



# Onboarding a new teacher through the incubator experience

MA Degree Project

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## The Abstract

The Estonian education system is changing. Teaching in the classroom is becoming more personal, due to the special educational needs (SEN) of the students and the general focus on personal learning. This means more thorough preparation for the lessons, but also feedback to each student through a formative assessment. In order to adapt to the changed circumstances, the pressure on the teaching staff has increased, as well as the expectations and thus increased the level of stress. This is all happening in a context where school teachers are ageing and the new generation is not growing fast enough. The high workload does not attract. However, for those who come, the first year of work is crucial, whether to continue or not.

This made me ask, how can we support the beginning teacher in the first year of work so as to avoid burnout and get the necessary work done? To this end, I have developed a concept for 2025 that schools can use to support beginning teachers. Through the incubator experience, it combines the teacher's first year of activity into a whole, where their workload is lower, but the focus on self-development and creating their own community higher. According to the concept, when you become a teacher, there are four entry points according to different levels of workload.

## Kokkuvõte

Eesti haridussüsteem on muutumises. Õppetöö klassides muutub järjest personaalsemaks, tulenevalt õpilaste hariduslikest eripäradest ja üleüldiselt fookusesse tõusnud personaalõppe tõttu. See tähendab põhjalikumat ettevalmistust tundideks, aga ka igale õpilasele tagasisidestamist läbi kujundava hindamise. Et muutunud oludega kohaneda, on surve õpetajaskonna jaoks kasvanud, nagu ka ootused ning tõstnud seeläbi stressitaset. See kõik toimub kontekstis, kus koolide õpetajaskond vananeb ja uus põlvkond ei kasva piisava kiirusega peale. Suur töökoormus ei meelita. Nende jaoks aga, kes tulevad, on esimene tööaasta määrava tähtsusega, kas jätkata või mitte.

See pani mind küsima, kuidas me saaksime alustavat õpetajat toetada esimesel tegevusaastal nii, et vältida läbipõlemist ja ta jõuaks vajaliku tehtud? Selleks olen välja arendanud kontseptsiooni aastaks 2025, mida koolid saaksid alustava õpetaja toetamiseks kasutada. See seob läbi inkubaatori kogemuse õpetaja esimese tegevusaasta üheks tervikuks, kus ta töökoormus on väiksem, aga fookus enesearengul ja oma kogukonna loomisel suurem. Kontseptsiooni järgi on õpetajaks hakkamisel neli sisenemispunkti vastavalt eri koormusastmele.

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## Chapter 1

# Introduction

In this section I lay out the foundation for this thesis, where I present my motivation, research questions, hypothesis, background research, project target group my design approach, and Education Strategy development plan 2021-2035

## Motivation and goal

I see education as the catalyst for individual development through the acquisition of knowledge, skills, values, beliefs or habits. It has a long term impact on one's life. But from an administrative point of view, school education touches upon many challenges, which makes it very complex field. I aimed at my design thinking skills out in this complex environment and come up with a proposal to solve an important problem in school system. Overloaded teachers seemed an important issue to tackle.

## Initial research to find the challenge

During autumn 2019 I talked with couple of teenage students and scholars to get inspiration of the issues that lie within the education system. One of the student, in the age of 13 studies in a ordinary basic school outside Pärnu. Other student, in the age of 16 had just started her 10th class at the state gymnasium in Pärnu. One of the scholars is an ex-teacher, being 29 he was teaching English language in rural area basic school. Other scholar, who goes to schools to train students on mental health issues, is 33 years old.

I decided to go for the 1:1 conversations with them at this preliminary stage because this is a personal and honest way

to dig deeper into the issues and emotions that drive potential target groups—the student and the teacher. I was expecting to see, where the stories overlap or contradict each other.

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## Findings

What I found out during this research about the teachers' mindset, is that teaching students in front of the class is most enjoyable parts of their work, which gives positive emotions and produces a feeling that they can make a difference for somebody.

But the number of students a teacher meets during a week could be several hundred pulling the attention apart.

*“Honestly, how they handle these big classes, I don't understand. The management of this large mass is pointing towards authoritarian leadership.”*

Ex-teacher of English language

Students told me that they like the feeling to learn something about the topic and that they can play smart with smaller ones. Yet at the same time they are frightened to go to some of the classes or to even talk to some of the teachers, as they feel being judged based on what they don't know. That makes them write down everything as a survival mechanism. Even if they don't understand the content.

Sometimes the class is so tense creating a block against the subject and as a result students don't want to study it anymore.

*“Some teachers are very scary—you are afraid to go to class and check out the replacement pages hoping that suddenly she has been replaced.”*

Student (13)

Just like an ex-teacher of English language pointed out:

*“Students experience a great deal of emotionally incompetent teachers who cannot provide positive feedback for students mistakes.”*

Ex-teacher of English language

Instead of a rush of negative emotions students like when the teacher is relaxed and happy, explains calmly and discusses the topics together in class so that everyone feels involved, they told. Teacher can make a boring subject very interesting for them. Students told also, that when teacher explains, makes jokes and involves everybody, it makes learning much more enjoyable.

*“In humanities, we talk more and feel safer, where the teacher wants you to explain a lot in your own words. Whatever you offer, everything is right.”*

Student (16)

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## Analysis

Having done these interviews, I understood that teacher is the key person in class who can create the environment, where everyone feels safe to actively participate, open up and ask questions, which is the basis for students to build up new knowledge. But as students told me, classroom with teacher can be also very scary place.

Therefore quality of education that students get, depends a lot on the teacher and how they play out the subject. If teachers are stressed out and grumpy, it has direct impact on students, resulting in emotionally loaded school time and affecting their future.

## Background

Parent-teacher partnerships bring a community of adults together to work toward a common goal by helping students to succeed. When these partnerships are based on genuine respect and mutual sharing of ideas, a web of support is created to provide students with the best opportunity to thrive in school. (See Figure 1) (Lazar & Slostad, 1999)

Therefore **the quality of student-teacher-parent is critical to the well-being, self-esteem and social and academic growth of a child.** When parents understand and believe that teacher acts in the best interest of the child, an attitude

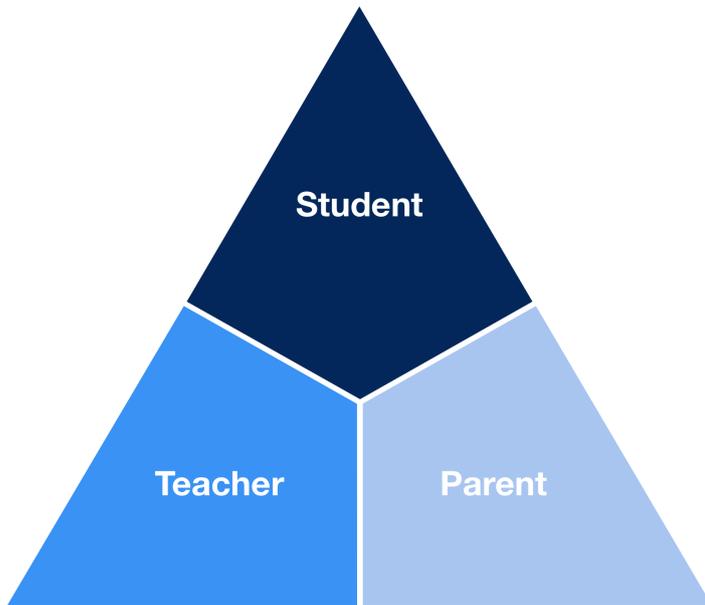


Figure 1. Student-Teacher-Parent triangle (Mariconda 2003)

of trust and mutual respect will emerge. (Mariconda, 2003)

This makes the triangle ideal support system for the students. The partnership between the parent and the teacher is the foundation of good education for the child, who benefits from the support and assistance, both home and school.

