therefore not a very surprising result and there are reasons to believe that there are many teachers who are not as confident with computers as the survey respondents. This is also reflected in that late adopters seems to use the computer more as “book-on-a-can”, maybe because they do not realize the potential of more interactive tools. Early adopters, on the other hand, does not only use more advanced tool but also use quite simple tools, such as blogs, in more innovative ways by combining them with other programs. Moreover, just as Jacobsen (1998) states, it is evident that the early adopters are eager to share information and engage in communities, such as Facebook groups. These groups could therefore be an interesting channel for Lurn to find potential users of their platform.

Salmon (2005) claims that late adopters usually demand that when new methods are introduced in school, the benefits of them need to be proved. However, as one interviewee points out, it would probably make more sense to question the old traditional methods and demand proof that they work. According to Jacobsen (1998) mainstream faculty also wants to see demand from students before starting using new tools and an interesting observation that the interviews revealed is that students sometimes can be the most reluctant when it comes to changes. This is especially true when it comes to upper secondary school students who have gotten used to certain ways of learning during the many years they have spent in school. Therefore, it can be a great benefit for Lurn if their platform can quickly motivate students and make them see the point in using them, since it usually takes some time before students start appreciating new methods.

It is evident from the empirical results that lack of time is a common problem among teachers and to start using a new tool always requires some time. Moreover, as Nichols (2008) states, the process of learning a new program is added to the teacher’s already long list of tasks. Therefore, it is very important to highlight the time savings that can be achieved in the long run through for example, decreased administrative work. This also makes it important to make the platform easy to use, since a very complex program would require a lot of time to just learn how it works. Perceived ease of use is also one of the attributes that Gwebu and Wang (2007) claim lead to increased motivation, which can help to speed up the diffusion process. Therefore, it is important that Lurn focuses on reducing the complexity of their platform and makes sure that even less experienced computer users quickly can learn it as well.

The literature highlights the importance of having an involved principal and management for rapid diffusion to take place and this is strongly confirmed in the interviews. A clear vision and guidelines regarding ICT is probably needed, and as one teacher stresses, teachers need to be seen and feel that their efforts are worth something so support from the principal is very important. Another reason for management to engage in new education models is the bandwagon effect that Comacchio and Scapolan (2004) describe and which might lead to that schools need to become more innovative in the competition for the students. If other schools take the lead and start marketing their modern methods, students might go to them instead. However, there still exists a big problem due to the small budget most upper secondary schools possess, making it difficult to invest heavily in e-learning. This contradicts Nichols’ (2008)

findings that the perception that e-learning is expensive does not affect the diffusion, which is probably truer for rich private organizations than Swedish public schools. It is therefore important that Lurn finds schools that have room for ICT investments in their budget and where school management is positive towards ICT in order to gain traction.

When it comes to introducing something new within school, it can be difficult to choose the right approach and according to Elton (1999), an innovation can diffuse successfully even when it does not make a big difference in the beginning. An upper secondary school is usually not a very big institution and as Nichols (2008) argues, it could then benefit from incremental staff-based change. The interviews reveal that the introduction of one computer for each student is usually a centralized action, where more than one school can be involved. However, when it comes to certain programs it is more common that they are introduced incrementally, usually through one or two very innovative teachers. This could fit well with a freemium model for Lurn, which allows for one teacher to try out the tool and then make it spread within the organization.

6.1.2 Organizational Buying Behaviour

In order to understand how the diffusion process is spread in an organization, one needs to understand the buying process of organizations. By applying the framework presented by Webster & Wind (1971) on the collected empirical data it is possible to present an idealized structure of the organizational buying behaviour in upper secondary schools. First, the most important individual categories will be listed with a description of their characteristics and relations. Using that as a foundation to describe the buying center one can thereafter analyse the surrounding organization and environment.

The overall purpose of initiating a buying process is to fulfil a need that has arisen within an organization. The need that Lurn can fulfil is the need for improving the interaction between students and teachers, better learning and better monitoring of students' progress. This section will be based on the assumption that the three stipulated needs are those that the target schools prioritize. However, some schools may due to local factors rank other needs higher than the stipulated ones but most likely they could still benefit from improving the highlighted areas.

Based on the empirical data it seems as if most software buying processes are initiated by teachers who find software solutions that they believe can improve some aspect of their teaching. If a teacher identifies a need that can be fulfilled through a software purchase some will need to escalate the issue since 36/59 respondents said that they could not take any purchasing decisions by themselves. Those who can take a purchasing decision by themselves most often only have a limited budget set to a few hundred SEK and most teachers need to escalate the decision to their teacher team. The teacher team usually has a budget that they can utilize but it may not amount to more than a couple of thousand SEK. If the teacher who has found a software solution wants something more expensive she will need to get the support of the teacher team before requesting funding from the principal.

By using Webster & Wind's (1971) model of buying centers in the upper secondary schools, the individuals could be classified as follows: Users and buyers are teachers and to some degree students, gatekeepers are the teacher team, opinion leaders are the ICT-teachers and principals are the deciders. Thus it is possible to analyse the task and nontask of the individuals of the buying center.

Individuals in the Buying Centre

The primary users of the Lurn platform are students and their teachers. While it could be argued that the statistics generated by the users of the platform will be of interest for other within the upper secondary school, those would likely not be the primary users of the platform. The need to move away from the traditional rostrum teaching was highlighted by several of the interviewees who wanted to move towards a coaching based education and to utilize the possibilities of ICT. However, even though both students and teachers can be viewed as users, the assumption is that only teachers will be a part of the buying center. Students may influence their teachers, as was illustrated by one teacher who started to use the computer game Minecraft in his lectures due to a request from his pupils.

Users

In the model described by Webster & Wind (1972) the different actors have tasks, which are their formal motives, and non-tasks, which are their informal motives. For example the task of an individual might be the desire to achieve the lowest possible price while the nontask may be personal values and needs. In the context of upper secondary schools the task of teachers involved in the buying process is to find an ICT tool that improves the education of the students and that can save time for the teachers at a reasonable cost. Further, the nontask of teachers are personal values and needs, but more specifically they might be influenced by how comfortable they are with technology and if they view it as a distraction from traditional teaching or if they fear that there might be rationalization of personnel due to increased productivity with ICT-tools.

One important aspect is that the formation of views can be dependent on how the teachers interact with each other; some teachers mainly speak with the colleagues at the same school while other actively seek out new connections via social media and conferences. Thus, it is important for Lurn to be aware of the distinction of teachers' formal and informal motives and how they are formed, in order to align their offer and marketing material as to touch upon both rather than only focusing on the formal motives.

Opinion leaders

In an organization there can be persons who have no formal role in a buying process but due to deep knowledge within a certain area or in the role as an informal leader, they have a larger impact than other individuals in the process. According to Rogers (1983) these persons are more interconnected and diffuse new knowledge through their personal network as they often have a higher socioeconomic status and are more innovative. During the study it was noted that there is a certain category of teachers that fit into this description, ICT-teachers. An ICT-teacher has a formal role of finding new ICT-tools and presenting these to other teachers. They often work in a municipality rather than at a single school which means that they have access to a larger pool of teachers than regular teachers. Another important aspect of the ICT-teachers is that they can reach the teachers that are not actively looking themselves for new ICT-tools. However, ICT-teachers could probably be seen more as early adopters than innovators, which might be good in a relatively conservative organization, such as upper secondary school, where a person who is too innovative is looked upon with suspicion (Rogers, 1983).

