

The Design Book for Online Learning

- Practical Tools for Designing High-quality Online Learning

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1. Why online courses, why design?

Congratulations, you have gotten hold of the FITech Design Book! This guide, including the toolkit presented in it, focus on the design of online courses. Not because online courses are modern, or because design is fashionable, but because online learning can lead to excellent learning outcomes that are underpinned by the practical tools provided by the learning design approach.

So why opt for an online course?

1. High-quality learning outcomes: Studies have shown that both absolute and subjective learning outcomes reach their highest potential when the learning takes place both online and on-campus. High-quality online courses make a valuable contribution to learning.
2. Flexibility: Online courses are also available to those students for whom it is difficult to attend lectures at a specific time or location.
3. Saving time: With the tools provided by online learning, a course can be delivered to a larger number of students. While creating an online course is a relatively time-consuming process, the possibility of building on the same content in the future also makes it a worthwhile investment.

This toolkit bases its approach to building online courses on **learning design**, a systematic, learner-centred, comprehensive way to create learning experiences. **The advantages of learning design are as follows:**

1. Stand on the shoulders of giants: Research work seeks to “climb atop the shoulders of giants”, building on the foundations laid by previous researchers. Why not adopt the same approach in teaching? Effective teaching and learning solutions already exist. Making use of these processes can streamline your work and free up time for other tasks.
2. Better learning outcomes through systematic design: A high-quality online course does not come about by accident. When surveyed about the factors that most contribute to the quality of their online courses, award-winning university teachers stressed the importance of systematic design (Martin et al. 2019).
3. Targeted solutions for real needs: Based on feedback from teachers and students, the FITech Design Book for Online Learning was created with the aim of providing solutions to real problems.

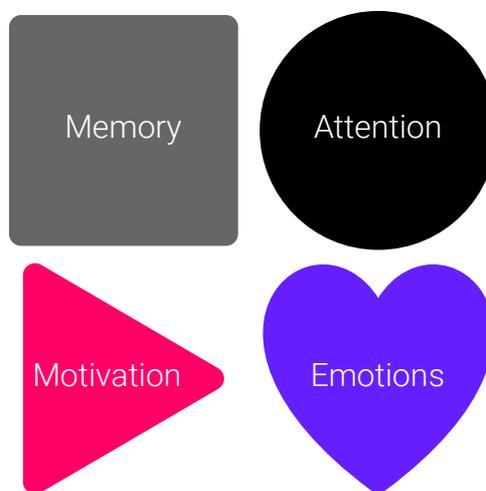
The tools presented in this guide draw their inspiration from four key sources: The *eOppiva Playbook* (eOppivan pelikirja, Kallio et al. 2018), the *Learning Designer’s Workbook* by Mukamas Learning Design (Oppimismuotoilijan työkirja, Mutka 2019), the quality criteria for online implementations created as part of the eAMK project (Varonen & Hohenthal 2017) and the *Lean Service Creation Handbook* by Futurice (Sarvas, Nevanlinna & Pesonen 2017). I owe a debt of gratitude to all of you. My hope is that these tools will be useful, and that the joy of learning accompanies you as you create your course.

Akseli Huhtanen, FITech

2. The Psychology of Learning – the Basics

While teaching and studying are constantly evolving, learning itself has not changed. This section outlines the necessary psychological prerequisites for learning¹. Feel free to skip over this section if you are primarily looking to learn about the practical tools rather than the research that underpins them.

Learning is an intensely complex human phenomenon, and distilling it down to a few features will thus necessarily distort it. Such distillation is, however, necessary for the purposes of this design book, as it enables the development of teaching in a research-based manner. The fundamental question this section poses is as follows: *What are the psychological factors without which learning is impossible?*



2.1. Motivation

Motivation provides the catalyst for learning. In recent years, the concept of motivation has received much attention in psychological research. The factors that compel a person to undertake an activity or select a particular option are a core question. In the context of learning, it is also interesting to study the factors that result in a sustained effort to learn.

A key theory to emerge from recent study into motivation is the so-called Self-Determination Theory developed by American psychologists Edward Deci and Richard Ryan (2000). According to the theory, all people share a set of **innate psychological needs**, typical of human beings, whose satisfaction is the goal of human activity. In this light, the motivation to undertake an activity stems from a drive to satisfy our innate psychological needs. Deci and Ryan identify three innate needs:

1. **Autonomy:** The subjective freedom to choose what to do and how to do it, without external constraints.
2. **Competence:** The experience that a person is successful in his or her activities and gets things done.

¹ This section is based on an article published in the journal Työn tuuli 1/2019, entitled "How to support learning in the workplace of the 2020s?" ("Miten oppimista tuetaan 2020-luvun työpaikalla?", Huhtanen 2019).

3. **Relatedness:** The experience that a person is connected with other people and that his or her activities form part of a shared meaning.

According to Deci and Ryan, sustainable motivation stems from the satisfaction of these three innate needs. They argue that other forms of motivation exist, but these are self-consuming and not as long-lasting. Therefore, encouraging someone to learn entails awakening their motivation to do so. From the perspective of Self-Determination Theory, it is impossible to motivate people externally. Instead, we can create a set of circumstances that promote intrinsic motivation by taking into account the three innate needs.

2.2. Memory

Memory is often described as a place of storage analogous to a safe deposit box that houses documents at a bank. According to modern psychology, however, memory does in fact **not** function in this way. In what was perhaps the most significant breakthrough in 20th century education theory, it was observed that people remember things by building connections between them rather than by storing individual pieces of information in their minds. Since the mid-1900s, it has thus been known that building knowledge is the most effective way to commit things to memory. This **constructivist theory of learning** was developed by Swiss psychologist Jean Piaget.

When it comes to memorization, it is precisely the aforementioned processing of information that plays a central role. If this is only done by the instructor or teacher, he or she will be the only one to commit to memory the information in question. If, instead, the learners themselves process the information, they make connections to what they have previously learned and thus gain the ability to use those connections when recalling new information. Such actively constructed knowledge structures are known as mental models. As Finnish educational psychologist Kirsti Lonka has stated, memory is not like a bank, but instead functions akin to a workshop in which new configurations of knowledge are constantly being constructed (Lonka 2015, 11-17). **Remembering is an active process, not a passive act of storing information.**

The process of knowledge building is more effective in the context of social interaction. Supported by his or her social environment, a person can learn things that would not be achievable alone. Such knowledge and skills, out of our reach without help from our social environment, are referred to as the zone of proximal development. Memorization can thus be promoted through the creation of spaces for building knowledge and connections.

2.3. Attention

While motivation sparks learning and memory entails processing the information to be learned, attention acts as a kind of funnel between the available information and its internalization. Paying attention directs our focus to that which is important and filters out unnecessary information. The process of learning is, however, complicated by the fact that our attention is naturally drawn to stimuli tied to our evolutionary survival, such as moving, loud, large or colourful objects (Rauste-Von Wright et al. 2003, 107-110). We thus often filter out complex

details that do not immediately spring to the forefront of our consciousness, but which we and our teachers would like us to learn.

This process by which the objects of our attention are selected can, however, also help deepen our expertise: Studies have shown that attention is directed based on previous experiences, thus making it easier for us to learn more about things with which we are already familiar. Taking advantage of this mechanism, people can be trained to focus their attention on a particular target. Influencing the direction of attention in this way is known as the *priming* effect.

We have an attention span of about 15 to 20 minutes. This means that during a typical Finnish university lecture, which lasts about 90 minutes, a student's attention lapses totally between four and six times. After each lapse, regaining focus requires a strong stimulus such as a change of teaching medium or method (Hattie 2014, 113-115). A learning environment that seeks to foster attention thus needs to be varied and directed towards relevant factors.

