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**INSTRUCTOR COMPETENCIES FOR (NON-DIGITAL) GAME-BASED
LEARNING ON ENTREPRENEURSHIP BASED ON THE EXAMPLE OF
ENTREPRISE VILLAGE NPO**

Master's thesis

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I have written this master's thesis independently. All viewpoints of other authors, literary sources and data from elsewhere used for writing this paper have been referenced.

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Abstract

Entrepreneurial capabilities are accepted as part of the key competencies for lifelong learning by the European Parliament. One of the ways to give a more practical approach to learning entrepreneurship is by using game-based learning. It has been established that the instructor plays a critical role in the success of game-based learning. However, the needed instructor competencies for this approach have not been thoroughly researched. This thesis examined the instructor competencies for (non-digital) game-based learning on entrepreneurship based on the example of Entreprise Village NPO. Using the qualitative research approach, inductive and deductive methods and thematic analysis, a thorough literature review of instructor's competencies in game-based learning and entrepreneurship education was followed by interviewing five instructors of the Entreprise Village NPO. As a result, the competencies needed for instructing game-based learning on entrepreneurship were mapped throughout four phases of the learning process and the distinction of which competencies are needed in a certain phase became more clear. Several new competencies were deemed necessary, such as the skill of observation and the attitudes of growth mindset, open mindedness and encouragement.

Keywords: educational games, entrepreneurship education, non-formal education, competence, educators

Lühikokkuvõte

Ettevõtlusalased võimekused on Euroopa Parlamendi poolt loetud elukestva õppe võtmepädevuste hulka. Üks viis, kuidas muuta ettevõtlusõpet praktilisemaks, on mängupõhise õppe kasutamine. On tõestatud, et juhendaja mängib olulist rolli mängupõhise õppe edukuses. Sellegipoolest ei ole selle lähenemise jaoks vajalikke juhendaja pädevusi veel põhjalikult uuritud. Käesolev lõputöö uuris (mitte-digitaalse) mängupõhise õppe läbiviimiseks vajalikke juhendaja kompetentse Ettevõtlusküla MTÜ näitel. Kasutades kvalitatiivset uurimisviisi, induktiivseid ja deduktiivseid meetodeid ja temaatilist analüüsi, viidi läbi põhjalik kirjanduse analüüs mängupõhise ja ettevõtlusõppe teemadel, millele järgnes viie Ettevõtlusküla MTÜ juhendaja intervjuerimine. Tulemusena kaardistati mängupõhise ettevõtlusõppe läbiviimiseks vajalikud juhendaja kompetentsid läbi nelja õppefaasi ja selgemaks sai see, milliseid pädevusi on teatud faasis vaja. Välja joonistusi ka mitmed uued kompetentsid nagu vaatlemisoskus, arenguuskumus, avatud mõtlemine ja julgustamine.

Võtmesõnad: õppemängud, ettevõtlusharidus, mitteformaalne haridus, kompetentsus, koolitajad

Table of Contents

1. Introduction	5
2. Literature review	8
2.1 Game-based learning and instructor's role in it	8
2.2 Entrepreneurship education and instructor's role in it	10
2.3 Comparison of instructor's competencies in GBL and entrepreneurship education	12
3. Methodology	17
3.1 Enterprise Village and Entrepreneurial Citizen	17
3.2 Data sources and collection	20
3.3 Analysis	21
4. Results and discussion	23
4.1 Orientation phase	24
4.2 Creation phase	26
4.3 Play phase	27
4.4 Elaboration phase	29
4.5 The changing role of the instructor	31
4.6 Overarching competencies	33
4.6.1 Encouraging freedom	33
4.6.2 Open mindedness	34
4.6.3 Growth mindset	36
4.7 Updated overview of instructor's competencies	37
5. Conclusion and limitations	39
References	40
Appendix 1: Interview guide	44
Appendix 2: Example of a competences ranking board in the Miro platform	50

1. Introduction

In order to ensure resilience and ability to adapt to the changing environment, entrepreneurial competencies are considered increasingly important and are accepted as part of the key competencies for lifelong learning by the European Parliament (Council of the European Union, 2018; Crick, 2008). According to the recommendation made by the Council of the European Union, the member states should nurture the entrepreneurship competence, encouraging young learners to undertake practical entrepreneurial experiences already during their school education.

One of the ways to give a more practical approach to learning entrepreneurship is by using game-based learning (GBL), which can be defined as a type of gameplay which incorporates defined learning objectives (Plass et al., 2015; Nadolny et al., 2020). The importance of play in learning has been acknowledged by renowned psychologists like Vygotsky (1980) and Piaget (1962). According to Plass, Homer and Kinzer the benefits of GBL include wide varieties of ways to engage learners, such as game's storyline, activities and characters can enhance cognitive, affective, behavioural and sociocultural engagement and keep the learner interlocked for a longer period of time. GBL also incorporates adaptability and personalisation, which can make the learner connect the game more to their personal real-life situation. GBL can be used in various learning situations which call for behaviour modification or understanding complex domains (Whitton, 2012), thus making it a useful tool for helping to grasp the entrepreneurship process. Additionally, educational games allow for graceful failure, as failure is introduced by design and illustrated as a normal step in the learning process (Plass et al., 2015).

The research on GBL is conducted mainly based on digital games, while there is not that much literature about using non-digital games in learning environments (Morelock, 2018; Nousiainen et al., 2018). Furthermore, the role of instructors and the needed competencies for conducting GBL have been deficiently represented in GBL literature, while they are seen as crucial learning catalysts when it comes to GBL (Foster et al., 2016). Instructor competence can be viewed as a multilayered concept comprising cognitive, skill-based and affective components which can be concluded as the following three aspects: knowledge, skills and attitudes (Council of the European Union, 2018). There is also a lack of overarching

empirical research on game-based learning being used in entrepreneurship education and thus also the competencies needed for the instructor for facilitating such an approach.

Thus, the aim of this thesis is to establish what kind of competencies are needed for instructing (non-digital) game-based learning on entrepreneurship based on the example of Enterprise Village NPO. The aim is to be achieved through the following research questions.

Research Task 1: Giving an overview of game-based learning process and entrepreneurship process.

Research Question 1: What kind of competencies are needed for instructing game-based learning and entrepreneurship education based on previous research?

Research Question 2: What kind of competencies are needed for instructing (non-digital) game-based learning on entrepreneurship based on the example of Enterprise Village NPO?

Research Question 3: Which competencies do the instructors need in different parts of the learning process?

First of all, in pursuance of creating a comprehension of the background of the topic the terms of game-based learning and entrepreneurship process as well as the related educational approaches will be examined with Research Task 1. Secondly, the already mapped competencies for instructing both GBL and entrepreneurship learning will be explored in order to build upon them for further research (RQ1). Subsequently, the pre-mapped competencies will be clarified and potentially new ones mapped based on the real-life example of Enterprise Village NPO (RQ2) and finally a better understanding of the competencies throughout the learning process is created by figuring out which competencies are needed in different parts of the learning process (RQ3).

Research Task 1 and Research Question (RQ) 1 will be achieved through reviewing the existing literature on game-based learning, entrepreneurship education and competencies for instructing the learning process. A list of competencies will be prepared as the outcome. RQ2 will be achieved through conducting interviews with the instructors working at the Enterprise Village NPO, gathering their view on which competencies they need and use the most while conducting game-based learning. RQ3 will be achieved by conducting thematic analysis on the data gathered from the interviews and comparing it to the mapped competencies from prior literature.

The thesis consists of a literature review giving an overview of what is game-based learning and the role of the instructor in such an approach, what is entrepreneurship education and the role of the instructor in it, followed by a comparison of needed competencies for instructors in both. This is followed by the description of the methodology used for gathering and analysing data. Subsequently the overview of the results that were discovered during the analysis will be given, followed by a discussion and conclusion.

2. Literature review

2.1. Game-based learning and instructor's role in it

Game-based learning (GBL) can be defined as learning facilitated by the use of a game (Whitton, 2012) or a type of gameplay which incorporates defined learning objectives (Plass et al., 2015; Nadolny et al., 2020). Game-based learning encompasses the development in the following aspects: cognitive, affective, motivational, and sociocultural, thus making GBL a complex learning environment (Plass et al., 2015; Nadolny et al., 2020; Boyle et al., 2016). In order for games to achieve their potential for learning, all these perspectives have to be taken into account, with specific emphasis depending upon the intention and design of the learning game (Plass et al., 2015). GBL can provide the possibility for interaction, which is a crucial component of an effective learning process, as it supports the learner in assessing their point of view, identifying mistakes and adjusting their way of thinking (Whitton, 2012). Thus, it can be said that GBL is a multifaceted approach to learning, which can potentially facilitate the development of various different competencies besides just acquiring knowledge.