However, in the real world of the classroom, there are never just students, they are unique personalities, have past life experiences, expectations, prejudices, and sensitivities, that makes teachers to react. **If anyone of these parts in the triangle fails, the whole thing falls apart.** (Mariconda, 2003)

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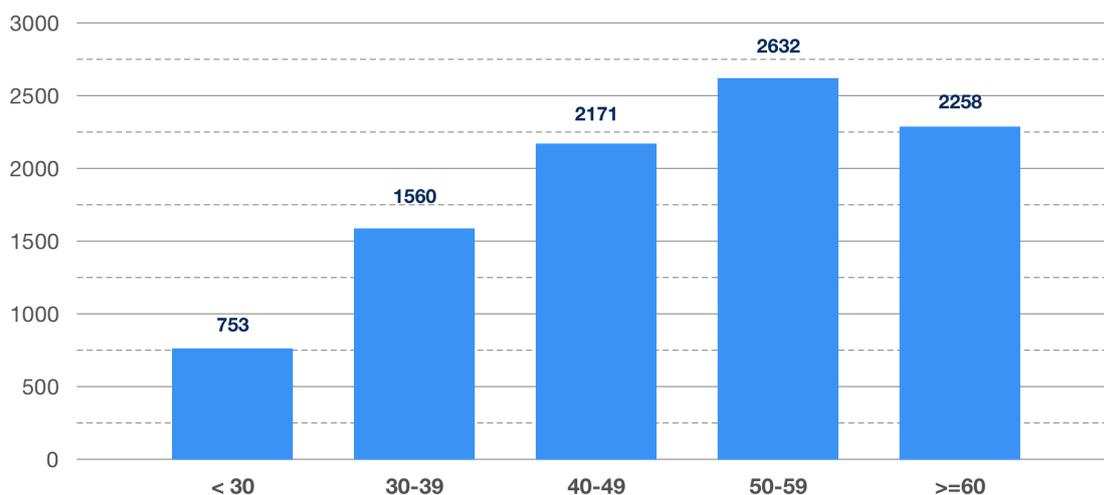
## Teachers workload in Estonia

According to Estonian teachers, their workload is high. It is estimated that the total working time can sometimes be even up to 60 hours/week. In average, full-time teachers work an average of 40,6 hours per week, which exceeds the allowed weekly workload (35 hours). Despite the high workload and higher salary expectations, the majority of teachers (80%) believe that the pros of the profession clearly outweigh the cons. (TALIS, 2018)

Interestingly, half of 1,696 teachers, who participated the survey carried out by Ernst & Young in 2016, said that **their work overtime, if exceeds their contractual working time, is not compensated.** (Ernst & Young Baltic, 2016)

Therefore Estonian Education Personnel Union (EEMU) states that viable and permanent solutions are needed as the problem of overloaded teachers taps into the area of age as well (see Figure 2). “We need to keep those who work at the school!”, says Margit Timakov, Chairman of the Board of the Estonian Teachers' Union. (Timakov, 2019) EEMU sees three solutions:

## The number of teachers by age group teaching 7th-9th grade in Estonian basic schools



Source: Haridussilm

Figure 2. Statistics about the number of teachers by age group currently in Estonian basic schools.

(Graph: Author)

as well as decisions affecting each teacher.

- **Supervision** - In a workplace with a burning risk such as that of a teacher, supervision should be provided by the state in order to keep professionals at work and to support their coping and ability to work.
- **Reduce workload** - To 16-18 hours and improve working conditions: if the teacher does not have time to analyze, rest, charge the batteries, there is no wonder of burnout. Less workload helps maintain a teacher's mental health!
- **Training needs** - The priority areas for education policy and the wishes and needs of teachers themselves are certainly known at the state level - a self-respecting and innovative state of education collects and analyzes such data and draws appropriate conclusions,

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### Age of teachers

The average age of the teachers in Estonian schools is 49,2. Due to this, the education system should be able to substitute as many as 3,000 teachers by 2025. **However, about 750 new teachers are qualified each year, a third less than would be needed** to substitute retiring teachers (Suud puhtaks, 2019).

The share of teachers under the age of 30 in Estonia is almost in the same level as the OECD average (OECD average 10%, Estonia 9%). But one-fifth of teachers in Estonia are 60 years of age or older, the share of teachers over the age of 60 in science subjects being the largest. Teachers' length of service at the third level of basic school is on average 22,7 years. (TALIS, 2018)

## New teachers of Estonian general education schools 2010-2019

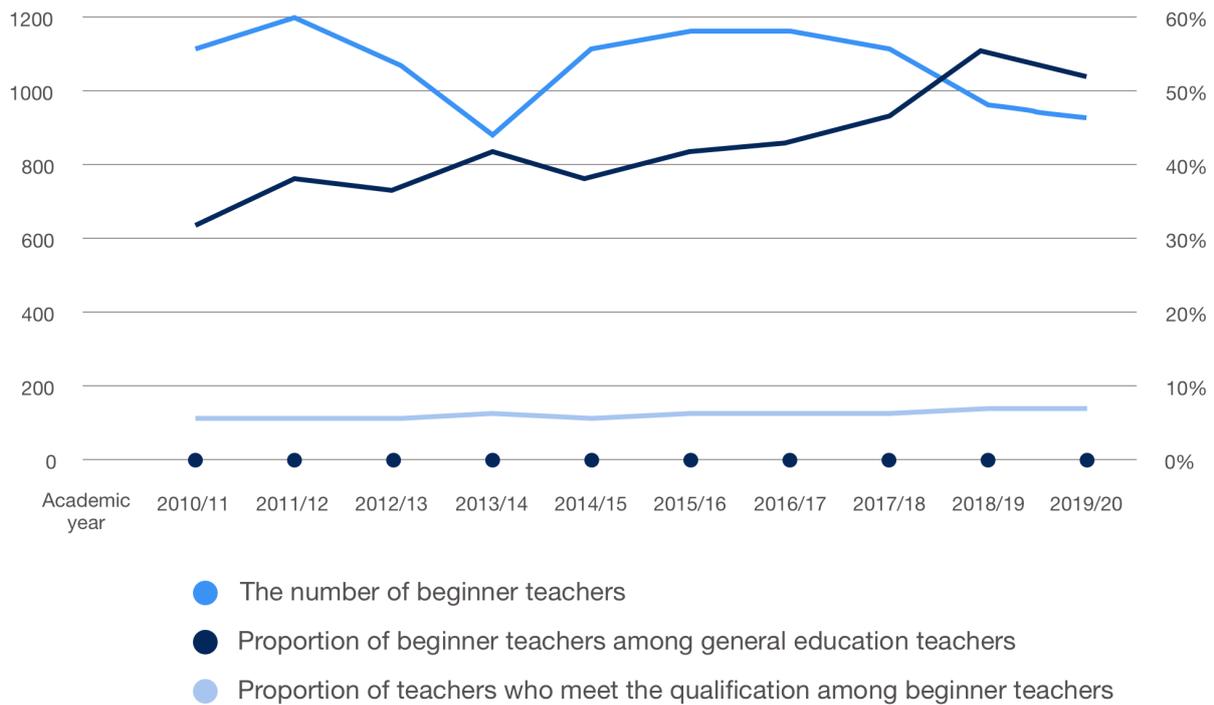


Figure 3. Graph that shows, how many qualified new teachers enter schools each year.

### Beginning teachers

The total number of new teachers in the school's teaching staff is 6,3% and **the beginning teacher is a 35-year-old person. There are about 1,000 of them a year, 73% continue the second academic year.** In year III, 61%, in year IV 55% and in year V 50% of those who start. The parties will disappear within 5 years. (TALIS, 2018)

Figure 3 shows that over ten years the number of beginning teachers has grown slightly, but it is still not enough to cover all the needs.

