



OAMK

LAB Learning Model Introduction

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Glossary

Business Oulu	Business development service for the Oulu region.	LAB master	The person responsible for the operational activities of the LAB learning environment.
Care	Caring for someone/something. One of Oulu Game LAB's values.	LEAD	Demo LAB concept development phase.
Demo	An abbreviation of the word 'demonstration', which is an early version of an upcoming solution for presentation purposes.	Oamk	Oulu University of Applied Sciences.
Demo Path	A study path aiming at creating a demonstration of a solution.	OPS	Curriculum.
ECTS	European Credit Transfer and Accumulation System. In this handbook, the term is also used to describe the scope of a course in credits.	Oulu Cloud LAB, OCL	Cloud business education organised by the Oulu University of Applied Sciences utilising the LAB learning model.
Facilitation	Activities that are aimed at making the tasks of others easier.	Oulu Game LAB, OGL	Game industry education organised by the Oulu University of Applied Sciences utilising the LAB learning model.
Horizontal	Enabler of a solution and/or business (enables the vertical).	Peda team	The educational development working group of the Oulu University of Applied Sciences.
IPR	Intellectual Property Rights.	PRO	A study period during which project teams develop a demo into an actual product.
LAB	A multidisciplinary project-based learning model that utilises experience from multiple areas.	Product Path	A study path aiming at creating a product or service.
LAB alumnus	A person who has completed the LAB studies.	Profession	A professional group.
LAB Expo	A graduation event where projects present their demos.	Trust	Confidence in someone/something. One of Oulu Game LAB's values.
		Vertical	An entity aiming at a solution and/or business that requires multidisciplinary cooperation.

Summary

This handbook contains a description of the vocational LAB learning model and LAB learning environment developed at the Oulu University of Applied Sciences. The LAB learning model, (also referred to as 'LAB') was developed between 2012 and 2014 by training new professionals for the gaming industry (Oulu Game LAB) and cloud business (Oulu Cloud LAB) in LAB learning environments.

The purpose of this handbook is to make it easier to establish new LAB learning environments. Instead of providing detailed instructions on how to set up a LAB learning environment, the aim is to stay true to the learning model and activate readers to think and apply the principles in a creative way in order to build and develop learning environments in their respective fields.

The goals of the LAB learning model have been to find employment and establish new businesses in the field. The learning itself takes place through these goals and practical results, as a kind of a by-product. The pedagogic models of the LAB model are project-based learning, problem-based learning as well as cooperative learning focused on research and development. In addition to this, the model involves a master-apprentice model and utilises the methodologies of coaching. As a result, the teacher breaks free from the traditional mould and becomes a facilitator of learning, a coach for teams and individual learners, and a project consultant.

The LAB masters are in charge of the practical activities of the LAB learning environments, alongside the coaches.

What the established LABs must have in common is an approach focused on business, learning by doing, teamwork, leadership and solution development through creative and multidisciplinary processes.

Shared operating models will be established for the LABs as far as is feasible. Goals determined for each respective LAB will be used as the bases for selecting these models. In other words, a well-determined model guides practical activities and daily decisions.

The basic structure of the LAB learning environment consists of a concept development phase and a demo implementation phase. The goal of the concept development is to produce a project plan and content description for demo creation purposes. A demo is a demonstration of the developed solution. It is not ready for production or use. Instead, its purpose is to describe the solution and its value to the customer. Another aim of the demo implementation phase is to produce concrete evidence of the professional skill of the team and the individual student for the purpose of obtaining financing or finding a job, for example. In addition to this, the implementation phase demonstrates the path of an idea into a functional demo.

If this is required by the goal established for a LAB learning environment, LAB learning paths can also be established, during which demos will be developed into products and possible startup companies. This deepens the professional skill and entrepreneurial attitude of the students by involving them in the team and preliminary company from the start.

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Background and demand for the model

In December 2011, Heikki Tunkkari – Key Account Director, Creative Industries at BusinessOulu – initiated a survey into how gaming industry education could be established in Oulu. The reason for organising the education was the anticipated structural change in the ICT field – with Nokia leading the way, companies would be dismissing several hundreds of product development employees within the next few years. The gaming industry with its increasing business opportunities was seen as a means to boost employment in the area.

The study was conducted by Eeva Kangas (FixUI Oy) and Jussi Autio (Tuonela Productions Oy). The idea was to analyse local game companies by interviewing them about their needs in terms of competence and labour. The survey also included questions regarding concept and game development education, and its desired content and form. Below is an excerpt of the summary of the study from the spring of 2012. It crystallises some of the basic principles of the early LAB learning model.

"For the purposes of planning game and concept development education, Oulu-based companies were approached in order to determine the need for education. Before the planned training was described to them, most companies stated that the education should focus on specialised expertise, which would help to generate a variety of specialists for the field. For this reason, the companies hoped that the education would not be general in nature, offering something for everyone. Instead, the education should enable each participant to focus on strengthening their own skills and special expertise. As a whole, however, the education should be based on a multidisciplinary foundation, meaning that experts from a variety of fields should meet during their studies instead having to wait until actual employment."

A multidisciplinary approach, problem-based project learning, concept development and internationality were defined as the cornerstones of the Oulu Game Lab. Jussi Autio and Kari-Pekka Heikkinen were invited to plan the education in the spring of 2012. Based on his background and experience, Jussi took responsibility for the industry-specific product development and business content of the studies while Kari-Pekka handled the concept development, teamwork and project activity portions.

The LAB learning model in a nutshell

The LAB learning model involves project-based learning implemented through multidisciplinary project teams.

The cornerstones of the model are its orientation towards practical work, creative problem solving, concept development, learning by doing, internationality, entrepreneurial thinking as well as the participants' multidisciplinary background and wide range of experience.

The emphases of the model vary depending on the field of each LAB: for example, one LAB may focus on internationality more than others. The aim is to develop each LAB to meet the current and future needs for competence in their respective fields. This makes the LABs dynamic and networked collaborators that change over time whilst maintaining a cooperative link to the other LABs. In addition to this, the naming of the LAB learning environments provides incentive towards networking. The doubly named 'municipality' and 'field' LAB practically demands more LAB environments to be established in various municipalities and fields.

The teaching methods in the LAB model can be varied and experimental. In the Oulu Game LAB and Oulu Cloud LAB that are used as examples in this handbook, the teaching methods have included learning by doing, project-based learning, coaching, problem-based learning, learning through research and development, lectures held by local and visiting speakers, debates, study groups, and the master and apprentice model. Workshops are also an efficient way for teams in corresponding phases to work on their projects. In addition to lecture handouts and books, previously created product demos, complete products, video and e-learning materials and excursions to relevant conferences and events have been used for educational purposes.



Oulu Game LAB students at 2013 Nordic Game Conference in Malmö.

Coaching and tutoring are essential parts of the LAB activities, which aim to develop the competence of young professionals, in particular, at an all-encompassing level. Alongside professional expertise, the students are provided with life-long tools that will enable them to work successfully in large and small companies and teams.



Presentations and presenting are essential part of the LAB studies.

The concrete results of the LAB learning model include presentation versions of the solutions, i.e. demos, as well as possibly complete products and services. Another aim of at least equal importance is to produce tight-knit and competent teams that receive coaching for establishing and developing business activities when necessary.

The cornerstones of the LAB learning model

In order to gain a clear overall picture of the model, it is important to view it from the perspective of a few basic questions. We chose 'what, why and how' as the questions for establishing the mission, strategy and values of the model. The following is a description of these cornerstones.