In order to better orient in the miscellaneous nuances of the GBL process Nousiainen, Kangas and Rikala (2018) divide the game-based learning process into four phases: orientation, creation, play and elaboration. Orientation phase focuses on creating a knowledge base with students, focusing on exploring the learning goals and the methods, tools and games used. Creation phase focuses on collaborative knowledge construction and creative problem-solving. Play phase focuses on implementing playful and gameful processes, guiding and tutoring during the gameplay. Elaboration phase focuses on reflecting on and evaluating the learning processes and outcomes with the students. (Nousiainen et al., 2018) These phases somewhat correspond to the Experiential Learning Theory (ELT) by Kolb, which portrays two ways of grasping experience - Concrete Experience and Abstract Conceptualisation - and two ways of transforming experience - Reflective Observation and Active Experimentation (Kolb et al., 2001). The creation and play phases provide players with concrete experience, while the elaboration phase provides place for reflective observation and abstract conceptualisation. In case of iterating the GBL process and repeating the play and elaboration phases several times, the next play phase can provide the place for active experimentation on the learning points conceptualised during the elaboration phase.

In order for GBL to have maximised benefits the game should be within a player's zone of proximal development (Plass et al., 2015). Zone of proximal development (ZPD) is a concept by Lev Vygotsky (1978), which can be defined as the distance between the actual level of development as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers (Margolis, 2020). This means that in order to have a meaningful learning experience technologies and games on their own are not enough. The concept of the instructor's role and competencies is crucial in successful achievement of learning outcomes during GBL (Nousiainen et al., 2018; Rikala, 2015).

The instructor's role in GBL can vary from a leader to a facilitator and from an organiser and planner of learning processes to a guide and a tutor during the game-play sessions, depending on the learning goals and the game context (Nousiainen et al., 2018). In the following Table 1 the instructor roles during the GBL process described by different authors are illustrated.

Table 1

Instructor roles in GBL (composed by the author based on Hanghøj and Brund, 2010; Kangas et al., 2017; Marklund and Alklind Taylor, 2015).

GBL phase	Orientation	Creation	Play	Elaboration
Author(s)				
Hanghøj and Brund	Instructor	Playmaker	Guide	Explorer
Kangas	Planner, organiser	Leader, communicator	Tutor	Facilitator
Marklund and Alklind Taylor	Authority and enforcer of educational models	Gaming tutor		Subject matter anchor

Hanghøj and Brund (2010) describe four teacher roles in GBL as the instructor, playmaker, guide and explorer. Instructor involves planning and communication; the playmaker communicates tasks, roles, goals and dynamics of the current game. The guide supports learners during gameplay, and the explorer understands, probes and facilitates reflection on learners' gameplay experiences. Kangas et al., 2017 characterise the role of the instructor in the beginning of the GBL process as a planner and organiser with an aim to build a meaningful and holistic learning experience, which fits well with the description of *instructor* role by Hanghøj. This is followed by the role of a leader and communicator, which supports

the further onboarding into the rules and goals of the game as does Hanghøj's *playmaker*. During the play phase, the instructor should adopt the role of a tutor (similar to Hanghøj's *guide*), who scaffolds and guides learners by asking relevant questions and finally amid the elaboration phase the instructor takes on the role of a facilitator to guide the reflection and extraction of learning points, which definition is fitting with Hanghøj's *explorer*. Furthermore, Marklund and Alklind Taylor (2015) describe one of the instructor roles as a gaming tutor, who guides and supports the gameplay experience of the students and helps them with technical aspects, which coincides by the role of tutor described by Kangas and the role of guide according to Hanghøj & Brund, however adding the aspect of technical support. Another role described by Marklund and Alklind Taylor is authority and enforcer of educational modes which refers to educational framing of the gaming activity fitting well at the start of the GBL process but in some instances being needed also in the midst of play and referring to situations which need instructor's intervention. Ultimately, they also describe the teacher as a subject matter anchor who helps to draw connections between the game content and real subject matter as does Hanghøj's *explorer* and Kangas' *facilitator*. Hence, it is visible that the roles of the instructor can be illustrated with different terms, however, all in all they refer to similar behaviours required in the four phases of GBL.

2.2. Entrepreneurship education and instructor's role in it

Entrepreneurship can be described as an action-oriented process comprising identification, assessment and implementation of business opportunities, where ideas are exploited, and the reality can change as a consequence of these actions (Nielsen, 2012; Kyro, 2008). The entrepreneurial process can be defined as the cognitive and behavioural steps from the initial conception of a rough business idea until the process has led to an up and running business venture with regular sales or is terminated (Mets et al., 2019).

The entrepreneurial process consists of the following stages (Baron & Shane, 2004): opportunity recognition; initial decision to continue; assembling the required resources; actual launch of the new venture; building a successful business and collecting the rewards. Mets et al. (2019) describe the stages of the entrepreneurial process similarly while adding a preliminary stage of propositions:

1st stage - Propositions - consists of (prior) knowledge, motivation, skills, and capabilities. Together with perceived opportunity and intention, one can move into the next stage.

2nd stage - Idea development - consists of social needs, problems, goal(s), creativity, intellectual capital, and social assets. By the end of this stage, the problem to be solved is clearly defined and opportunity is filtered.

3rd stage - Concept development - focuses on the 4P-s marketing concept¹, product or service, research, and development (R&D), business model, intelligence, intellectual property (IP), and available resources. The main activity in this stage is to develop and test the business model – it should combine marketing-mix, capabilities and different venture resources it has itself or can use. Moreover, this stage focuses on market testing – the best way is to involve customers and have direct feedback and have an impact on the product-development process. At the end of this stage, there should be more confidence in the value proposition and business model in general.

4th stage - Business development - this stage focuses on strategy, team leadership, human and accumulated resources and legal issues. At the end of this stage, venture launch and further opportunity exploitation are possible results.

The role of the instructor in the process of learning entrepreneurship in today's world differs from the earlier learning paradigms that are still visible in formal education, where the teacher takes a more lecturial approach (Kyro, 2008). Some countries with a reputation for more innovative education, like Finland, already show the growing popularity of using interactive methods like practical projects and groupwork (Ruskovaara et al., 2010). Overall, there is still a large focus on more traditional methods like expert lectures, business plan creation and case studies in formal education (Kyro, 2008; Mwasalwiba, 2010). Considering entrepreneurship education, the actions of learners have been found to be more crucial than the ideas of teachers and henceforth the entrepreneurship education should focus on supporting learners in defining their own goals (potentially with the help of their co-learners), taking action and reflecting. Instructors wanting to introduce learners to creativity and innovation must also reflect this in the pedagogical methods used, including active learning methods and be ready to acknowledge that learning should take place outside of the classroom as well (Carrier, 2007; Kyro, 2008).

¹ 4P-s marketing concept refers to product, price, promotion and place as elements of the marketing mix (McCarthy, 1971)

2.3. Comparison of instructor's competencies in GBL and entrepreneurship education

Besides being a multilayered concept consisting of knowledge, skills and attitudes, instructor competence can be defined as a context-bound and process-oriented concept, depending on the learning environment and contextual factors such as learning goals, social environment and resources (Nousiainen et al., 2018). In order to illustrate the similarities and differences in the instructor's competencies in game-based learning and entrepreneurship education the following table was constructed. The cells in blue show the competencies that are also described as important for an entrepreneurship educator.

Table 2

Competencies of GBL and entrepreneurship education instructors (comprised by the author using Hanghøj & Brund, 2010; Hirumi et al., 2010; Kangas et al., 2017; Kyro, 2008; Nikitina et al., 2020; Nousiainen et al., 2018)

Experiential Learning Theory phase		Concrete experience	Concrete experience, active experimentation	Reflective observation, abstract conceptualisation
Game-based learning phase	Orientation	Creation	Play	Elaboration
Instructor's role	Instructor, planner, organiser	Playmaker, leader	Guide, tutor	Explorer, facilitator
Instructor's competencies	(curriculum-based) planning	presenting instruction	providing practice	facilitating reflection and discussion
	gaining attention	tutoring/guiding		helping learners recall prior knowledge
	informing learners of the objective	communicating tasks, roles, goals and dynamics	coaching	assessment
	helping learners recall prior knowledge			creative orientation to self-development
	analysing games and technological tools			providing feedback
				enhancing retention and transfer
	overcoming technology-related obstacles			
	sharing and co-development within the school or organisation/outside			
	playful stance			
	ability to explore and improvise			

Moreover, the following competencies were described necessary for the entrepreneurship education instructor (Kyro, 2008; Nikitina et al., 2020):

- delegating;
- sense of initiative;
- risk-taking;
- ability to turn ideas into action;
- judgement about the appropriateness of instructor's participation;
- initiating discussion;
- knowledge about entrepreneurial process;
- respecting the learner's right, freedom (and duty) to decide and act;
- supporting collaborative learning while considering individual differences.