The work process of the ICT-teacher starts out with that they look for new ICT-tools and then they compile a smorgasbord of available options for other teachers that they can use in their teaching. The task of the ICT-teachers is to find new ICT-tools that they believe have an appeal to a large group of teachers. The assumption is that their nontask is that they might select tools that other teachers do not find relevant or overshoot with regards to requested features because

the ICT-teachers find those tools more exciting. For Lurn the ICT-teacher is one of the most important individual to reach, as they can influence other teachers and within this area they can be seen as opinion leaders.

Gatekeepers

A gatekeeper controls the flow of information (Reid & de Brentani, 2004) and in the empirical data it was found that it is seldom a single individual that can control the flow of information in such a way in the upper secondary school. However, teachers are organized in teams in which they coordinate their actions with regards to teaching and purchasing decision. If one teacher finds a useful tool that they want to purchase and their own budget is not enough, they will reach out to their team and try to convince them about the necessity of the purchase. If the instigator can convince the team, they will make a joint request to the principal regarding funding for the purchase. Thus, unless the instigator can convince the team, the information about the purchase request will stop here. The task for the team therefore becomes to vet the proposal and judge if it is a reasonable request or not and to find out if it fulfils a need for the majority of the team. The assumption is that the nontask is that this process is influenced by who initiates it as some may be more well-liked or persuasive. The implications of this for the focal company is that the purpose of the product must be easy to grasp and most likely easy to demonstrate for a more heterogeneous group as the assumption is that the instigating teacher might be more comfortable with new technology.

Decider

The decider is often responsible for the order process and identification of suppliers (Töllner, et.al) and in the context of the focal company this most likely is the IT coordinator in each respective organization. This person will most likely be tasked with evaluating how an ICT tool can be implemented from a technical standpoint, ergo how well it can be integrated into the existing platforms that are utilized at the school in question. For Lurn this means ensuring compatibility with all major platforms, Windows, iOS Android and so forth but also to be aware of legal issues in Sweden such as Personuppgiftslagen (Privacy Act) that could hinder the adoption of Lurn.

Buyer

The buyer have the final say in what gets purchased in an organization (Töllner, et.al) and in the upper secondary school this is the principal. However they are not involved in the process until the final decision and one principal stated that if the teacher team presents a request for funding and it fits with the budget she would not have any opinion regarding what it is used for. Furthermore the budget that is allocated to a specific school is dependent on the number of students and how much money each municipality assign to each student. This means that the available budget for ICT investments will differ between municipalities and schools. Thus for Lurn it is important that the pricing of the platform is reasonable

Buying Center

The buying center is composed by individuals who have the different roles described above (user, influencer, gatekeeper, buyer and decider) and is embedded in the organization which in turn is influenced by the external environment. The task of the organization can be a policy regarding supplier preference and for environment it can be anticipated changes in price. Further, the nontask of the environment can be the political climate in an election year (Webster & Wind, 1972). For upper secondary schools as an organization, the task when procuring ICT-tools is to find those that fit with the goals of the school such as improving student learning and

reducing costs. The environmental task can be anticipation of new regulations for the upper secondary school due to decreasing results of Swedish students in international comparisons.

For the focal company the environmental influences can be used by them to show that they are aligned with the current trends. For example formative assessment and the need for improved results by students are high on the agenda and may influence the buying process and the individuals involved in it. Furthermore, by ensuring alignment with current trends there is most likely a higher chance that a school will move forward with their product.

6.2 Internal Environment and Business Development

This chapter will present an analysis of the empirical data and literature in order to decide upon a proper business model for how Lurn can organize their activities to ensure traction in the upper secondary school market. Furthermore, as the researchers believe that a freemium model will have the highest chance of becoming a successful pricing model it will be analysed in-depth as to be able to present specifics of what should be free as opposed to premium. Finally, the blue ocean strategy will be applied on Lurn's case.

6.2.1 Business Model Canvas Lurn

Figure 18 shows the proposed business model canvas that Lurn should utilize when entering the upper secondary school market.

Business Model Canvas Lurn				
Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
None	Programming Keeping up to date with pedagogical research Finding customers	Increased quality time teacher/ student Interactive learning in line with formative assessment	Personal in the beginning Later automated, service given through community in the platform	Upper Secondary Schools
	Key Resources	Possibility to follow students' progress Reduced administrative time	Channels	
	Human Programmers Pedagogy experts		Homepage Social media ICT teachers	
Cost Structure		Revenue Streams		
Development costs Updates & maintenance Marketing & promotion costs		License based freemium model		

Figure 18, The business model canvas adapted to Lurn's establishment on the upper secondary school market

Lurn has identified many customer segments, such as universities and companies. However, since the focus of this thesis lays on upper secondary schools, this will be the customer segment that the following business model canvas is adapted to. The value proposition that Lurn offers upper secondary school is arguably more high-quality time between teacher and students through reduced administrative work. This can be achieved since the platform allows the teacher to easily see how each student is doing and adapt her lectures accordingly. This also facilitates

the work with formative assessment. By introducing elements of blended learning and flipped classroom, it is also possible for students to watch short lectures at home and the classroom time can then be spent focusing more on what the students find difficult.

The best channel for Lurn to distribute their platform is their homepage. However, initially it is probably not enough to just passively use the homepage, rather Lurn needs to seek out interested ICT teachers, maybe through social media, and direct them to the homepage where they can sign up for the platform. This also means that the customer relationships must be more personal in the beginning in order to establish close contact with ICT teachers who later can be very important for the further diffusion of the platform within different schools. Later on, the relationship has to be more automated since the cost would otherwise be very high and it would be difficult to scale the business. Ideally, teachers should just have to visit the homepage and find all information they need there, together with a forum or community where they can help each other out.

The most important key resources for Lurn are definitely their human capital since their business relies on intangible assets and knowledge in programming and pedagogy is crucial for their success. This also makes programming, upgrades and keeping up to date with pedagogical research very important key activities. Naturally, finding customers will also initially be a crucial activity. Regarding key partners, there are none at the moment but one possibility could be to cooperate with established suppliers of study material who struggle to find a good e-learning solution. This could help Lurn to find ways into the upper secondary school but it would also mean that they would have to relinquish some of their freedom.

When it comes to making money, it is essential for Lurn to keep marginal costs as low as possible since the schools cannot spend much money on expensive programs. Their cost structure is made up of development costs and also some marketing and promotion costs. There will also be costs for updating and maintaining the platform but once they have a fully working version, that cost should not have to be very high. The cost of giving customers service could be kept really low, since customers should not have to ask Lurn for help but rather find it in the community of teachers connected to the platform. The revenue will come from payment of licenses, preferably through a freemium model where a basic part of the platform is free but to get access to a full version of Lurn, the user must pay an annual fee.

