Guidelines for delivering a blended university course
"Academy4Business"

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Introduction

The Academy4Business (A4B) project has produced these guidelines for blended university courses. The aim of this A4B project was to bridge the gap between the academic and business worlds through a two-way transfer of knowledge between the academic and business sectors. In this way, students are supported to develop an entrepreneurial mindset, while business actors are introduced to the use of evidence and science-based approaches in their business. The process involves high-quality innovative outputs - digital, online and hands-on learning opportunities that are co-designed using the design thinking approach, then piloted and, based on feedback, improved and transferred to the digital output form.

In order to achieve the project's goal, one of the project's tasks was to create blended university courses that would support the development of students' EdTech entrepreneurial mindset.

In this document you will find guidelines on how to organise and conduct the blended course that supports the development of students' understanding of the nature of the entrepreneurial mindset, entrepreneurship in EdTech and collaboration skills.

The name of the course is Academy4Business (A4B) and the volume of the course is 6 credits. The course was designed to be high quality and innovative, incorporating digital, online, and practical learning opportunities.

The course was designed using a flipped classroom approach. In this case, learners first work through the learning materials independently before the classroom seminars. The classroom seminars include discussions on the topics covered, practical learning activities in teams and meetings with experts. To achieve the learning outcomes of the course, students are encouraged to develop solutions to a real problem faced by an EdTech company.

To this end, it is recommended that before the start of the course, the lecturers in charge of the course find a partner in the EdTech company who is willing to present their problem and allow for the students to solve it, validate and give feedback on the solutions developed.

Course aim and learning outcomes

The aim of the course is to support students' understanding of the nature of the entrepreneurial mindset, entrepreneurship in the field of EdTech and collaboration skills.

Learning outcomes

The student will be able to:

- ➢ understand the entrepreneurial mindset based on theoretical approaches;
- ➢ analyse a problem in the field of EdTech based on the principles of design thinking;
- ➢ analyse the possibilities of using artificial intelligence (AI) in EdTech;
- ➢ design a business model for an EdTech product or service based on value proposition principles;
- ➢ create, validate and improve a prototype of an EdTech product or service based on the target audience;
- ➢ present an idea for a product or service to solve a problem in the EdTech field (a business model) using the principles of an elevator pitch.

Course content and methodological guidelines

The course covers two major topics:

1. **Entrepreneurial mindset, volume 2 ECTS.**

    Sub-topics:
    - Entrepreneurial Mindset
    - Team building
    - Mentoring

2. **Evidence-based and science-based approaches to entrepreneurship, volume 4 ECTS.**

    Sub-topics:
    - Meaning of EdTech
    - Foundations of entrepreneurship (theoretical approaches)
    - Principles of Design thinking and applying design thinking principles to entrepreneurship
    - Business model
    - Introduction of AI in education

In working through these topics, students will develop solutions to the problems of a specific EdTech company, based on the research literature and theoretical knowledge they have acquired, using case studies and design thinking tools. The case problem will be provided by the EdTech company.

The course consists of 6 sessions and independent work, both individually and in teams. The content of each session, the learning activities in class, individually and in teams are presented below.

1st session: Introduction to the course

Topics	Students' activities before the classroom	Activities during the classroom

Introduction to the course and discussion of the idea/nature of an entrepreneurial mindset.	One week before the first meeting, students will receive an email asking them to fill in the presentation card (Appendix 1) for the first class.	1. Lecturer's presentation of the course objectives and learning outcomes, content and topics to be covered, individual and team tasks.
		2. Introductions between the lecturers and the students enrolled in the course, using the pre-filled presentation cards. Each student will be given 2 minutes to introduce themselves.
		  • It is suggested that the lecturer starts with his/her introduction and then gives the floor to the students in a friendly manner.
		3. Students divide into 2 or 3 teams (with the help of the lecturers if necessary) in which they will work in further classes.
		4. Discussion in three groups based on the following question: What do you think an entrepreneurial mindset is, or what does it mean?
		  • Lecturer directs the students to form into three groups (if in the class are 12-16)
		  • Lecturer explains the topic of the discussion and gives a time limit. It is suggested to allow 10 minutes for the first discussion.
		  • Lecture encourages each group to present their first idea of what an entrepreneurial mindset means.
		5. Lecturer introduces the independent assignment to be prepared for the next class.

2nd session: Entrepreneurial mindset and EdTech

Topics	Students' activities before the classroom	Activities during the classroom

• The entrepreneurial mindset (Group discussion)
• What is EdTech
• EdTech trends (e.g., who is in the market, what is wanted, etc.)
• EdTech company - Introduction of the company and its problem
• Customer journey and finding practical information
	Please complete the following tasks by second class:
	1. Read the summary of the mindset and entrepreneurial mindset (Appendix 2).
	2. Watch the following videos:
	  • Team Building
	  https://www.youtube.com/watch?v=eH1zY6rk3R0
	  • Networking
	  https://www.youtube.com/watch?v=AEozFw4Bmhg
	  • Tips to start creating your personal brand
	  https://www.youtube.com/watch?v=G0cGfBkc6tU
	3. Improve (if necessary) your personal presentation card and upload it in the course folder.
	
	Additional recommended reading:
	• Naumann, C. (2017). Entrepreneurial Mindset: A Synthetic Literature Review. Entrepreneurial Business and Economics Review, 5(3), 149-172. http://doi.org/10.15678/EBER.2017.050308
		1. Lecturer introduces the classroom topics and activities
		2. In the teams, students discuss the entrepreneurial mindset based on the sources they have read individually before classroom, and create a concept map to express their understanding.
		  • Students form into teams which were created during the 1st class.
		  • Students discuss and create a concept map using the canva.com environment or others digital tool chosen by the team.
		  • Allow 20 minutes for discussion.
		  • Each team has 3-5 minutes to present their concept map.
		3. Expert presentation (max 15 min) about what EdTech is and EdTech trends (e.g., who is in the market, what is wanted, etc.). It is possible to use this video if the expert cannot come to class: what EdTech is and EdTech trends
		4. Expert from the EdTech company introduces the company and its problems that need to be solved (max 30min).
		  • It is suggested that this introduction to the company and the presentation of the problem be recorded. This will allow students to watch it later as they develop their solution or idea for solving the problem.
		5. Expert presentation about Customer journey (see example in Appendix 3).
		6. Lecturer introduces the independent assignment to be prepared for the next (third) classroom.