Some of the challenges of implementing game-based learning can illustrate the necessary competencies for GBL instructors. According to Kangas (2010), the learning activities in GBL need a lot of creative collaboration and common decision making at the group level. The instructors in their study faced difficulties with giving up control on planning of lessons, learning and play processes. Challenges were also linked to the fact that GBL is very learner centric and requires a lot of tutoring and guiding for the knowledge co-creation. Keeping attention and staying focused throughout the whole process, being able to draw out cause-and-effect relationships were also mentioned as demanding. One of the main disputes was finding the balance between not supporting the learners enough and over-tutoring. Additionally, deciding in which situations it is helpful or harmful to interrupt the gameplay can be challenging for the instructors (Watson et al., 2011). The instructor's role is described as especially important in the planning and elaboration phases.

The study by Nousiainen, Kangas and Rikala identified four main competence areas for the instructors of game-based learning: pedagogical, technological, collaborative and creative (Nousiainen et al., 2018). As stated in their paper, curriculum-based planning, tutoring and assessment fit into the pedagogical competence area. Teachers need to be able to relate the GBL activities to the curriculum and understand the strengths and limitations of using the GBL approach for a certain topic. Ideally, the instructor is also able to include learners into the planning process and while having predefined broader goals for the learning activity, allowing learners to participate in defining more specific methods and learning contexts. In

terms of Entrepreneurship Education, it is crucial that besides goals regarding cognitive aspects of learning also conative (like strive and impulse) and affective aspects (like feelings and mood) are planned into the learning process (Kyro, 2008).

Tutoring competencies refer to guiding the learning process during game-based activities, including applying motivational techniques, personalising activities and changing the degree of student responsibility in order to provide maximal learning and growth (Hyvönen & Ruokamo, 2005; Nousiainen et al., 2018). In game-based learning the students should be the ones to mainly take responsibility for acquiring the information they need (Kyro, 2008). Nevertheless, acknowledging the so-called teachable moments and interactional situations where the teacher guides students' learning process to deepen their understanding of the topic and further progress in the game can be considered an important aspect of the tutoring competence (Watson et al., 2011). When needing to introduce complex rules, the tutoring or guiding approach may be needed from the instructor. The instructor can decide how much the rules should be directly communicated or how much to let the learners discover the rules by themselves. In the latter case, using questions and taking a more coaching approach can be a helpful tool in order to make the learning process more efficient (Gagne, 1974; Nikitina et al., 2020).

Assessment competencies refer both to assessing students' learning outcomes and reflecting on the process with them (i.e. elaboration) (Nousiainen et al., 2018). Assessing the achievement learning outcomes and communicating the results to the learner is considered a crucial and frequent requirement of the instructional process. This process can be done either formally or informally by the instructor (Gagne, 1974). One of the most challenging aspects of assessment in GBL is for the instructors to gather enough relevant evidence for assessment by their observations during the play phase. Kirkpatrick (1967) presents a four level learning evaluation framework starting from the learner's reaction to the instruction, assessing the fulfillment learning outcomes, assessing the extent the learner implements what they learnt and changes their behaviour accordingly and assessing results in a bigger scale such as organisational or classroom benefits. Out of these only the first two levels are possible to assess right after the learning event has taken place, while the last two need to be assessed in a longer timeframe (Kaufman & Keller, 1994).

Presenting instruction and providing feedback which are described among the nine events of instruction by Gagne (1974), can thus also be considered pedagogical competencies. Presenting instruction means introducing the steps to be taken in the learning process and in case of game-based learning introducing the characters, environment, objects, puzzles and obstacles and conversation arranged by the goals of the game (Hirumi et al., 2010). Providing feedback focuses on reinforcing ideas and conforming student assessment of correct performance based on application of information (Zhu & St. Amant, 2010). An interesting aspect to keep in mind is that in game-based learning every action of the learner has immediate feedback during the play phase, even if that feedback is that nothing happens (Hirumi et al., 2010). Similar phenomenon can occur in Entrepreneurship Education as the next stage in the Entrepreneurship Process can give feedback to the success of the previous one (Mets et al., 2013). This illustrates another overlap in the entrepreneurial and game-based learning process.

The concept of reflection on an event or activity and following analysis is considered the cornerstone of experiential learning, ergo facilitating reflection can be considered a crucial skill both for GBL and Entrepreneurship Education instructors (Greenaway, 2018; Nikitina et al. 2020; Nousiainen et al., 2018). Even though reflection can happen without external guidance, not everyone is naturally capable of analysing, making sense and assimilating learning experiences on their own. The attempt to bridge this natural gap between experiencing an event and making sense of it led to the evolution of the concept of “post-experience analysis” or debriefing (Fanning & Gaba, 2007; Greenaway, 2018). Instructors can generate trust in the group by sharing their own genuine reactions, thoughts and struggles, while remaining objective and non-defensive towards criticism (Levesque, 2021).

Furthermore, communication, gaining attention, informing of the objective, helping learners recall prior knowledge, presenting instruction, communicating tasks, roles, goals and dynamics, providing practice and enhancing retention and transfer are also fitting in the pedagogical competence area. Technological competencies include analysing games and technological tools and overcoming technology-related obstacles. Sharing and co-development within the school/outside falls into the collaborative competence area according to Nousiainen et al. Based on their research, instructors still have a lot to develop in this area, as even with the increased amount of teamwork the willingness to share among

colleagues and other organisations was still rather low. The main sub-competencies brought out under this included openness to new approaches, finding other instructors and experts with the necessary knowledge, sharing materials and co-creating new solutions with them. Collaboration between instructors, students, parents and other professional and educational organisations is also considered a crucial part of Entrepreneurship Education, which also seems to be lacking in the formal education scenery (Seikkula-Leino et al., 2010).

The ability to explore and improvise is described under the creative competence area by Nousiainen et al. This means experimenting with new tools and methods without worrying about failure, feeling comfortable to improvise on the go and to seek activities which feel natural and motivating. As mentioned by Carrier (2007), entrepreneurship instructor's teaching methods should also reflect creativity, innovation and experimentative mindset.

3. Methodology

The thesis used a combination of inductive and deductive methodologies by including review of previous literature together with empirical research using comparison and assessment of fit with theory after data collection. The data gathering and analysis was done using qualitative methods by conducting interviews and combining theory and real-life practices to make innovative advances. The study by Nousiainen et al. mapping the teacher competencies in game-based pedagogy, used qualitative content analysis for analysing documents gathered from teachers and input from interviews. This thesis used the method of thematic analysis, which is similar to qualitative content analysis but adds the dimension of looking at latent content in addition to the manifest content in order to also pay attention to the hidden underlying meanings (Vaismoradi et al., 2013).

3.1. Enterprise Village and Entrepreneurial Citizen

The interviews are conducted with the instructors and managers of Enterprise Village² NPO. Enterprise Village is a non-profit organisation based in Tartu, Estonia, dedicated to developing the entrepreneurial skills and attitude in youth by using game-based learning. There are four different educational games based on the age group starting from the kindergarten up to the end of high school. The games feature a varying level of detail and difficulty based on the age group and are easily adjustable to diverging circumstances. Additionally, they are focused on different parts of the entrepreneurship process. Below, Table 3 shows the overview of the games, their age groups and main goals.

² This is an unofficial translation of the name of the organisation. The original name in Estonian is Ettevõtusküla MTÜ. More information in Estonian language can be found in the website of Enterprise Village: <https://ettevotluskyla.ee/>

Table 3

Educational games of Entreprise Village

Game	Age group	Main learning goal
My Money	5-9	Players understand what money is and how it works
Entrepreneurial Family	7-12	Players understand how a family business works, how to save money and what makes teamwork successful
Entrepreneurial Citizen	12-16	Players understand how an enterprise works, what are taxes and what does the state do with the money
Business Battle	13+	Players understand the first stages of the entrepreneurial process

The first game is called My Money, which is meant for 5-9 year old children and it helps them understand what money is and how it works. The second game is called Entrepreneurial Family and it is focused on 7-12 year-olds, explaining to them how a family business works, how to save money and what makes teamwork successful. The third game called Entrepreneurial Citizen is for the age group 12-16 and aims to explain how an enterprise works, what are taxes and what does the state do with the money. The fourth game called Business Battle is meant for the age group 13+ and focuses on the first stages of the entrepreneurial process by practicing coming up with a business idea, forming it into a product, setting the price and trying to sell it.

This research focuses on instructing the game meant for the age group 12-16 - Entrepreneurial Citizen (EC), as this is the most commonly ordered game and most of the current instructors have experience in facilitating it several times. The main aim of this game is to create an environment which fosters entrepreneurial aptitudes development, supports using entrepreneurship terms and additionally develops social, communication and mathematical skills. Self-definition competencies are also indirectly addressed in the gameplay.

The specific learning objectives of Entrepreneurial Citizen, as described in the instructor's handout, are the following:

- the player understands what is an enterprise and what are its main goals;
- the player is able to bring examples of sources of revenue and sources of expense;
- the player is able to utilise the help of the team to achieve success;
- the player is able to communicate in an unexpected and new situation;

- the player is able to document the incomes and expenses of a company in a simplified way;
- the player is able to create payroll in a simplified way;
- the player understands state's role in companies' and citizens' activities;
- the player understands the impact of the contribution of enterprises into the society and the contribution of team into the enterprise;
- the player is able to serve clients and make transactions in a simplified way.