As for why people do not want to become teachers, in 2016 TNS EMOR conducted a survey aimed at assessing the image and attractiveness of the teaching profession

in Estonian society. **Only 16% of high school students would choose a teaching profession. The teaching profession felt more as an attractive career choice for university students — 41% would rather or definitely consider a teaching profession.** They see teaching jobs as with a high sense of mission, which also carries a high workload and is a stressful one. These are the most important characteristics in addition to questionable salary conditions, work atmosphere, and career opportunities, that shape the reputation of the profession. (Õpetajaameti kuvand ja atraktiivsus, 2016)

Thn the first year as a new teacher at basic school is very crucial — **about 30% of all the new teachers in Estonia leave during their first year** (Sellio & Vaher, 2018). The experience during those 12

months affects their thinking and creates the basis for understanding what the teacher's role and school environment more generally are about, how the work looks like, what are the tools they can use, how students behave, etc, for the years to come. This indicates to the importance of the support, that the beginning teachers receive during their onboarding.

In her master's thesis, Evelin Salu writes why teachers leave, because the first years are most difficult for beginners as very good subject knowledge and mastering of modern methodologies is required. **The problem grows exponentially without a mentor and the necessary support from a support professional and school management.** (Salu, 2018)

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## Decreasing qualification

Another thing is that **the number of teachers with a starting qualification has decreased: about every other beginning teacher has no qualification!**

By the beginning of the second year of teaching, an average of 14% of them acquire a qualification, and by the beginning of the third year of work, almost every fifth or 20%. (Material of the project "Journey to a school leader supporting a beginning teacher and shaping a school culture that values the future of teachers")

This has created opportunities for programs such as Asendusõpetaja,

Noored Kooli, Tagasi Kooli, Edumus, Kogenud Kooli, as more and more new teachers are people who have previously worked in other disciplines and they have decided to turn their career or enrich their career also with teaching. (See more in "Programmes addressing shortages" under Chapter 3)

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## Future predictions

This has also created worrisome opinions in public media over the problem space. "A bomb is ticking in the Estonian education system, which is expected to burst **in the next ten years when almost half of today's teachers will reach retirement** age and students will be left alone in front of a blank board," says Toomas Kruusimägi, the principal of Tallinn English College. He is calling parents to react to teachers' drought in the education system and most actively fight for the children's right to appropriate study organization and quality teaching. (Toomas Kruusimägi, 2019)

Representatives of the US National Center for Education and the Economy (NCEE) got acquainted with the Estonian education system in 2015. They were most interested in how we can achieve such a high result in the PISA test, but the head of the organization Marc Tucker also noticed crisis areas in Estonian education. **"The Estonian teaching staff seems to be on the verge of extinction**—the current elderly female teachers should be

covered by young female teachers coming straight from school. At the same time, the teaching profession does not seem very attractive in the labor market, as you do not earn much. But then again teachers here work more than in most countries.” (Marju Himma, 2015)

When to open Estonian teachers weekly paper *Õpetajate Leht*, their job ads section is typically full of schools that are looking for teachers to hire. (See Figure 4)

### Toila Gümnaasium

Lisatud: 17. apr. 2020

ajaloo- ja ühiskonnaõpetuse õpetaja, eesti keele ja kirjanduse õpetaja, huvijuht-projektijuht

[Ava kuulutus](#)

### Vasalemma Põhikool

Lisatud: 14. apr. 2020

eesti keele ja kirjanduse õpetaja, inglise keele õpetaja, matemaatikaõpetaja

[Ava kuulutus](#)

### Aravete Keskkool

Lisatud: 14. apr. 2020

eesti keele ja kirjanduse õpetaja, klassiõpetaja, matemaatikaõpetaja, muusikaõpetaja

Figure 4. Job adds section on the website of *Õpetajate Leht* (Teachers weekly).

## Solution initiatives

University curricula for educating teachers have been made much more flexible both in Tallinn University and Tartu University. These changes in curricula have already brought more math teachers. Additionally, **new teachers are**

**increasingly learning coaching thinking and collaboration methods.** More students are coming also to the educational innovation curriculum. The end result is that the content of the teaching profession is changing. **We are no longer talking about full-time teachers but also part-time teachers.**

Labor mobility has become the norm and also affects schools. And we have to get used to this normalcy. Working in education is changing as well, as Kristi Vinter-Nemvalts points out.

(Arvamusfestivali haridusala, 2019)

Also, a discussion on how to solve this problem can be found especially in the pages of Estonian teachers newspaper *Õpetajate Leht*. **“Teachers should not be alone in their class but work with colleagues, prepare lessons with two or three and give lessons also together.** It was also found that the teacher should be able to pursue a career in school. If you used to become a teacher-methodologist, now you could become a master teacher. In conclusion, it was also said that school management should approach each beginning teacher as individually as a teacher approaches each student individually.” (Juurak, 2018)

To highlight new teachers and the teaching profession as one of society’s most important and exciting professions, in 2017, NGO Alustavat Õpetajat Toetav Kool (School for New Teachers) (hereafter AÕTK) called upon to **celebrate the first**

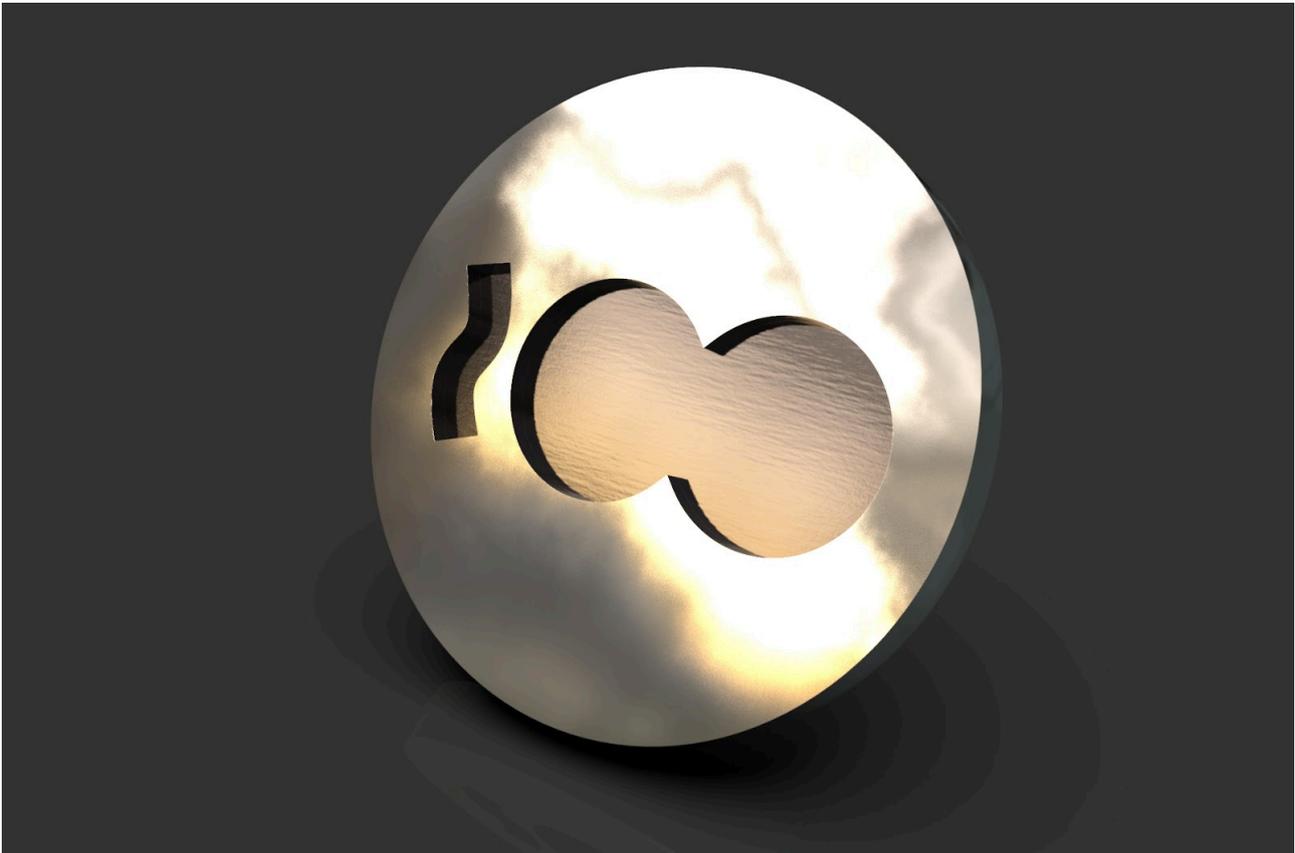


Figure 5. A special first 100 teacher days badge  
(Photo: AÕTK)