	• Nadelson, L. S, Nageswaran Palmer, A. D., Benton, T., Basnet, R.,Bissonnette, M., Cantwell, L., Jouflas, G., Elliott, E., Fromm, M., & Lanci, S. (2018). Developing Next Generation of Innovators: Teaching Entrepreneurial Mindset Elements across Disciplines. International Journal of Higher Education, 7(5). https://doi.org/10.5430/ijhe.v7n5p114	

3rd session: Design thinking and its application in analysing the problem of the EdTech company

Topics	Students' activities before the classroom	Activities during the classroom

Design Thinking	1. Watch the following videos:
	  • Practical steps to begin innovating
	   https://www.youtube.com/watch?v=E84mK675coQ
	  • Innovation in Business: How City of Tallinn supports new innovations
	   https://www.youtube.com/watch?v=G9J6TiVFpgc
	  • Design Thinking
	   https://www.youtube.com/watch?v=c5FC07aaNbY
	  • How to develop my business idea
	   https://www.youtube.com/watch?v=Ia688naGyF8
	2. Read teaching material on design thinking:
	  Design Thinking for Educators, s.a., IDEO
		1. Lecturer introduces the classroom topics and activities.
		2. Design Thinking.
		In the teams, students reflect on the principles of design thinking based on the materials studied, and based on supporting questions.
		• Students form into teams which were created during the 1st class.
		• Students reflect on the principles of design thinking based on the materials studied, and based on supporting questions. Supporting questions:
		  ✓ What did you discover about design thinking that is important to you?
		  ✓ What is the main idea/concept of design thinking?
		  ✓ What are the principles of design thinking?
		  ✓ What tools are used in design thinking?
		  ✓ What design thinking tools and how to use them to solve EdTech company problems?
		• Students prepare a poster summarising the discussion, Students prepare a poster summarising the debate using an AI tool of their own choice.
		• Allow 30 minutes for reflection and creating the poster.
		• Each team will have 5 minutes to report their knowledge by presenting a poster.
		• Lecturer summarises the principles of Design Thinking.
		
		The learner's guide:

Discuss what you have learned about design thinking. In the discussion, it is helpful to rely on the following questions:

- What did you discover about design thinking that is important to you?
- What is the main idea/concept of design thinking?
- What are the principles of design thinking?
- What tools are used in design thinking?
- What design thinking tools and how can you use them to design solutions to EdTech company problems?

Prepare a poster with a summary of the discussion with the help of an AI tool of your choice.

Present the result of your work.

3. Describing and analysing the problem of EdTech company.

In the teams, students define and analyse the problem of an EdTech company using design thinking principles.

- Based on a presentation of the EdTech company, students will define the problem using a brainstorming method. Time for brainstorming 10-15 minutes.
- Students choose a problem to work on and analyse the problem using the 4W1H (What, Who, Where, When, and How) or SWOT- analysis method.
- Time for analysis 20 minutes.
- Each team will have 2-3 minutes to report their results. The lecturer provides feedback

The learner's guide:

- On the basis of the company's presentation, brainstorm in a team to map the problems of … (the name of the company).

- If necessary, watch the company presentations and video again (materials can be found in (link to Moodle environment https://moodle.edu.ee/course/view.php?id=6055).
- If you prefer, see supporting material on the method of analysis. If necessary, see further examples https://readandgain.com/2022/07/05/4w1h-5w1h-with-examples/

4. Description of the potential customer / user

In the teams, students define target groups (customer or / and user) and profile them using a value proposition canvas https://www.strategyzer.com/library/the-value-proposition-canvas. Time for analysis 20 minutes. The lecturer provides feedback.

The learner's guide:
- Draft a description of the target group based on the problem chosen.
- Use a customer profile canvas. The template can be found in (link to Moodle environment https://moodle.edu.ee/course/view.php?id=6055).
- Describe the customer journey.
- Each team will have 2-3 minutes to report their results.

5. Designing the value proposition

Students design a value proposition that meets the customer's needs, wishes, and expectations. Use value proposition canvas. The lecturer provides feedback.

Time for designing a value proposition 30 minutes.

The learner's guide:

		• Based on previous teamwork, generate some initial ideas for innovative solutions to the problem you have chosen. • Use the value proposition canvas. The template can be found in (link to Moodle environment https://moodle.edu.ee/course/view.php?id=6055) 6. The lecturer introduces the independent assignment to be prepared for the fourth session. **Teamwork before 5th session** Discuss the previous results and, if necessary, make additions or changes to the problem description, analysis, target audience profile, or value proposition ideas. Based on previous teamwork, generate some initial ideas for innovative solutions to the problem you have chosen. Use a value proposition canvas.

4th session: AI in education and basic principles of idea validation

Topics	Students' activities before the classroom	Activities during the classroom

Using AI in education
 	
• Exploring the different types of AI being used in education
• Generating ideas to solve the EdTech enterprise problem in teams
• Basic principles of idea validation
	1. Watch the following videos:
	• AI https://www.youtube.com/watch?v=E0_kCR4ZqCI
	• AI and Intellectual Property Rights https://www.youtube.com/watch?v=KqSBjqyPYcw
	• Studying with AI https://www.youtube.com/watch?v=aYu4UCXwmqo
	• 3 Productivity methods https://www.youtube.com/watch?v=HxoLnsnZ9Po
	• How to fill in Business Model Canvas https://www.youtube.com/watch?v=d0rz-ix0Vtk
	2. Read business modelling teaching materials and resources:
	• Pigneur, Y. & Osterwalder, A. (2013). Business model generation. John Wiley & Sons.
		Before the classroom, the lecturer arranges for two experts to cover the following topics during the session if needed:
		    The use of AI in education
		• Exploring different types of AI applications in education
		• Generating ideas to solve EdTech enterprise challenges in teams
		• Basic principles of idea validation
		1. At the start of the classroom, the lecturer introduces the topics and activities.
		2. The **first expert** presents the following topics over 20 to 25 minutes:
		    • The use of AI in education
		    • Exploring different types of AI applications in education
		    After the presentation, students will have 10 minutes to ask questions.
		3. The **second expert** presents the following topics over 20 to 25 minutes:
		    • Generating ideas to solve EdTech enterprise challenges in teams.
		    • Basic principles of idea validation
		    After the presentation, students will have 10 minutes to ask questions.