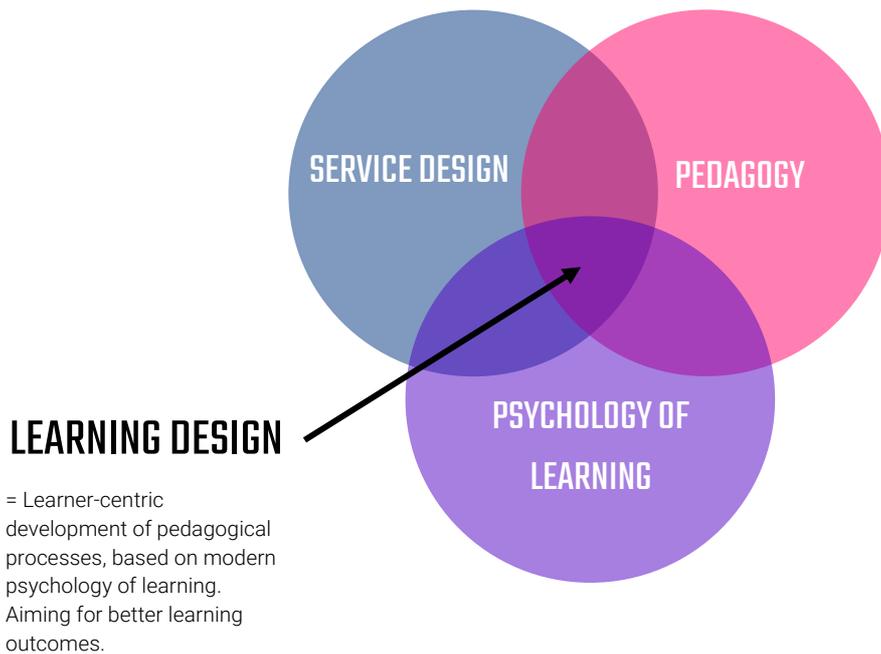
2.4. Emotions

According to a widely known theory developed by psychologist Daniel Kahneman, our thinking can be considered in terms of a division into two modes or systems of thought: A fast, intuitive type that is suitable for triggering a flight response or quickly arming us to react with force, and a slow, deliberative mode that allows us to e.g. carry out complex mental calculations (Kahneman 2011). Fast, so-called system one thought is effective and comes naturally to us. The slower system two mode, on the other hand, is the exception, and requires conscious concentration.

Learning complex things requires conscious thought, i.e. slow, system two thought. In our everyday lives, however, most of our thinking is routine, intuitive and fast. In this light, learning can only take place in a space specifically dedicated to slow, conscious thought (Hess 2014, 11-14). **Moreover, conscious thought also requires that we feel safe.** In an emergency, our minds are taken over by the intuitive fight or flight response, which explains why a sense of psychological safety is necessary in the context of conscious thought. An atmosphere of psychological safety thus plays a central role in facilitating the process of learning (Hess 2014, 22-32).

2.5. What is learning design?

Learning design is a working method that seeks to incorporate the mechanisms of learning psychology described above into pedagogical planning. It is related to service design insofar as it places the end user, in this case the learner, at the centre of the process (instead of the content or teacher, for example). Learning design entails the creation of a kind of support structure that allows the learner to focus on what is important, i.e. learning. The concept of *scaffolding* was introduced into education theory in the early 1900s.



Learning design thus stands at the intersection of pedagogy, service design and modern learning psychology. Compared to traditional instructional design, its advantages reside in the user-oriented, structured working methods which result in an approach to teaching that is more responsive to the psychological needs of the learner.

The psychology of learning has been built into all the tools contained in this toolkit. In order to facilitate a more systematic consideration of psychological needs, a **Checklist for the Psychology of Learning** has been developed. You will find it towards the end of the toolkit section of this book.

3. How to create an online course?

Online courses differ from classroom learning in a number of significant ways. These differences may not be easily observable, as our familiarity with traditional teaching methods can blind us to what they actually entail. When meeting face to face, a connection is formed between the learners even if the teacher takes no particular steps in order to establish it. A face-to-face scenario allows for the teacher's nonverbal communication to be conveyed to the student. The lecture format makes use of at least visual and auditory information. And so forth. This section discusses the features characteristic of online courses.

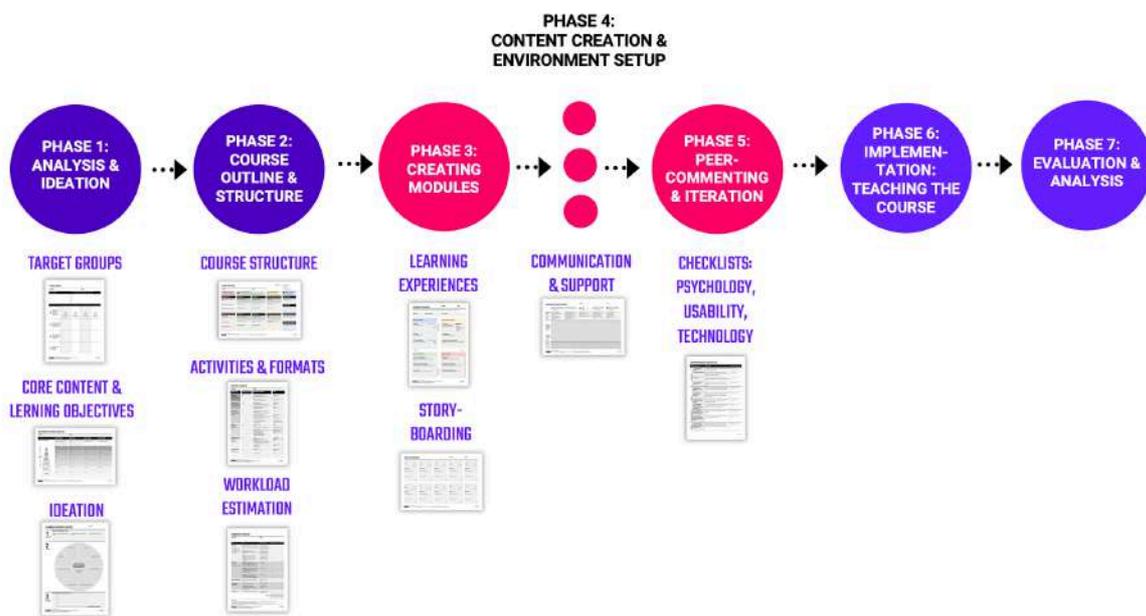
Six golden rules for creating an online course:

- 1. Be concise:** Online courses put a strain on students' attention spans. The teacher's job is to identify core content and weed out superfluous information. According to Hattie, a learner can focus on information delivered through a single medium for 15 to 20 minutes, but in the case of online videos this limit is in practice no higher than five or six minutes. Distributed practice is more effective than cramming. (Hattie & Yates 2014)
- 2. Organize content into modules:** Because an online course needs to convey information through a variety of media, the course as a whole is at risk of being confusing. Group content and exercises into modules thematically, with one module delivered per week, for example.
- 3. Activate, activate, activate:** As the subjective intensity of the connection and interaction between teacher and student is weaker than in a classroom setting, an online course should involve activities designed to compensate for this. These can include short quizzes, writing exercises or discussions. Information is committed to memory through active processing, which can only take place in the context of such activities (Salmon 2002).
- 4. Provide a channel for social interaction:** In order for students to keep attending a course for its entire duration, they must experience it as meaningful. Meaning is in large part constructed socially, and a channel for interaction must therefore be provided. Even if a course is delivered exclusively in online sessions, it is beneficial to organize a face-to-face starter meeting. A group for students taking the course can also be created on Telegram, Whatsapp or Facebook, for example. If video conferencing equipment is available, always ask that video be switched on.
- 5. Manage expectations:** Pretests or motivation letters help students orient themselves and allow teachers to require that students prepare for the course. "The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him or her accordingly." (Hattie & Yates 2014)
- 6. Give feedback and assess continuously:** Formative feedback, i.e. constructive feedback given throughout a course, is one of the most effective ways to promote learning. If students are given the chance to improve their work during a course, they have the opportunity to learn from feedback, which can also constitute an assessment tool. This can be done through e.g. weekly assignments, peer assessment and iterative essays. (Hattie 2009)

3.1. The online course design process

As is the case with other types of courses, the quality of online courses benefits from systematic planning. This process can take many forms, and will vary based on whether the course in question is being put together for the first time, for example. This guide presents a number of tools that can be used, individually or together, as aids in the planning process.

Below is an example of what the design and production process of an online course may look like:



The tools are at their most effective when used in a collaborative way. In practice, it is advisable to carry out the first three phases of the process as collaborative workshops: An analysis and ideation workshop, a course outline and structure workshop, and a module creation workshop. Workshops can involve the teachers of a single course, or multiple courses can be worked on simultaneously. Following the workshops, participants work independently on content creation, after which they can share comments on each other's plans and self-assess using checklists.