### 100 days of a beginner. (See Figure 5)

One hundred days is symbolic at the beginning of new roles. Settling in is getting behind, first cold showers are made, it is time for a mid-term review and look ahead—also in the teaching profession, where the issue of posterity is especially important today. (Noorkõiv, 2017)

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## Recommendations

One part of the TALIS 2018 study sets out recommendations for the future. It says:

- In order to accelerate the implementation of educational innovations, it is necessary to **support collegial cooperation** and diversify the

feedback within the school and between schools to the teacher and the principal.

- In order to support the professional development of a teacher, it is necessary for teachers to **teach more often together and to observe the lessons** of colleagues and to give feedback at school.
- To make greater use of forms of **cooperation for beginning teacher training** to support teacher co-operation.
- Develop a teacher **evaluation and feedback system** in each school.
- To support teachers in **how to analyze their own work** and draw conclusions from it in order to improve their work.

## Education Strategy Development Plan 2021–2035

When opening the problem space around teachers workload in Estonia, a document entitled as Education Strategy Development Plan 2021-2035 must be considered. (See Figure 6) It sets targets in education for the next 15 years. When thinking on current challenges and future perspectives, this document helps to set the frame.

**The new strategy asks how education is related to the economy, science and culture and talks about seamless education where there are no barriers.**

This document is still under compilation, but one of the main ideas of the drafters of the new strategy is that each student should have his or her own individual study path that suits his or her interests, learning speed, and so on. Meaning **the individual learning path brings the learner together with other individual learners.** (Juurak, 2018)

**In the strategy, the focus is on empowered and self-directed learner.** A person who is aware of his or her resources takes responsibility for choices and education. Following is non-exhaustive list of directions in the plan:

- Learner and teacher empowerment and well-being, safe learning environments
- Encourage teacher mobility as well as learning mobility



Figure 6. Cover illustration of the Summary of the vision document Smart and Active Estonia 2035, part of Education Strategy 2021-2035. (Illustration by HTM, 2021–2035)

- Learning is learner-centered and forward-looking and helps the learner to cope well in life
- Ensure the growth of qualified teachers / trainers / support professionals and support professionals, flexible career paths, support for beginners and support for professional development throughout their careers;

(HTM, 2021–2035)

The aim of strategic planning is to develop a realistic long-term plan for the

development of these areas so that Estonia has a favorable environment for creating, acquiring and using knowledge and people can and want to learn all their lives, be creative, entrepreneurial and open to new and contribute to a cohesive and democratic society. (Education conference “Õppimise aeg”)

## Research questions

Based on the initial interviews and findings analysis I decided to look into the following research questions.

- How can teachers build contact with all the students if classes are big?
- What are the biggest stressors for teachers?
- How the teachers get support?

## Hypothesis

Similarly to research questions I formed also hypotheses based on initial research.

- By reducing the workload for teachers we can improve the outcome of their work.
- Dealing with students with special needs (such as the ones that have behavioral disorders) use up a lot of teacher’s time and energy in the class.
- Teachers in schools do not get enough of support.

## Target group

I chose to focus on **basic school third level subject teachers**, as they are the ones dealing with students that are between 12–16, which is very fragile time of life for a person. Adolescence is the developmental epoch during which children become adults – intellectually, physically, hormonally, and socially. Adolescence is a tumultuous time, full of changes and transformations. The pubertal transition to adulthood involves both gonadal and behavioral maturation. (Arain, M., Haque, M., 2013)

Due to the turbulent times, the need for humane contact between themselves and teacher is especially valid, to have somebody that can have an impact on their education. For that reason I see the teacher and teaching quality holding a great influence on young people and their study results. **Teaching quality lowers significantly if the teachers are stressed out.**

## Design Approach

Overall this **project is based on design thinking process** which seeks to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test. The method consists of five phases— Empathize, Define, Ideate, Prototype and Test and is most useful when you want to

tackle problems that are ill-defined or unknown as described by Interaction Design Foundation, an online non-profit organization dedicated to accessible design learning. (IDF 1)

Among other materials they have made public also Hasso Plattner Institute of Design's (hereafter HPID) **five-stage design process**. It is noteworthy framework as it is not a linear process and designers can often run the stages in parallel, out of order and repeat them in an iterative fashion. In this process, the various stages of design thinking should be understood as different modes which contribute to the entire design project, rather than sequential steps. The ultimate goal throughout is to derive as deep an understanding of the product and its users as possible. (IDF 1) (See Figure 7)

solid basis for exploring the problem space to build my concept proposal on top of that, but supplemented it with more comprehensive inspiration phase in the very beginning. (See Figure 8)

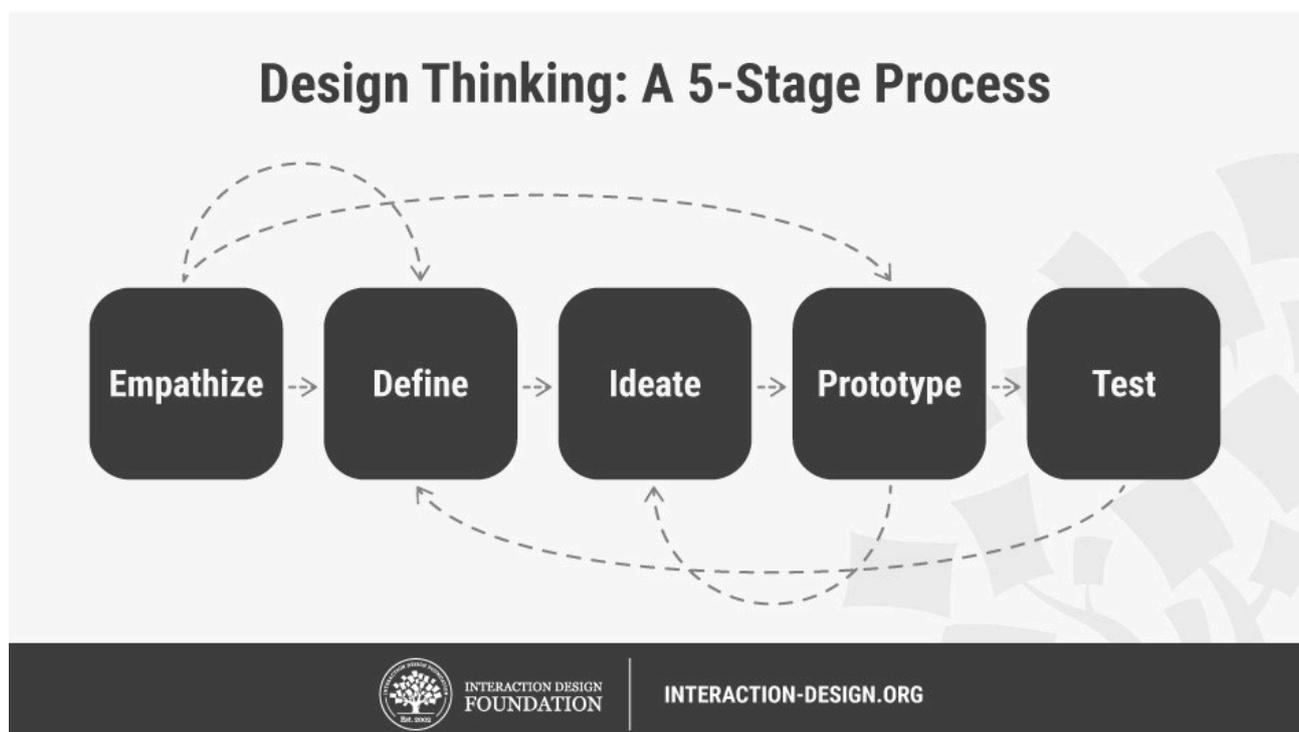
**In addition to design thinking, I also followed the service design framework in my process aiming to create optimal service experience.** This required taking a holistic view of all the related actors, their interactions, and supporting materials and infrastructures. Service design often involves the use of customer journey maps, which tell the story of different customers' interactions with a brand, thus offering deep insights. (IDF 2)