The mission of the LAB learning environment

According to the tenets of business management, organisations should, at some point, determine the purpose of their existence. This was something we, too, wanted to do in order to make the right choices in the development of the model. A well-thought-out and internalised mission helps an organisation or function to make justified choices at all levels. In our opinion, it answers the question 'Why do we act?'. The Finnish Wikipedia page for 'mission' defines it as follows:

"A mission is a statement of the purpose of a company, its reason for existing. It is thought to define the permanent and long-term goals of the organisation. The mission is closely related to the basic intent and core activities of the company. In the same way, it describes the company's role in society." (Wikipedia, ei pvm)

A good mission statement guides the entire LAB, including the students, towards the right choices and creates a foundation for activities and values. The statement should be short so that everyone can remember it, but it should also be sufficiently comprehensive to take the school and its partners into account. The mission statement should avoid general terms or 'hype' words that may create varying or even negative connotations. A clearly defined mission statement is easy to understand and share, which means that it can be set as a common goal for all parties involved.

The following is the Oulu Game LAB's mission:

To Create Employment & New Game Companies

For the goal established by the mission statement to become a reality, the mission must be shared with all participants and interest groups and revisited more than once. By speaking about the mission and showing concrete results, those working within the LAB, along with any cooperating parties, can be convinced to commit themselves to a shared goal and work towards it.

Values of the LAB learning environment

The culture of an organisation is like the air everyone breathes. It can be sweet, foul, or unnoticeable, but still vital. The foundation of this culture is formed by values that answer the question 'How do we operate?'. In other words, the values of a LAB define how we work towards achieving the defined mission.

The mission of a LAB should be in line with its values.

The values should describe the mindset used to coach the students to become future experts.

What this means in practice is that, in addition to the present, the values should also account for future competence needs. In general, the values must reflect the LAB's inherent entrepreneurial thinking and approach to problem solving.

We defined the following as the values of the Oulu Game LAB:

Care and Trust

Among other things, the value 'Trust' refers to the fact that students are trusted with keys to study rooms and have the opportunity to make their own rules for using these rooms. The value 'Care' means taking proper care of everyone and everything involved, from the educators and students to the production and lear-

ning results of the projects and teams. This value also emphasises tutoring as a means for ensuring professional growth.

Strategy of the LAB learning environment

Even though the strategy of the Oulu Game LAB is defined as

"Act more as a game startup instead of a school",

we find that defining a detailed strategy is unnecessary.

A strategy can be nothing more than a collection of activities towards achieving a shared mission.

The strategy established for the Oulu Game LAB is an example of the most important activity in support of the mission. Within the strategy, the idea is to create a dynamic low-hierarchy environment that permits everyone involved to present their input and suggestions without being afraid of violating the strategy. In other words, all LAB participants implement and modify the strategy. They work each day to secure employment for themselves and their team. Other smaller activities are in line or develop alongside this larger activity. An example of a strategic activity is networking and close cooperation with local business.

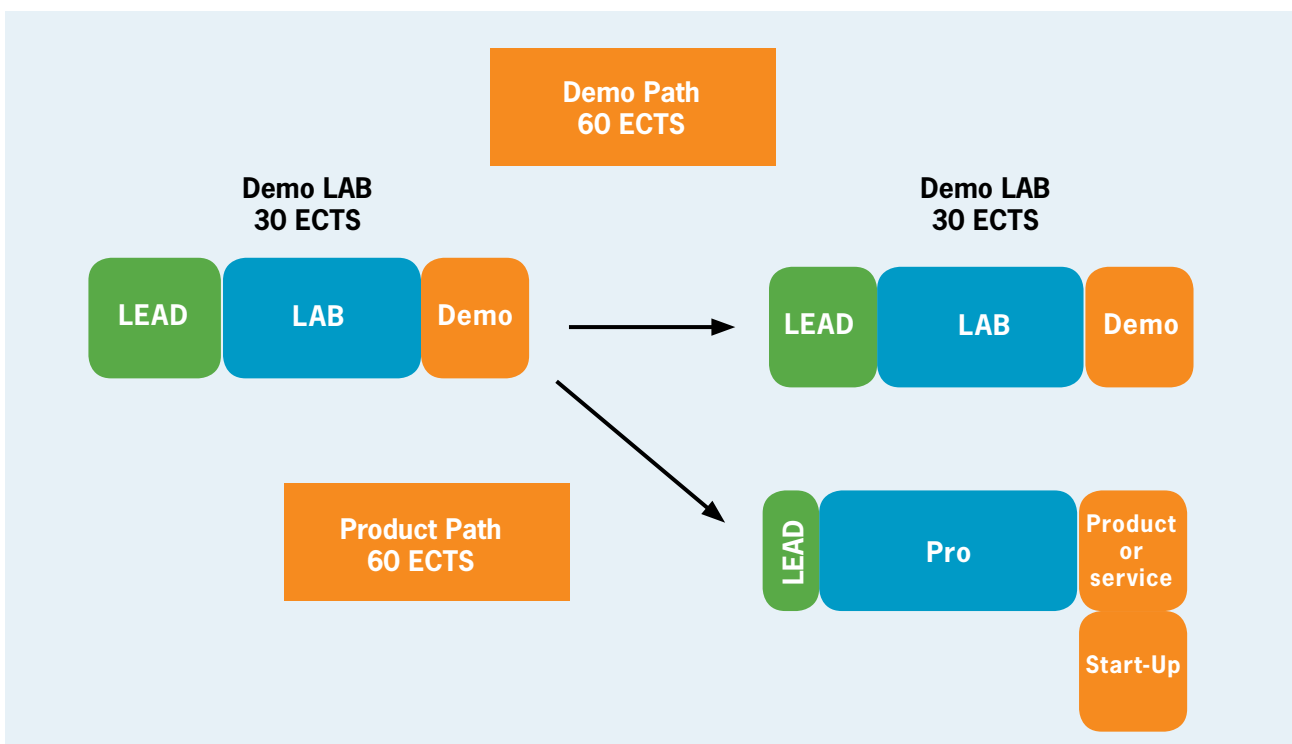
Description of the LAB model

The following paragraphs describe the LAB learning model in a general fashion – more specific descriptions are provided separately as needed by each respective LAB. The examples used in this handbook are from the Oulu Game LAB (OGL) and Oulu Cloud LAB (OCL).

It is difficult and at times practically impossible to define a model in a way that meets the needs of all LABs. It is not my intention for the models to be implemented directly upon the establishment of new LABs. The idea is to provide a starting point to which justified changes can be made during planning and actual operations. An opportunity for this must also be ensured at the administrative level.

The LABs must be organisms for learning that adapt to their time and environment and focus on achieving their mission in cooperation with their partners.