6.2.2 Freemium Model

Freemium is a pricing model that has gained a lot of popularity due to the decreasing cost of delivering an online solution. This is due to Moore's law, economies of scale and scope for mature IT companies and a large variety of open source solutions which coupled together have decreased costs for deployment as well as development of online solutions. Another important aspect of the pricing of freemium is finding the right balance between free content and premium content; if too much is free there is little incentive to upgrade and if too little is free one risk not achieving the viral loop needed for freemium.

As was revealed in the procurement structure chapter, most teachers do not have a budget for purchasing ICT tools by themselves and the most widely used ICT tools were free or freemium. However it is possible for a teacher team to request funding from the principal if they want to make a joint purchase as long as they all agree that it would be a useful investment. This makes a freemium business model in the education market powerful since teachers are actively looking for free or freemium products because of their limited budgets. Another important aspect is that by being freemium, ICT teachers can recommend the tool to other teachers as there is no

monetary commitment necessary. Thus, by embracing a freemium business model it is possible for Lurn to get a high adoption rate and reduce the time needed for marketing, as a freemium pricing structure is according to Bekkelund (2011) suitable for achieving a viral spread of the product.

There are of course alternatives to a freemium business model and if Lurn cannot keep costs low enough to sustain a freemium business model then one alternative is a traditional SaaS pricing model. A typical SaaS pricing model allows one to use the full service for free the first 30 days but require a paid subscription after that time period. The limitation to this approach is that it does probably not enable teachers to add enough content into the platform to become locked in or to see the results of using the product over a longer time period such as a school semester. As the Lurn product requires certain commitment from teachers it might be beneficial to refrain such a limited test period as there otherwise is a risk that a teacher will not have enough time to setup Lurn at the time of registration and when he or she comes back to it the trial will have expired.

Bekkelund (2011) lists a number of propositions for what enables a successful freemium business model. While all relate to freemium there are some that are more important than other for Lurn to focus on. One aspect that always needs to be kept in mind is that even the most successful freemium model does not achieve more than a 5% conversion rate of free users to paying premium users. Thus Lurn should aim for a cost structure that break even at a conversion rate of between 1-2% and ensure that the platform can scale without a linear increase in cost.

Several of Bekkelund's (2011) propositions highlight that the fundamental challenge with a freemium model is to find the right balance between free and premium content. If one gives away too much for free there is little incentive to upgrade and conversely too little value for free may give the users a bad experience which makes it less likely that they will recommend it to others. Another proposition is that the longer a user uses a service, the higher the lock in effect and together with the observation from Evernote that conversion rate increases the longer a user has used a service, this means that retention rate will be a key area to observe. Further, a viral loop should be included in a freemium product that increases the spread of the product to new consumers as to keep marketing costs low since acquisition of new users can otherwise be quite costly. For Lurn this means that one most likely need to test iteratively which features should be included in the free and premium version to find the right balance, and to monitor the users in cohorts based on signup date to see if users stay and how long it takes before they start converting to the premium service. Another way of increasing the overtime value with using Lurn is to make it possible for teachers to share complete courses through a "course store" or similar.

The empirical data of freemium products showed that the products that were targeted towards the educational or business market had at least three pricing tiers. A typical tier can be a freemium version that is limited in number of users or storage, a medium version that removes most restrictions but does not allow one to administer a large group of accounts and a final tier with school or group discount that have all the previous features plus administration features. The implications for Lurn are that they should have three price points and they need to find features that promote conversion from the free to the premium version. The researchers suggest the following division between the three tiers as illustrated by Figure 19.

Freemium	Premium	Group Premium
1 Teacher Account	5 Teachers Accounts	Minimum of 10 Teacher Accounts
40 Students	Unlimited Students	Unlimited Students
Student Result Aggregation	Student Result Aggregation	Student Result Aggregation
No Course Store	Course Store	Course Store
No LMS Integration	LMS Integration	LMS Integration
Free	5000 SEK/year	800 SEK/teacher

Figure 19 Example of Pricing Model for Lurn

Teacher and Student Differentiation

First the Freemium version should be limited to a single teacher with 40 students, which makes it possible for a teacher to try Lurn for one course with one class. This is enough for a teacher to be able to test the platform on a limited scale and see if it fits with their teaching style and they do not need to get approval from either the teacher team or the principal in order to start using it. This is based upon the survey which revealed that most teachers were actively looking for new ICT-tools, that most ICT-tools were free or Freemium and that most teachers had a limited budget. By including all of the functionality for creating courses it is clear for teachers what can be done with the platform. However as it is limited to 40 students it is not possible to use the platform with more than one class, which can be a strong reason for upgrading to a premium version. Further it is arguably possible for a teacher to create new accounts and invite a new class to the second account; however this would also mean that the teacher would have to redo all of the content for that class.

The premium version should include five teacher accounts, as it is reasonable to believe that if one teacher tries out the Freemium version, he or she can find four more teachers that are interested and see the benefits of using Lurn. This is based upon interviews with teachers that stated that they may find a new model that they want to try in their class but if it is successful the rest of the teacher team will most often also adopt or try it. Further since few teachers can afford to upgrade to premium by themselves they would still need to convince the teacher team of the necessity of premium. It stands to reason that by being able to argue that everyone in a teacher team will get an account it is easier to convince everyone about why one should make this investment.

Student Result Aggregation

This feature that makes it possible for teachers to see the progress of their students should be included in all versions. Without the possibility of seeing the student results one loses out the formative assessment part of Lurn. Arguably, it could be a premium feature but with the limitation in number of students in the Freemium version it is most likely enough to entice teachers to upgrade even if they have access to the student results. This is also a feature that

becomes more valuable over time as teachers add more courses and more students are added in the premium version which should increase the retention rate of those that convert. Moreover, as many teachers have stated that there is too much administration, this is a feature that most teachers need and is requesting from ICT tools.

Course Store

With course store the researchers mean the ability to export and import complete courses or individual nodes from a course in order to share them with other teachers. This feature means that it would be easy for a teacher to get started and take part of other teachers created content and it also makes it easy to setup a new course using old material once an initial course has been created. Arguably, it could be enough to just have the possibility of exporting and importing course material, but by creating a centralized “Course Store” it would create a platform in which teachers can share material for free or for pay depending on the setup. Having a centralized store would also mean that one can create a uniform ranking system for content as to highlight best practice within e-learning and highlight good content creators. This is all based upon the interviews and survey in which teachers said that they had a limited time for creating content and that they want to take part of other teachers flipped material. Further if it is possible to import and then edit content it means that the teachers can adapt the content after their own teaching style which is important to them.

LMS Integration

Most schools already have some sort of Learning Management System implanted such as Hjärntorget in Gothenburg that has information about all of the students. If it was possible for Lurn to integrate their platform with LMS it would mean that the time needed to setup a course could be minimized as teachers could import the class roster and not have to manually add all students. This feature is also based upon the need to minimize administration for teachers and if they want to use it for more than one class it would most likely get quite time-consuming to administrate without this feature.