There are **five basic principles that underlie service design**, which I held onto during the process:

## Methods

For this project I used HPID's model as an outline for my own process, which creates

Figure 7. Five-stage design process. (Author/Copyright holder: Teo Yu Siang and Interaction Design Foundation. Copyright terms and licence: CC BY-NC-SA 3.0)



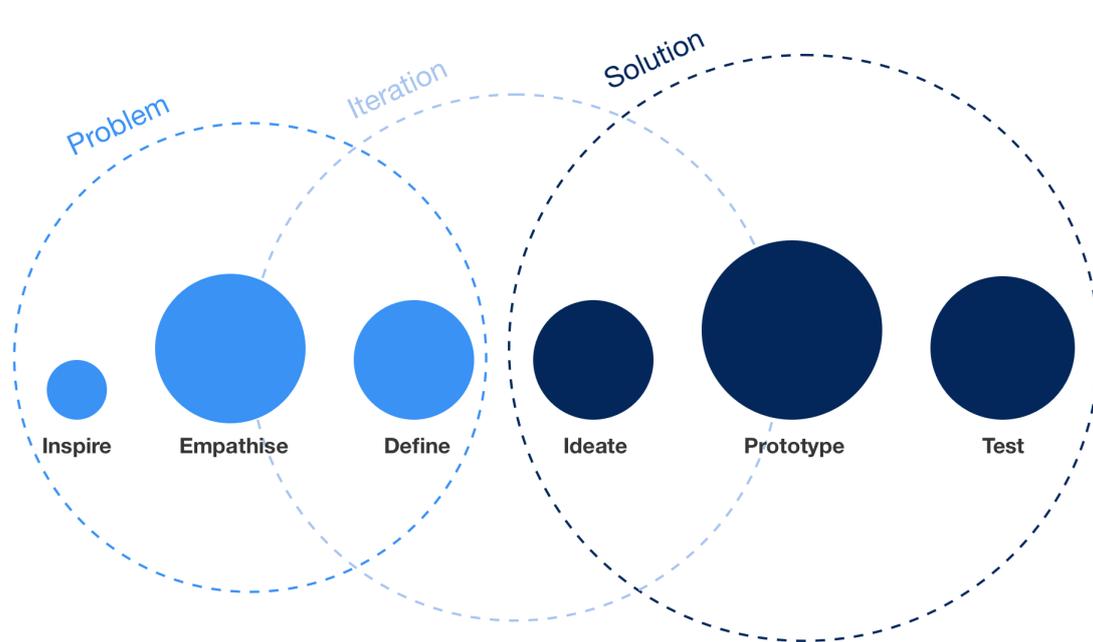


Figure 8. Outline of my project process. (Graph: Author)

1. **User-centered**, through understanding the user by doing qualitative research
2. **Co-creative**, by involving all relevant stakeholders in the design process
3. **Sequencing**, by partitioning a complex service into separate processes
4. **Evidencing**, by visualizing service experiences and making them tangible
5. **Holistic**, by considering touchpoints in a network of interactions and users

delivery, which includes generating new ideas, co-creation workshops with the users, persona description, model development, and prototyping. In the final stage I refined the concept and validated it on the users.

(Stickdorn & Schneider, 2018)

As can be seen on Figure 8, there are two main parts in my project, which in turn is bound by a nonlinear iteration. In the first part I describe the process through inspiration empathising and challenge framing. This part involved target group interviews, observation, visiting conferences, desktop research, future trends analysis and sense making from all the material. In the second part I focus on ideation, concept development and final

## Chapter 2

# Primary Research

In this section I present methods I used for researching the target group, the synthesis process and the main findings

## Interviews

**To understand the reasons behind huge workload, the pain points and motivations around it and see whether my hypotheses were right**, I compiled an interview plan with the target group—the subject teachers in the basic school. I used the ranking of state exams of Estonian general education schools as a reference point to choose schools to find the subject teachers from to talk to.

I looked out **three schools from the very top of the ranking, three from the middle and three from the bottom, topping it with a hobby school**. My goal was to compare the extremes and see, what comes together from that comparison.

For the abovementioned way of selecting interviewees **I based on Extremes and Mainstreams method** from IDEO's Design Kit, which directs to target both the mainstream and those on either extreme of the spectrum, when recruiting for the interviews. It is a valid method, because an idea that suits an extreme user will nearly certainly work for the majority of others. (IDEO Design Kit)

Still, due to the problem area I am focusing on, teachers saw it very hard to find time to talk with me so I had to re-organise. Over the next month and a half, I managed to talk to subject teachers from following schools:

- Tallinna Inglise Kolledž (Tallinn English College)
- Pärnu Sütevaka Humanitaargümnaasium (Pärnu Sütevaka High School of Humanities)
- Tallinna Vaba Waldorfkool (Tallinna Waldorf School)
- Tartu Forseliuse Kool (Tartu Forselius School)
- Pelgulinna Gümnaasium (Pelgulinna Gymnasium)
- Tartu Herbert Masingu Kool (Tartu Herbert Masing School)
- Tartu Loodusmaja (Tartu Nature House)
- Lasila Põhikool (Lasila Basic School)
- Kõrveküla Kool (Kõrveküla School)

Interviews were carried out in a semi-structured manner. I had prepared some of the topics but left also space for natural conversation flow. Interviews took one-two hours, depending on how much time teachers had. Teachers were by the profession: Estonian language and literature teacher, 2 English language teachers, Elementary school class teacher, 2 Geography teachers, History teacher, Math teacher, Nature instructor. From the perspective of work experience they varied from the very beginners to the ones having 20 years of experience.

Overview of the interview findings can be found in chapter Pain Points for Teacher, p 23.



Figure 9. Photos characterising indoors environment in schools where I interviewed teachers. (Photos by Author)

## Observation

Additionally to the interviews, I spent one day in English College alongside the English teacher during the 4 classes she held at that day, observing the dynamics that took place in the class, witness students' behavior, seeing the role of a teacher in front of the class and how students follow her lead. I did not participate in the activities more than introducing myself at the beginning of the class. The rest of the time I sat in the back of the class, observed and took notes in my notebook.

Additionally to the classes, I followed her footpath to the teachers' room during the break and used the time to ask further questions, talked with couple of other teachers and collected photo material of the artifacts in the school. Along with the interview findings I took observation findings into account, when I organized data and ideas in next step.