		These previous topics can also be covered independently using the following video tutorials:
		- Video lecture by Tomáš Doležal: <u>The Use of AI in Education. Exploring Different Types of AI Applications in Education</u> - Video lecture by Luis Peña Sánchez: <u>Generating Ideas to Solve EdTech Enterprise Challenges in Teams. Basic Principles of Idea Validation</u> 4. A **representative from the EdTech company** will share more information about their company, which will help student teams better understand the company's challenge and develop potential solutions. 5. The lecturer introduces the independent assignment to be prepared for the fifth session.

5th session: Initial solution modification and validation

Topics	Students' activities before the classroom	Activities during the classroom
Validation of product/ service initial idea	• Read the following material: Bland, J. D. & Osterwalder, A. (2019). Testing Busieness Ideas. Wiley. • The teams develop an idea (i.e., a business model for an EdTech product or service based on value proposition principles) that should solve the problem of the EdTech company. • The teams prepare an initial presentation of an idea for the company, which should provide a solution to the problem faced by the EdTech company.	It would be great if the meeting takes place at the EdTech company whose problem needs to be solved. 1. Lecturer introduces the classroom topics and activities. 2. Each team presents their initial idea for the company, which should provide a solution to the problem faced by the EdTech company. 3. After each team's presentation, members of the EdTech company and lecturers provide feedback to the team to help them improve their solutions for the final presentation. 4. The lecturer introduces the independent assignment to be prepared for the sixth session.

6th session: Final presentation of product/service idea

Topics	Students' activities before the classroom	Activities during the classroom

Final presentation of product/service idea	Assignment for independent work:
	
	Each team improved their problem solution based on the feedback received and prepared the final presentation based on the principles of an elevator pitch. The pitch can be 5 to 7 minutes long.
	
	Some tips on how to create an effective elevator speech:
	
	● **One-Pager**: Consider creating a one-pager, a single-page document that concisely presents key information. It's an effective way to summarize your main points. For more information, see:
	   ● What is a one-pager?
	   ● Example from MobiLab: MobiLab One-Pager
	   ● Example from Multikey: Multikey One-Pager
	
	Additional resources for crafting your pitch:
	● The Secret to Successfully Pitching an Idea | The Way We Work, a TED series
	● How to Start a Pitch or Presentation
	● How to Give the Perfect Pitch - with TedX speech coach David Beckett
		1. Lecturer introduces the classroom topics and activities.
		2. Each team presents their solution for solving the EdTech company problem using the principles of elevator speech. The pitch can be 5 to 7 minutes long.
		3. After the teams have presented, the jury decides on the best solution and presentation and gives feedback to the teams.

	- Pitch 90 1st place 14 pitches presented on the TLU stage on November 17.2024: https://www.youtube.com/watch?v=RI9v7KF7sLg (starting at the 22-minute mark)	

Appendixes

Appendix 1. Presentation card

PRESENTATION CARD

Competences
What are you good at?
1.
2.
3.
4.
5.
...

Personality
What defines you better?
1.
2.
3.
4.
5.
...

Your avatar

Contact details
A sentence you love which defines you....

Identity
Hobbies and values
1.
2.
3.
4.
5.
...

Interests on EdTech
What topics motivate you?
What problem or need would
you like to solve?

1.
2.
3.
4.

Appendix 2. Mindset and entrepreneurial mindset

Mindset and entrepreneurial mindset

Summary

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Mindset

What is a mindset?
A mindset is an attitude, belief or idea that provides a framework for explaining events and thus influences how we respond to and/or interpret a situation (London et al., 2018).
Thus, a mindset can be considered as an attitude or belief.

Attitude refers to a person's behaviour, which is manifested in their actions, feelings, or mood. Therefore, an individual's behaviour, emotions, or mood can affect how they are perceived and interacted with by others (Nightingale, 2017)

Psychologists refer to attitudes as opinions, which contain certain motivational components and can elicit certain emotions, and vice versa, i.e. emotions can elicit opinions. Therefore, an opinion that determines a certain attitude is generally associated with emotions and a tendency to act accordingly (Gleitman et al., 2014).

Attitudes are shaped by various factors. Some attitudes can be formed through careful consideration of facts and debate, weighing the pros and cons before making a decision and drawing conclusions (Gleitman et al., 2014).

Sometimes we acquire an attitude in the context of a particular learning, i.e. we perceive a connection between two things, which leads to a positive attitude. Attitude can also be the result of a process. For example, when rewarding desirable behaviour that results in a certain positive attitude towards certain work habits. Attitudes can also be formed through social learning. For example, if a teacher is a role model for his or her students, and that teacher values some attitudes, then students may also come to support those attitudes (Gleitman et al., 2014).

A person may hold a strong attitude or belief, but it is still just something in the person's mind. However, it is up to each person to change their thinking.

One method of inducing a change in attitude is through persuasion. For instance, well-designed television advertisements can influence us to purchase a different product than we are accustomed to. Persuasion can be accomplished by analysing information from various sources. Additionally, changing our own attitudes can be achieved through self-persuasion. Although it is accurate that attitudes shape behaviour, at times, our own behaviour can compel us to alter our perception of the world. For example, you have to experience something negative for a short period of time to become a member of an important group. Such negative experiences can help new members in valuing their membership more highly than they would have otherwise. Attitudes can also be changed through experience, and particularly through positive experience (Gleitman et al., 2014).

At the same time, however, changing attitudes is not easy because people tend to stick to their previous attitudes, especially if they rarely make changes in their social and economic environment (Gleitman et al., 2014).

A lot depends on mindset
The mindset determines whether mistakes and failures discourage people or whether they are taken as an opportunity to learn and grow. It also determines whether a person rejects and ignores criticism or analyses it thoroughly and learns from it. Furthermore, the belief that a person's intelligence is a fixed quantity or can be developed also depends on the mindset.

Dweck (2017) has described two opposing mindsets - the fixed mindset and the growth mindset (see Figure 1).