Pricing

The suggested price levels is based upon the gathered data on teachers’ budget and competitors’ pricing. The Freemium version is obviously free and is not limited in time, however if Lurn cannot reduce their costs enough to sustain a Freemium model one could change the free version to a time-limited trial of 30 days instead but that would negate most of the positive effects of the platform. The premium version should cost around 5000 SEK per year as this would give a cost of 1000 SEK per teacher and year, which is deemed reasonable given the limited funds available for teachers. This also means that a teacher team can likely decide to purchase a license without having to involve the principal of the school. Further, the final version should have a discounted group price based upon the number of teachers who are using it. As the group price requires a minimum of ten teachers it is likely that it would require the approval of the principal but then a strong argument for purchasing a group license is the discount that one gets with it.

6.2.3 Applying Blue Ocean Framework

If Lurn should successfully manage to find a blue ocean, they need to find a solution that manages to increase buyer value and simultaneously decrease cost. By analysing the data from interviews and survey it is possible to answer the questions regarding what should be eliminated and what should be created.

- *Which of the factors that the industry takes for granted should be eliminated?*

These are factors that exist in many programs today but that teachers find unnecessary or do not experience as value adding. Many of the interviewees have complained about programs that are too flat and just works as a book-on-a-can. Examples of this are when tools are just used to read a text as a pdf instead of in a book or watching a PowerPoint instead of a presentation on the whiteboard. Using tools like this does not seem to add much value and the outcome could be the same without using any digital tools at all. Therefore, it can be argued that similarity to traditional classroom methods is not something that ICT tools need to have; rather all the potential for making more interactive and stimulating learning material should be utilized.

- *Which factors should be reduced well below the industry's standard?*

These are the factors that teachers do not seem to care very much about but that many e-learning providers still try to compete on. During the interviews it has become evident that a lot of functionality or a completely comprehensive solution is not something that there exists a great demand for. According to one teacher, a lot of flashy functionality that no one recognizes is unnecessary and just contributes to confusion among the users. Moreover, many teachers want to individually be able to put together the best solution for themselves by choosing the best parts from different tools. It is therefore not necessary to provide a tool with a lot of functionality that covers all the needs the teacher might have.

- *Which factors should be raised well above the industry's standard?*

The teachers' demand for tools that allow them to individually adapt the content to their lectures seems to be quite big. Many tools such as Khan Academy, Duolingo or computer games provide limited possibilities for teachers to create their own content so Lurn has an advantage compared to them since it is more adaptable. Many interviewees also believe that more gamification, done in the right way, could increase the students' results. Some teachers experienced the problem that when they were flipping the classroom, students did not want to spend any time studying at home. It is possible that more gamified learning could make students more motivated to use the program at home. It could therefore be important for Lurn to utilize research about gamification in order to raise this factor to a level above their competitors.

- *Which factors should be created that the industry has never offered?*

These are features that the programs are lacking but that teachers want to see in e-learning tools. They might even be unaware of this demand but by analysing the problems they express, it is possible to find features that would help them solve these problems. It is quite evident that lack of time is a big problem for teachers and that tools which can decrease administrative work and give teachers more time would be needed. Since teachers are increasingly expected to work with formative assessment, programs that can facilitate that work would probably also be appreciated. As explained earlier, the flipped classroom can lead to a better utilization of the time the teacher spend with the students and it is therefore important that the blended learning

factor Lurn's platform provides is very high. Many teachers are also seeking for more interactive tools which allow them to follow their students' work and progress and although there are other programs in which the teacher can see how the students are doing, few of those combine that feature with a high adaptability and blended learning factor. Lurn should therefore highlight that their platform can let the teacher conveniently work according to a flipped classroom model and at the same time allow for formative assessment as well as less administrative work by giving the teacher a quick and comprehensive overlook of the students' progress.

Taking the above discussion into account, it is possible to create a value curve for Lurn. On the strategy canvas, the factor similarity to traditional methods should be very low, which it is in Lurn's case. Functionality should also be quite low so Lurn should probably keep the clean focus they have right now. Lurn also scores well on adaptability, which is high just as the teachers want. Their gamification level is relatively high as well, but it is possible that adding further elements of gamification could add even more value to the platform, since many teachers believe that more gamification could increase students' learning. The high level Lurn has on both possibility to see students' progress and the blended learning factor is arguably one of their main competitive advantages and these factors should be kept as high as possible. Regarding the availability of ready-made content, it is not very high today but it is expected to increase as teachers start using the platform and in the future, this factor should be kept high since teachers really want to take part of each other's material.

In Figure 20, Lurn's value curve is plotted and compared to one of the most popular ICT tools, Google Apps. It is important to point out that the value curve of Google Apps is not representative for all competitors and there seems to be almost as many value curves as there are competitors. However, very few competitors seems to have a high level of all the important factors; adaptability, possibility to see student's progress, gamification and blended learning factor.

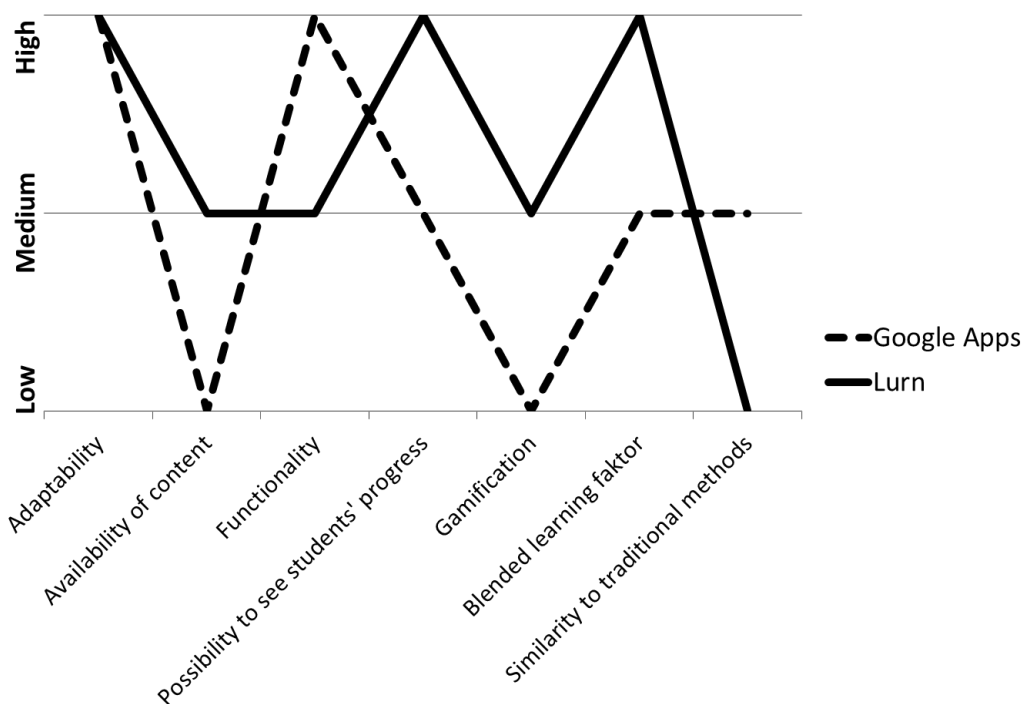


Figure 20, Strategy canvas with a comparison of the value curves for Lurn and Google Apps

6.3 Summary of Analysis

The empirical data points at several challenges that need to be addressed in order for a company to successfully enter the upper secondary school market. One of the main challenges is that there is generally a limited budget for purchasing ICT software, which points to that in order to profit from the market one needs to be able to sell to a large share of the schools while retaining a low marginal cost. Further, the upper secondary school has been slow at adapting new technologies and methods, which imply that the willingness to switch to new ICT software is relatively low. These themes along with business models and blue ocean strategy are presented in Table 6.