In practice, the course design, production and delivery process is often iterative, nonlinear, fast and even chaotic. Following an overly rigid planning process can sap creativity². **The design process outlined above is therefore intended as a guideline** and is only one example of how the tools presented in this book can be used together. High-quality courses can also be designed by following other processes.

² InstructionalDesign.org: Weaknesses of the ADDIE model.
https://www.instructionaldesign.org/models/addie/addie_weaknesses/

3.2. Online courses- Types and structures

As online courses are missing certain learning-promoting elements present in classroom-taught courses, there are structural differences between the two. Firstly, online courses do not automatically benefit from social interaction or a sense of community that help students commit to learning and boost their motivation. Moreover, as concentrating on online content is more challenging compared to face-to-face teaching, it must be divided into manageable blocks and structured with the help of activities.

Online courses consist of modules typically of one week's duration, but shorter or longer modules are also possible. A module focuses on a single topic, and includes content (lectures, videos, text etc.), activating exercises, and possibly an interactive component and assessed work.

3.2.1. The basic structure of a web-based course

The learning environment of an online course is different from that of a classroom-taught course. Interaction between students is not as automatic, following the content is more demanding and forming an overall picture of the course as a whole is more challenging. It is therefore advisable to mitigate these challenges by following a clear structure.

The **canvas for a basic course structure**, presented later in this book, can be used as an aid in planning a course that follows the basic structure of an online course as outlined below.



- 1. Beginning and activation of prior knowledge:** The course opens with a run-through of learning objectives, structure, assessment and tools used during the course. Including a test of prior knowledge empowers the students and boosts retention in a significant way. Orientation plays an important role as well, as the structure of an online course is often more complicated than that of a face-to-face course.



- 2. Basic knowledge and directing interest:** These modules cover the course's "must know" content. Each module comprises content and an active participation component.



- 3. Deepening knowledge through interaction:** These modules task the learners with actively working on the topic in the form of projects, group work, writing exercises or other activities. These interactive components can be incorporated among the basic knowledge modules.



- 4. Summing up and assessment:** Summing up the topics covered by the course e.g. by means of an online seminar. It is essential to conclude by drawing connections between the covered topics one more time. Assessment can take place either at the end of the course (summative) or throughout the course by means of smaller exercises (formative).

3.2.2. Online course

Online courses are delivered entirely over the internet and usually take advantage of a learning platform or environment (Learning Management System, LMS) such as Moodle. The course structure, materials, exercises and guidelines are distributed via the platform, which can also serve as a channel for synchronous (chats) or asynchronous discussion (forums).

Students can either be required to participate at certain times (synchronous) or at a time of their choosing (asynchronous). While flexible, asynchronous courses often have certain weekly deadlines.

Example structure for a module-based online course:

	Week one	Orientation meeting face to face, pre-course reading
	Week two	First content module <ul style="list-style-type: none">• First video: Ten minutes on a certain topic• Second video: Five minutes on a certain topic• Online exercise: short quiz on the topics covered in three videos, can also be incorporated into the videos (e.g. using H5P tools).• First reading: article• Weekly assignment: a one-page reflective essay on the topic covered in the article
	Week three	Second content module
	Week four	Third content module
	Week five	Fourth content module
	Week six	Group project based on a business case study
	Week seven	Recap and wrap-up: Students present the results of their group projects during an online seminar. Key findings are compiled into a mind map and a recapitulative discussion is held on the topics it covers. Peer assessment of group projects. Final assessment based on the weekly assignments and the group project.

3.2.3. Blended learning

Blended learning refers to the combination of face-to-face interaction and online learning elements. Blended learning typically works the same way as flipped learning (see below).

3.2.4. Flipped learning

The *flipped learning* approach combines in-person meetings and digital learning in a particular order. By contrast with traditional lecture courses, the face-to-face component of flipped learning does not entail the presentation of course content. Instead, students familiarize themselves with the content prior to meetings e.g. by means of videos or assigned texts. The videos used are typically of about ten minutes' duration and thus compatible with intensive concentration. Their content focuses on the basic, "must-know" information covered by the course. Having familiarized themselves with the content, students work independently to complete a weekly assignment. This allows them to test their own knowledge (University of Oregon 2019). The face-to-face component of the course is reserved for discussions of the content. This frees up time for feedback, reflection, and revision, which have been shown to play a uniquely central role in the promotion of learning (Rauste-Von Wright et al. 2003, 66-70).

Example structure for a flipped learning course:

	Week one	Face-to-face orientation lecture <ul style="list-style-type: none">• Run-through of learning objectives• Instructions given for the exercise, formation of groups
	Week two	First flipped content module <ul style="list-style-type: none">• One to three videos (up to 10 minutes). These cover must-know content.• One to three articles (5-30 pages). Cover must-know topics. Complete command of the articles' content is not required, as they are intended to deepen students' understanding.• Weekly assignment: two questions, with a one-paragraph answer to be written for both. Grasp of the must-know content assessed through these.• Face-to-face meeting: Discussion covering the weekly assignment and articles. Possible new information is should-know content.• Feedback: Teacher gives each student feedback on the weekly assignment. There is sufficient time for this as there is no need to prepare lectures.• During weeks two to seven: The group convenes one to three times to work on the exercise.
	Week three	Second flipped content module
	Week four	Third flipped content module
	Week five	Fourth flipped content module

	Week six	First presentation of the exercise: Immediate peer feedback + teacher feedback
	Week seven	Groups work on exercise
	Week eight	Final presentation of the exercise: <ul style="list-style-type: none"> • Final seminar, face to face • Recap of course content
	Week nine	Final assessment: Based either exclusively on the weekly assignments and exercise, or additionally on a final exam that allows students to improve their grade.

3.2.5. Online seminar

The online seminar (sometimes known as a webinar) is a subtype of online course. Seminars always take place in real time, and utilize video conferencing tools such as Adobe Connect or Zoom in addition to the LMS platform. Learners can, for example, follow the seminar introduction or participate in a group discussion at a given time. Adobe Connect and Zoom are both available to universities, provided by the Finnish University and Research Network (FUNET). Online seminars can be organized for a relatively small group of students, and require good network connections for video conferencing.

Many organizations use the term webinar when referring to streamed lectures. However, these should more properly be called streams or online lectures, which differ from interactive online seminars.

The methods and tools of online seminars can also be used for online calculation exercises (known in Finnish as "laskuharjoitus"). Furthermore, online seminars are suitable as capstone courses, i.e. courses that tie together learning objectives achieved during earlier courses.

Example structure for an online seminar:

	Week one	Orientation lecture via video link: <ul style="list-style-type: none"> • Learning objectives, assignments and structure • Attendance in online meetings is mandatory, video link facilitates interactivity and concentration. • If a student is unable to attend, he or she will complete a learning diary entry based on a recording of the discussion.
 	Week two	Module one <ul style="list-style-type: none"> • Reading one • Seminar meeting: <ul style="list-style-type: none"> ◦ Starts with a short quiz designed to activate and test knowledge acquired from the reading

		<ul style="list-style-type: none"> ○ 10 to 30-minute introduction. Presentation + video. It is advisable to assign exercises to the students in between. ○ Division of students into small groups using the Breakout Rooms function ○ Discussions in small groups on the topics covered in the reading, 20 minutes. ○ Group discussion involving all students. ● Independent work on preparing a seminar session
	Week three	Module two: <ul style="list-style-type: none"> ● Same as module one ● In addition, first hand-in of reflective essay and comments from the teacher
	Week four	Module three <ul style="list-style-type: none"> ● Same as module one
	Week five	Student-led online seminar one <ul style="list-style-type: none"> ● Students take turns leading the seminar, each focusing on his or her own topic ● Written peer commentary of seminar sessions (not part of course assessment)
	Week six	Student-led online seminar two <ul style="list-style-type: none"> ● Same as seminar one
	Week seven	Student-led online seminar three <ul style="list-style-type: none"> ● Same as seminar one
	Week eight	Summing up <ul style="list-style-type: none"> ● Recapitulative seminar session ● Final hand-in of the reflective essay and mind map ● Final assessment based on the seminar session, essay and mind map

3.2.6. MOOC

MOOCs (massive open online courses) are online courses designed for an unlimited number of students, and are open to anyone. Not all online courses can be considered MOOCs, as they differ from ordinary online courses and seminars with regard to their openness and number of participants. Like ordinary online courses, MOOCs make use of content modules, but due to the large number of students attending them, feedback and assessment are usually based on peer assessment or automatic marking.