The fixed mindset
A person with a fixed mindset believes that their talents, skills, and character traits are immutable and cannot be developed over a lifetime. They believe that they either have a certain talent or they do not. If they do not have it, they believe that there is nothing that can be done about it. It is important to note that this belief is not necessarily true (Dweck, 2017). Unfortunately, persons who do not believe in their own (low self-efficacy) abilities may start to avoid certain activities, neglect solving complex problems or experience anxiety even before tackling them (Kikas, 2015). Often, a person with a fixed mindset thinks that if a certain talent is present, there is no need to make any effort. The individual who possesses this mindset tends to look for external reasons for their failures and place blame on others, leading to a repetition of the same mistakes. This mindset is present in all individuals to some extent, although they may not have yet recognized it within themselves. However, recognizing this mindset within oneself is the initial step towards developing a growth-oriented mindset (Dweck, 2017).

The growth mindset
A growth mindset is characterised by the belief that talents can be developed through effort. This mindset values the journey of talent development over the end-point or outcome. It is important to experiment, try, do your best, and learn from mistakes. With this mindset, individuals believe in themselves and are willing to make an effort even when facing challenges (Dweck, 2017). Therefore, individuals who believe in developing their capacity tend to persist in the face of challenges and setbacks, which can lead to greater success in future attempts (higher self-efficacy). When a person is confident in their ability to solve a problem, they are more likely to take action and seek assistance, when necessary, ultimately leading to a resolution (Kikas, 2015). This approach can assist individuals in overcoming challenging times and facing difficult obstacles, leading to a more content and less stressful life, as well as greater success (Dweck, 2017; see Figure 1).
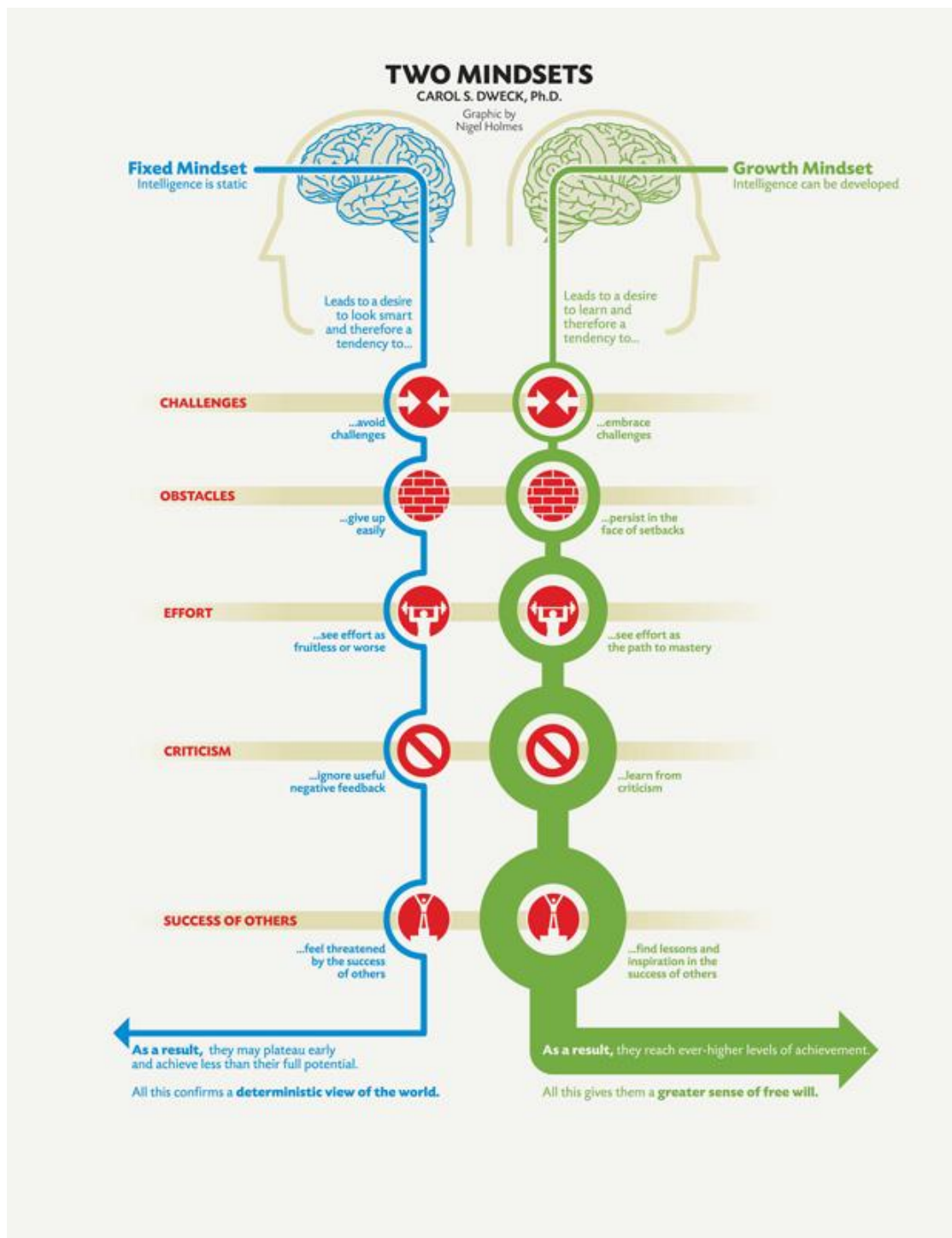
Figure 1. The fixed mindset and the growth mindset (Dweck, 2017)

An entrepreneurial mindset

There is no common understanding of an entrepreneurial mindset

When discussing the concept of the entrepreneurial mindset, several authors have noted that there are different emphases in the definitions and that there is no common understanding so far (Naumann, 2017; Sudrajat, 2015; Korte, 2018). Entrepreneurial mindsets have traditionally been conceptualised in the context of business or entrepreneurship (Arro et al., 2018; Gibb & Price, 2014; Nadelson et al., 2018; Sudrajat, 2015). Some authors have highlighted characteristics that differentiate entrepreneurs from non-entrepreneurs in their definitions (Davis, Hall, & Mayer, 2016; Naumann, 2017).

An entrepreneurial mindset is important.

In today's globalising and changing world, an entrepreneurial mindset is increasingly seen as an important factor in helping individuals to cope with the challenges or problems they face in their daily lives, and in their actions and self-realisation in general (Gibb & Price, 2014; Nadelson et al., 2018; Sudrajat, 2015). An entrepreneurial mindset helps individuals to turn ideas into action, thereby significantly increasing their overall employability. It contributes to success, which is why the importance of developing an entrepreneurial mindset is emphasised at all levels and types of education (Arro et al., 2018; Gibb & Price, 2014; Nadelson et al., 2018).