Table 6 Challenges and Solutions in the Upper Secondary School Market

<i>Theme</i>	<i>Challenges</i>	<i>Solutions</i>
Diffusion	The Upper Secondary School has been slower than society at large in adopting new technologies and methods	Trialability and low complexity is important to emphasize. Target schools with management that have high change willingness
Buying Behaviour	Teachers generally have a limited budget for purchasing ICT software. They also need to get an approval from their teacher team or the principal in order to make a purchase	Seek out ICT teachers that can educate teacher teams and principals about which needs that can be fulfilled by using ICT software
Business Model	Find a scalable business model with almost zero marginal cost that emphasise trialability of the ICT software	A Freemium business model implies that one will give away parts of the service for free which will lead to high trialability. However, unless a sufficiently low marginal cost can be achieved it is not sustainable as the conversion rate is generally low
Blue Ocean	Identify new factors that customers need and eliminate the unnecessary factors	Reduce functionality and similarity to traditional methods and introduce blended learning factor, gamification and possibility to follow students' progress in conjunction with each other

7. Discussion

This chapter will highlight two separate areas that were investigated in the early phases of this report but that was abandoned due to discussions with the focal company and input from teachers. The two areas regarded how a partnership with an established actor could be formed and how an offer should be structured to make it suitable for a public procurement process at a municipality level.

Partnership

When the initial market scan had been completed it was clear that there was no dominating ICT tool provider in the Swedish upper secondary school market but that the traditional publishers have a dominant position when it comes to supplying schools with teaching material. Thus, traditional publishers could have been a suitable partner in order to be able to use their existing channels to reach the target market. However, one downside of this is that the focal company would have had to relinquish some control of their platform in order for it to suit the offering of the partner. This would have reduced the possibility of pivoting the business model as one would have been locked in with a partner for good and bad. Further, another problem with partnering with publishers is that they have a bad reputation for listening to teachers and school administrators who have requested more interactive material for a long time but the publishers have been slow to react to this demand. As the focal company wanted to introduce a new innovative platform and retain control of it, it became clear that it was unwise to further pursue the partnership investigation.

Public Procurement

Another path that was investigated was whether it would be possible to enter the market by selling directly to municipalities through public procurement. The advantage of this method is that if you could find a municipality that is searching for an ICT platform and that would select the focal company, then one would be able to diffuse the platform to all the public schools in that municipality. However, there are several problems with this method, foremost the municipality needs to be searching for an ICT platform and the focal company needs to fulfill all of the criteria stipulated in the procurement process. Furthermore, the process can be time consuming and most likely the focal company could only have focused on a single procurement and if that would fall through, all the time and money spent on it would have been wasted. Therefore it was decided that the disadvantages were far too large to overcome to make it worthwhile to further pursue a public procurement strategy.

8. Conclusions

This chapter will present answers to the research questions. The conclusions are based on the empirical study, the literature review and the analysis. The main research question was:

How can startups, focused on e-learning, establish themselves and diffuse new technology in Swedish upper secondary school?

It can be concluded that today is probably a good time for entering the e-learning market. There seems to be no dominant player on the market which is characterized by many actors of different size, with various focuses and business models. Moreover, it has been argued that the traditional suppliers of teaching material still have not managed to introduce e-learning material which is very interactive and utilize all the potential ICT has.

If a startup wants to enter the educational market in Sweden it should focus the attention on increasing the diffusion rate of their product. Given the teachers' expressed concerns regarding too little time with students and too much time spent on administrative work, the startup should try to highlight features that can solve these problems, such as good blended learning features and a convenient overview of each student's progress. One major limitation for achieving diffusion in the upper secondary school market is the limited budget available for making ICT purchases and therefore one need to have a business model that takes this into consideration. As it was identified that many of the popular ICT tool were either free or freemium the researchers suggest that one should have a freemium business model.

Since the ICT teachers are the most influential when it comes to bringing new programs into school, these should be approached when a company wants to introduce a school to their e-learning tool. However, one also has to take the principal into account since he or she usually is the one who takes the final decision regarding purchases. It is therefore important to seek out principals who are relatively innovative and positive towards new education methods, since a supportive principal will make it easier for the platform to diffuse among the teachers in the school.

How does the diffusion process of ICT tools in upper secondary school look today?

The diffusion process in school is arguably quite slow compared to society at large. There is a change willingness but many teachers are somewhat afraid of abandoning their traditional methods or do not have the time to start learning new programs. It is therefore important that a new program is not very complex to learn and also can contribute with time savings for the teacher. Usually, the diffusion process starts out with an ICT teacher or other innovative teacher who finds some interesting program and starts using it. Sometimes other teachers become inspired and start to follow but it can take a while and often there are only a few teachers who are quick to adapt. Sometimes directives and guidelines from the principal are required before the majority of teachers start to change their methods. Therefore, the principal can play a key part when it comes to the diffusion process.

What is the procurement process of ICT tools for Swedish upper secondary schools?

The typical process starts with an identification of a need that can be fulfilled through a purchase. If a teacher finds something that can enhance the classroom experience she can seldom purchase it herself because of the limited budget per individual teacher. However, there

is also a budget assigned to the teacher team that can be utilized and if that is not sufficient but the teacher team deem a purchase important enough, they can request funding from the principal. The budget that a principal have is, due to the voucher system, based upon the number of students that attend a school.

What ICT tools are used today in Swedish upper secondary schools?

There is a wide variety of e-learning tools used today and in the questionnaire 86 different ICT tools were reported to have been used by the teachers who responded. Furthermore, the most popular ICT tools were either free or freemium but none of them have the same purpose as Lurn. Interesting to note in Table 7 is that few of the ICT tools overlap with regards to functionality even though they all cater in some way to teachers.

Table 7, Summary of the most popular ICT tools

<i>Instances</i>	<i>Program</i>	<i>Type</i>	<i>Cost</i>
201	Youtube	Video Sharing Site	Free
152	Google Apps	Online Office Suite	Free
90	Screencast-o-matic	Screen Recorder	Freemium
90	Socrative	Student Response System	Free
36	Khan Academy	Online Education	Free

Which business model is the most suitable for Lurn to enter the upper secondary school market?

In order to achieve traction in the upper secondary school where budgets for ICT tools are limited, Lurn should embrace a freemium business model that minimizes the risk for teachers that want to test their platform. Further, by making it freemium it increases the likelihood that ICT teachers will recommend Lurn to new teachers. As the value of using Lurn increases over time as teachers add more content to the platform, the more likely it is that they will convert from the freemium version to premium version. A freemium model also increases the trialability of the platform, allowing for a faster diffusion process. There should be three pricing points, freemium with one teacher and a limited number of students, premium with access for five teachers, unlimited amount of students and courses and administration tools, and the last pricing point should be a group pricing point which includes the previous features.

What are the strengths and weaknesses of Lurn’s platform in relation to what the upper secondary school market is requesting today?