MOOCs are a suitable way to organize a course when its subject is interesting to a wide audience, and a basic understanding of that subject can be taught without face-to-face interaction. MOOCs thus work well as introductions to a topic, but are usually not suited for more advanced learning. The structure of MOOCs is substantially different from that of online courses as the former require e.g. open or licence-free learning platforms and tools. In light of the fact that anonymous mass learning requires exercises, tools and a structure adapted for the medium, ordinary online courses can usually not be transformed into MOOCs simply by opening them to unlimited participation.

3.3. Delivering an online course to a diverse group of learners

When learners other than undergraduate/graduate students participate in a course, the diversity of needs that results must be taken into account. Not making the necessary adjustments may result in learners dropping the course. In this case, the effort made by both learner and teacher is wasted.

What is true for design in general also applies in the case of learning design: What is easily available to those users that are experiencing the most difficulty will also work for everyone else. Well-designed scissors, for example, allow those who lack physical strength to cut, but also function well in the hands of stronger users. This perspective of usability and accessibility has been developed by CAST, an American non-profit organization, in the context of its **Universal Design for Learning (UDL)** framework.

In short, universal learning design means making learning accessible to all, regardless of background and skill level. It does not entail tailoring each instance of learning to meet the needs of individuals, but instead seeks to achieve universal accessibility. Teaching methods are chosen deliberately in order to remove psychological obstacles to learning. In practice, UDL follows three principles:

1. Enable multiple means of engagement with studies.
2. Make use of multiple means of representation.
3. Enable multiple means of working and expression.

Following these principles makes learning natural even for those who are used to different tools, such as mature students. The recommendations contained in the UDL framework have been built into the **Target Groups Canvas**, the **Checklist for the Psychology of Learning**, the **Usability Checklist** and the **Technical Implementation Checklist** of this toolkit. For more information on the UDL principles, visit [the UDL Guidelines page](http://udlguidelines.cast.org/)³.

³ <http://udlguidelines.cast.org/>

4. Design Tools: Planning and Production of an Online Course in Practice

This chapter presents twelve tools for designing a high-quality online course that promotes learning. Nine of the tools are *canvasses*, whose purpose is to guide the design work. The other three are checklists that can be used to evaluate the quality of a course plan or its implementation. **The idea is not to make use of all twelve in the design of each course.** Like a carpenter who doesn't use all the tools in the toolbox for all tasks, the learning designer also chooses the tools most suitable for the course in question and applies his or her expertise in order to make use of them.

The canvasses are primarily intended for co-creation, i.e. the planning of courses in the context of collaborative workshops. They serve as a basic structure for the workshop and help move the process forward. Alternatively, they can be used to underpin independent work. In the latter case it should be borne in mind that the canvasses do not necessarily need to be filled in completely in order to put together an effective course.

The tools are presented in an order consistent with the ideal progression of the design process, but it is recommended that, in practice, both the order and extent of their use be adapted to the specific needs of each course.

4.1. The Ideation Canvas

The Ideation Canvas is intended to guide preliminary brainstorming when the topic and practical implementation of a course are still to be determined. It is essential at this early stage to produce ideas on a wide spectrum so that the range of possibilities available is not narrowed down excessively. It is therefore advisable to gather together a group of several people and keep an open mind. At first it is important to get the ideas flowing, as unrealistic or unworkable suggestions can be weeded out later. Following these rules will help keep an open mind while brainstorming:

- Use the words “yes, and”, avoid saying “no” or “but”.
- Build on others’ suggestions.
- The crazier the idea, the better. When it comes to brainstorming, quantity is a guarantee of quality.
- Document each idea on separate pieces of paper. This will help when processing them further.

This canvas is used in three stages:

1. Immersion: Immerse yourselves in the theme of the course by looking at which related topics are currently being discussed, and who are the foremost authorities on the subject.
2. Ideation: When the topic of the course has been decided and the participants’ minds primed for creative thought, allot a suitable amount of time for independent work on brainstorming possible ways to implement the course, considering them from a number of perspectives (virtual, physical, fun, ridiculous, business-like, parliament-like, school-like and laboratory-like).
3. Ranking the ideas: Rank the ideas according to the learning results you expect them to produce and the amount of work they translate into for the teacher. The best ideas produce the best outcomes with a reasonable amount of effort.

LEARNING EXPERIENCE IDEATION

TEAM:

1

IMMERSION

IDEA FOR LEARNING TOPIC:

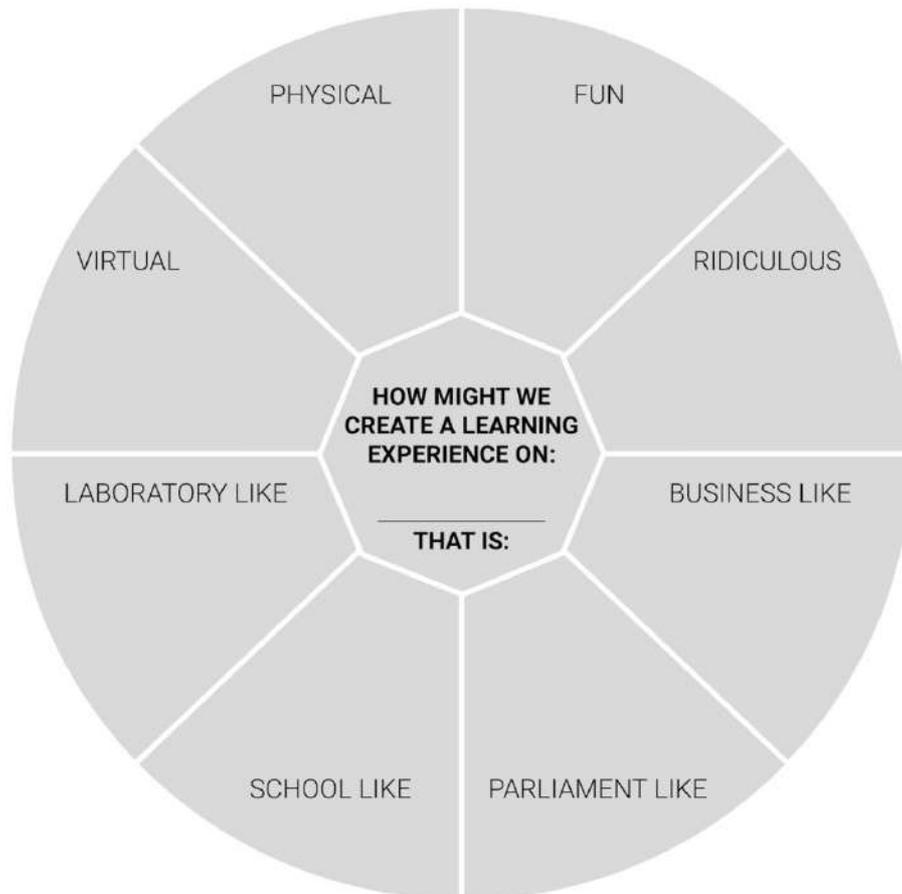
CURRENT HOT ISSUES RELATED TO TOPIC:

BIG NAMES & GREAT BOOKS ON TOPIC:

GREAT COURSES ON TOPIC:

2

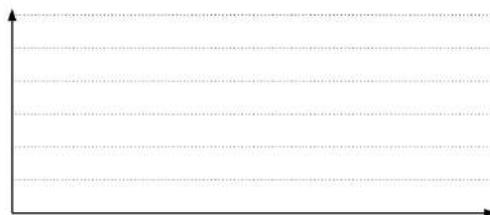
IDEATION



3

RANKING
THE IDEAS

BETTER EXPECTED LEARNING RESULTS



MORE WORK FOR TEACHER



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4.2. The Target Groups Canvas

This canvas helps answer the questions of who should learn and what they should learn as well as how and why they should learn it. High-quality learning design is learner-centric, just as high-quality service in general is user-centric. In other words, the actual needs of the learner are placed front and centre, taking precedence over the teacher's interests, traditions, and at times even the content itself. In order for the learning experience to be truly accessible to all, regardless of background, it is crucial that the genuine needs of the learners are understood.