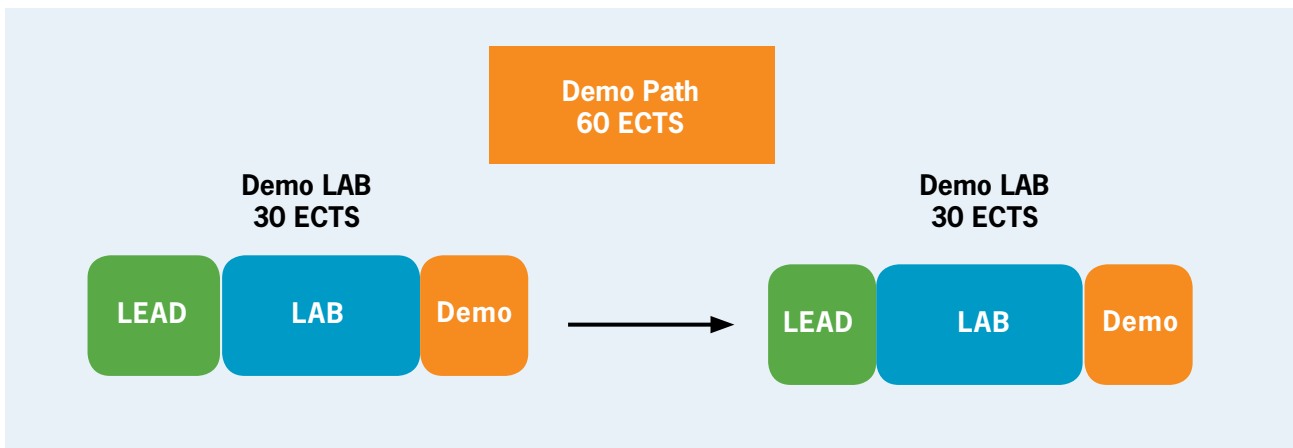
The learning itself occurs as a by-product of generating concrete results. This idea is also supported by the strategy specification. The establishment and discontinuation of various LABs should be dynamic. To further this goal, all established LABs must support OAMK's strategic efforts, i.e. priorities. These priorities are vertical specifications that are defined at regular intervals and develop with time.



LAB model paths descriptions

Creative problem solving is a definite requirement for future success. We will not be able to compete in the increasingly globalised markets using solutions created by any single professional group. The idea of the LABs is to create professionals that approach problems in a natural way and solve them creatively through multidisciplinary teamwork. For the purposes of this goal, I would like to point out the significance of tutoring as part of the core operations of all LABs. Accordingly, this matter is described comprehensively in the handbook.

In addition to needing to possess sufficient content-related competence, the coaches have a considerable impact on cultivating the right attitude and passion among the students. As philosopher Lauri Järvillehto states in his book *Upeaa Työtä!* (Great Work!): "Your calling is where your passion meets the needs of the world." (Järvillehto, *Upeaa Työtä!*, 2013) This simultaneous occurrence of passion and need – i.e. finding one's calling – should be the aim of all education and studies. Järvillehto defines freedom, flow and responsibility as the pillars that support the calling (Järvillehto, *Upeaa Työtä!*, 2013) p. 27–28). The LAB learning model enables all of them to be realised.



Demo Path description

LAB paths

Two study paths have been developed within the framework of the LAB model: the Demo Path and the Product Path. These paths are presented in the figure below. The total extent of the paths is about 60 credits, ECTS. In our experience, this scope creates results that support employment, startup companies, demos and products. If needed, the paths may also be more limited and include additional modular phases.

At the end of the first Demo LAB period, the students will be asked to choose between the Demo Path (i.e. the new Demo LAB period) or the Product Path (i.e. the Product LAB period). The selection practices and phases will be covered later in this handbook.

Upon entering the Demo Path, LAB participants are provided with an overall view of the various opportunities during the LAB studies. Feedback from students has indicated that as they gain a better understanding of the possibilities for improving employment opportunities or establishing companies of their own, their motivation for learning begins to increase from the start.

Demo Path

The Demo Path consists of two courses of equal lengths, the Demo LABs, the purpose of which is to produce a demo based on an idea or problem. The Demo LAB is 30 or 15 credit course, which means that the Demo Path yields 30 or 60 credits.

A few things should be emphasised with regard to selecting the Demo Path.

The purpose of the Demo Path is to provide the participants with a deeper understanding of the phases involved in developing a creative solution, to improve professional competence through the master-apprentice model and to provide experience on two different projects – possibly including the LAB.

The Demo Path comprises of two corresponding courses called Demo LABs. The Demo LAB is described later in this handbook in the section on the basic modules of the Demo LAB.

In the second phase of the Demo Path, the participants have understood the LAB process and can, therefore, concentrate on the

right things during the LEAD concept development phase. They also understand the importance of the LAB phase and are familiar with the opportunities and challenges of teamwork. In the second phase, participants typically assume a more prominent role in their teams and carry more responsibility for the team's results. They also often guide the other team members with regard to their own profession, which also serves to strengthen their own skills.

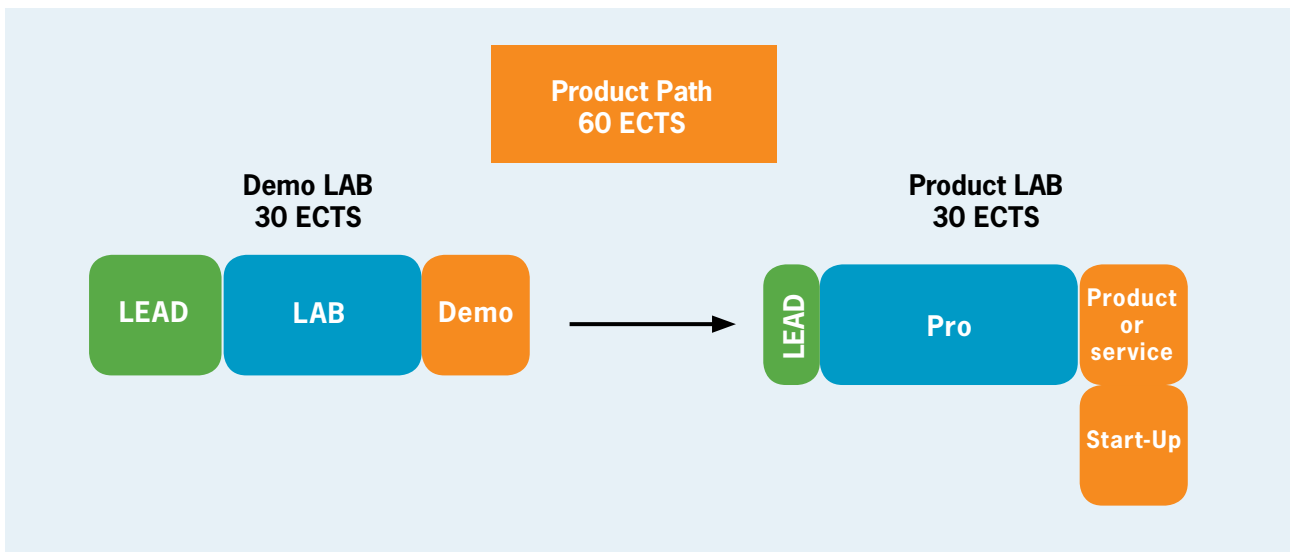
The Product LAB is a 30 or 15 credit course in which the project teams continue the development of their demos into verified products, services and operating models. The course entails coaching on business development, product testing and publications as well as voluntary business coaching, including a financing plan. In addition to this, the Product LAB team will be coached regarding the first steps of entrepreneurship, if they so desire. The finished solutions will be presented at the Expo event held together with the Demo LAB students. The Expo is, in a way, a graduation event for the LAB courses, which is described later in this handbook.

Product Path

The Product Path consists of two parts: the Demo LAB and the Product LAB. The Product Lab begins with the 30 or 15 credit Demo LAB module, which is provided to all LAB students.

In addition to generating a product, service or method, the aim of the Product Path is to create a startup company with its own business operations.

Normally, focused teams who wish to continue the development of their demo enter the Demo LAB Product Path. During the brief LEAD concept development phase, the team utilises the feedback received to review the content and requirement specification of their demo, the competence required for further development, the motivation of the team and the progress plan together with the coach. Therefore, the transition to the Product path steers the entire team towards business-oriented thinking.