In one game, there are usually around 20-30 participants, one head facilitator and four instructors, which the Enterprise Village also refers to as facilitators. The participants will be divided into 6-7 teams, each team getting to lead a different enterprise (the bank, the manufacturing plant, the media house, the clinic, the beauty parlor, the shopping mall or the city government). The game is divided into the following phases: a general introduction with the whole group, specific introduction in the teams, three activity periods (play months), each followed by a team reflection (company meeting), and a reflection with the whole group at the end of the game. The role of the head facilitator is to make the general introduction for the whole group, divide players into teams, keep the time, overview and support the instructors and deal with special circumstances coming up in the game. At the end of the game, the head facilitator also makes a reflection with the whole group. The role of the instructors is to overview 1-2 teams, explain more specific rules of the game and conduct the analysis in the small teams after each phase of gameplay.

According to the instructor's handout, the gameplay should allow for the following elements: retaining information through emotions, trial and error, asking questions, action and analysis. The role of the instructor is to allow for different emotions to ensue in the players during the game play and interfere only in the cases where the emotions of a player get very extreme and prompt behaviour that harms other players. The instructor also needs to step aside and give the players the freedom to decide on their own, also allowing for learning through failure. The main communication approach requested from the instructor is asking questions. The explanations provided should stay limited to giving the necessary background information about rules of the game. Otherwise, most of the learning is supposed to happen through experience and directing the learners attention to certain information by asking the right questions, making them think and reflect and connect their new experience to their prior knowledge. During the play phase, the instructor's interference should be minimal, mainly observing. The most crucial part for the instructor is considered to be the analysis phase,

where the instructor should bring their observations from the play phase and ask the right questions to make the players see the bigger picture, reflect on their actions taken in the gameplay and extract learning points.

3.2. Data sources and collection

The data was collected by semi-structured interviews together with ranking the pre-mapped competencies using an interview guide created based on the competencies mapped in Table 2. The semi-structured approach brought the benefits of using an interview guide in order to cover all the relevant aspects of prior research, while allowing for clarifications and additions based on the input of the interviewees. The interviews were conducted in Estonian, however, the English version of the interview guide can be found in Appendix 1. The length of the interviews ranged from 45 minutes to two hours. The interviews were organised using the video conferencing platform Zoom³ and recorded with the consent of the participants.

The interviewees were selected on a volunteering basis from the instructors, who worked in the Enterprise Village during the 2020/2021 season. In total, interviews were conducted with five instructors. The interviewees' ages ranged between 21 and 37. The instructors had varying experience levels and duration that they had worked in the Enterprise Village, the longest one being ten years, followed by four years, then two years and half a year. Nevertheless, all instructors participating in the interviews had instructed the Entrepreneurial Citizen game. The other roles that respondents have taken in Enterprise Village besides being an instructor are the following: head facilitator, trainer, game designer, founder, marketing specialist, head of Enterprise Village, CEO, software developer, mentor. Therefore, the sample was diverse and gave an overview of the viewpoints of instructors representing different generations with a varying level of experience and expertise.

All interviewees had obtained or were in the process of obtaining some kind of formal tertiary education, altogether covering the fields of humanitarian and social subjects pedagogy, trade economics, sales representation, environmental protection, software development and theology. Several of the interviewed instructors had working experience in the fields of sales, marketing and customer service. Having experience with volunteer work

³ Video conferencing platform Zoom: <https://zoom.us/>

in student or other organisations was also an overlapping instance and in the case of two instructors this was the one of the factors that raised their interest in the non-formal education and training field. Additionally, there were experiences with substitute teaching, HR management, design and software development and working in startups among the interviewees. Four out of five interviewees had experience with entrepreneurship and have founded one or more companies. This was deemed advantageous for diversity of the sample, as it included people with and without personal entrepreneurial experience and with rather divergent professional paths.

During the interviews, in addition to answering open-ended questions, the respondents were also asked to rank the competencies predefined in Table 2 for each phase of game-based learning. The ranking was conducted using the digital collaborative whiteboard platform Miro⁴, where the interviewees could easily move the randomly organised digital sticky notes into a ranking from 1-20. They also had the option to assign the same rank to the competencies they found of equal importance and the possibility to leave out competencies that they did not find relevant for the specific phase at all. A visual example of the ranking board of one interviewee can be found in Appendix 2.

3.3. Analysis

After collecting the data in the format of videos, it was consolidated by transcribing the input from the interviews. The transcription was done using the help of a web-based speech recognition platform⁵ developed by Alumäe, Tilk and Ottokar (2018) using the technology and models developed in the Institute of Cybernetics Laboratory of Phonetics and Speech Technology of Tallinn University of Technology. Followingly the transcription notes received from the platform were corrected by relistening to the interview audio. The collected data was analysed using thematic analysis, which is a flexible method for qualitative data analysis focusing on identifying, analysing, and reporting repeated patterns (Kiger & Varpio, 2020). Besides describing the data, it also includes selecting codes and constructing themes (Kiger & Varpio, 2020; Vaismoradi et al., 2013). Thematic analysis is useful for interpreting experiences, thoughts, or behaviours across a data set, which is suitable for reaching the aims and answering the research questions of this thesis.

⁴ Online collaborative whiteboard platform Miro: <https://miro.com/index/>

⁵ Transcription tool by Alumäe, Tilk and Ottokar (2018): <http://bark.phon.ioc.ee/webtrans/>

Using this approach, firstly, to identify the repeated patterns, the interview transcripts were read by the author several times and relevant and repeating insights were highlighted. Followingly, codes were selected and an excel table was constructed for mapping both the manifest and latent content. Themes were constructed by clustering the relevant extracts and illustrative quotes from the transcripts gathered under each theme. The following Table 4 shows some examples of identified themes and the codes they were based on.

Table 4

Example of themes and codes

Theme	Open mindedness	Encouraging freedom	Guiding with questions	Traditional vs non-traditional education	Experiential learning
Codes	Neutrality	Freedom to decide and experience	Instructor as a guide	Fear of making mistakes	Freedom to decide and experience
	Not being influenced	Freedom and duties of entrepreneur	Making players think on their own	Teacher as the source of knowledge	Making players think on their own
	Taking players as a clean slate	Supported freedom	Helping to make connections	Making players think on their own	

In pursuance of further analysis and smoother reporting, the emerged themes were organised according to the phases of the learning process and some were identified to extend over the whole process. The rankings of pre-mapped competencies were transferred from Miro platform into a Google Spreadsheet. Subsequently, the rankings were transposed into grades using a scale of 1-20, giving the value “20” to 1st rank, “19” to 2nd rank, etc. Afterwards, the average grades were calculated and five highest graded competencies of each phase were outlined.

4. Results and discussion

When ranking the pre-mapped competencies, respecting the learner's right, freedom (and duty) to decide and act, playful stance and supporting collaborative learning while considering individual differences were in top 5 highest ranked competencies for three phases. Judgement about the appropriateness of instructor's participation and the ability to explore and improvise reached the top 5 rankings in two phases. The highest overall average grade was for facilitating reflection and discussion, which ranked top 1 in the elaboration phase. Below, Table 5 gives the overview of the five highest ranked competencies for each phase of GBL.

Table 5

Top 5 competencies for each GBL phase

Rank	Competencies	Average Grade	Standard Deviation
Orientation Phase			
1	Gaining attention	16.6	3.286
2	Ability to explore and improvise	16.6	3.912
3	Respecting the learner's right, freedom (and duty) to decide and act	16.4	2.191
4	Supporting collaborative learning while considering individual differences	16.2	3.962
5	Playful stance	15.0	5.612
Creation Phase			
1	Judgement about the appropriateness of instructor's participation	18.2	2.049
2	Tutoring/guiding (using questions)	17.2	3.633
3	Respecting the learner's right, freedom (and duty) to decide and act	17.0	2.345
4	Playful stance	16.8	3.701
5	Supporting collaborative learning while considering individual differences	15.0	8.456
Play Phase			
1	Providing practice	17.8	1.789
2	Playful stance	17.8	2.049
3	Judgement about the appropriateness of instructor's participation	17.4	3.975
4	Respecting the learner's right, freedom (and duty) to decide and act	17.0	3.464
5	Supporting collaborative learning while considering individual differences	14.4	8.081
Elaboration Phase			
1	Facilitating reflection and discussion	19.4	0.894
2	Enhancing retention and transfer	19.0	0.000
3	Creative orientation to self-development	18.0	1.581
4	Providing feedback	17.4	2.408
5	Ability to explore and improvise	16.4	1.949

Generally, it is apparent that the highest average rankings with the lowest standard deviations are present in the elaboration phase, which is coherent with the open input by the interviewees, as they see the instructor taking the most active and substantial role during this phase. The skill of tutoring and guiding was elaborated by one interviewee with the addition of “using questions”, as asking questions is the main methodology for guiding the participants during Enterprise Village’s games. Playful stance was described as always keeping in mind it is a game and not a competition. The interviewee emphasised that although playful stance is important, it does not mean the instructor getting lost in the game and start playing themselves, as the instructor should avoid such behaviour and stay neutral.