## Affinity mapping

Affinity mapping means organizing data and ideas into clusters based on patterns or themes I saw. It is a method to help to make sense of all the information. (IDF 3)

After gathering all the data from the interviews and observation I used affinity mapping methodology to do the **initial categorisation for the data collected and marked out pain points**. These

interviews opened wide field of topics that the teacher is facing daily basis. These were all not necessarily pain points, but conveyed also the information, what it's like to be a teacher and what are the different themes they are facing. Altogether the volume of different topics ended up being big, but this canvas helped me to see, which topics are overlapping across the schools more than others and which tap into certain schools only.

After doing the initial clustering I decided to re-cluster the whole cloud into blueprint kind of format, where I differentiated the findings by four main actor types: the user (teacher), school, end-user (student), parents. Furthermore, the teacher part I cut into three parts: what they do, what are the emotions, and the means on the big picture.

During the re-clustering, I left some of the post-it notes out of the picture, which carried repetitive meaning. (See Figure 10 for an illustrative overview of the blueprint)



## Pain points for the teacher

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### 1. Schools leave new teachers into survival mode during their first year.

1.1 There is a lack of knowledge of how things work and who knows the answer. No clear system is waiting, leaving them in constant stress.

1.2 As a new teacher, you lack skills on how to establish yourself to feel confident and both, your colleagues and students would respect you. There is a lot of information and different guidance, making it altogether

1.3 Teachers need a mentor. In the NK program, you will get one from there. Some schools provide a mentor to new teachers as well, but they might not have enough time or skills to mentor or the relationship is rugged. Plus it is not paid.

1.4 Each school has its own school culture, practices and rules. It demotivates, when you end up in school, where your colleagues do not support you and act for their own good. Competition and power chain destructs creativity, safety, trust and builds up fear among the team.

1.5 In case the teachers come through NK, they have to remain in the position for two years. There is a mindset to decide based on the experience, whether to continue afterwards.

*“The first year of teaching is very difficult, there is a lot of uncertainty. For a long time I did not know that a social pedagogue existed at all.”*

*“You come in raw and can’t yet establish yourself both within yourself due to the nature of this work and with children.”*

*“My friend history teacher offered me a mentor. It’s not paid for me, it develops me, but the mentor does it for empathy and doesn’t get any reward.”*

*“When I wanted to leave, my colleagues asked me if I was weak, that I could not cope? You can’t establish yourself, right?!”*

*“When 2 years of the Youth School program is over, I will see what happens.”*

---

2. Due to a lack of proper human resource management, the teacher is facing a rich selection of activities, having no guidance, how to divide and conquer in this situation, which pushes them toward burnout.

2.1 There is a list of things a teacher has to take care of besides actual teaching in the class. A lot is going on during the school day, so it is almost impossible to manage all the tasks in time and they have to do extra hours. Some of them use time tracking apps to witness, where all that time goes.

2.1 Typically there is no HR service in the school to deal with time management, recognition, training or feedback system. These issues are dealt by the management.

2.1 Teachers don't get enough of the professional support they need during the times of struggle as due to the lack of resources many schools haven't managed to hire psychologists, speech therapists, social pedagogues.

2.1 They are not getting enough feedback on how they are doing, neither from the students nor from colleagues. Once a year a development discussion is held with the director.

*"I did before 40 h a week + materials preparation, in-service training, specialty materials development, class tours, tutoring etc."*

*"There is no staff management at school —it is mostly in the hands of the director."*

*"I'm pretty good at stress tolerance. I usually drawn problems into me and don't want to talk to anyone about them."*

*"The school could also ask students for regular feedback."*

---

3. Estonian new education strategy states that we need to develop more personalized learning in schools by 2035. Already today, teachers struggle to reach every student.

3.1 To reach to personalization level, where the teacher has time to deal with every student, the classes in the cities need to shrink in numbers. The typical class today in the cities has 21–26 students, in the countryside around 10 or less.

3.2 If each person is viewed according to his or her personal development, it means also a bigger workload for the teacher.

3.3 Personal learning track is an acute topic also because teachers feel that children today have more special needs than they use to have years ago.

3.4 Inclusive learning system as now does not work, i.e. SEN brings emotional struggles to everybody in class incl to the classmates. Private or top schools can choose, whether they will accept SEN students among their classes.

*“9–12 students is the ideal of a personalized student class.”*

*“I have to start presenting the material differently to the children when personalizing.”*

*“In today’s classroom, there are many special needs that did not exist before and need to be considered.”*

*“All recent world studies show that inclusive learning does not work, yet Ministry of Education pushes them into the usual class.”*

---

4. Parents are keen to know, how their offspring is doing, but tend to protect them very vigorously and lack respect towards the teacher.

4.1 Parents can be very pretentious. Some teachers refuse to even become class leaders, as they are afraid of the parents.

4.2 Raising and educating a child should go hand in hand in collaboration between home and school. This is how teachers see it, but feel, that parents tend to think that schools are more responsible for the child.

*“Parents often feel smarter than teachers and there is no respect for the teacher.”*

*“Society should not assume that when a child goes to school, then only the school deals with them.”*