Entrepreneurial mindsets can be developed

When discussing entrepreneurial mindsets, some authors focus on the cognitive perspective, while others highlight specific personal traits that contribute to a person's ability to identify and pursue new opportunities (Naumann, 2017). Some definitions emphasise beliefs, attitudes, or behaviours (Korte, 2018). It is argued that entrepreneurial mindsets are not innate but can be developed over a lifetime, influenced by a person's interaction with their environment (Naumann, 2017; Sudrajat, 2015; Korte, Smith, & Li, 2018). However, developing such a mindset requires effort and support (Nadelson et al., 2018). Therefore, to develop an entrepreneurial mindset, it is important to understand its definition and the environment that fosters its growth (Korte, 2018).

Definitions of entrepreneurial mindset

There are many definitions of entrepreneurial mindsets in the academic literature. Naumann (2017) has compiled definitions published by various authors, which are summarised in Table 1.

Table 1. Definitions of entrepreneurial mindset (Naumann, 2017)

Author	Definition
McGrath & MacMillian (2000)	"ability to sense, act, and mobilize under uncertain conditions"
Ireland et al., (2003)	"way of thinking about business that focuses on and captures benefits of uncertainty"

	"growth-oriented perspective through which individuals promote flexibility, creativity, continuous innovation, and renewal"
Haynie & Shepherd (2007)	*"ability to adapt thinking process to a changing context and task demands"*
Shepherd et al., (2010)	"ability and willingness of individuals to rapidly sense, act, and mobilize in response to a judgmental decision under uncertainty about a possible opportunity for gain"
Baron (2014)	"think, reason, make decisions, plan and set goals in relatively unique way" A person with an entrepreneurial mindset is able to relate or transfer approaches from one situation to another, drawing on their experience, knowledge, integrity and network.
Davis et al., (2016)	"constellation of motives, skills, and thought processes that distinguish entrepreneurs from nonentrepreneurs"

Several other definitions similar to McGrath and MacMillian's can be found in the literature, such as those proposed by Lindberg, Bohman and Hultén (2017) or Korte, Smith and Li (2018). In their definition, Lindberg, Bohman and Hultén (2017) emphasise speed (*the ability to perceive, act and mobilise quickly under uncertain conditions*). Nadelson et al (2018) have defined the entrepreneurial mindset as the ability to cope with novel situations, to work with others, to perceive failure in a situation, and to connect people and ideas, thereby creating new insights and unederstandings. The definitions of entrepreneurial mindset reveal that some authors have defined it in the context of entrepreneurship, while others have defined it more broadly. However, all definitions emphasise thinking or cognitive processes.

In summary, the entrepreneurial mindset is both an adaptation of thinking and a set of decision making (Naumanni, 2017) and the perception and interpretation of a situation (Korte, Smith, & Li, 2018). It is important to note that the thinking process should be followed by action. Additionally, it is emphasized that both thinking and action take place in an uncertain and constantly changing or dynamic environment (Naumanni, 2017; Sudrajat, 2015). Thus, an entrepreneurial mindset requires alertness to new opportunities (Naumanni, 2017). Nadelson et al. (2018) have defined entrepreneurial mindsets in a more general sense - as the ability to cope with new situations, but require the first to perceive the situation.

An Entrepreneurship Spectrum

Individuals differ in terms of their characteristics and therefore cannot all be expected to have a similar entrepreneurial mindset. According to Nadelson et al (2018), an entrepreneurial mindset can be defined on a spectrum based on its essential components and their application. The authors highlight the following components as the hallmarks of such a spectrum of entrepreneurial mindset:

- Engaging in visionary thinking and creativity;

- Taking advantage of opportunities;
- High levels of motivation, tenacity, and resilience;
- Taking action using innovative or novel approaches;
- Reliance on curiosity;
- Tolerance for ambiguity;
- Calculated risk-taking;
- High levels of self-regulation;
- Constant monitoring of needs and progress toward goals when taking action.

Nadelson et al. (2017) describe three types of entrepreneurial mindsets based on these characteristics. The first type is individuals with a low level of entrepreneurial mindset who are conservative in their approach to innovation, lack curiosity, and do not initiate problem-solving. The second type is individuals with a moderately entrepreneurial mindset who are somewhat more curious, engage in a moderate level of creative problem-solving, and are positioned in the middle of the axis. Thirdly, individuals with a high level of entrepreneurial thinking often employ innovative approaches to problem-solving, seek novelty, exhibit high curiosity, and engage in complex creative problem-solving (see Figure 2).
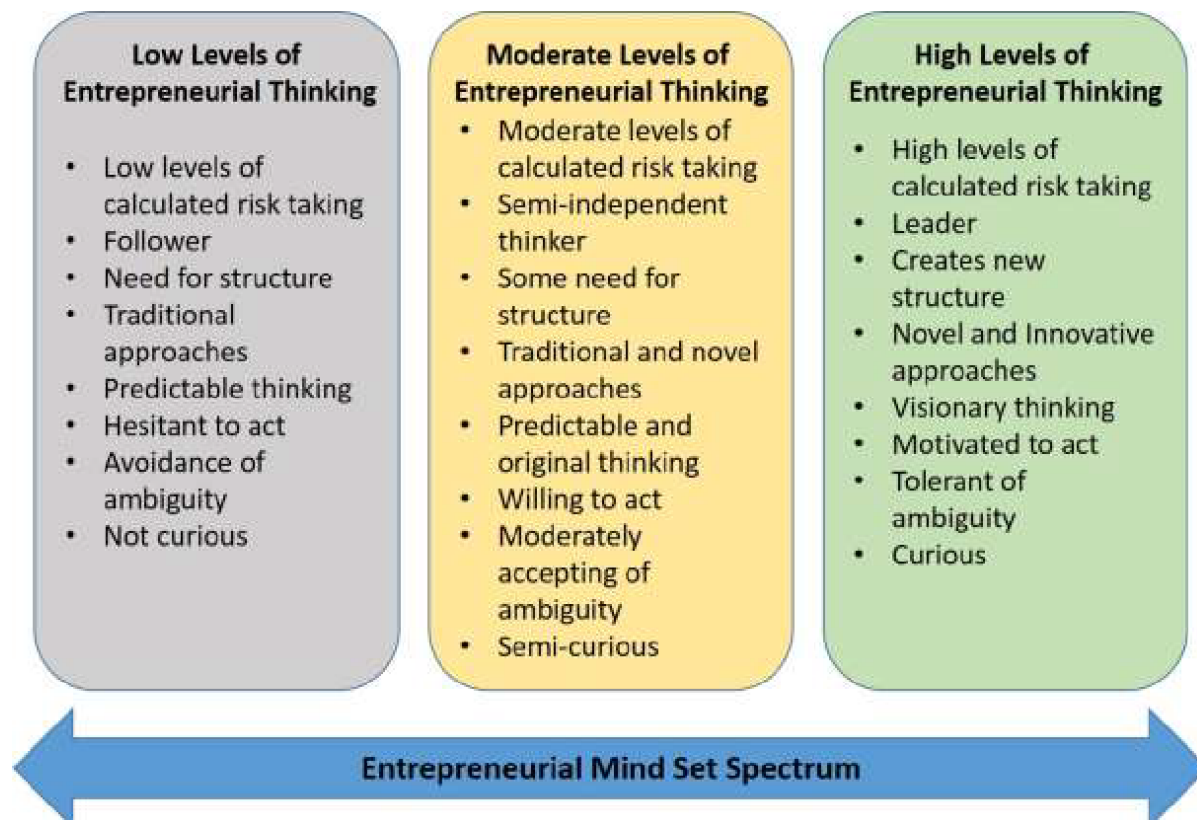