4.1. Orientation phase

The interviewees saw this phase as corresponding to the introduction by the head facilitator, introduction by instructors in small groups or both in the Entrepreneurial Citizen (EC) game. As the goals of the phase they described introducing game rules, setting the mood or helping the children relate to the game, introducing the framework - tools, opportunities and roles, bringing the group together, getting to know the enterprises and getting into the roles, getting acquainted with the definitions of entrepreneurship and entrepreneurial behaviour. By the end of this phase the player is aware of what are the stages and activities in the game, the goal(s) they need to achieve and which stadium they should reach by the end of the game.

The respondents describe the main activities of the instructor in this phase as following:

- bringing the group together by introducing each other;
- creating a collaborative atmosphere;
- building trust and rapport with the players, so that they would feel comfortable to approach you and each other;
- listening to the head facilitator’s introduction to know what to ask in the small group;
- introducing the game rules, goals, tasks, tools, roles and opportunities;
- creating a discussion on the definitions of entrepreneurship and entrepreneurial behaviour;
- guiding the players towards setting the game plan for their team;

One interviewee brought out that the approach of the instructor in this phase depends a lot on the group: “Sometimes it is necessary to assert yourself, another time you need to be very gentle and lenient and tell them that the instructor is there to support you.”

The interviewees claimed the instructor needs the following skills for facilitating this phase:

- building trust;
- asking questions;
- explaining the main definitions and terms;
- gaining attention;
- passing on information;
- observation to understand which player might struggle with which aspects of the game and what should the instructor pay attention to;
- tuning the inner compass of the players, meaning encouraging the players to trust themselves more;
- adjusting and changing direction depending on the situation.

The instructor’s attitude in this phase should be open and susceptible to questions, inviting and friendly, supportive and patient according to the respondents.

Out of the aforementioned competencies gaining attention was directly mentioned by Hirumi et al. (2010) and Gagne, (1974), passing on information covers some aspects of presenting instruction, which is also one of Gagne’s nine events of learning. Asking questions, which in prior literature comes to play in later phases as a tool in tutoring, guiding or coaching, is already brought out for the orientation phase by the interviewees. One of the interviewees described a common challenge for the instructors as tuning the group and getting them in the right mood to play and learn: “Often the children have just had a long bus ride, they might be hungry, tired, etc. Then it becomes a challenge to tune them into the activity. One thing that helps is our methodology of asking questions. We don’t tell how things are going to be but we involve and engage them with questions from the first moment onward. It is a consciously chosen methodology.” This gives insight into the benefit of using the questions to trigger thinking and engage learners into the activity.

4.2. Creation phase

This phase appeared to cause the most confusion and different understandings among the interviewees. Each instructor described a different stage of the EC game as corresponding to this phase. The stages of the game that were mentioned as belonging into the creation phase were the following:

- the first planning meeting with the team at end of the introduction, where the players set the plan for the first play month, discuss division of work and make other preparations;
- the first play month;
- the company meeting after the first play month;
- all the company meetings and a bit of the activity during play months as well;
- everything from the second play month onwards.

The difference of opinions here can be related to the rather vague definition of this phase compared to the others but also the different experiences and views of the interviewees. One interviewee describes their understanding of creation as the following: “Creation for me is equivalent to play. In everyday life as well, I interpret creation as an exciting game, a thrilling adventure.”

The goals of this phase according to the respondents are adapting to the situation of the company, experimentation, making errors, discovering on their own, learning by connecting experience and prior knowledge, problem solving, making first analyses about how things are going and what to do differently, testing the teamwork abilities of players.

The respondents describe the main activities of the instructor in this phase as following:

- pulling back and giving the players the freedom to act on their own;
- letting things go and intervening only in case of physical violence;
- creating an environment where the players feel safe and well;
- talking as little as possible and avoiding giving advice;
- observing how players act in different situations;
- taking notes of situations to be used later for analysis;
- create a discussion on the players’ concerns and questions;
- guide the players to create a plan on their own;

- using questions to help the players find a solution;
- creating collaboration by pointing out issues of teamwork.

The instructor activities brought out by the interviewees vary in nature and the approach they need. This can be due to the fact of the respondents relating the description of the creation phase to very different parts of the game.

The interviewees claimed the instructor needs the following knowledge and skills for facilitating this phase:

- ability to step out of the teacher's role and take more of an observer and a coach role;
 - "Today, I am not the teacher here. I will only ask questions, you will be the ones responsible, you will be the leaders of this enterprise, you will be making the decisions."
- observation, monitoring and noticing;
- prioritising observed situations to know what to bring out in the analysis phase;
- supporting;
- guiding to find the solution on their own;
- knowledge about the game - rules, structure, technicalities;
- knowledge about the definitions and subcategories of revenues and expenses;

The attitude of the instructor is described as open, trusting the knowledge and choices of the players, neutral - doesn't get caught up in the game or start playing themselves, however, keeping the playful stance, which is also an attitudinal aspect brought out by Nousiainen et al. (2018).

4.3. Play phase

There were also slight differences in the ways the interviewees defined this phase. Nevertheless, all of them mentioned that this phase encaptures all of the three play months in the EC game. Two interviewees were having difficulties differentiating the play phase from the creation phase and saw them as rather equivalent.

The goals of this phase were described as the following:

- working as an integrated group;

- dividing tasks and workload;
- managing money;
- developing communication skills;
- developing negotiation skills;
- gaining (entrepreneurship) experience;
- testing ideas.

The respondents describe the main activities of the instructor in this phase as following:

- observing, monitoring and noticing;
- interfering as little as possible;
- being moral support while staying neutral;
- answering questions with questions;
- providing the freedom to act and encouraging independent action;
- supporting regarding the technical aspects of the game;
- letting things go and intervening only in case of physical violence;

The interviewees claimed the instructor needs the following knowledge and skills for facilitating this phase:

- observation, monitoring and noticing;
- knowing the contents of the instructor's guide and technical aspects of the game;
- knowing you are not supposed to give the players the answers;
- communication between instructors.

The ideal attitude of the instructor in this phase is described as open, accepting anything that happens (except physical violence) and taking the back seat giving the players the freedom to act on their own. One respondent describes the attitude and approach of the instructor in this phase as follows: "In this phase the instructor should give the children the freedom to act and encourage taking action on their own. The emphasis should be on it being their own decision based on their own analysis. The instructor shouldn't be a decider or input giver here." This input matches well with the competencies brought out in the prior literature as providing practice, guiding and coaching.

4.4. Elaboration phase

The interviewed instructors saw this phase covering the company meetings aka small group analysis and final summary and analysis in the big group. Two of them described it as the last company meeting followed by the final summary, while three instructors said this phase covers all of the company meetings and the final summary.

Besides being rather aligned on the definition of the phase the interviewees also gave most uniform answers about the goals of the phase. All five respondents considered interpreting the learning experience and bringing out learning outcomes, using questions such as “What did you learn?” and “How can you implement this in your life?”, as the main goal of this phase. The instructors for whom this phase covered not only the final reflections but also the ones between the play months, said the goal was to also be analysing the situations that came up during the previous play month to avoid making the same mistakes in the next one(s). Creating cause-effect relationships was also brought out as an aim of this phase by one of the respondents.

The respondents describe the main activities of the instructor in this phase as following:

- using the information gathered through observations during play phase, formulating guiding questions to bring out the learning points and support the player in connecting different pieces of knowledge;
- supporting through sharing real life examples and personal experience;
- listening;
- creating excitement around the analysis process and encouraging players to come up with novel solutions.

The interviewees claimed the instructor needs the following knowledge and skills for facilitating this phase:

- active listening;
- asking guiding questions;
- analysis;
- conflict solving.

The attitude of the instructor should be:

- open and accepting;
 - “There are no right or wrong answers”
- oriented to finding solutions;
- discovering and explorative
 - not taking the first answer of the player as the final one and is willing to dig deeper;
- supportive and encouraging;
- honest;
- exciting.

In this phase, a competency that is clearly outlined by the instructors is consolidating the learning as all of them repeat the aspect of helping learners create connections between different experiences and different pieces of knowledge by asking the right questions. One of the interviewees mentioned the following regarding consolidating learning: “The games in Enterprise Village are a good example of how 99% of the children enjoy it and they don’t realize at all that they are learning. But they did in fact learn - the game helped them to create connections between many small bits and pieces of various knowledge inside their head. It is funny that in the beginning we thought we were going to teach something to children. By today, I am convinced that we don’t teach them anything. Instead, we help them create connections like showing how the same money they used in the clinic is connected to the city government and how that is connected to the wellbeing of citizens - how what you just chose to do is connected to what happened half an hour later in the town. That is something that is hard to create with a textbook or workbook.” This affiliates quite well with a competency brought out as instructor tasks by Hirumi (2010) and also considered one of Gagne’s nine events of learning - enhancing retention and transfer, which covers helping learners connect learning outcomes to real-world applications. In ranking the pre-mapped competencies, enhancing retention and transfer was ranked second by the instructors of Enterprise Village.