This canvas helps identify various target groups and understand their needs. In the context of a university course, target groups can include major and minor students, foreign degree students, students working on their thesis, mature students, and so forth. **Target groups are delineated based on different learning needs.** Groups can be prioritized based on e.g. their importance or size.

The aim is to identify defining features for each target group:

1. Motivation for attending the course. Particular interests within the topic in question.
2. Difficulties related to the topic. These can include holes in prior knowledge, contexts of application, terminology.
3. The ways in which the group can find the course in question.

Best results are produced when actual members of a given target group are studied. It is therefore advisable to contact putative members of a given target group e.g. by telephone or email and ask them about their true motives, difficulties and how they seek out courses.

Models that describe the archetypal member of a given target group are known as *personas*. Identified personas can be used when planning a number of different courses.

As John Hattie (2014, 113) has stated, "the most important single factor influencing learning is what the learner already knows. Ascertain this and teach him or her accordingly."

TARGET GROUPS

COURSE:

TEAM:

MAIN THEMES:	WHY THIS THEME IS RELEVANT RIGHT NOW?			
1.				
2.				
3.				
	1	2	3	4
!! Target groups that are interested in the theme				
▶ What motivates a learner in this target group?				
♥ What is difficult for the group in this theme				
➡ How will they find the course?				



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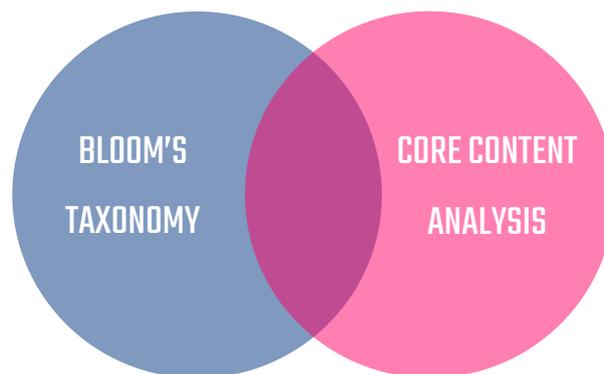


4.3. The Core Content Analysis and Learning Objectives Canvas

This canvas is intended to help with sketching out learning objectives, which is an integral component of the course planning process. When planning a course, it is often tempting to keep adding content, all of which learners are expected to absorb. The Core Content and Learning Objectives canvas helps set limits for these objectives and ensure that they are realistic.

The canvas combines two models used in academic educational planning: Core content analysis⁴ and Bloom's (revised) taxonomy⁵. It also takes into account prior knowledge requirements.

Core content analysis is used to answer the questions of what a learner *must know*, *what it is advisable to know*, and *what is nice to know*. It is recommended that approximately 80 percent of course content fall under the first category. For its part, Bloom's taxonomy helps classify learning objectives into levels of priority: While it is sufficient to simply remember some content, other objectives require that the learner be able to apply the acquired knowledge in new contexts.



The bulk of a course's content should be found around the middle of the taxonomy. If the upper part of the "must know" column is starting to become overly full, it is advisable to consider whether the learning objectives for the course in question are realistic.

Learning objectives and core content analysis also serve as guides when deciding which activities to incorporate into the course. The more challenging the objectives that are set, the more demanding and numerous the included activities must be.

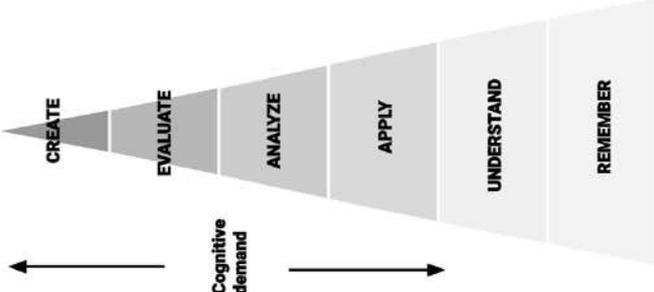
⁴Karjalainen, A. & Jaakkola, E. University of Oulu 1999. Teaching document: "Developing an Academic Curriculum - Core Content Analysis" ("Akateemisen opetussuunnitelman kehittäminen - Ydinainesanalyysi")

⁵Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.

CORE CONTENT & LEARNING OBJECTIVES

COURSE:

TEAM:

		PREREQUISITES	MUST KNOW	SHOULD KNOW	NICE TO KNOW
BLOOM'S TAXONOMY: 	Skills and knowledge that the learner must have when course starts.	Core content, that needs to be learned to continue.	Supplementary knowledge adding details and practical applications	Specific knowledge that deepens competence in a certain topic	
	Before the course learner is able to...	After the course the learner is able to...			
	create..	create..	create..	create..	
	evaluate..	evaluate..	evaluate..	evaluate..	
	analyze..	analyze..	analyze..	analyze..	
	apply..	apply..	apply..	apply..	
	understand..	understand..	understand..	understand..	
remember..	remember..	remember..	remember..		



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4.4. The Course Structure Canvas

This canvas is the most holistic among the tools presented here. It is intended as an aid in outlining the course as a whole and putting together the modular structure characteristic of an online course. As was the case for the **basic structure of a web-based course** described earlier in this book, the Course Structure canvas also divides the course into four phases or activities:

1. Orientation and activation: First module and orientation content.
2. Basics and sparking interest: Introductory content modules.
3. Deepening knowledge through interaction: Advanced content modules, based on interaction.
4. Summary and evaluation: Course wrap-up, methods of assessment.

This canvas guides the planning process towards splitting the course content up into modules. In light of the limited nature of the human attention span which is compounded by the loose attachment characteristic of online learning, maintaining student engagement and achieving learning objectives requires splitting content up into manageable sections.

Before starting work on planning the course structure, it is advisable to be clear on what the learning objectives will be. The **Core Content Analysis and Learning Objectives** canvas can help with this.

While this canvas reserves four modules for learning the basics, more can be added if necessary. Module-specific content and activities can be developed in more detail using the **Activities and Formats** canvas, the **Learning Experience** canvas and the **Storyboard** canvas.

COURSE STRUCTURE

COURSE:

TEAM:

COURSE TYPE

- Flipped course
- Online course
- MOOC
- Masterclass
- On-campus/other

<p>ORIENTATION & ACTIVATION  Arousing previous knowledge and interest, evaluation of prerequisites</p> <p>PREREQUISITES</p> <p>Letter of motivation? Prerequisite test?</p> <p>Pre-assignment? Pre-reading?</p> <p>Setting personal learning goals?</p>	<p>BASICS & SPARKING INTEREST  The learner acquires the basic knowledge (must know) on theme, and directs her interest more specifically. For detailed planning use Learning Experience canvas.</p> <p>→ MODULE 1</p> <p>Key topics in the module:</p> <p>Contents: video, readings etc.</p> <p>Activities/assignments:</p> <p>→ MODULE 3</p> <p>Key topics in the module:</p> <p>Contents: video, readings etc.</p> <p>Activities/assignments:</p>	<p>DEEPENING INTERACTION  Collaborative knowledge construction through assignments</p> <p>→ PROJECT/GROUP WORK</p> <p>Case/project:</p> <p>Assignment to turn in:</p> <p>Method: eg. "jigsaw"</p> <p>→ INDIVIDUAL ASSIGNMENT</p> <p>Theme:</p> <p>Assignment to turn in: Eg. essay, presentation</p>	<p>SUMMARY & EVALUATION  Summarizing, evaluating, assessment and feedback</p> <p>→ SUMMARY</p> <p>How is the course summarized? How to make learners reflect?</p> <p>→ ASSESSMENT</p> <p>See Learning Objectives canvas</p> <p>→ FEEDBACK & RECOGNITION</p> <p>How will the learners get feedback? How is learning made visible and credited?</p> <p>CONTINUOUS FEEDBACK</p> <p>How do the learners get iterative feedback during the course?</p>
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4.5. The Activities and Formats Canvas

This canvas is intended to serve as a tool for selecting the learning activities appropriate to the target level in question. It can be used either when planning activities for the course as a whole or for a single module.

The Activities and Formats canvas is based on the objectives outlined using the **Core Content and Learning Objectives** canvas. When the decision has been made as to what should be learned and at which level, this canvas can be used to select activities in line with that target level. Psychology has taught us that **learning is knowledge construction**, which in turn implies that **on an online course, knowledge construction must be facilitated by means of various activities**.