Figure 2. The entrepreneurial mindset spectrum (Nadelson et al., 2017)

A particular person's entrepreneurial mindset on the axis depends on their context and can be linked to their individual characteristics, while being influenced by their cultural background, society and worldview. The level of entrepreneurial mindset can also be influenced by knowledge, as well as lack of commitment (Nadelson et al., 2018). To summarise, an entrepreneurial mindset refers to a person who possesses the necessary characteristics to cope with a complex and fast-changing world, and who is able to skilfully and creatively solve problems. Developing such a mindset requires individuals to cultivate appropriate personal qualities and self-awareness throughout their lives.

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Appendix 3. Customer journey
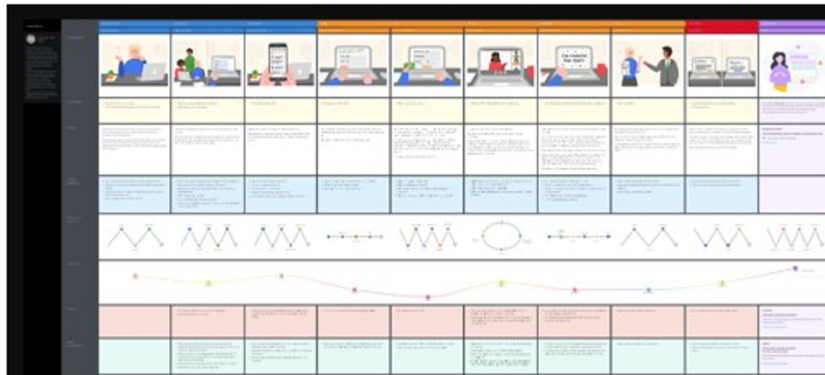
Customer Journey

A customer journey is the sum of all interactions a customer has with a company, from initial **awareness and consideration to purchase, post-purchase support, and advocacy**.

Creating a customer journey map is essential for businesses looking to understand, optimize, and deliver a superior customer experience. It helps align business strategies with customer expectations, leading to increased satisfaction, loyalty, and long-term success.

https://uxpressia.com/blog/wp-content/uploads/2023/08/Online-student-journey-map.png

Why Customer Journey Mapping is Important:

1. **Customer -Centric Focus:** helps align products, services, and processes with customer needs and expectations.

2. **Improved Customer Experience:** Identifies areas for improvement and enhancement in the customer journey. Enables proactive measures to address pain points and enhance positive experiences.

3. **Enhanced Communication:** Improves communication between different departments within a company. Ensures a unified approach to customer interactions.

4. **Increased Customer Satisfaction and Loyalty:** A better understanding of customer needs leads to improved satisfaction. Positive experiences contribute to customer loyalty and advocacy.

5. **Data-Driven Decision Making:** Provides a visual representation of the customer journey based on data and insights. Helps in making informed decisions for marketing, product development, and customer service.

6. **Adaptability to Customer Changes:** Allows businesses to adapt to changes in customer behavior and preferences. Enables companies to stay agile and responsive to evolving customer needs.

Before Customer Journey Mapping:

1. **Define Objectives:** Clearly articulate the goals and objectives of the customer journey mapping exercise. What are you trying to achieve? Improved customer satisfaction, increased sales, or enhanced brand loyalty?

2. **Identify Target Audience:** Determine the specific customer segment or persona for which you are mapping the journey. Different customer groups may have distinct journeys.

3. **Gather Data:** Collect relevant data about customer interactions, behaviors, and feedback. Utilize customer surveys, interviews, analytics, and any existing customer data.

4. **Create Customer Personas:** Develop detailed customer personas representing key segments. Understand their goals, pain points, and preferences.

5. **Define Touchpoints:** Identify all touchpoints where customers interact with your brand. This includes online and offline channels, customer service, social media, and more.

6. **Map Current Processes:** Understand and document existing customer processes, from awareness to postpurchase and support. This provides a baseline for improvement.

Sample
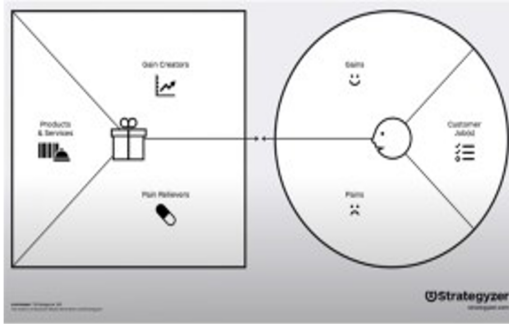
	GET A REQUEST	RESEARCH
	FACE A PROBLEM	FIND A SOLUTION
Persona's goals	Pass an exam	Discover relevant education
Process	Want to get trained on the subject	She starts googleing to learn more about ...courses, asks her ...
Personas questions	Will I be able to pass an exam?	Where can I get trbining on ...? What are the best online courses on this topic? Will I have time to study? Is ...difficult to learn?
Process and channels	Email, Google, Whatsapp	PC, Google, Online ad, Web page, Colleagues
Experience	Frustrating	Frustrating
Problems		Few relevant search results on the first pages. A lack of educational content
Ideas/Opportunities		Populate the website with detailised descriptions and important facts about our course that respond to the most common customer queries.