The questions methodology is used for facilitating reflection and discussion, which is a competency brought out by Hanghøj and Brund (2010) and ranked first in this phase by the interviewees. The attitude of excitement towards analysis and encouraging players to come up with novel solutions can be considered coherent with the competency of creative orientation to self-development mapped by Nousiainen et al. (2018) and ranked third by the

interviewees. Aforementioned aspects show that out of all four phases, in the Elaboration phase the respondents view on instructor's tasks and competencies was most aligned with the previously mapped competencies.

4.5. The changing role of the instructor

The interviewees described the role of the instructor as more active and prevailing in the phases of orientation and elaboration. "The main difference between the phases is that in the beginning you have to support the players a lot, with the aim of bringing the group together, getting the teamwork going and roles divided. Then as the game progresses things will get more specific and you will notice the situations that you want to bring up in the analysis. You will start to comprehend what information they are willing or able to receive and what is the journey you would like to direct them to," said one of the interviewees when describing the changes in the role of the instructor. Another respondent described the transition of the role more gradually, giving more importance to the instructor's prevalence at the orientation phase: "In the beginning, when they come to their companies, you will need to take a bit more of a leading role to teach the manual and game rules. The rest should be as player-centered as possible - just guiding them a bit with the coaching approach and questions."

All of the instructors agreed that in the creation and especially the play phase, the instructor should take a more back-seat approach and give the freedom to the players to make decisions on their own, while taking a more active role again in the elaboration phase to ensure the retention and transfer of learning. One of the interviewees described this change in approach as following: "During the creation and play phases the similarity is that the instructor lets the players act themselves, is in the background, observing and if needed supporting but with as little interference as possible. Then in the elaboration and analysis phase the instructor can be more involved and help to interpret and elaborate the experienced things." These descriptions are quite aligned with the roles brought out by Hanghøj and Brund (2010) and Kangas et al. (2017), where the instructor first takes a more directive role as an organiser and planner in the orientation phase, takes the role of the guide or tutor, stepping back but still supporting during the play phase and assumes the role of explorer or facilitator for the elaboration phase in order to help students consolidate the learning. The main difference from the roles mentioned

by these sources emerges in the creation phase, where the interviewees of this research described more an approach similar to the play phase, instead of taking a very strong leadership role. This outcome, however, might be influenced by the fact that the opinions of the interviewees regarding the definition and activities of this phase differed quite a lot, as some saw it more similar to the introduction phase, thus suggesting a stronger presence of the instructor, while others saw it encompassing activities similar to play phase.

An overarching theme throughout the descriptions of the instructor's role during the game is the contrasting approach from what is used to be seen in the traditional education. The interviewees described the role of the instructor more as a facilitator of the process than the giver of content. Quite some criticism was raised regarding harsh evaluation and giving the "one right answer" from the teacher's side. One of the interviewees described the disparities of the game based approach from the traditional approach as follows: "The main difference between traditional and non-traditional education is that in the traditional education the teacher is the one whose word is the so-called last instance, the one whom the children are used to ask questions and get the right answer from. Enterprise Village is the place where instructors should stand back and say: "You know the answer yourself, you have different ideas, please trust them and try out." Today, our educational system is convinced that we take a child who is, if I put it radically, stupid and we need to start putting wisdom into their head. In Enterprise Village we want to take the attitude that a child already has an immense amount of various information in their head and it's our job to help them draw connections between these pieces of knowledge and give the feeling of success that they can do more than they think." Several respondents agreed with this distinction, however also emphasising the similarity of having the same goals in the end: "Teachers think they know the answer and give it to the children and there the thinking process of the child ends. They can be too limiting - not giving the children the freedom to think on their own. All in all, we all have the same goal - to help children learn something. In the end, the teachers with the traditional approach also want good for the children, they don't want them to fail, taking a bit of a mother hen approach - wanting good but potentially haltering the learning process." Based on the opinions of the interviewees, it could be concluded that the role of the instructor mainly differs from a traditional educator's approach regarding the level of freedom given to the learners, thus agreeing with the suggested approach mentioned by Kyro (2008), where respecting the learners' freedom to act is recommended as an appropriate instructor's stance.

4.6. Overarching competencies

Aside from the varying competences described for the different phases, there were certain themes that kept emerging throughout various parts of the conversation with the instructors. Overall there were three main competences drawn from these themes that have not yet been detailed in the prior chapters of this thesis: encouraging freedom, open mindedness and growth mindset. All the interviewed instructors touched all of these topics in one way or another, bringing interesting insight into the relevance of these competencies throughout the whole GBL process.

4.6.1. Encouraging freedom

Continuing the line of thought from the previous chapter, encouraging freedom was one of the aspects of the instructor's attitude that the interviewees mentioned a lot. One of them describes the games of the Enterprise Village as a tool of giving an overview of the balance between freedom and responsibility entrepreneurship gives: "The game gives an understanding of how much you have to contribute to an enterprise and how much freedom it gives. As much as I will work, as much it will also give back." Another respondent describes the role of the instructor as the following: "It's important to give the children freedom to act and encourage their independence. Put the emphasis on it being their decision and their own analysis. The instructor shouldn't be a decider or presenter."

One respondent emphasises how people are not usually used to deal with too much freedom: "Freedom does not arise on its own, freedom must be learnt to be used. People think they want to be free but actually most of us do not know how to and get scared when there is too much freedom too sudden. So we need to help people learn how to use their freedom." Furthermore, they describe how the instructor should understand the distinction between giving enough freedom and abandonment: "There is a difference between freedom and abandonment. If you leave a person alone on the street and say "Deal with yourself!" it's also freedom but it's abandonment. Another way to teach people is that you create a safe environment and our role as instructors is to create that environment to deal with the freedom and to learn it. This means, creating the space where a person can make their own mistakes, try out on their own but they are in this safe zone with someone besides them, who is holding that safe space. There you don't have to interfere but to keep such space - creating a

framework in a way.” This viewpoint is rather aligned with the ZPD concept of Vygotsky and the notion of providing appropriate scaffolding to the learners, while still allowing them to make their own decisions and learn from their mistakes.

Another theme that emerged from the research regarding freedom was connected to experiential learning, where freedom is a necessary factor to allow for natural experiences to transpire. According to the respondents, it is paramount that even when the instructor has through their own experience developed a certain knowledge base about what can bring success in the game, they stay neutral and allow the players to discover it on their own to create their own experiences to learn from. “Sometimes you know how a game can end or how to do things in an easier way but maybe the way they take to reach the outcome is way more valuable than the answer that they want to know at that moment,” explains one interviewee. “It is important to value the learning process just as it is and understand that every discovery they make is actually valuable even if it’s not so aligned with the intended learning goal,” mentions another. A different respondent describes the challenges of not getting involved as the following: “We still tend to want to teach and direct them. Nevertheless, we should guide them to trust whatever their inner feeling says, even if they choose the most silly options, which you, as the instructor, know won’t succeed. I have seen some instructors who go into competition with each other and start to give their team tips to make them do well in the game. They have good intentions and want to give the children the experience of success but actually will be taking away the opportunity to safely experience failure. In the end, what financial results the enterprises have in the end is not important at all. What is important is what the children experienced during the game, as often the ones who learnt and benefitted the most are the ones who did the most idiotic things during the game, the ones who dared to try out different options and take risks.”

4.6.2. Open mindedness

One attitudinal aspect the instructors mentioned in all phases was open mindedness towards the background, prior experience and abilities of the children and taking an inclusive approach towards all. Several instructors use the term “clean slate” when describing how the instructors should view the players. “One thing that the instructor can use to create an atmosphere of cooperation is our own mindset we approach the children with. Most of our instructors have a very short timeframe to interact with the children. We have no prior

information about them, so we are taking them all as a clean slate,” explained one interviewee. Another one shared a challenge they had with keeping an open mindset even with the influence of the accompanying school teachers of the players: “There was a group where we went to their school to make the game and I saw that there was one boy who was not very engaged and didn’t dare to do anything. Before, the boy’s teacher had told me that this boy doesn’t do anything anyways. However, it’s not my place to take a stance based on someone else’s opinion. My job is to ensure that everybody would be included and noticed and that I would see everybody is feeling well in the game. We should take each learner as a clean slate and take people exactly as they are with the knowledge they have and not assume that they should know or do specific things.” A different instructor shared a similar challenge although with the impressions coming from the peers of the learner: “It is crucial to stay very neutral. There was a situation where the other players were making fun of a girl and even though it was quite good natured, I shouldn’t have gone along with it. This was a moment I realised, I should be even more neutral towards the children, take everybody as they are and give equal support and energy to all.” A contributing factor to this mindset of neutrality and openness among the interviewees might be the organisational culture and personal values, as several of the interviewees mention that it is also part of the core values of Enterprise Village as well as their personal values to give every person a chance and take them as they are.