The canvas gives suggestions regarding activities and the technical tools to be used in their completion. **There is, however, a virtually unlimited number of possible activities**. For this reason, the canvas is best utilized as a catalyst for reflection and fodder for ideas.

Not all content can be considered activities, as the latter specifically refer to an active effort made by the learner. Examples include

- Problem-solving
- Decision-making
- Classification
- Training
- Researching a topic

When using the Moodle platform, it is often necessary to understand which of Moodle's tools are suitable for which activities. For more information on selecting suitable tools, see the article (in Finnish) entitled [Assigning exercises to students](#) in the Moodle user instructions.

ACTIVITIES & FORMATS

COURSE:

TEAM:

TARGET LEVEL (see Learning Objectives)	TOPICS TO LEARN (see Learning Objectives)	ACTIVITIES & FORMATS	TOOL
CREATE: Designing, publishing, planning, producing, inventing, constructing		<ul style="list-style-type: none"> <input type="checkbox"/> Individual research essay/paper <input type="checkbox"/> Individual presentation → <input type="checkbox"/> Individual project: product, design, service Group work (asynchronous): <input type="checkbox"/> Collaborative research/design project 	<ul style="list-style-type: none"> <input type="checkbox"/> Moodle/LMS <input type="checkbox"/> Other → <input type="checkbox"/> Adobe Connect / Zoom <input type="checkbox"/> Other
EVALUATE: testing, experimenting, checking, judging, moderating, critiquing		<ul style="list-style-type: none"> Content evaluation: <input type="checkbox"/> Research essay/paper <input type="checkbox"/> Peer-evaluation (of essays, of group work) → Video conference (real time): <input type="checkbox"/> Online-seminars / group discussions <input type="checkbox"/> Moderating a seminar 	<ul style="list-style-type: none"> <input type="checkbox"/> Moodle forum <input type="checkbox"/> Google Drive <input type="checkbox"/> Other → <input type="checkbox"/> Adobe Connect <input type="checkbox"/> Zoom <input type="checkbox"/> Other
ANALYZE: organising, outlining, integrating, comparing, validating		<ul style="list-style-type: none"> <input type="checkbox"/> Reflection essay (can be self-evaluated) <input type="checkbox"/> Self-evaluation <input type="checkbox"/> Peer-commenting (of text, of participation) → Video conference (real time): <input type="checkbox"/> Online-seminars / group discussions <input type="checkbox"/> Small group discussions / 1-to-1 discussions <input type="checkbox"/> Online workshop (real time) <input type="checkbox"/> Commenting/annotating videos <input type="checkbox"/> Creating videos 	<ul style="list-style-type: none"> <input type="checkbox"/> Other → <input type="checkbox"/> Adobe Connect <input type="checkbox"/> Zoom <input type="checkbox"/> Other <input type="checkbox"/> Flinga <input type="checkbox"/> Other <input type="checkbox"/> H5P: Interactive video <input type="checkbox"/> Panopto/Etuubi <input type="checkbox"/> Other
APPLY: implementing, operating, using, editing		<ul style="list-style-type: none"> <input type="checkbox"/> Argumentative essay <input type="checkbox"/> Exam <input type="checkbox"/> Solving a business case collaboratively → <input type="checkbox"/> Watching videos <input type="checkbox"/> Online exercise session (Fin: <i>laskuharjoitus</i>) <input type="checkbox"/> Editing wikis (asynchronous): <input type="checkbox"/> Collaborative authoring <input type="checkbox"/> Gallery of cases / instances <input type="checkbox"/> Virtual lab work (introductory) <input type="checkbox"/> Quizzes, multiple choice tests 	<ul style="list-style-type: none"> <input type="checkbox"/> EXAM <input type="checkbox"/> Other <input type="checkbox"/> Adobe Connect / Zoom → <input type="checkbox"/> H5P: Quiz, Multiple choice <input type="checkbox"/> Panopto/Etuubi <input type="checkbox"/> Adobe Connect/Zoom <input type="checkbox"/> Other
UNDERSTAND: summarizing, explaining, categorizing		<ul style="list-style-type: none"> <input type="checkbox"/> Posters <input type="checkbox"/> Reflective/narrative essays <input type="checkbox"/> Forum discussions & commenting (asynchronous) → <input type="checkbox"/> Classification and identification exercises <input type="checkbox"/> Information lookup exercises: mindmap etc Online chat (real time): <input type="checkbox"/> Small group chats <input type="checkbox"/> Teacher Q&A 	<ul style="list-style-type: none"> <input type="checkbox"/> Moodle/LMS <input type="checkbox"/> H5P: Hotspot, sequencing <input type="checkbox"/> Mindjet <input type="checkbox"/> Other → <input type="checkbox"/> Moodle chat room <input type="checkbox"/> Other
REMEMBER: Identifying, recognising, listing		<ul style="list-style-type: none"> <input type="checkbox"/> Flash cards <input type="checkbox"/> Listening to podcasts → <input type="checkbox"/> Reading articles 	<ul style="list-style-type: none"> <input type="checkbox"/> Panopto/Youtube <input type="checkbox"/> H5P: Flashcards <input type="checkbox"/> Flinga → <input type="checkbox"/> Other



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4.6. The Workload Estimation Canvas

This is the most straightforward and least creative of the canvasses. It can be used to calculate the number of hours required for the activities completed during the course and convert them into credits.

The canvas is based on workload estimates made by the University of Oulu⁶, Aalto University⁸, and Rice University⁹. In reality, the number of hours required for a given exercise vary significantly as a function of the material in question and the learner's individual abilities. In light of this, a standard basic formula for calculating the workload of a course helps when considering it relative to other courses.

Using the canvas is straightforward:

1. Estimate the workload: Number of pages, exercises
2. Calculate the number of hours required: Workload multiplied by the type-specific coefficient
3. Calculate the number of credits: Number of hours divided by 27
4. Calculate the total number of credits

⁶ Karjalainen, A., Alha, K. & Jutila, S. (2006): *Give me time to think - determining student workload in higher education*. University of Oulu, Teaching development unit.

⁷ University of Oulu: Core Content Analysis (FI: Ydinainesanalyysi).
https://www.oulu.fi/koulutuspalvelut/julkaisut_ja_materiaalit/verkkomateriaaleja/ydinainesanalyysi.htm

⁸ Aalto University (2016): *Estimated and perceived: A guideline on workload by Aalto University pedagogical training*. Training material.

⁹ Rice University: <https://cte.rice.edu/workload#howcalculated>

WORKLOAD ESTIMATION

COURSE:

TEAM:

Note: The coefficients given are simplified and an estimation should always be made according to teachers understanding of the material, group and other circumstances.

Credit: 1 ECTS = 27 h

Task	Type	Workload / unit	Workload	Hours	ECTS
Reading (Word count in monography ca. 600/page, textbook 750/page)	Survey: Reading to survey main ideas; OK to skip entire portions of text	20-50 pages / hour in native language. Foreign lang. 60%			
	Understand: Reading to understand the meaning of each sentence	10-20 pages / hour in native language. Foreign lang. 60%			
	Engage: Reading while also working problems, drawing inferences, questioning, and evaluating	4-10 pages / hour in native language. Foreign lang. 60%			
Writing (250 words / page)	Reflection/Narrative: Essays that require very little planning or critical engagement with content	1 h / page			
	Argument: Essays that require critical engagement with content and detailed planning, but no outside research	2 h / page			
	Research: Essays that require detailed planning, outside research, and critical engagement	4 h / page			
Exam preparation	Recap of content and making notes	4-5 h / 1 ECTS in exam			
On-campus teaching	Lectures, seminars, guided exercises etc.	1 h = 0,037 ECTS			
	Independent work / time to think after teaching	1-2 h / hour of teaching			
	Math home exercise / lab work after teaching	3-4 h / hour of teaching			
Group work	Eg. preparation of a presentation	5 h preparation / 1 h presentation			
Other work	All other work, such as excursions.				
TOTAL:					

Sources:

Rice University: "Course Workload Estimator - Estimation Details" (<https://cte.rice.edu/workload#howcalculated>), referred 15.5.2019

University of Oulu: "Akateemisen opintojakson työmäärän mitoittaminen"

(https://www.oulu.fi/koulutuspalvelut/julkaisut_ja_materiaalit/verkkomateriaaleja/ydinainesanalyysi.htm), referred 15.5.2019

Aalto University (2016): *Estimated and perceived: A guideline on workload by Aalto University pedagogical training*. Training material.