Product Path description



PRO phase

After the brief LEAD phase, the teams continue on to the PRO phase, in which learning takes place through practical work and coaching. The PRO phase provides the teams with the required facilities, tools and coaching. This phase differs from the Demo LAB phase in that the team works in a more business-like and professional manner. The coaches do everything they can to help the teams to develop their business-oriented thinking and professional skills. In the PRO phase, stronger networking with partners, i.e. local companies, has been found to be a good solution.

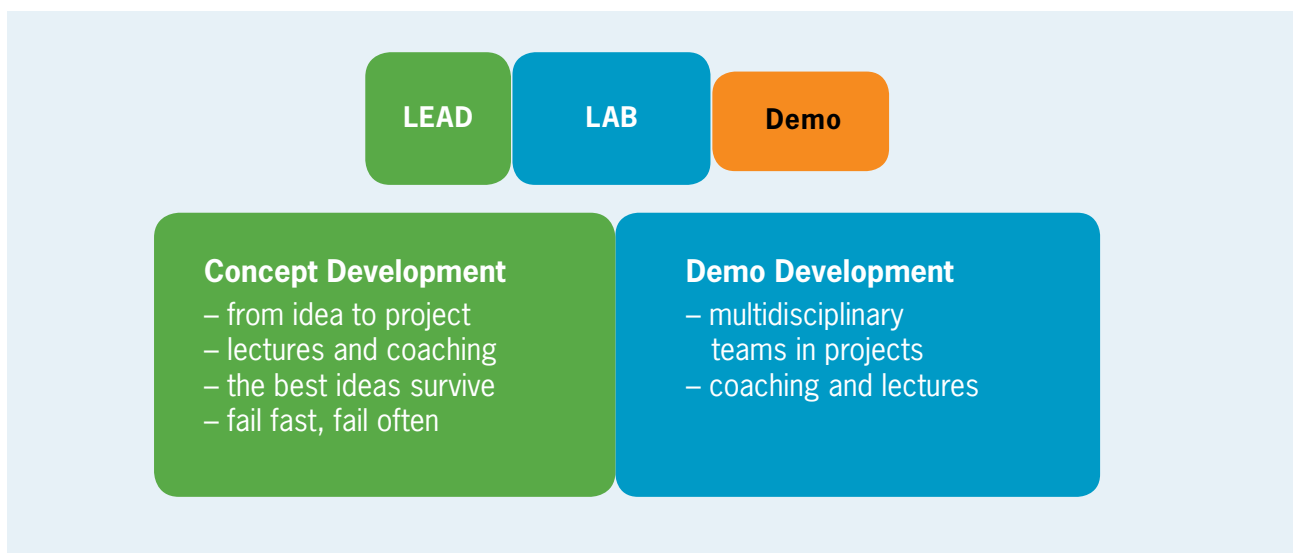
For the functionality and results of the LAB model, it is best if the Product Path teams are involved in the Demo Path activities in a way that benefits both. In practical terms, this can mean that the Demo Path and Product Path teams interact with each other closely. The educational offering of the Demo Path is also made available to the Product Path teams and everyone uses a shared

calendar to distribute information regarding education and events. This enables a master-apprentice learning environment in order to diversify the learning and coaching processes.

Basic modules of the Demo LAB

The Demo LAB is divided into two basic modules: the concept development phase and the project phase that ends with the publication of a demo.

The concept development phase and project phase are called LEAD and LAB, respectively. The LEAD phase typically lasts about a month (5 ECTS) while the LAB phase can take from one to three months (10 or 25 ECTS), depending on the desired result. The figure above details the primary content of the phases.



Demo LAB basic modules

Project ideas and IPR ownership

Ideas and solution requests are required for the LABs, based on which a concept proposal and project proposal for Gate 1 and Gate 2, respectively, will then be prepared during the LEAD phase. The project ideas and solution requests are primarily obtained by the LAB master and coaches from LAB field partners, organisations and companies.

Ideas can be half-finished products or services whereas solution requests detail problems observed by customers, to which methods, services or products can be developed as solutions within the projects.

The size and level of difficulty of the project ideas should naturally be proportional to the students' capabilities to solve them. The purpose of the LABs is to produce demos that indicate the primary features of the solutions – "Proof of Concept". Furthermore, they serve to demonstrate the ability of the teams and individual participants, offering potential financiers and employers concrete proof of capability and skill.

When obtaining new project ideas from partners, it is important to understand the mission of each LAB.

LAB customers and their needs

Defining and understanding the customer(s) must be among the core activities of an organisation. This ensures that the new or existing solution suits the customer's needs and creates the value required. This leads to more efficient and meaningful operations and improves the quality of the end product. We have defined society in general, partners (companies and organisations), LAB participants and the Oulu University of Applied Sciences as the LAB customers.

Society

Society and the phenomena and changes that occur within it are starting points for development efforts. We see the emergence of a creative class and creative business as one of the changes that has affected the development of the LAB learning model. This change was addressed by Richard Florida in his 2002 book "The Rise of the Creative Class (Florida, 2002)". His message is that

traditional professional divisions will dissolve and creativity will work its way to the core of all activities, including business, over the course of the 22nd century. As such, professional classes should be regarded as a new creative class that utilises multi-professional networks for problem solving purposes. The urbanisation of the global population is accelerating this process, which also influences Finland in a significant way.

Another starting point for the development has been the importance of reforming all types of education, including vocational education. Several people have written on this topic, including Sir Ken Richardson (Robinson, 2006) and Pekka Himanen whose book "Kukoistuksen käsikirja" (Guide to Flourishing) we decided to use as a guideline (Himanen, 2010). Himanen writes about the above-mentioned social change as a philosopher, extending the shift to cover education since, in his opinion, creative business is among the most important growth factors for Western economies. He calls for creativity to be increased in education and learning, and draws our attention to the change in leadership. The same conclusion has also been reached by Alf Rehn and Risto E.J. Penttilä who emphasise the importance of team leadership and teamwork in their book "Suunnaton Suomi" (Finland without Aim) (Rehn & Penttilä, 2012). As large companies reduce their personnel, the role of startup companies and SMEs as employers is increasing continuously. According to Rehn and Penttilä, the content of education should match this change. We interpreted this to mean that we should arrange vocational education that provides skills required in small companies instead of large corporations. Entrepreneurial thinking is among the most important metasubstance elements of the LAB learning model.

Companies and organisations

What skills do companies and organisations expect from newly-graduated professionals now and in the future? Upon preparing the specification for the Oulu Game LAB, we conducted a business survey among local game development companies in order to determine the needs and wishes of the customers. Based on this, we were able to outline the educational content. The results of the survey indicate a single common need, (T-shaped and recruiting, ei pvm) "T-shaped persons", which is described as follows:

"The concept of T-shaped skills, or T-shaped persons, is a metaphor used in job recruitment to describe the abilities of persons in the workforce. The vertical bar on the T represents the depth of related skills and expertise in a single field, whereas the horizontal bar is the ability to collaborate across disciplines with experts in other areas and to apply knowledge in areas of expertise other than one's own." (Wikipedia, ei pvm) The LAB model meets this need extremely well.

Participants/students, coaches and visitors

The participants of the multidisciplinary LAB learning environment come from a variety of sources. In addition to students aiming for a basic qualification from the university of applied sciences, an essential part of the variety within the teams is formed by students that enter the LABs through an open institute of higher education. Therefore, the LAB model provides a path for unemployed professionals, students of other schools or company employees to supplement or adjust their education, or to explore a new and interesting field.

The work experience brought in by professionals is important to young students in order to improve their practical skills and tacit knowledge.

An interesting educational opportunity is also presented when company employees or intended recruits bring a problem or business idea with them to the LAB environment.