TOP 5

	Problems	Ideas/Opportunities
1	xxx	xxx
2	xxx	xxx
3	xxx	xxx
4	xxx	xxx
5	xxx	xxx

https://uxpressia.com/blog/wp-content/uploads/2023/08/Online-student-journey-map.png

Creating personas 1(2)

► **1. Define Your Audience:**

Identify the primary users of your math teaching app. Are you targeting students, teachers, parents, or a combination?

► **2. Conduct Research:**

Gather information through surveys, interviews, and market research to understand your potential users.

Identify common characteristics, pain points, and goals related to math education.

► **3. Segment Your Audience:**

Divide your target audience into distinct segments based on demographics, learning styles, and needs.

For example, you might have separate personas for elementary school students, high school students, or adult learners.

► **4. Create Persona Profiles:**

• For each segment, develop a detailed persona profile. Include the following elements:

- • **Name:** Give each persona a name for personalization.
- • **Demographics:** Age, gender, location, grade level, etc.
- • **Background:** Education level, occupation, family status.
- • **Goals and Objectives:** What they hope to achieve with the math teaching app.
- • **Challenges and Pain Points:** Common struggles or difficulties related to math learning.
- • **Learning Style:** Preferred learning methods (visual, auditory, hands-on, etc.).
- • **Technology Proficiency:** Comfort level with digital tools.

The Ultimate Guide to Creating Buyer Personas (2024) - Shopify USA

Creating personas 2(2)

▶ **5. Add Personal Details:**
- Include personal details that humanize your personas. This could include hobbies, interests, and extracurricular activities.
- Consider adding a profile picture to visualize the persona.

▶ **6. Align with App Features:**
- Relate each persona to specific features of your math teaching app that cater to their needs.
- For example, a persona might benefit more from interactive quizzes, while another values progress tracking features.

▶ **7. Iterate Based on Feedback:**
- Share the persona profiles with stakeholders, such as teachers, students, and parents.
- Gather feedback and refine the personas based on real-world insights.

▶ **8. Name Your Personas:**
- Give your personas memorable names that reflect their characteristics. This makes it easier for your team to refer to them during development discussions.

▶ **9. Use Visuals:**
- Create visual representations of your personas, such as infographics or posters, to make them easily accessible to your team.

▶ **10. Incorporate Personas into Design:**
- Ensure that your app's design and features align with the needs and preferences of your personas.
- Test your app with real users and iterate based on their experiences.

8 Steps to Create a Customer Journey:

1. **Define Your Customer Personas:** Identify and understand your target audience. Create detailed personas that represent your different customer segments.

2. **Map Customer Touchpoints:** Identify all the touchpoints where customers interact with your brand. These touchpoints can include websites, social media, customer support, email, and more.

3. **Understand Customer Goals:** Determine the goals and motivations of your customers at each stage of their journey. Recognize the challenges they may face in achieving those goals.

4. **Create a Timeline:** Map out the chronological order of interactions from awareness to post-purchase. Understand the natural progression of the customer's experience.

5. **Identify Pain Points:** Pinpoint areas where customers may face challenges, confusion, or dissatisfaction. Consider how you can address these pain points and turn them into positive experiences.

6. **Highlight Positive Moments:** Identify moments in the journey where customers have positive experiences. Understand what contributes to customer satisfaction and loyalty.

7. **Integrate Customer Feedback:** Use customer feedback, surveys, and reviews to understand their experiences. Incorporate insights into your customer journey map for continuous improvement.

8. **Optimize Cross-Channel Consistency:** Ensure a consistent experience across all channels and touchpoints. Maintain a unified brand image and messaging.

Awareness, consideration, purchase, post-purchase, advocacy.

	GET A REQUEST	RESEARCH	CONSIDER	JOIN	PAY	LEARN	ESTIMATE	FINISH	FEEDBACK
Persona´s goals									
Process									
Personas questions									
Process and channels									
Experience									
Problems									
Ideas/Opportunities									

TOP 5

	Problems	Ideas/Opportunities
1	xxx	xxx
2	xxx	xxx
3	xxx	xxx
4	xxx	xxx
5	xxx	xxx

Sample

	GET A REQUEST	RESEARCH	CONSIDER
	FACE A PROBLEM	FIND A SOLUTION	ANALYZE OPTIONS
Persona´s goals	Pass an exam	Discover relevant education options	Pick the optimal option
Process	Want to get trained on the subject	She starts googleing to learn more about ...courses, asks her ... to	C searches for this ...course, finds and
Personas questions	Will I be able to pass an exam?	Where can I get training on ...? What are the best online courses on this topic? Will I have time to study? Is ...difficult to learn?	How much does this course cost? Is it really worth the money? When does the course start? Is this course best
	Email, Google, Whatsapp	PC, Google, Online ad, Web page, Colleagues	Laptop, Google, Webpage, Smartphone, Review site
Process and channels			
Experience	Please choose...	Please choose...	Please choose...
Problems		Few relevant search results on the first pages. A lack of educational content	Competitors use our branded queries in Google Ads to draw
Ideas/Opportunities		Populate the website with detailsed descriptions and important facts about our course that respond to the most common customer queries. Publish some articles on our blog to	Run a Google Ads campaign for our web pages based on differnt types of search queries. Use alternative social