The instructors also referred to open mindedness in connection to the learning process, receptiveness and prior knowledge of the children. “The children have very different backgrounds. You might have a goal in your mind but what will be the outcome for the child at the end of the game might be completely different,” says one of the respondents. Another one describes a similar approach: “I look at every group separately with the thought of what they are willing to receive today and what I can give to them, where I can direct them.” Yet another instructor continues along the same lines: “The instructor’s attitude towards the learning process should be open, so that no matter what happens or how a child receives something, you are open to it. Sometimes you can tell more to them, sometimes less. It totally depends on how receptive the children are.” Hence staying neutral is also one of the mapped competencies that supports this freedom to learn and is especially crucial in the creation and play phases according to the instructors.

4.6.3. Growth mindset

One more theme that kept coming up throughout the conversations was related to growth mindset, which can be defined as belief that a person's talents can be developed through effort, consistency and input from others rather than thinking that talents are an innate gift that one either has or has not got (Dweck, 2016). In Enterprise Village, growth mindset is an organisational value that is introduced to the instructors from the moment of joining and ideally even plays a role in the hiring process. According to the interviewees, this value should be highly reflected in the instructor's attitude and the games themselves. "The games of the Enterprise Village give an understanding that skills are something you can develop and achieve." reflects one interviewee.

When referring to situations, where a player seemingly has less knowledge about the topic or a player's abilities are questioned by themselves, their peers or teachers, one interviewee illustrates the ideal attitude of the instructor as the following "We have the attitude that everybody has the ability to succeed. We believe in the players from the first moment on, even if the class teacher comes and tells us that this child is the worst slouch ever and there's no use in taking them into account, I don't care. I assume that this child has the ability to learn and grow and cooperate, that everything that is needed for our game is already there inside them. There is nothing wrong with the child. They might not be able to phrase all of it or connect all of it but they will manage always. This attitude is actually the most important thing of all. The children can recognise it right away."

Besides the instructor having a growth mindset themselves, the ability to transfer this way of thinking to the learners is seen as one of the most essential qualities by several respondents, with one describing it as follows: "The main thing that Enterprise Village gives to children is the mindset. Most likely the change that happens in this child, is less about direct knowledge or skills but more about the way of thinking - they see that yes, they actually can do it. The aim is not that much to give inspiration but to give the feeling of "I can do this". Then it's up to them to decide if they actually want to do entrepreneurship or not. Even though growth mindset is not directly mentioned as an attitudinal aspect of the instructor's competencies in the prior research, it can be identified as a beneficial addition that helps to encourage freedom to act and enhance the general learning abilities and motivation of the children.

4.7. Updated overview of instructor's competencies

In order to better summarise the outcomes of the research, the following Table 6 was composed by the author. This table gathers competences from Table 2 which were highest ranked for each GBL phase by the interviewees. Moreover, the new competencies appearing as most common themes from the interviews were added showing both competencies relevant for specific phases and the ones overarching the entire process. The cells in blue represent the aspects related to knowledge, cells in green represent skills and cells in yellow attitude.

Table 6

Updated overview of instructor's competencies

GBL phase	Orientation	Creation	Play	Elaboration
Instructor's role	Instructor, planner, organiser	Playmaker, leader	Guide, tutor	Explorer, facilitator
Instructor's competencies	Gaining attention	Judgement about the appropriateness of instructor's participation	Providing practice	Facilitating reflection and discussion
	Ability to explore and improvise	Tutoring/guiding (using questions)	Judgement about the appropriateness of instructor's participation	Enhancing retention and transfer
	Respecting the learner's right, freedom (and duty) to decide and act			Creative orientation to self-development
	Supporting collaborative learning while considering individual differences			Providing feedback
	Playful stance			Ability to explore and improvise
	Observation, monitoring and noticing			
	Building trust	Knowledge about the game - rules, structure, technicalities	Knowing the contents of the instructor's guide and technical aspects of the game	Active listening
	Asking questions	Knowledge about revenues and expenses	Knowing you are not supposed to give the players the answers	Asking guiding questions
	Explaining definitions and terms	Prioritising observed situations	Communication between instructors	Analysis
	Inviting & friendly	Ability to step out of teacher's role	Coaching	Conflict solving
		Staying neutral		Oriented to finding solutions

			Taking the back seat giving the players the freedom to act on their own	Discovering and explorative
				Exciting
	Growth mindset			
	Open minded			
	Supporting & encouraging			
Patient				

Knowledge	Skills	Attitude
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From Table 6, it is visible that while skills and knowledge vary quite a lot depending on the phase of GBL, the attitudinal elements are mainly overarching several phases or even the whole process. The skill of observation, monitoring and noticing was also deemed relevant for all phases, however, was described more prominently in the creation and play phases. Overall, the roles of the instructor stayed the same to the ones described in prior research, with some additional explanation of the details and transitions portrayed in subchapter 4.5. The main additions to prior research have come from attitudinal aspects like the importance of inviting and friendly attitude in the orientation phase, neutrality in the creation and play phases and creating excitement for the analysis process in the elaboration phase. From the enveloping competences growth mindset, open mindedness, support and patience have been added. Even though this table should not be considered a finite list of all the nuances needed for successfully guiding GBL on entrepreneurship, it creates an overview of the most imminent competencies for facilitating this type of learning.

5. Conclusion and limitations

This thesis provided further insight into the competencies necessary for guiding game-based learning on entrepreneurship. The RQ1 was answered by reviewing prior related literature and mapping the competencies in Table 2. RQ2 and RQ3 were answered by conducting interviews with the instructors of Enterprise Village and gaining their own views in addition to ranking the pre-mapped competencies, followed by comparing the answers to the reviewed literature. This confirmed the high relevance of several competencies outlined in prior research like respecting the learner's right, freedom (and duty) to decide and act, facilitating reflection and discussion, enhancing retention and transfer, guiding and coaching with questions and supporting collaborative learning while considering individual differences visualised in Table 5. Furthermore, it added several new competencies to the list like the skill of observation and the attitudes of growth mindset, open mindedness and encouragement. The distinction of which competencies are needed in a certain phase and which are overlapping over the whole learning experience became more clear with the overview provided in Table 6. The changing role of the instructor was also confirmed by the empirics, supporting the priorly profiled roles by Hanghøj, Brund and Kangas.

The main limitations come from the qualitative nature of this research. It is imperative to keep in mind that the rankings and points of views of the interviewees come all from one NPO, thus being strongly affected by the organisational culture and methodologies of this organisation and thus these results cannot be claimed as fully comprehensive and universally applicable. Furthermore, even though the interview questions were designed mostly as open-ended questions avoiding assumptions, the interview design still might have influenced the input of the interviewees. The new competencies mapped in Table 6 should be further empirically tested with other institutions facilitating game-based learning on entrepreneurship, in order to have a more varied sample and reliable results. Nonetheless, the outcomes of this research can provide a useful first step for future research and application. Besides additional testing of the established competency map, the ways of developing these competencies among instructors can be investigated. Apart from advancing the scientific research, the outcomes could be used as a basis for developing a training strategy for the instructors of Enterprise Village or other organisations with similar approaches, while keeping in mind the dependence of training needs on the context and situation.

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Appendix 1: Interview guide

Based on Hanghøj, T., Brund, C.E., 2010; Hirumi et al., 2010; Kyro, 2008; Nikitina et al., 2020; Nousiainen et al., 2018.

I am Sandra, from the University of Tartu, Innovation and Technology Management MA course. I'm writing my thesis on the needed competencies for guiding game-based learning on entrepreneurship. The goal of this interview is to understand how you as an instructor in Enterprise Village (EV) perceive your role and competencies in facilitating the game-based learning in the NPO. This interview does not aim to assess your skills but get your perspective of the most important competencies based on your own experience. The results will be used anonymously and in a generalised form. We will focus on instructing the game meant for middle school aka Entrepreneurial Citizen (EC).

Background data

- Can you tell me a bit about yourself? How old are you, what is your prior education level and field? What kind of working experience do you have? Do you have any experience with entrepreneurship? If yes, what kind?
- Why did you decide to come work in Enterprise Village?
- How long have you worked there?
- What roles have you taken in Enterprise Village?

Understanding of the entrepreneurship process

- What is entrepreneurship in your opinion?
- How do you understand the entrepreneurship process? What parts does it consist of?
- How has your understanding changed through working in Enterprise Village?

Role of the instructor

- Reminding that we are focusing on the EC game.