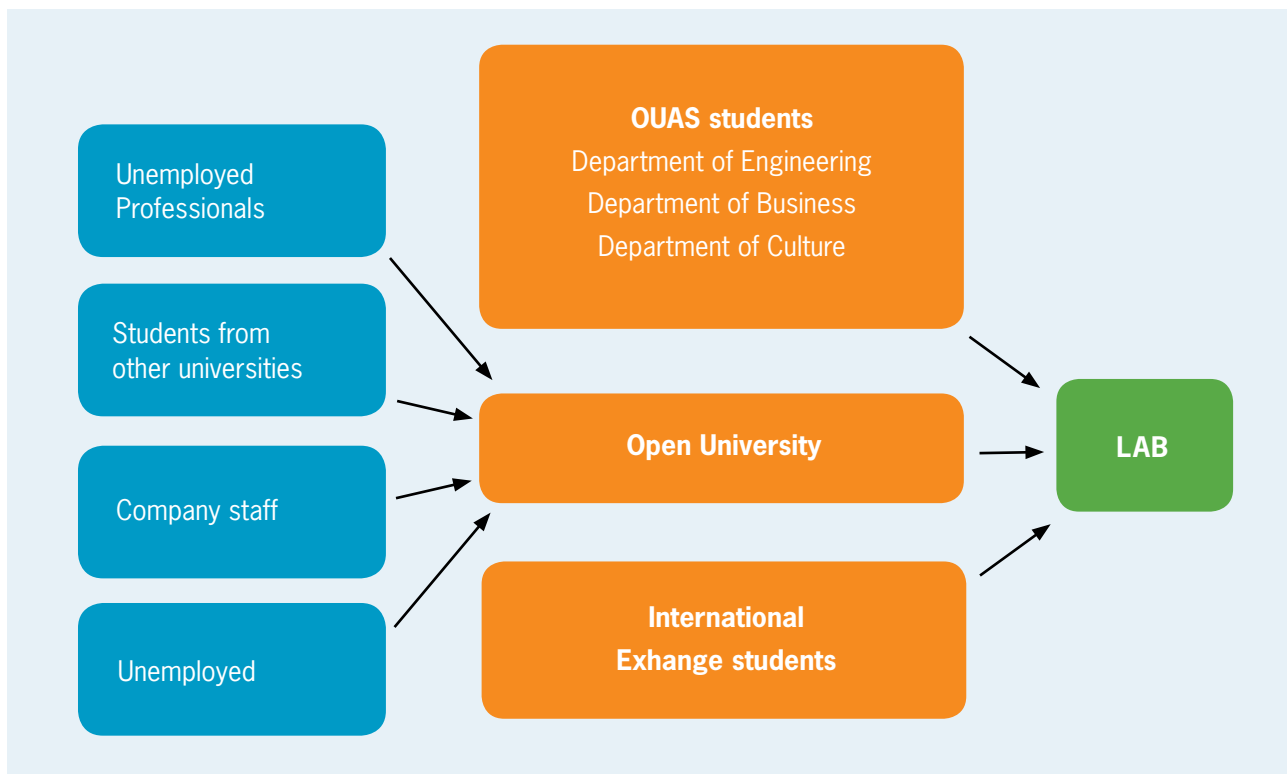
Internationality is a benefit to the Oulu region in terms of both business and product development but, first and foremost, it helps to develop international sales and export. Based on our experience, international students should be better integrated into the studies arranged by the university of applied sciences. For this

purpose, the LAB model can offer a good method for organising practical training, for example. The international study route also supplements the pool of competence in the region: for example, there are not that many experienced graphic designers in Oulu, as was discovered by the Oulu Game LAB game projects.

The most essential thing about the various application routes is to ensure a multidisciplinary and diverse foundation – in other words, the teams comprising of relevant professions and enthusiastic participants of varying ages must be compiled together to carry out projects in cooperation with the coaches. In this learning environment, the definition of student and teacher is blurred, which is why this handbook has intentionally replaced the word 'student' with 'participant', which better describes the LAB learning environment.

Applicants

We divide LAB applicants into three categories: students aiming for a basic qualification, experienced professionals who have arrived through an open institute for higher education, and exchange students.



Participants are joining LAB with different backgrounds

Students aiming for a basic qualification

Toni Dunderfelt describes the typical life situation of young adults between 20–25 as follows: "They are searching for a living environment that corresponds with their inner aspirations and expectations of what life is and what it could offer." In classical terms, this is a kind of Sturm und Drang period – a time for travelling, self-exploration and experiences. Life must be felt: it cannot degrade into bland theory. A profound wish among young adults is to face life head on, free and independent of the rules that constrain the older generation. Even larger issues should be overcome rapidly and ideals should be realised in practice." (Dunderfelt, 2011)

According to research conducted by Kirsi Piha and Liisa Poussa (Piha & Poussa, 2012), this Generation Y places more emphasis on leadership and teamwork skills, as well as educational methods, than the preceding generations. In their survey, Piha and Poussa interviewed higher education students and stated that it is possible for attitudes among the respondents to change as their own status in society and within their respective organisations changes. The research resulted in some important conclusions that are significant for constructing the LAB learning model.

- Young people want to work in groups. Good employees and employers help others.
- Young people want to work in all kinds of locations and environments. They want to manage their own work. They want to maintain a separation between work and leisure. They want more holiday time than is prescribed by law, even if it is unpaid.
- Young people want feedback, which can also be demanding and critical.
- Young people like to work. They would not exchange work for a lottery win.
- Young people want to commit. Only 2% are interested in switching jobs on short notice.
- Young people want to find their own paths and create suitable careers for themselves. The desired direction is not always up. Young people loathe unnecessary hierarchies. Successful employees are happy.
- Values are important to young people. They could not work for companies whose values conflict with those of their own.
- Young people want to work in an entrepreneurial fashion. They must have the opportunity to implement their own ideas. Micro-entrepreneurship and working for multiple employers is appealing.
- Young people are interested in internationalisation. 90% are ready to work for a company that uses English as its first language. Shorter periods abroad are preferred over longer stays.
- Young people see supervisors as enablers. Expert tasks are seen as more appealing than managerial tasks.

Young professionals have a strong desire to do things themselves and in their own way, apply their skills in creative ways and try different things.

The desire to experiment should be harnessed for creative problem solving whilst alleviating any possible fear of the consequences of failure.

In this equation lies an important opportunity for true innovation, without which we, as humans, could never have come this far. "Stay foolish, stay hungry!" urged the owner and CEO of Apple, Steve Jobs, in his 2005 speech to new graduates of Stanford University. He had recently learned of his terminal cancer and understood that his time on this planet was limited. (Isaacson, 2011)

Experienced professionals

Experienced professionals applying for continuing or upgrading education come to the LABs to seek employment, refocus their careers or learn more about an interesting project or field. These people with actual work experience have a significant impact on the younger students as role models who influence opinions, steer efforts in the right direction and disseminate tacit information. In the Oulu Game LAB, game development startups have generally been formed around them or by them.

Especially professionals who have run their own businesses before are extremely highly regarded among all students. However, the highest regard is reserved for those who have been through bankruptcy or have abandoned their previous business operations. Their experience is the most sought-after commodity for new teams on their way towards their own goals, and on the other hand, the interest shown by other students helps these older professionals to restore and strengthen their confidence.

Working within a large organisation can leave its mark on even the most experienced of professionals. In LAB participants, this often manifests itself as a lack of initiative, i.e. courage. For this reason, all LAB participants should be encouraged to be creative and do things their own way from the start.