The teachers of the upper secondary school market are requesting tools that utilize the benefits made possible with computers and tablets, ergo not ICT tools that just takes a regular book and turns it into a PDF for consumption on the screen. Moreover, teachers want to reduce the time spent on administrative tasks as to give more time for student-teacher interaction and preparation of lectures. Therefore the strength of Lurn’s platform is that it enables teachers to use technology to do something that was not previously possible and the emphasis on blended-learning in the platform means that teachers can spend more time with the students. Another

strength is that the administrative burden can be reduced for teachers as all of the students results are compiled in the platform. However, the current weakness of Lurn's platform is that there is no pre-made content that teachers can use to get started and many teachers have said that this means that it might be hard for them to start using the tool. Another potential weakness is if the platform is not sufficiently simple to use to attract teachers that are not as positive towards technology.

Which actor should Lurn target first in order to increase their chances of a fast diffusion process in the Swedish upper secondary school?

Since the ICT teachers can be seen as opinion leaders in their system and also are the ones who usually bring new ICT tools into school, Lurn should target these people when trying to promote their platform. However, they also have to make sure that the targeted school is under no budget constraints, since some schools are not allowed to spend any money at all on additional purchases for a couple of years. Moreover, it is strongly recommended to ensure that the targeted school's principal has a positive attitude towards ICT.

8.1 Recommendations to Lurn

This section will present recommendations to Lurn for how they should enter the upper secondary school market.

Short Term Recommendations

The emphasis in the short term for Lurn should be to find teachers that can use the platform and test it with their students. In this way it is possible to find issues that can be corrected before opening up the platform for the public. Furthermore, one can approach ICT teachers, maybe through the Facebook groups referred to in this report, as most of them have a high technical know-how and experience from a multitude of ICT tools which means that they can compare Lurn's platform with other. If such a relationship is established it is also possible for Lurn to use the ICT teachers as spokespersons for their platform. However, it is important to make sure that the targeted schools have principals that are supportive and positive towards ICT.

Lurn should also focus their attention on making the interface and content creation view as simple as possible to make it easy for new teachers to start using the tool. Then it can also gain traction among the teachers that are not as experienced in using ICT. Another area that they need to keep up with is the latest educational development within blended learning and formative assessment, since keeping in line with the latest research will be a good way of gaining acceptance among teachers.

Long Term Recommendations

When opening up the platform for the public, Lurn should focus on highlighting the time savings that can be gained through decreased administrative work. Possibilities to see students' progress, elements of gamification and the high blended learning factor are important features that should be communicated to the target customers. Lurn should start by having three pricing points, free, premium and group pricing with the following characteristics:

- The free version - includes one teacher and 40 students per school, no access to other teachers' content and is limited to one course.
- Premium version - should cost around 5000 SEK a year and include 5 teachers and unlimited number of students. This version should also give access to other teachers' content and enable teachers to create an unlimited amount of courses. Teachers should

be able to create one course and then duplicate it in order to be able to invite each class to their own course.

- Group pricing version - If you have more than ten teachers you can apply for group pricing at 800 SEK per year and teacher. This would include all of the features of the regular premium version but with a lower cost per teacher.

The pricing should not be set in stone, other price points can be considered as more data is collected regarding willingness to pay. Another long term recommendation is to make it possible for teachers to find pre-made content, preferably only in the premium version, which they can use instead of having to make all content themselves. By doing this, a clear incentive is created for teachers to upgrade from the free to the premium version. By including a forum or community where teachers can discuss problems and help each other out, the marginal cost for each user can be kept very low since Lurn will not have to provide a lot of support. This could hopefully allow for a highly scalable business with high profitability in the future.

9. Bibliography

- Asay, M. (2014, 3 25). *Amazon Web Services leads war on cloud price reductions*. Retrieved 4 25, 2014 from Tech Republic: <http://www.techrepublic.com/article/amazon-web-services-lead-the-war-on-cloud-price-reductions/>
- Bekkelund, K. J. (2011). *Succeeding with Freemium: Exploring Why Companies Have Succeeded & Failed With Freemium*. Trondheim: NTNU.
- Berge, Z., & Muilenburg, L. (2000). Barriers to distance education as perceived by managers and administrators: Results of a survey. *Distance Learning Administration Annual* .
- Björklund, J. (2011, 3 13). *Dags för läraren att åter ta plats i skolans kateder*. Retrieved 9 5, 2014 from Dagens Nyheter: <http://www.dn.se/debatt/dags-for-lararen-att-ater-ta-plats-i-skolans-kateder/>
- Blank, S., & Dorf, B. (2012). *The startup owner's manual. Vol. 1 : the step-by-step guide for building a great company*. Pescadero, California: K&S Ranch, Inc.
- Bowman, C., & Ambrosini, V. (2000). Value Creation Versus Value Capture: Towards a Coherent Definition of Value in Strategy. *British Journal of Management* , 11, 1-15.
- Bryman, A., & Bell, E. (2011). *Business Research Methods*. Oxford: Oxford University Press.
- Burdett, J. (2003). *A switch to online takes time: academics' experience of ICT innovation*. ASCILITE.
- Business Model Now. (2014). *Revenue model types: the quick guide* . Retrieved 6 4, 2014 from Business Model Now: <http://www.bmnow.com/revenue-models-quick-guide/>
- Cantoni, V., Cellario, M., & Porta, M. (2004). Perspectives and Challenges in E-learning: Towards Natural Interaction Paradigms. *Journal of Visual Languages and Computing* , 15, 333-345.
- Chen, C. C., & Jones, K. T. (2007). Blended Learning vs. Traditional Classroom Settings: Assessing Effectiveness and Student Perceptions in an MBA Accounting Course. *The Journal of Educators Online* , 4 (1).
- Chesbrough, H. (2007). Business Model Innovation: It's not just about Technology Anymore. *Strategy & Leadership* , 35 (6), 12-17.
- Comacchio, A., & Scapolan, A. (2004). The Adoption Process of Corporate E-learning in Italy. *Education & Training* , 46 (6/7), 315-325.
- Darlin, D. (2009, 8 29). *Using 'Free' to Turn a Profit*. Retrieved 4 23, 2014 from The New York Times: http://www.nytimes.com/2009/08/30/business/30ping.html?_r=0
- Eisenhardt, K. (1989). Building Theories from Case Study Research. *Academy of Management Review* , 14 (4), 532-550.
- Elton, L. (1999). New Ways of Learning in Higher Education: Managing the Change. *Tertiary Education and Management* , 5, 207-225.