Sample

	JOIN	PAY	LEARN	ESTIMATE	FINISH	FEEDBACK
	SIGN UP FOR A COURSE	PAY FOR A COURSE	TAKE A COURSE	TAKE AN ASSESSMENT	GET A CERTIFICATE	GIVE FEEDBACK
Persona´s goals	Register to the course	Gain access to the course	Get trained	Get certified as	Get a certificate	Share experience
Process	C decides to apply to the course recommended	On her confirmation email, there's a link to the	C takes the course on… She	C has taken the course. She needs to pass the	After passing the test, C gets an email	C writes a LinkedIn post
Personas questions	How do I know that the registration is successful? Where is my confirmation email? How will I learn if I	How can I pay for the course? Will I be able to pay on time? Where can I find out about alternative methods of payment?	Will they provide me with all the necessary information or	Will I be able to get the test done in time? Who will help me in case of a technical glitch? What if I don´t	Am I allowed to consult after the exam? How soon will I get the certificate to be	How do I share my opinion about the course?
	PC, Web page, Web form, Email	Email, Webpabe,webform,	Zoom, Educational Platform	PC, Educational platform, phone, Manager, laptop	Email, Phone, Manager	PC, LinkedIn, Laptop, Review site
Process and channels **Experience**	Please choose…	Please choose…	Please choose…	Please choose…	Please choose…	Please choose…
Problems	A confirmation email arrives with a lengthy delay	Online payment is glitchy	Too short sessions with a tutor make it	No second try to pass the exam on the same day because of the	No printed certificates for students	No company' d pages on major social media.
Ideas/Opportunities	Send confirmation emails to new students as soon as we receive their registration details. Automate this	Conduct a website audit to detect technical errors. Add more payment options for example PayPal	Have the number of students in one group (up to 8 people per	Provide each student with instructions before the exam day to explain what to do in case of any technical	Add a paper certificate as a paid option	Create company's pages on all major socials medias. Monitor all company's

During Customer Journey Mapping:

1. **Workshop or Brainstorming Session:** Bring together cross-functional teams involved in customer touchpoints.Conduct a workshop to brainstorm and map out the customer journey collaboratively.

2. **Create Customer Journey Map:** Develop a visual representation of the customer journey. Use diagrams, flowcharts, or other visualization tools to illustrate each touchpoint and stage.

3. **Define Customer Stages:** Clearly outline the stages of the customer journey, such as awareness, consideration, purchase, post-purchase, and advocacy.

4. **Identify Emotions and Pain Points:** Pinpoint customer emotions at each stage. Identify pain points, moments of delight, and areas that need improvement.

5. **Collate Feedback:** Gather input from various stakeholders, including frontline employees and customers.Ensure the accuracy and completeness of the journey map.

After Customer Journey Mapping:

1. **Prioritize Improvements:** Identify key pain points and areas that need improvement. Prioritize these based on impact and feasibility.

2. **Develop Solutions:** Work on solutions to address identified pain points and enhance positive touchpoints. This may involve process changes, technology upgrades, or communication improvements.

3. **Implement Changes:** Roll out changes in stages, monitoring the impact on the customer journey. This could include updates to websites, customer service protocols, or marketing strategies.

4. **Employee Training:** Train employees involved in customer touchpoints about the updated processes and expectations.

5. **Measure and Analyze:** Implement metrics to measure the effectiveness of changes. Track customer satisfaction, retention rates, and other relevant KPIs.

6. **Iterate and Refine:** Continuously revisit the customer journey map based on new data and feedback. Iterate and refine the map as the business evolves and customer expectations change.

7. **Communication:** Communicate changes to both internal teams and customers. Transparent communication helps manage expectations.

8. **Feedback Loop:** Establish a feedback loop to continuously gather insights from customers and employees. Use this feedback to inform future iterations of the customer journey map.

THANK YOU!

Appendix 4. Learning and teaching resources

- Bland, J. D. & Osterwalder, A. (2019). Testing Business Ideas. Wiley.
- Design Thinking for Educators (s.a.) 2nd edition. IDEO https://f.hubspotusercontent30.net/hubfs/6474038/Design%20for%20Learning/IDEO_DT Edu_v2_toolkit+workbook.pdf
- Naumann, C. (2017). Entrepreneurial Mindset: A Synthetic Literature Review. Entrepreneurial Business and Economics Review, 5(3), 149-172. http://doi.org/10.15678/EBER.2017.050308
- Nadelson, L. S, Nageswaran Palmer, A. D., Benton, T., Basnet, R.,Bissonnette, M., Cantwell, L., Jouflas, G., Elliott, E., Fromm, M., & Lanci, S. (2018). Developing Next Generation of Innovators: Teaching Entrepreneurial Mindset Elements across Disciplines. International Journal of Higher Education, 7(5). https://doi.org/10.5430/ijhe.v7n5p114
- Pigneur, Y. & Osterwalder, A. (2013). Business model generation. John Wiley & Sons.
- Readandgain.com https://readandgain.com/2022/07/05/4w1h-5w1h-with-examples/
- Value proposition canvas https://www.strategyzer.com/library/the-value-proposition-canvas
- What is a One-Pager in Business: Types, Templates & Tools. https://www.storydoc.com/blog/what-is-a-one-pager
- One-pager. Example from MobiLab: MobiLab One-Pager
- One-pager. Example from Multikey: Multikey One-Pager

Videos

- Team Building https://www.youtube.com/watch?v=eH1zY6rk3R0
- Networking https://www.youtube.com/watch?v=AEozFw4Bmhg
- Tips to start creating your personal brand https://www.youtube.com/watch?v=G0cGfBkc6tU
- Practical steps to begin innovating https://www.youtube.com/watch?v=E84mK675coQ
- Innovation in Business: How City of Tallinn supports new innovations https://www.youtube.com/watch?v=G9J6TiVFpgc
- Design Thinking https://www.youtube.com/watch?v=c5FC07aaNbY
- How to develop my business idea https://www.youtube.com/watch?v=Ia688naGyF8
- AI https://www.youtube.com/watch?v=E0_kCR4ZqCI
- AI and Intellectual Property Rights https://www.youtube.com/watch?v=KqSBjqyPYcw
- Studying with AI https://www.youtube.com/watch?v=aYu4UCXwmqo
- 3 Productivity methods https://www.youtube.com/watch?v=HxoLnsnZ9Po
- How to fill in Business Model Canvas https://www.youtube.com/watch?v=d0rz-ix0Vtk

- Video lecture by Tomáš Doležal: [The Use of AI in Education. Exploring Different Types of AI Applications in Education](#)
- Video lecture by Luis Peña Sánchez: [Generating Ideas to Solve EdTech Enterprise Challenges in Teams. Basic Principles of Idea Validation](#)

Additional resources for crafting your pitch:
- [The Secret to Successfully Pitching an Idea | The Way We Work, a TED series](#)
- [How to Start a Pitch or Presentation](#)
- [How to Give the Perfect Pitch - with TedX speech coach David Beckett](#)
- [Pitch 90 1st place](#)
- 14 pitches presented on the TLU stage on November 17.2024:
  https://www.youtube.com/watch?v=RI9v7KF7sLg (starting at the 22-minute mark)