Exchange students

Exchange students enter the LABs through various exchange programmes. They help to maintain the language proficiency of the LAB students, gain international visibility for the LABs and build networks. Especially in the concept development phase, the variety in cultural backgrounds provides the team with new perspectives and networks for developing ideas. Upon returning to their home countries or universities, the exchange students share their experiences, enticing new students to apply for the LABs. In addition to this, the close connection to the LAB team that produced a demo together enables a development and business continuum in the country in question.

On motivation

Professors Richard Ryan and Edward Deci define motivation as follows: "Motivation refers to energy, direction, persistence and bringing things to their conclusion. All of these are areas of active-ness and intent. Motivation has long held a central role in psychology as it is one of the core elements of biological, cognitive and social regulation." Ryan and Deci define three motivational states: amotivation, extrinsic motivation and intrinsic motivation.

Amotivation is a state where there is no will to act. In this state, people take no action whatsoever, or if they do, the actions are fully dictated by external sources. Extrinsic motivation refers to behaviour aimed at fulfilling an external demand or need, or obtaining a reward. Intrinsic motivation means actions taken by people for themselves in order to fulfil their own needs, which Ryan and Deci call psychological needs.

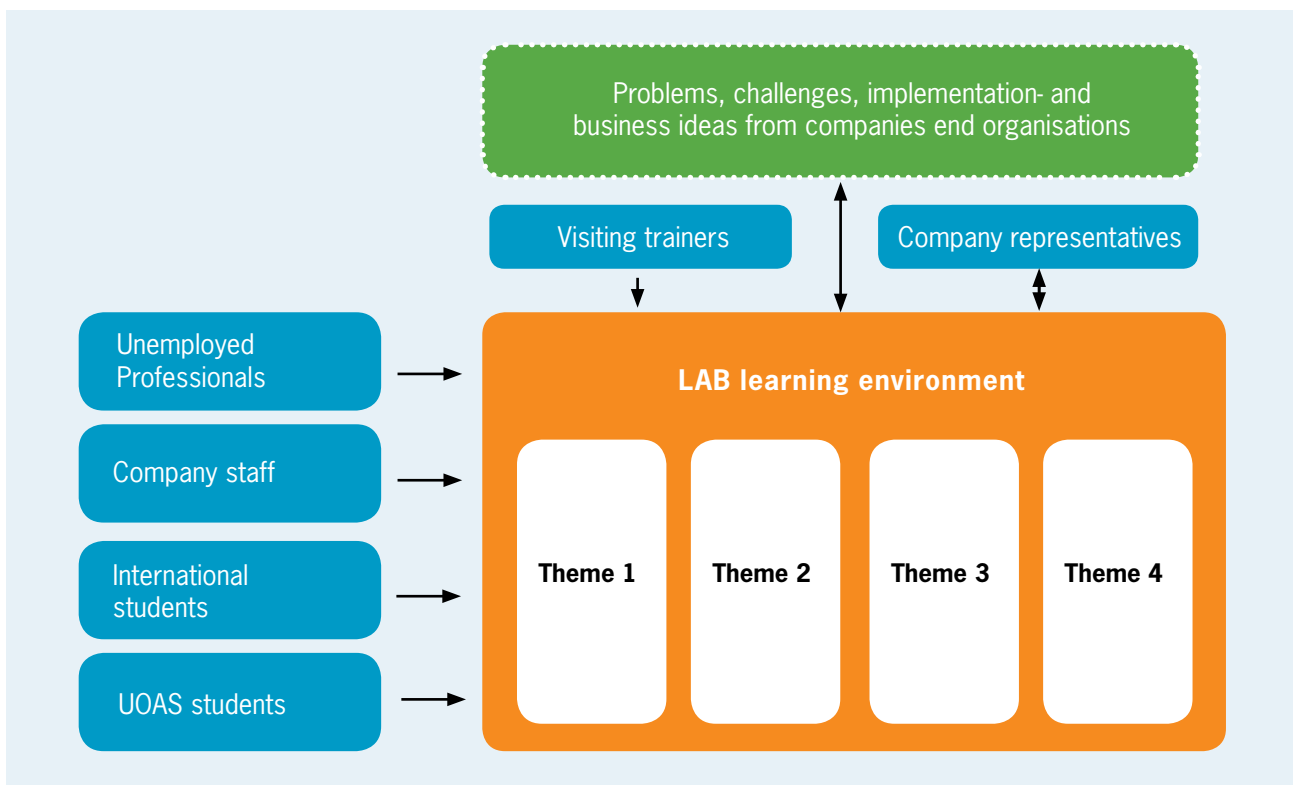
Deci, Ryan and Christopher Niemiec demonstrate that intrinsic motivation is extremely conducive to personal well-being. If a person values the goals for which he/she has intrinsic motivation and manages to reach these goals, he/she will experience significantly stronger positive emotions and general satisfaction in life than externally motivated individuals.

The fulfilment of psychological needs is at the core of intrinsic motivation. They are typical elements of a healthy person's psycho-

logy, and fulfilling them has a profound impact on the feelings of happiness and well-being experienced by the individual. In addition to this, they are extremely important for sustained learning. Ryan and Deci present three basic psychological needs: autonomy, competence and psychological relatedness.

The experience of autonomy refers to the feeling of achieving change in your life through your own actions. In other words, your actions are not excessively restricted by the will and behaviour of others, and you can attain goals that are important to you with reasonable effort. The experience of competence means that you can complete tasks and achieve your goals. More specifically, you have a feeling of being in control of your life, which enables you to reach the targets you have set for yourself. The feeling of psychological relatedness refers to the feeling of connectedness to other people. You feel like you are a part of a group of some kind – be it a family, work community or hobby group. (Järvilehto, Hauskan oppimisen vallankumous, 2014) (Järvilehto, Upeaa Työtä!, 2013)

The LAB operating environment



LAB operating environment

The LAB learning model is closely related to working life. The figure below describes the LAB learning environment and its primary cooperation partners.

The LAB network and export of training

The Oulu Game LAB has networked actively as the leading actor in game training, both in Finland and abroad. Currently, a cooperation agreement is already signed with the city of Sendai (Japan). Negotiations are in progress with Groningen (the Netherlands) and Pusan (South Korea). The purpose of networking is to expand the selection of training offered and to facilitate mobility of coaches and students. In addition, the network offers a unique opportunity for local start-up companies in the game field for product development and business in the local markets.

For the Oulu University of Applied Sciences, networking means wider availability of the unified model of training that is shared by different universities. It also means expanded opportunities for cooperation and increased attractiveness for the University, both