- Evernote. (2014). *Skaffa Evernote Premium*. Retrieved 4 20, 2014 from Evernote: <http://evernote.com/intl/sv/premium/>
- Flipped Institute. (2013, June 3). *What is Flipped Classroom?* Retrieved April 14, 2014 from <http://flippedinstitute.org/>: <http://flippedinstitute.org/>
- Folin, M. (2013). *Flippat Matematikklassrum: Några Matematiklärares Uppfattningar om Undervisningsmodellen Flippat Klassrum*. Stockholm: Stockholms Universitet.
- Fors, R. (2012). *Flippad Matematik: Elevers Uppfattningar av det Inverterade Klassrummet*. Stockholm: Stockholms Universitet.
- Friskolornas Riskförbund. (2013). *Skolpeng - på lika villkor*. Stockholm: Friskolornas Riksförbund.
- Göteborgs Stad. (2014, 2 4). *Hjärntorget - Pedagogiskt IT-stöd för Göteborgs Stad*. Retrieved 4 18, 2014 from Hjärntorget: <http://hjarntorget.goteborg.se/public/courseId/72448/lang-sv/publicPage.do?item=26480952>
- Glogster. (2014). *Frequently Asked Questions*. Retrieved 4 20, 2014 from Glogster: <http://edu.glogster.com/faq#part-b-1>
- Gobry, P.-E. (2011, 10 12). *How Spotify's Business Works*. Retrieved 4 25, 2014 from Business Insider: <http://www.businessinsider.com/how-spotifys-business-works-2011-10>
- Govindasamy, T. (2002). Successful Implementation of E-learning: Pedagogical Considerations. *Internet and Higher Education* , 4, 287-299.
- Gwebu, K. L., & Wang, J. (2007). The Role of Organizational, Environmental and Human Factors in E-learning Diffusion. *International Journal of Web-Based Learning and Teaching Technologies* , 2 (2), 59-78.
- Haiku Learning. (2014). *Pricing Haiku Learning*. Retrieved 4 20, 2014 from Haiku Learning: <https://www.haikulearning.com/pricing/>
- Hegarty, B., Penman, M., Nichols, M., Brown, C., Hayden, J., Gower, B., et al. (2005). *Approaches and implications of eLearning Adoption on Academic Staff Efficacy and Working Practice: An Annotated Bibliography*. Palmerston North: Universal College of Learning.
- Jacobsen, D. (1998). *Adoption Patterns and Characteristics of Faculty who Integrate Computer Technology for Teaching and Learning in Higher Education*. Alberta: Department of Educational Psychology, University of Calgary.
- Kanellos, M. (2003, 2 10). *Moore's Law to roll on for another decade*. Retrieved 4 23, 2014 from CNET: <http://news.cnet.com/2100-1001-984051.html>
- Kim, W., & Mauborgne, R. (2005). *Blue Ocean Strategy*. Boston, Massachusetts: Harvard Business School Press.
- Kindenberg, B. (2011, 3 15). *har katederundervisning vetenskapligt stöd? svar: nej*. Retrieved 5 9, 2014 from Lärarlistan: <http://www.lararlistan.se/?p=200>

- Lepak, D. P., Smith, K. G., & Taylor, S. M. (2007). Introduction to Special Topic Forum Value Creation and Value Capture: A Multilevel Perspective. *Academy of Management Review* , 32 (1), 180-194.
- Libin, P. (2010, 5 21). *Founder Showcase - Phil Libin Keynote*. Retrieved 4 25, 2014 from VIMEO: <http://vimeo.com/11932184>
- Lundahl, L., Arreman, I., Holm, A.-S., & Lundström, U. (2013). Educational Marketization the Swedish Way. *Education Inquiry* , 4 (3), 497-517.
- Martin, E. J. (2012). The Freemium Frenzy: Is This the Right Monetization Model for You? *EContent* , 35 (9), 20.
- Mattsson, M. (2013). *Flipped Classroom i Matematik i Gymnasieskolan*. Karlstad: Karlstads Universitet.
- Mellor, C. (2014, 1 9). *The Register*. Retrieved 4 18, 2014 from Dell will AXE up to ONE IN THREE workers in its US & EMEA sales teams: http://www.theregister.co.uk/2014/01/09/dell_sales_redundancies
- Mentimeter. (2014). *Upgrade to Premium*. Retrieved 4 20, 2014 from Mentimeter: <https://www.mentimeter.com/pricing/premium>
- Miller, C. C. (2009, 5 24). *Ad Revenue on the Web? No Sure Bet*. Retrieved 04 14, 2014 from The New York Times: http://www.nytimes.com/2009/05/25/technology/startups/25startup.html?_r=1&
- Moore, G. E. (1965). Cramming more Components onto Integrated Circuits. *Electronics* , 38 (8).
- Myndigheten för Skolutveckling. (2007). *Internationell Forskningsöversikt Kring IT i Skolan*.
- Nichols, M. (2007). Institutional Perspectives: The Challenges of E-learning Diffusion. *British Journal of Educational Technology* , 39 (4), 598-609.
- North, D. C. (1993). Economic Performance through Time.
- Osterwalder, A. (2013, 5 6). *A Better Way to Think About Your Business Model*. Retrieved 4 18, 2014 from Harvard Business Review: <http://blogs.hbr.org/2013/05/a-better-way-to-think-about-yo/>
- Osterwalder, A., & Pigneur, Y. (2009). *Business Model Generation*. Amsterdam: Modderman Drukwerk.
- Ramböll Management. (2006). *E-learning Nordic 2006: Effekterna av IT i Undervisningen*. Copenhagen: Ramböll Management.
- Reid, S. E., & de Brentani, U. (2004). The Fuzzy Front End of New Product Development for Discontinuous Innovations: A Theoretical Model. *The Journal of Product Innovation Management* , 21, 170-184.
- Rogers, E. M. (1983). *Diffusion of Innovations*. New York: The Free Press A Division of Macmillan Publishing Co., Inc.

Salmon, G. (2005). Flying not Flapping: A Strategic Framework for E-learning and Pedagogical Innovation in Higher Education Institutions. *The Association for Learning Technology Journal* , 13 (3), 201-217.

Skolinspektionen. (2014, 4 4). *Om oss*. Retrieved 4 20, 2014 from Skolinspektionen: <http://www.skolinspektionen.se/sv/Om-oss/>

Skolverket. (2013b, 11 26). *Det här gör Skolverket*. Retrieved 4 20, 2014 from Skolverket: <http://www.skolverket.se/om-skolverket/det-har-gor-skolverket-1.61165>

Skolverket. (2014b, 04 12). *Formativ bedömning - bedömning för lärande*. Retrieved 04 20, 2014 from Skolverket: <http://www.skolverket.se/skolutveckling/forskning/bedomning/undervisning/formativ-bedomning-1.100681>

Skolverket. (2014, 04 01). *Kraftig försämring i PISA*. Retrieved 04 10, 2014 from Skolverket: <http://www.skolverket.se/statistik-och-utvardering/internationella-studier/pisa/kraftig-forsamring-i-pisa-1.167616>

Skolverket. (2013, 11 26). *Skolor och elever i gymnasieskolan läsåret 2013/14*. Retrieved 04 10, 2014 from Skolverket: <http://www.skolverket.se/statistik-och-utvardering/statistik-i-tabeller/gymnasieskola/skolor-och-elever>

Spotify. (2014). *Spotify*. Retrieved 4 20, 2014 from Spotify: <https://www.spotify.com/se/>

Sveriges kommuner och landsting. (2009, 9 8). *Om SKL*. Retrieved 4 20, 2014 from Sveriges kommuner och landsting: http://www.skl.se/om_skl

Töllner, A., Blut, M., & Holzmüller, H. H. (2011). Customer Solutions in the Capital Goods Industry: Examining the Impact of the Buying Center. *Industrial Marketing Management* , 40, 712-722.