Karjalainen, A., Alha, K. ja Jutila, S. (2006): *Give me time to think - determining student workload in higher education*. University of Oulu, Teaching development unit.



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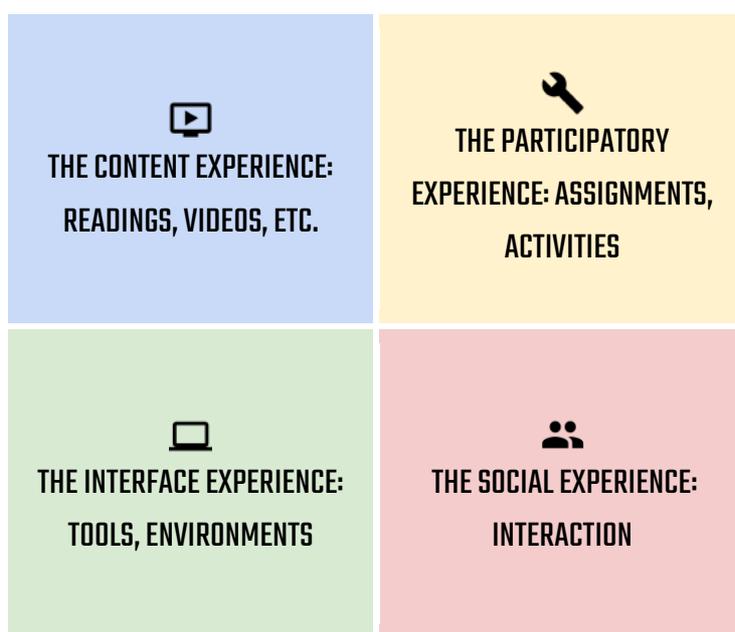


4.7. The Learning Experience Canvas

This canvas is intended as an aid in **planning the basic structure of an individual content module**. At this stage the topics, scope and outline of the division into modules have been decided. The canvas is used to plan individual themed modules or weekly modules that support the learning process. Multiple canvasses are therefore required when planning more than one module.

The Learning Experience canvas helps answer the question of how to facilitate the absorption of a given topic by students in the most effective way possible.

The building blocks of the learning experience are



The canvas is divided into four sections, with content, interface, participation and interaction each in their own boxes. **It is advisable to produce at least one element for each of the four sections.** It is not catastrophic if only the content section is filled out for a given module. If participation and interaction are neglected in the case of all modules, however, it is clear that the course in question does not adequately support retention and motivation.

Filling out the canvas is not time-consuming, given that the foundations have been laid using the **Course Structure** and the **Activities and Formats** canvasses.

LEARNING EXPERIENCE

COURSE:

TEAM:

This canvas is used to plan individual modules or weeks as learning experiences. Use the Course Structure canvas for general planning.

MODULE #:	MODULE NAME:	KEY TOPICS:
-----------	--------------	-------------

CONTENT EXPERIENCE

<p>VIDEO(S) What video material is there?</p>	<p>Mockup of the video</p> <div style="text-align: center; height: 80px;"> </div>
<p>READINGS What text material is there?</p>	
<p>LECTURE/SEMINAR What synchronous teaching there is?</p>	<p>Sketch of the lecture</p> <div style="text-align: center; height: 80px;"> </div>

← PASSIVE

INTERFACE EXPERIENCE

<p>VIRTUAL ENVIRONMENT What's the platform? What other online tools are needed?</p>
<p>MICROLEARNING/CHUNKING How is the content chunked to accessible nuggets (15 min)?</p>
<p>PITCH TALK What's the purpose of this module, told in 30 seconds?</p>

↑ CONTENT DRIVEN

PARTICIPATORY EXPERIENCE

<p>ACTIVITIES What is the learner doing? Use the Activities and Formats canvas.</p>	<p>EXAMPLES</p> <ul style="list-style-type: none"> <input type="checkbox"/> Quiz <input type="checkbox"/> Mindmap <input type="checkbox"/> Essay <input type="checkbox"/> Exercise: math/code <input type="checkbox"/> Classification exercise <input type="checkbox"/> Other
<p>ASSIGNMENTS What do the learner need to turn in?</p>	
<p>KNOWLEDGE CONSTRUCTION What tools are the learners using to build connections between topics?</p>	

ACTIVE →

SOCIAL EXPERIENCE

<p>MEETING(S) What face-to-face or online gatherings there are?</p>
<p>COMMUNITY/DISCUSSION What channels there are for informal chat and support?</p>
<p>REAL-WORLD RELEVANCE How do you connect the content to the real world?</p>

↓ PROCESS DRIVEN



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4.8. The Storyboard Canvas

This canvas is **intended as an aid in planning an individual video**. As videos cannot be considered an integral part of web-based learning, the decision to include them should always be accompanied by careful planning. This is where the Storyboard canvas is useful.

It is structured by section, and helps outline the content of the video, the kinds of text or captions shown, and the audio track. One **section** is a single image sequence between two cuts. For optimal learning results, it is advisable to eschew static videos and instead include variety in the content of the image, the captions and the audio track.

The canvas is also suitable for planning a slightly broader outline for a video in the form of **scenes**, which are made up of multiple sections.

VIDEO STORYBOARDING

COURSE:

TEAM:

<p>1</p> <p>(Mockup of the media elements)</p>	<p>2</p> <p>(Mockup of the media elements)</p>	<p>3</p> <p>(Mockup of the media elements)</p>	<p>4</p> <p>(Mockup of the media elements)</p>	<p>5</p> <p>(Mockup of the media elements)</p>
<p>Section title:</p> <p>On-screen text/caption:</p> <p>Narration/voiceover:</p>				
<p>6</p> <p>(Mockup of the media elements)</p>	<p>7</p> <p>(Mockup of the media elements)</p>	<p>8</p> <p>(Mockup of the media elements)</p>	<p>9</p> <p>(Mockup of the media elements)</p>	<p>10</p> <p>(Mockup of the media elements)</p>
<p>Section title:</p> <p>On-screen text/caption:</p> <p>Narration/voiceover:</p>				



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4.9. The Communications and Support Canvas

This canvas has been conceived as a tool for planning the communications effort needed in the context of organizing a course. It answers the question of **how and through which channels do we communicate with the learner during the different stages of a course**. A surprising number of learning-related problems and obstacles have to do with communication issues. This is especially true of cases in which a student drops a course, which are often a result of negative experiences related to communication. Communicating with the students attending a particular course is usually the sole responsibility of its teacher, which is why this aspect has been given a dedicated canvas.

It follows the same sequence of stages laid out in the **Course Structure** canvas, with an additional section at the start on finding the course:

1. Application and registration
2. Starting and activating
3. Basics
4. Deepening interaction
5. Feedback and assessment

Each stage entails slightly different needs on the part of the learners as regards information and support. The canvas lists some typical examples of these. The planning is done by channel: Communication channels can be open to everyone, while support channels can be reserved for contact between the teacher and an individual student. Once the channels have been outlined, it is advisable to check who is responsible for each of them.

COMMUNICATIONS & SUPPORT

COURSE:

TEAM:

 **APPLICATION & REGISTRATION**
Finding the course, application, registration

 **STARTING & ACTIVATING**
Pre-exercises and introduction

 **BASICS**
Core content, lectures, materials

 **DEEPENING INTERACTION**
Group work, projects, assignments

 **FEEDBACK & ASSESSMENT**
Summary, assessment, feedback & closing down

LEARNER'S NEED What information the learner needs, what kind of support?	When is the course going to start? Is there a pre-exercise? How to turn it? Who else is participating? What tools are being used in the course? I can't login to course online platform. I can't participate in the first weeks of the course, can I still register? I have previously done half of the course, can I participate partially? How is the grading done?	I can't make it to the lecture, do I need to compensate this? Where can I find the readings? I didn't understand the assignment. I can't open pdf file. My connectivity is bad and I can't watch the videos, can I read the material instead?	My connectivity is bad, do I have to take part in group discussions? Where can I find the assignments? What tools should I be using for the exercises/assignments? I can't get contact with my group. There is a freerider in my group. I can't get in touch with my business case company.	Is there an exam? When? What is the content area of the exam? How do I get feedback? How do I give feedback? I disagree with my grading. I wanted to get better grades. Did I pass the course? How can I prove my accomplishment for my employer?
COMMUNICATION CHANNELS How is the message delivered?				
SUPPORT CHANNELS How to reach out when there's a question?				
WHO REPLIES? Who's responsible for the channel, who will reply?				