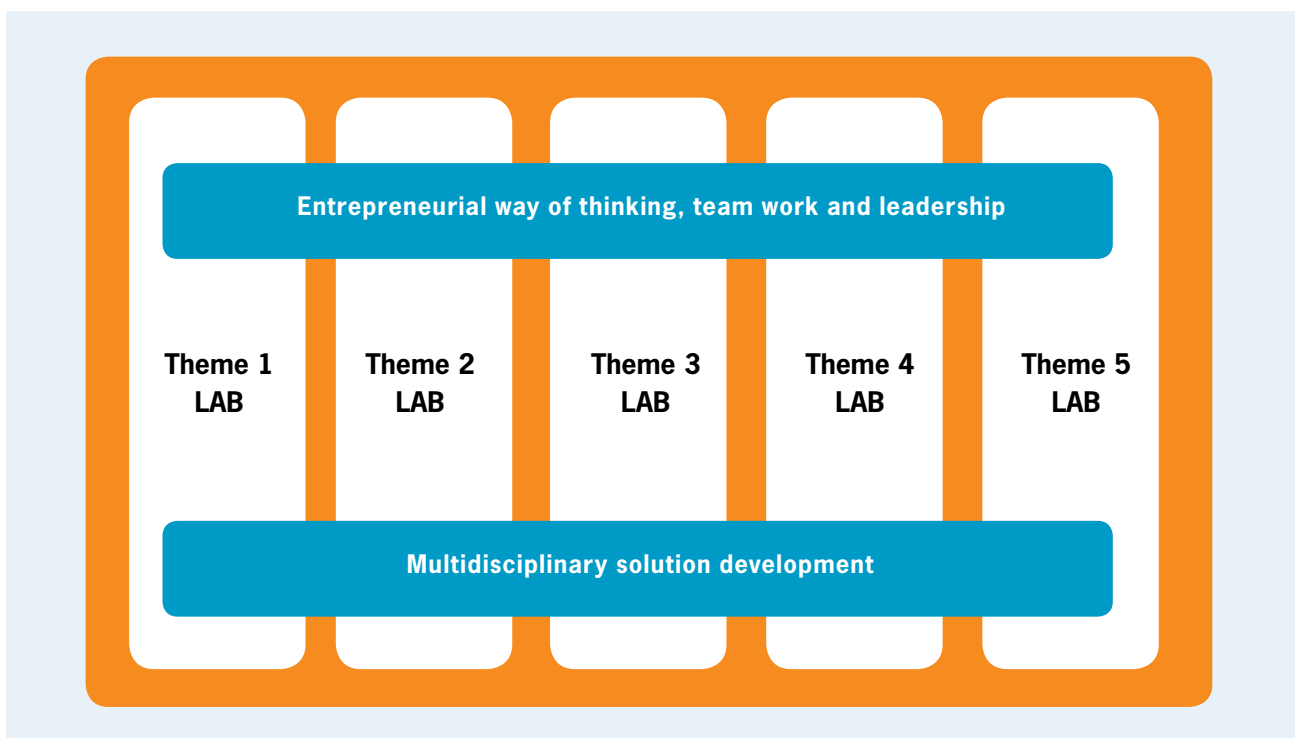
in Finland and internationally. The LABland concept, where LABs in different countries facilitate learning through international cooperation projects, is a great opportunity for us from the viewpoints of attractiveness, reputation and training-related business.

Common to all LABs

This image describes the metasubstances common to all LABs: entrepreneurial thinking and attitude; teamwork; leadership; and creative multidisciplinary development of solutions. These subject fields should be a part of the content of every LAB's teaching, and they should become concrete during the training.

At the LABs, we conceive of entrepreneurial thinking and attitude as including the following qualities:

- an active, self-governing, opportunity-seeking and opportunity-grasping attitude
- taking into account the basic realities of business when weighing alternatives



Common subjects for all LABs

- an activity that networks actively and makes use of networking
- understanding the significance of communicative skills and developing them actively

At the LABs, we conceive of teamwork as including the following qualities:

- the opportunities and weaknesses of small groups
- the importance of teamwork skills for employability and business
- understanding the lifespan of teams
- sharing and taking responsibility; orientation towards result
- seeking out and making use of networks

At the LABs, we conceive of leadership as including the following qualities:

- creating an own conception of leadership for all participants in the team
- the significance of leadership for the atmosphere in the team and the results achieved
- leadership of tomorrow, leaders of tomorrow
- emphasising the importance of communicative skills for all participants in the team

At the LABs, we conceive of multidisciplinary development of solutions as including the following qualities:

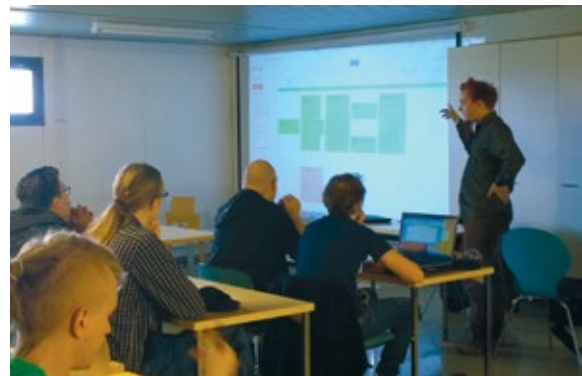
- the reward and pain of an multidisciplinary approach
- applying one's own substantive skills
- creativity as a source
- communication as a key factor for success
- tolerance
- seeking out opportunities

The secret weapon of the LAB model

Turning versatility into an asset can be challenging. In the LAB model, versatility is shown in the different professions and experiential backgrounds of the students. Professionals or those studying to become professionals in various fields aim to understand one another and achieve results together, quickly and in a changing environment. For many participants this is their first opportunity for cooperating outside their own profession. Experiential background shows in the age distribution. The same team may have participants between the ages of 22 and 55, so a shared understanding can be hard to find at times. Some of the team members have a foreign background and a radically different experiential background, not to mention a different terminology and other linguistic challenges.

According to our experiences, a versatile team is brought together by the members' love for their field – in the case of the Oulu Game LAB, games. This should be taken into account when new LABs are being founded. The mission of the LABs should speak to every participant and function as a larger purpose. Those who believe in the same purpose will also gather together in their leisure time to learn new things and to deepen what they have learned. They will also participate in the further development of the LAB.

The facilities of the LAB learning environment



Lecture room should be available

The facilities used are an interesting and multi-faceted matter to solve. It pays to give attention to this question, as research shows that the surroundings matter for arousing creativity and activity. In short, the minimum requirement is "Masters in our own house, with the LAB alumni close by". Trust that the LAB's own facilities will be taken care of is important, as is the fact that a high degree of organisation is not a top priority. The permission to adapt the facilities according to the situation and the student numbers is an important element in creating motivation. Access control should enable work in the evenings and at weekends.



The facilities must support team working.



LAB roles

LAB master

The LAB master plays a key role in achieving results. The LAB master is responsible for the LAB's activity and functions as a contact person for cooperation partners. When a new LAB is being established, two persons should ideally be named for this role. Not many people embody all the qualities that would ideally be required:

Power and responsibility

- 100% working time at the LAB
- Responsible for the budget and the LAB's results
- Responsible contact person for cooperation partners
- LAB organiser
- Takes care of the tools and facilities
- Project coach, defines the milestones within the project, functions as an internal client
- Will preferably also teach/train their own area of specialisation
- Acquires the project templates from the cooperation partners
- Brings together coaches; prepares the curriculum and course plan with them
- Plans capacity

Has

- a general view of the field and its distinguishing features
- good networks in the field: both locally, nationally and internationally

LAB coach

Through own professionalism and contacts, participates in both teaching and training of teams. Designs and understands the overall picture together with the LAB master. Is also prepared to change the plans. Networking with cooperation partners is also essential for acquiring project templates and promoting the employability of students.

On the learning models used at the LAB

The Peda team of the Oulu University of Applied Sciences has defined the guidelines for development of teaching in 2011–2015 (Oamk, 2011) as follows: "The key principles for the development of teaching are inquiring, developmental and cooperative learning based on skills. These principles show the pedagogical way to furthering learner-centric culture and learning oriented to working life. The principles for the development of teaching will also strengthen the active role of the learners as members of the learning community."

In addition, the Peda team defines the learning process as follows: "The learning process is viewed as a process of learning and building knowledge that is shared by the whole learning community. Knowledge is understood to be generated in cooperation. It is increased and developed when we act together. Learning together is needed in all areas where the amount of knowledge sets challenges for individual learning. Developmental learning will bring an orientation towards working life into the centre of the learning process."