- What (learning) goals does this game fulfill?
- In your opinion, what is the role of the instructor in the game?
 - Has your understanding of the role changed throughout time? If yes, how?
 - How does the instructor's role differ from the role of the teacher? What are the similarities?
- When you came to work here, what kind of skills did you think you will need as an instructor?
- In your opinion, what kind of attitude should the instructor have towards:
 - the learner;
 - the learning process;
 - the learning environment;
 - entrepreneurship?

Orientation phase

- Explanation of the orientation phase: Orientation phase focuses on creating a knowledge base with students, focusing on exploring the learning goals and the methods, tools and games used.
- In your opinion, what part of the EC game does this phase describe?
- Which (learning) goals does this phase aim to fulfill?
- What are your activities as the instructor in this phase?
- Which knowledge and skills do you use the most in this phase?
- What should be the attitude of the instructor in this phase?
- Can you arrange the following competencies in the order of importance for the instructor in this phase?
 - (Curriculum-based) planning;
 - gaining attention;
 - informing learners of the objective;
 - helping learners recall prior knowledge;
 - analysing games and technological tools;
 - overcoming technology-related obstacles;
 - sharing and co-development within the organisation/outside;
 - playful stance;

- ability to explore and improvise;
- delegating;
- sense of initiative;
- risk-taking;
- ability to turn ideas into action;
- judgement about the appropriateness of instructor's participation;
- initiating discussion;
- knowledge about entrepreneurial process;
- respecting the learner's right, freedom (and duty) to decide and act;
- supporting collaborative learning while considering individual differences.

Creation phase

- Explanation of the creation phase: Creation phase focuses on collaborative knowledge construction and creative problem-solving.
- In your opinion, what part of the EC game does this phase describe?
- Which (learning) goals does this phase aim to fulfill?
- What are your activities as the instructor in this phase?
- Which knowledge and skills do you use the most in this phase?
- What should be the attitude of the instructor in this phase?
- Can you arrange the following competencies in the order of importance for the instructor in this phase?
 - Presenting instruction;
 - tutoring/guiding;
 - communicating tasks, roles, goals and dynamics;
 - analysing games and technological tools;
 - overcoming technology-related obstacles;
 - sharing and co-development within the organisation/outside;
 - playful stance;
 - ability to explore and improvise;
 - delegating;

- sense of initiative;
- risk-taking;
- ability to turn ideas into action;
- judgement about the appropriateness of instructor's participation;
- initiating discussion;
- knowledge about entrepreneurial process;
- respecting the learner's right, freedom (and duty) to decide and act;
- supporting collaborative learning while considering individual differences.

Play phase

- Explanation of the play phase: Play phase focuses on implementing playful and gameful processes, guiding and tutoring during the gameplay.
- In your opinion, what part of the EC game does this phase describe?
- Which (learning) goals does this phase aim to fulfill?
- What are your activities as the instructor in this phase?
- Which knowledge and skills do you use the most in this phase?
- What should be the attitude of the instructor in this phase?
- Can you arrange the following competencies in the order of importance for the instructor in this phase?
 - providing practice
 - tutoring/guiding
 - coaching
 - overcoming technology-related obstacles;
 - sharing and co-development within the organisation/outside;
 - playful stance;
 - ability to explore and improvise;
 - delegating;
 - sense of initiative;
 - risk-taking;
 - ability to turn ideas into action;
 - judgement about the appropriateness of instructor's participation;

- initiating discussion;
- knowledge about entrepreneurial process;
- respecting the learner's right, freedom (and duty) to decide and act;
- supporting collaborative learning while considering individual differences.

Elaboration phase

- Explanation of the elaboration phase: Elaboration phase focuses on reflecting on and evaluating the learning processes and outcomes with the students.
- In your opinion, what part of the EC game does this phase describe?
- Which (learning) goals does this phase aim to fulfill?
- What are your activities as the instructor in this phase?
- Which knowledge and skills do you use the most in this phase?
- What should be the attitude of the instructor in this phase?
- Can you arrange the following competencies in the order of importance for the instructor in this phase?
 - Facilitating reflection and discussion;
 - helping learners recall prior knowledge;
 - assessment;
 - creative orientation to self-development;
 - providing feedback;
 - enhancing retention and transfer;
 - overcoming technology-related obstacles;
 - sharing and co-development within the organisation/outside;
 - ability to explore and improvise;
 - delegating;
 - sense of initiative;
 - risk-taking;
 - ability to turn ideas into action;
 - judgement about the appropriateness of instructor's participation;
 - initiating discussion;
 - knowledge about entrepreneurial process;

- respecting the learner's right, freedom (and duty) to decide and act;
- supporting collaborative learning while considering individual differences.

Follow-up

- If you now think about the priorly described phases, then what are the differences of instructor's roles in these phases and what are the similarities? Has your understanding changed over time of working in Enterprise Village and why?
- What has helped you to develop the competencies (knowledge, skills, attitude) needed for instructing GBL?
 - How well did the preparation for instructors provide you with those?
- Have you conducted games also outside of the Enterprise Village room in Spark Hub?
 - Does conducting the game outside of EV need any other competencies than doing it inside the EV room? If yes, which?
 - Are there differences in the attitude the instructor needs to have outside of the EV?
- Do you have anything else you would like to mention?

Appendix 2: Example of a competences ranking board in the Miro platform

Sissejuhatuse faas • keskendub õppijatega teadmistebaasi loomisele, mis sisaldab õpiesmärkide, meetodite ning tööriistade tundma õppimist.

1 Õppijate õpiesmärkidest teavitamine	2 Võime avastada ja improviseerida	3 Mängu ja tehnoloogiliste tööriistade analüüsimine	4 Koostöö teostamine avastades individuaalsete erinevustega	5 Võime hinnata kui palju juhendajana osaleda/sekkuuda	6 Õppijate ootava teadmise meenutada	7 Algatusvõime <small>Õppija õigus, vabaduse ja kohustusel tegevuse alustamine</small>	8 Tähelepanu võitmine	9 Teadmised ettevõtlusprotsessist	10 Tehnoloogiliste raskuste ületamine
11 Võime muuta ideed tegevuseks	12 Mänguline hoiak	13	14	15	16	17	18	19	20

Delegeerimine

(Õppekavapõhine) planeerimine

Riskeerimine

Jagamine ja ühisarendus organisatsiooni sees/väljas

Loomise faas • keskendub koos ühise teadmise loomisele ja loomingulisele probleemilahendusele

1 Ülesannete, rollide, eesmärkide ja sõnamarkide koostamine/teostamine	2 Tuutordamine/suunamine	3 Õppija õigus, vabaduse ja kohustusel tegevuse alustamine	4 Koostöö teostamine avastades individuaalsete erinevustega	5 Võime hinnata kui palju juhendajana osaleda/sekkuuda	6 Juhiste esitamine	7 Algatusvõime <small>Võime muuta ideed tegevuseks</small>	8 Teadmised ettevõtlusprotsessist	9 Tehnoloogiliste raskuste ületamine	10 Mänguline hoiak
11	12	13	14	15	16	17	18	19	20

Delegeerimine

Riskeerimine

Jagamine ja ühisarendus organisatsiooni sees/väljas

Mängu faas

- keskendub mänguliste protsesside implementeerimisele, suunamisele ja toetamisele mängu jooksul

1	2	3	4	5	6	7	8	9	10
Võime avastada ja improviseerida	Võime muuta ideed tegevuseks	Õppija õiguse, valikuvõime (ja kohustuse) tegevusele austamine Algatusvõime	Koostöö toetamine erinevates individuaalsete erinevustega	Mänguline hoiak Võime hinnata kui palju juhendajana osaleda/sekkuuda	Järgmine ja ohtsurendus organisatsioonisees/väljas Praktilise tegevuse tagamine	Teadmised ettevõtlusprotsessist	Tehnoloogiliste raskuste ületamine	Ruutordamine/suunamine	
11	12	13	14	15	16	17	18	19	20

Delegeerimine Riskeerimine

Coaching (läbi küsimuste toetamine)

Analüüsi faas

- keskendub õpi- ja mänguprotsessi reflekteerimisele ja koos õppijatega tulemite hindamisele

1	2	3	4	5	6	7	8	9	10
Refleksiooni ja arutelu fassiliteerimine	Õpitu kinnistamise ja õppija reaalsusesse ülekandmise toetamine Teadmised ettevõtlusprotsessist	Hindamine Tagasiside andmine	Loominguline suunitus enesearengule	Järgmine ja ohtsurendus organisatsioonisees/väljas	Delegeerimine Võime avastada ja improviseerida	Võime muuta ideed tegevuseks			
11	12	13	14	15	16	17	18	19	20

Koostöö toetamine erinevates individuaalsete erinevustega

Õppija õiguse, valikuvõime (ja kohustuse) tegevusele austamine

Algatusvõime Tehnoloogiliste raskuste ületamine Riskeerimine Võime hinnata kui palju juhendajana osaleda/sekkuuda

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