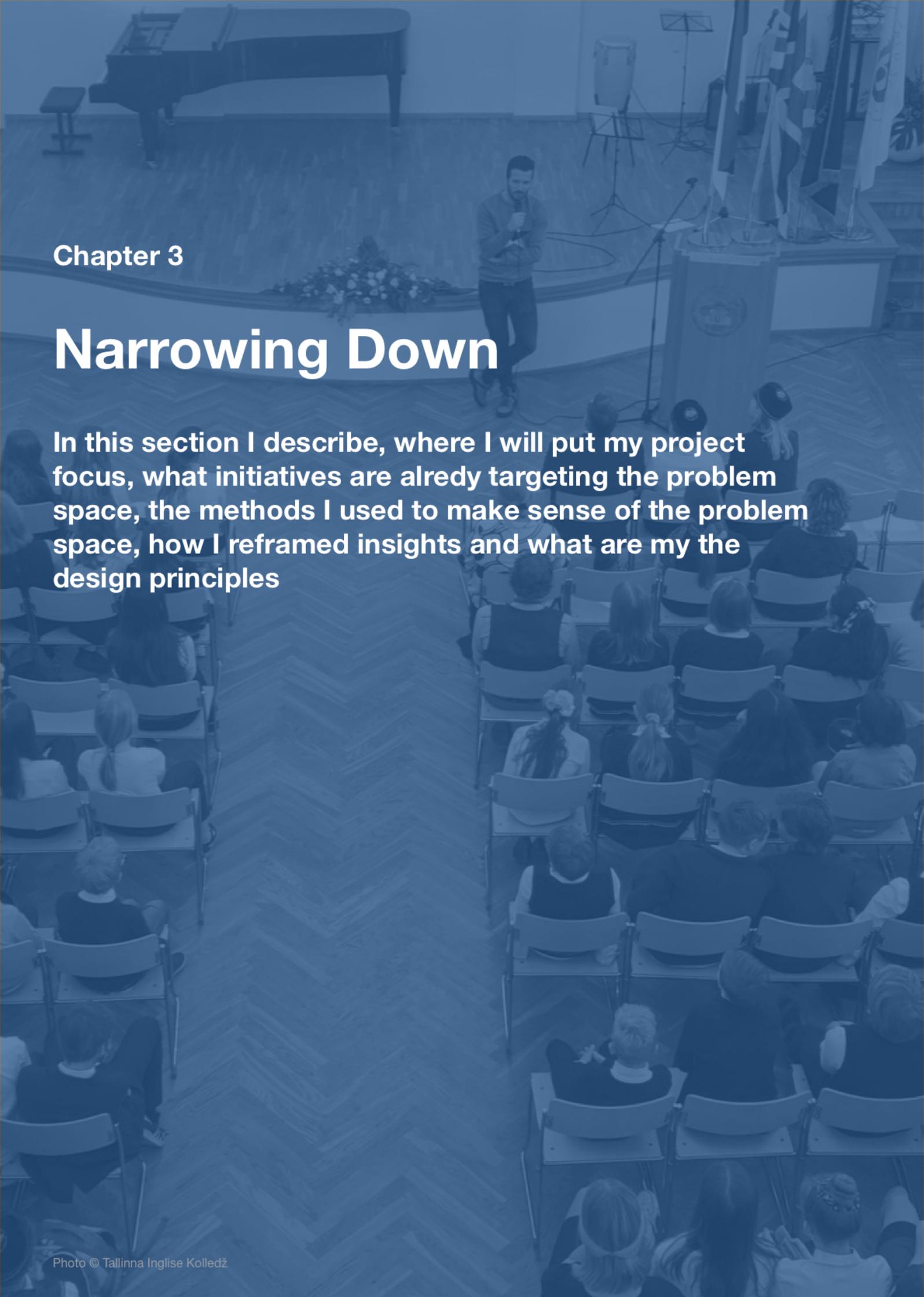
## Future vision by teachers

Through the interviews, I learned that in their mind, present-day teachers see the school by 2035 as something that is much more diverse than it is now. They see an opportunity for much smaller and varied schools, which could also grow as by the initiative of the parents or teachers to become community schools.

All the people are different and the more diverse is the field of education the more we can learn from each other. By keeping this in mind, we avoid building up schools that follow the same “right” structure that standardizes the students. School in the teachers’ minds will become more and more something else than just the place, where to learn the facts and theories.

*“Education is needed on a broad basis and it is becoming more and more diverse. If there is a general expectation that you are no one without a high school diploma, then we must allow people with different needs to get a diploma. Different routes must emerge.”*

*“The school of the future could have rooms of different sizes that can be structured according to the needs of both teachers and students.”*

A photograph of a man in a grey sweater and dark pants standing at a podium on a stage, addressing an audience. The stage is decorated with a piano, a drum set, and a microphone stand. The audience is seated in rows of chairs, facing the stage. The entire image has a blue tint.

## Chapter 3

# Narrowing Down

**In this section I describe, where I will put my project focus, what initiatives are already targeting the problem space, the methods I used to make sense of the problem space, how I reframed insights and what are my the design principles**

## Defining challenge

As my explorative research findings cover wide areas of problems that are all very much interconnected, **I decided to narrow my focus down to teachers that are at the very beginning of their career.**

I saw it as an important focus area due to the shortage of new teachers. As I learned from my research, teachers in Estonian school network are aging, but they need as much of attention as the beginning teachers. Still I realised, we need to support the new ones more as this could help to bring new people on board. Schools simply need more qualified teachers.

**The challenge is remarkable at the beginning of the new role. They need strong support and guidance from more experienced colleagues and the leaders of the school.** After graduating from university or another preparation program, the newcomer enters the school with positive energy and ideas, which they hope to try out, inspire other teachers, and encourage students to think along. But the reaction of students and colleagues can yet turn out the opposite. The current staff for e.g. might not accept the newcomer so warmly, perceive them as competition, or are simply arrogant towards them.

*“The first board meeting at the beginning of the year discussed last year’s summary — the document which*

*I saw for the first time — and my opinion was expected. When I asked something, the older teachers rolled their eyes and said, listen, we’ve already discussed that. I was given a lot of that attitude.”*

*Noored Kooli teacher*

For newcomers, it is an emotional driver, which makes them feel not welcome and understand rather the need to adapt to the existing system. In another example, one young teacher told me about her experience in the rural school, where she wasn’t getting friendly welcoming either.

*“I went to the teachers’ room. As I stepped in I could tell that everyone turned silent in the coffee corner because they clearly didn’t want me to hear their discussion.”*

*Teacher at a rural school*

To conclude, among other reasons, this all can tell, why we are facing a shortage of teachers. **Their experience during the first year is crucial, having a big impact on the further relationship with the school, students, colleagues, and process.** That made me want to narrow down my focus on that very first year of the beginning teacher, as I realized that a

lot of the issues seem to touch their onboarding process.

## Programmes addressing shortages

**Approximately 380 general education school teachers need to be replaced per year in 2018–2025 due to their age.**

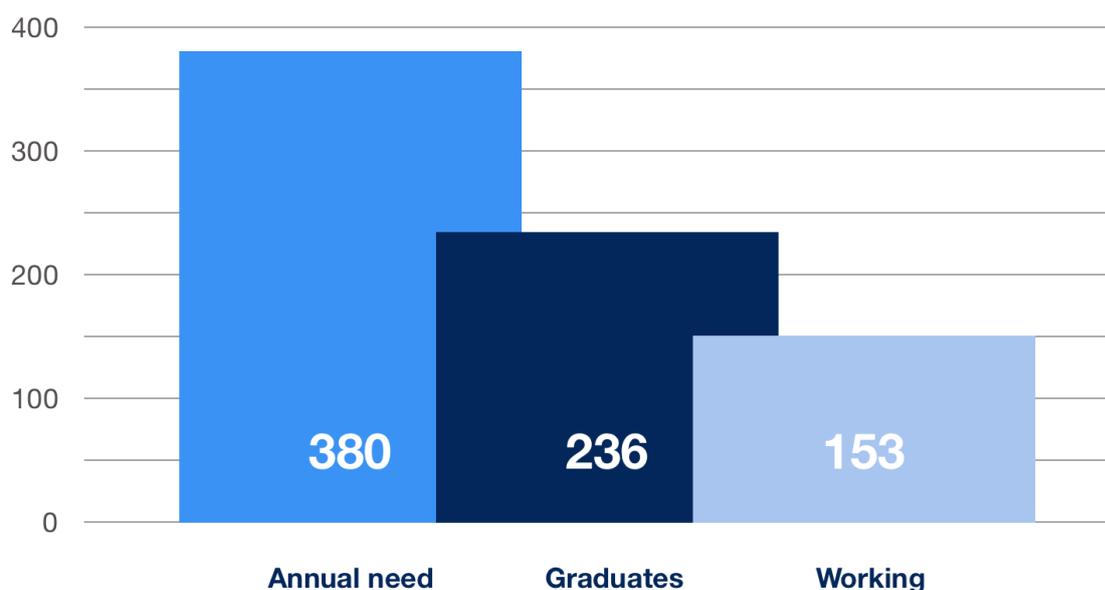
If the number of teacher education graduates remains at the current level, **about 230 teachers could potentially enter the labor market** per year during this period (incl graduates of multi-subject teacher curricula). Unfortunately, a significant part of them does not become teachers. Out of the 236 subject teacher training graduates who

graduated in the 2018/19 academic year, **153 started working** in schools in the 2019/20 academic year. (OSKA, 2018; EHIS)

We are lacking teachers with professional education. Due to the acute problem, several programs and initiatives try to address this issue, but even all of them together still do not cover up all the shortages. Approximately 70 teachers entered schools additionally in the 2019/20 academic year (calculated based on the numbers given under each program), leaving schools to find rest of 157 teachers on their own (calculation:

Figure 11. Qualified beginning teachers in Estonian general education schools in the 2019/20 academic year. (Graph: Author)

### New teachers who started working in Estonian general education schools in the 2019/20 academic year



380-153-70=157) (disclaimer: It is not a factual number, as this calculation depends on many variables. It rather represents magnitude.).

Working on another profession and becoming a teacher is a step towards a career change. Participating in one of these programs is a way to begin with it. Following is the list of active programmes in Estonia that actively address the shortage of teachers.

---

## 1. Noored Kooli

NK (Youth To School) is the program that trains people with different backgrounds to become teachers ensuring that every child receives a good education. In average it is said, that every NK teacher has an impact on 100 students. The program period is two years and participants work at a load of 0.8-1.0 positions. The total working time of a teacher is 35 h/week, but beginning teachers usually work more in reality. The workload is divided into four working days - Fridays are free to allow participants to take part in the trainings.