Learning is defined by the Peda team as follows: "Learning is mutual sharing of expertise in the learning community. Students, teachers and working-life partners will all learn from each other. Students are responsible for their own learning. The role of teachers and tutors as supervisors of learning is to direct the students to find and build new knowledge and to commit themselves to work that promotes learning. Being a teacher means genuine interest in the learning of students and willingness to further the communitarian nature of learning. The role of the teacher combines expertise in the subject matter, pedagogy and supervision. Cooperative teaching methods emphasise learning together in small groups in order to reach common targets."

The learning environment is defined by the Peda team as follows: "Learning environments include learning at work, projects, internships, hobbies, in online learning environments and communities, classrooms, libraries and through international exchange. By inquiring and developmental learning, we seek solutions to challenging problems presented by real working life. The students are directed to encounter the developmental challenges of working life already early on. This will happen by applying theories studied to problems in working life and by guiding the students to internalise the model of an inquiring and developmental working method as a part of their professional activity."

Skills-based learning is defined by the Peda team as follows: “Skills are born out of learning. The skills at which the learning process aims are described in the skills-based study plan. Setting the aims in the study plan is directed by the skill requirements and needs of working life. The skills-based study plan is student-centric and describes the progress of professional skills. The skills-based study plan presents the skills produced by the degree and the progress of professional expertise through areas of expertise and targets for skills.”

These guidelines for the development of teaching, formulated by the Peda team of the Oulu University of Applied Sciences, also summarise most of the pedagogical models used in the LAB model of learning. In addition to these, the LAB model includes learning by doing; the master and apprentice model; and the international learning environment.

Commitment

The establishment of LABs in connection with some particular area of business is an important factor for creating enthusiasm in students. A shared interest creates an inner sense of purpose, which takes the activity to a new level. In the best case, the LAB members and businesses gathered around a shared interest will also create new product ideas and models for activity.

Examples at the Oulu Game LAB include game evenings and game hobby clubs. The events kindle a passion for the field. They also function as relaxed events for networking with businesses in the field and other cooperation partners. The example below is the Oulu Game LAB’s “Pretentious Video Game Club”, which was established by students out of their voluntary interest.

“An OGL videogame club that is aimed to motivate people to play games, and look at games from a new perspective, learn about game design and most importantly have fun! The format is a basic book club format where we pick a game for a duration of 1–2 weeks that everyone plays, and at Thursdays at 16.00 we gather around and talk about the game and share our impressions and thoughts.” (Club Pretentious Video Game, ei pvm)

Other examples are the debating club and an excursion club, established by volunteers to fund a study trip to a game-related event. The former club intends to foster the fine art of storytelling and argument in the development of ideas.

The stories of Kari-Pekka and Jussi

The LAB model was designed as teamwork with the LAB participants. The first plan on the training was completed in the summer of 2012, and training began in the autumn of that year. The LAB masters responsible for designing the first version and first round of training were Jussi Autio and Kari-Pekka (KooPee) Heikkinen. Below, they briefly describe their background and the development of the model.

Jussi Autio

“My own work in planning the Oulu Game Lab was preceded by several years’ work as a game entrepreneur. During that time, I had detected many problems in the current form of university education. Students regularly served as interns in my business, and whether they were from a regular university or a university of applied sciences, the feedback they gave was extremely negative towards their university. The most common feedback was that the students had learned more during the internship than from several years’ study. Some even thought that they had learned more than from all their university courses put together. I don’t think that the internship should be used to outsource teaching to businesses. It should be used to enable students to demonstrate their existing skills to the business.

When I was invited at the end of 2011 to the working group that was starting to plan game-related training in the Oulu region, the starting point was clear. A multidisciplinary training programme in studio format, balancing the number of experts from different fields, would be the only direction of development that made any sense. Keeping in mind the structural change Oulu was faced with and the ever-changing nature of the game field, it was also important to produce business experts – new entrepreneurs – and not just product developers. We noticed that we had fixed one key problem with the training in the game field that had been given for a long time. They had concentrated on producing product developers for those companies whose activity is growing in scale, instead of training people to take full responsibility for newly established businesses. We will also seek to reinforce these new features later on the level of practice.

When it was time to carry out the plans, I wanted very much to see this done. I dropped the company I had run for nearly six years, and moved to the Oulu Game Lab with Kari-Pekka Heikkinen. I have a background in the humanities; I studied history at the University of Oulu. I established the third game business in Oulu

after participating in the game-related ELVI project at the university. I made many mistakes during those years. In the beginning, I was not yet entrepreneurial, and I still remember well the difficulties I had at that time. It was all the more gratifying when I could help new people get started in the field and to make it easier for them. The biggest surprise for me was the really good team spirit among the people involved in the OGL. The background has been secure all the time, thanks to the people working at the core of the organisation. Nevertheless, I would never have guessed that a teacher's job also gives you enjoyment of a good team, where everyone clearly shares the same willingness to do something uniquely great."

Kari-Pekka Heikkinen

"I became interested in creative, multidisciplinary project learning when I had my practical training as a teacher in the autumn of 2011 at the Hanze University of Applied Sciences in Groningen, the Netherlands. The course in which I participated included problem- and project-oriented learning in teams of approximately five members. The teams carried out commissions from industry. The teams included students in engineering, Human Technology, Technology Management and industrial design. My responsibility was teaching the different phases of a small product development project and process, and training the students in the development of a product concept. I became friends with the teachers of the study unit. We have used consultation by Steven de Boer and Reino Veenstra and exchanged experiences when we developed the LAB model in the spring of 2012.

"I must have more of this!" During the training, which lasted a month, I developed a strong concept and willingness to design a training programme to meet similar needs in Oulu. After I returned to Finland in late 2011, my further studies focused on designing the equipment for a multi-professional study unit, such as the design of medical equipment. At the same time, the practical challenges in designing a course plan became clear. I also became acquainted with the ideas of Pekka Himanen and Sir Ken Robinson on necessary change, and the writings of Richard Florida on the rise of the creative class. These affected me and convinced me about the necessity of change. At the turn of the year 2011/2012, I heard of a new project that was just starting, whose intention was to develop training in concept development and the game field in Oulu. After deliberation for about two milliseconds, I phoned the project manager and expressed my interest in being involved. I am still on the same road on which I started then.

I trained as an engineer in electric technology, specialising in electronics and optoelectronics. Before the Oulu University of Applied Sciences, my professional views were developed during more than 15 years which I spent working for Nokia Mobile Phones unit in different tasks of product development, product management, leadership and business. We created products with different technologies, in different business environments and for different customers – from old ladies to the fire brigade, and from TV operators to Linux nerds. I also worked as the leader of several different-sized projects in quality, process development and change. The experience I received at Nokia has helped me understand the importance of cooperation between professionals in different fields, the significance of long-term thinking in facilitating change, the opportunities related to change more generally, and a positive attitude to change as part of my life. In addition to my colleagues at work, my views have been influenced most significantly by my wife Anna-Maria and my son Juho.

Developing the LAB model together with LAB master Jussi Autio of the Oulu Game LAB and LAB master Janne Karjalainen of the Oulu Cloud LAB would not have been possible without my skilled colleagues and team. The biggest thanks for facilitating the development and functioning as sparring partners are due to Kimmo Paajanen, Jussi Haukkamaa and Mika Määttä. This super team, consisting of genuine and brave people of the Oulu University of Applied Sciences, has smoothed out the terrain in front of us. Afterwards, it has also treated the inner wounds which this 'guerilla movement' has inflicted. As a veteran of the creative field at Business Oulu, Heikki Tunkkari has opened to us the biggest doors and windows outside the university. Many thanks and apologies!"

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