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4.10. The Checklist for the Psychology of Learning

This checklist is a **tool for self and peer assessment on a course**. It is structured along the four basic psychological processes of learning described earlier in this guide: Motivation, memory, attention and emotion. With the help of this checklist a teacher can adopt the perspective of psychology in evaluating a course plan or a course that has already been delivered, and ask **whether this course contains elements that truly promote learning**.

The checklist describes psychological needs and processes, and provides examples of methods in relation to each. It is not necessary to strictly follow these examples, however. The essential point is that chosen methods promote motivation, retention, attention and psychological safety.

The degree to which the needs are met is evaluated using a five-point scale. This is because the course in question may include certain elements in line with the demands of learning psychology, but does not necessarily fulfil all of them.

CHECKLIST FOR PSYCHOLOGY OF LEARNING

COURSE:

PSYCHOLOGICAL NEED		POSSIBLE METHOD	True	False
MOTIVATION	1. Meaning in content	Course description connects the learning content to wider context and interests of the learners.	5 <input type="checkbox"/>	4 <input type="checkbox"/>
	2. Experience of competence	Learner takes a participatory assignment right at the beginning of the course. If the assignment can be failed, there must be a possibility for retry.	3 <input type="checkbox"/>	2 <input type="checkbox"/>
	3. Autonomy	Learner can pick the best suitable elements of learning for her/him, eg. time of study, project topic.	1 <input type="checkbox"/>	<input type="checkbox"/>
	4. Social relatedness	Learner is connected to other learners through eg. meetings, chat rooms, forums, video conferencing.	5 <input type="checkbox"/>	4 <input type="checkbox"/>
MEMORY	5. Learning content is linked with previous knowledge	Previous knowledge is activated at the start of the course through eg. prerequisite test or letter of motivation.	3 <input type="checkbox"/>	2 <input type="checkbox"/>
	6. Memorizing is active knowledge construction	The learner has to look up for information and showcase her findings. There is eg. a project work, group assignment, presentation or mathematical exercises included in the course.	1 <input type="checkbox"/>	<input type="checkbox"/>
	7. Context helps remembering, irrelevance prevents it	The learning content is linked with real-world examples, for example business cases. Every topic is demonstrated with at least one example.	5 <input type="checkbox"/>	4 <input type="checkbox"/>
	8. The last and first piece of information is often best remembered	There is at least some kind of summary at the end of the course: "take-home message". Even better, if there is summary after every module.	3 <input type="checkbox"/>	2 <input type="checkbox"/>
ATTENTION	9. People can focus on one thing / medium max 15-20 minutes	Single videos or lectures are not more than 15 minutes long.	1 <input type="checkbox"/>	<input type="checkbox"/>
	10. People learn better through divided training than through cramming	Course content is divided into smaller chunks and chunks are assembled into thematic modules.	5 <input type="checkbox"/>	4 <input type="checkbox"/>
EMOTION	11. People learn and perform well, when they experience psychological safety	Individual learners can participate and present results anonymously. Discussions are participatory and everyone is included.	3 <input type="checkbox"/>	2 <input type="checkbox"/>



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4.11. The Usability Checklist

Like the Checklist for the Psychology of Learning, this checklist serves as a **tool for self-assessment**, with which learners can evaluate the accessibility and usability of a course.

The checklist helps take into account the principles of the Universal Design for Learning framework, described in this guide under the heading **Delivering an online course to a diverse group of learners**.

The degree to which the requirements of usability are met is evaluated using a five-point scale. This is because the course in question may include certain elements that promote usability, but it does not necessarily achieve complete accessibility.

This tool is based on the [evaluation tool for online implementations](#) developed in the context of the eAMK project (Mari Varonen & Tuula Hohenthal 2017, eAMK 2019). It also draws from the UDL Guidelines (CAST 2019) and the “Checklist for Designing a Course for Non-Degree Students” developed as part of the FITech project (Pilvi Lempiäinen 2018).

THE USABILITY CHECKLIST

Need	Method	True	False
Target group and application process	The target group is clearly indicated (degree students/non-degree students/all students).	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Prior knowledge requirements and recommended prerequisite skills are communicated clearly at the application stage.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	The application process is outlined and required documents are listed clearly.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	The course includes a test of prior knowledge, self-assessment, motivation letter, or other method of ascertaining the starting level of the students.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Accessible course organization	The estimated workload (instructed study and self-study) is indicated clearly.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Compulsory assignments and possible exams are defined clearly.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Information is made available regarding the course schedule and possible compulsory meetings (time, place, making up for absences).	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Engaging assignments	The course includes regular assignments or other contact points designed to foster student engagement in the course.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Assignments are consistent with the learning objectives of the course as well as the requirements of professional life.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Instructions are clear and include the necessary information on the method of completion, assessment, and deadlines.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Assignments can be completed online (on an online course) either independently or in groups.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Assignments can be completed using a variety of technologies including text, images, videos, and sound.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Catering for a diverse group	The content and professional-life applications of the course form a coherent whole and are presented in a clear manner.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	The course begins with a kick-off or other face-to-face meeting designed to promote student engagement in the course.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Additional material and easily accessible support are made available to students who require help with course content or study skills.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Students are given the opportunity to apply skills learned during previous or current employment when completing course assignments.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Sources: Piiwi Lempiäinen (2018): Checklist for Designing a Course for Non-Degree Students.
 eAMK (2019): Evaluation Tool for Online Implementations. <https://www.eamk.fi/en/courses-offering/evaluation/>
 CAST (2019): Universal Design for Learning Guidelines. <http://uidguidelines.cast.org/>



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4.12. The Technical Implementation Checklist

Like the other two checklists, this too is a **tool for self-assessment**. It can be used to ensure that the technical implementation of a course is cohesive and fit for purpose.

The quality of the technical implementation is evaluated using a five-point scale, as it may be high in some aspects but lacking in others.

This tool is based on the evaluation tool for online implementations developed in the context of the eAMK project (Mari Varonen & Tuula Hohenthal 2017, eAMK 2019). It also draws from the UDL Guidelines (CAST 2019).

THE TECHNICAL IMPLEMENTATION CHECKLIST

Topic	Method	True	False
Learning platform (LMS)	In principle, the course makes use of the same platform as other courses, unless there is a compelling reason to use another tool instead.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	The one-stop principle: All course materials, exercises and workspaces can be found via the course page/learning platform.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	The learning platform is used to collect metadata for analysis. This data is available to the teacher e.g. for the purposes of instruction and to learners e.g. for the purposes of monitoring the progress of their studies.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	The platform and other tools are also easy to use on mobile devices.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Other tools	If other web-based tools are used, the reasons for the decision to do so are shared with the students. Any applications used are information secure and available free of charge.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	User instructions for using the online platform and other tools, downloading applications, and creating a user account can be found on the learning platform.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Requirements regarding equipment and other necessary applications are included in the course description available at the registration stage.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Organization of content	The content on the learning platform is logically structured: chronologically, thematically, or based on other coherent criteria.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Content such as folders, files, and pages are identifiable and named in a logical manner.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	The course is visually coherent and students have no difficulty identifying the elements it comprises.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Usability and visual aspects	Fonts are easily readable. The text used is sufficiently large or can be enlarged.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Text is readable with the help of a screen reader. Headings use heading elements, the body text uses body text elements, and pictures are accompanied by descriptive text.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Videos and audio files are subtitled or transcribed, or the content is otherwise available in text form.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Material that is not accessible is clearly labelled as such.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Using the various tools provided is information secure. Content and materials are information secure.	5 <input type="checkbox"/>	4 3 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Adapted from the eAMK Evaluation Tool for Online Implementations (Mari Varonen & Tuula Hohenthal 2017).

<https://www.eamk.fi/en/courses-offering/evaluation/>

Source: CAST (2019). Universal Design for Learning Guidelines. <http://udlguidelines.cast.org/>



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