Töllner, A., Blut, M., & Holzmüller, H. H. (2011). Customer solutions in the capital goods industry: Examining the impact of the buying center . *Industrial Marketing Management* , 40, 712-722.

Webster, F. E., & Wind, Y. (1972). A General Model for Understanding Organisational Buying Behavior. *The Journal of Marketing* , 36 (2), 2-19.

Wilson, F. (2006, March 23). *My Favorite Business Model*. Retrieved April 23, 2014 from avc.com: http://avc.com/2006/03/my_favorite_bus/

10. Appendix

Appendix A- Interview Guide

The interview guide has been translated from Swedish, which was the language used for all the interviews.

Background Information

What is your position?

Which tasks are included in your daily work?

How long have you been working here?

What are your earlier school related experiences?

What trends regarding education can you see today?

Do you utilize formative assessment in your courses?

ICT in School

To what extent do you use e-learning in your lectures?

How do you use it?

What programs do you use today?

How come you chose to use these programs?

How do you find new programs or teaching material?

Is there anything you feel is lacking in the ICT tools you use today?

What do the students think about the programs that you use?

Are there many teachers at your school who have tried flipping the classroom?

Buying Process

How do you experience the process when new ideas are introduced in school?

Who takes the decision regarding what teaching material to buy in your school?

How is the decision process structured?

How much impact can you have on these decisions?

How do you find providers of e-learning tools?

Final Question

Do you know anyone else who would be interesting for us to talk to?

Appendix B – Survey Results

The answers were converted to a scale from one to four in order to examine the results in Excel.

		I have a great degree of freedom in structuring my teaching as I want	I work with formative assessment in my teaching	I use digital tools when I teach
118	Elementary School	3,45	3,27	3,61
67	Upper Secondary School	3,12	3,06	3,64
	Elementary School (Years Worked)			
15	0-3 years	3,00	3,07	3,53
13	4-7 year	3,46	3,54	3,85
28	8-11 year	3,50	3,18	3,61
31	12-15 year	3,58	3,32	3,61
17	16-19 year	3,24	3,24	3,47
14	More than 20 year	3,57	3,43	3,43
	Upper Secondary School (Years Worked)			
7	0-3 year	2,71	2,86	3,14
15	4-7 year	3,13	3,07	3,67
18	8-11 year	3,50	3,00	3,56
12	12-15 year	3,00	2,92	3,67
4	16-19 year	3,25	3,00	3,25
11	More than 20 year	3,18	2,91	3,64
		I am comfortable with using new technology in my everyday life	In my experience, the process of introducing new ideas in my school is fast	It is important for me to freely adapt the content of my lessons
118	Elementary School	3,67	1,91	3,59
67	Upper Secondary School	3,66	2,27	3,33
	Elementary School (Years Worked)			
15	0-3 years	3,73	1,87	3,40
13	4-7 year	3,92	1,77	3,69
28	8-11 year	3,71	1,75	3,64
31	12-15 year	3,68	1,71	3,65
17	16-19 year	3,53	2,12	3,59
14	More than 20 year	3,50	1,71	3,86
	Upper Secondary School (Years Worked)			
7	0-3 year	4,00	3,00	3,14
15	4-7 year	3,53	2,20	3,53
18	8-11 year	3,61	2,22	3,39
12	12-15 year	3,67	2,08	3,17
4	16-19 year	3,50	2,25	3,75
11	More than 20 year	3,55	2,18	3,27
		Most of the teachers at my school is positive to change	It is important that the principal is active and takes initiative in order for the teachers at my school to be	I am actively searching for new ICT tools

			positive towards change.	
118	Elementary School	2,26	3,55	3,31
67	Upper Secondary School	2,43	3,45	3,13
	Elementary School (Years Worked)			
15	0-3 years	2,33	3,13	3,20
13	4-7 year	2,00	3,38	3,62
28	8-11 year	2,29	3,64	3,29
31	12-15 year	2,16	3,68	3,39
17	16-19 year	2,35	3,59	3,29
14	More than 20 year	2,36	3,43	3,07
	Upper Secondary School (Years Worked)			
7	0-3 year	2,00	3,43	2,57
15	4-7 year	2,40	3,80	3,33
18	8-11 year	2,33	3,56	3,33
12	12-15 year	2,33	3,25	2,67
4	16-19 year	2,75	3,25	2,75
11	More than 20 year	2,55	3,55	3,27
		I want to take part of other teachers flipped material	I feel that I am often first at my school in testing new models	I miss a more complete solution than what is offered by the ICT-tools I use today
118	Elementary School	3,41	3,03	2,48
67	Upper Secondary School	3,37	2,57	2,30
	Elementary School (Years Worked)			
15	0-3 years	3,25	2,73	2,13
13	4-7 year	3,27	3,31	3,15
28	8-11 year	3,50	3,11	2,39
31	12-15 year	3,36	3,10	2,45
17	16-19 year	3,75	3,35	2,82
14	More than 20 year	3,64	2,71	2,14
	Upper Secondary School (Years Worked)			
7	0-3 year	3,80	1,86	2,43
15	4-7 year	3,43	2,67	2,33
18	8-11 year	3,21	2,61	2,28
12	12-15 year	3,45	2,25	1,92
4	16-19 year	3,25	2,75	1,75
11	More than 20 year	3,67	2,36	2,36
		I think that a more gamification based teaching would increase my students learning	I experience that I have a lot to say in regards to procurement of study materials for	My students prefer formative assessment more than summative assessment

			my courses	
118	Elementary School	2,43	2,69	2,65
67	Upper Secondary School	2,21	2,78	2,37
	Elementary School (Years Worked)			
15	0-3 years	2,27	2,33	2,20
13	4-7 year	2,62	3,31	2,38
28	8-11 year	2,25	2,82	2,61
31	12-15 year	2,52	2,65	2,61
17	16-19 year	2,41	2,76	2,47
14	More than 20 year	2,14	3,07	2,93
	Upper Secondary School (Years Worked)			
7	0-3 year	2,29	2,71	1,86
15	4-7 year	2,47	3,00	2,53
18	8-11 year	2,33	3,11	2,56
12	12-15 year	2,08	2,67	2,08
4	16-19 year	2,00	2,75	1,75
11	More than 20 year	2,45	2,55	2,82
		When I flip the classroom my students prefer material produced by me more than material produced by others	I have tested flipped classroom in my teaching	
118	Elementary School	1,98	82,20%	
67	Upper Secondary School	2,57	80,60%	
	Elementary School (Years Worked)			
15	0-3 years	1,75	80,00%	
13	4-7 year	2,45	84,62%	
28	8-11 year	2,32	78,57%	
31	12-15 year	2,00	83,87%	
17	16-19 year	2,31	88,24%	
14	More than 20 year	1,55	78,57%	
	Upper Secondary School (Years Worked)			
7	0-3 year	2,20	71,43%	
15	4-7 year	2,21	100,00%	
18	8-11 year	2,79	83,33%	
12	12-15 year	2,64	83,33%	
4	16-19 year	3,25	100,00%	
11	More than 20 year	2,50	45,45%	