While working at school, NK participants develop their knowledge and understanding of the education system and human management, as well as leadership skills.

Work itself takes place in NK partner schools, which students are more likely

than average to be limited to basic education.

Currently, there are 28 people in 13th batch (2019–2021) chosen out of 344 people. In the next batch, organisers hope to get 40 participants. Noored Kooli Foundation was established in 2006 by the Heateo Sihtasutus and Swedbank. During this time, NK has brought more than 200 motivated and active people from diverse backgrounds to Estonian education.

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## 2. Õpetajad loovad homse Eesti

ÕLHE (Teachers will create tomorrow's Estonia) is the marketing program, that has been implemented in cooperation between the Innove Foundation and the Estonian Ministry of Education and Research. They aim to promote the value of growth and attractiveness of the teaching profession in society. The activities are supported by the European Social Fund.

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## 3. Alustavat õpetajat toetav kool

AÕTK (School for New Teachers) have dedicated to supporting the growth of a new generation of teachers and the smooth and meaningful integration into their new role. Currently, they are addressing the following issues to support the beginning teachers:

- Calculating the cost of interruption of the beginning teacher work;

- Piloting the training program for mentors of beginning teacher to prepare the ground for expanding the mentoring service and creating regional communities of beginning teacher mentors.
- In cooperation with Estonian Business School, they have trained already two batches of school leaders in the focus of their own personal and professional development to be able to find solutions to their key challenges and support others;

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#### **4. Tagasi Kooli**

TK (Back to School) is a citizens' initiative that aims to help 1-12 class students learn life skills to cope well in life. TK offers teachers and people from outside the school a web-based environment to arrange guest lessons, study visits, work shadowing and guest e-lessons valuable to teach skills for life. The program's reservation system has gained more than 1,000 invitations from first to twelfth class students hoping to take part of the lessons in various subjects areas.

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#### **5. Asendusõpetajad**

AÕ (Substitute Teachers) is a social enterprise that brings together schools and suitable volunteer substitute teachers to cover subject teachers for individual classes, which would otherwise be called off. In 2018, they had 230 and at the end

of 2019 almost 1,000 people in the network. In 2019, 177 helped to complete the lessons, so every fifth person was a substitute, of whom 18 people have even become full-time teachers. Today, there are more people in their list, than work for them. It is most difficult to find science teachers. Their top subjects are natural sciences, Class teacher, Mathematics, English, Estonian.

---

#### **6. Edumus**

Edumus helps working professionals to contribute to the education of Estonian youth by teaching just one subject to one class in one school during one academic year. Programme discusses with the school which class the teacher will teach and try to find them classes that are easy. 13 teachers are currently working, the goal for next year is 60. TK people are good candidates for Edumus, who in turn are good candidates for NK.

---

#### **7. Kogenud Kooli**

KK (Experienced School) is a program by the University of Tartu, aiming to bring new science teachers to schools. Especially those are expected to join, who have already higher education and are ready to do the work at school while studying at university. This project is just beginning—in the autumn of 2019, 11 candidates started working at the school and teaching at the university. In 2020, they want to find 25 people who are ready

to go to school as Mathematics or Physics teachers and who have a master's degree or a four-year nominal bachelor's degree or equivalent. The goal is to receive 25 people each year.

## **Understanding Opportunity Areas**

To get a better understanding of the opportunity areas in the onboarding process, I used my research findings to map out the present problem space. It reflects both, the experience of NK program teachers as well as the ones with a pedagogic educational background. Experience mostly differs between them only from the perspective of mentorship, which NK participants get in big part from their program, although schools are asked to provide a mentor from their side. Apart from that, the experience overlaps— they both have to manage the new situation and struggles are real. Though, in this journey, I used NK program length as the basis, i.e. two years. (See figure 12)



Figure 12. Mapping the onboarding journey for new teacher. (Author)

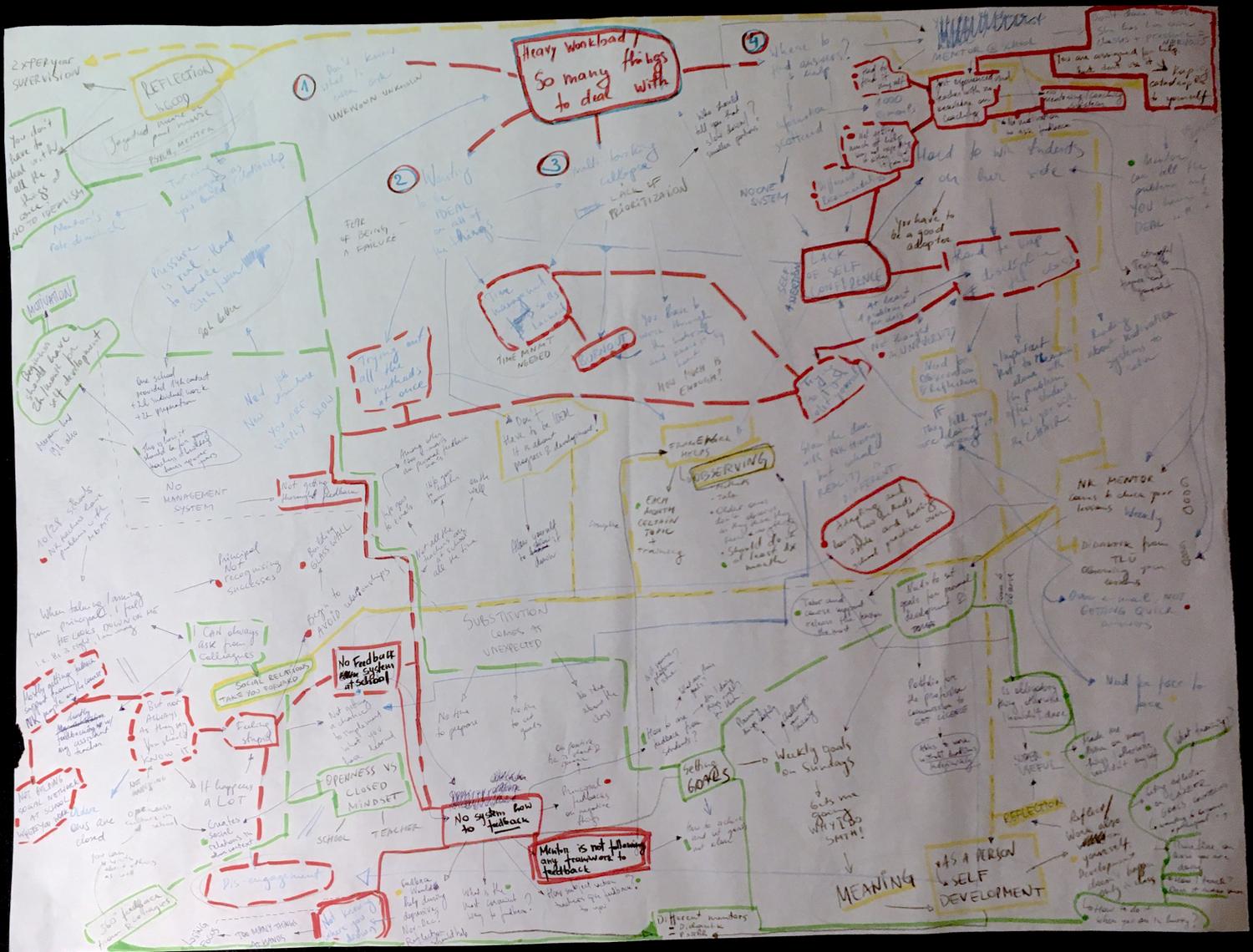
# Mindmapping problem space

After mapping this journey, it became clearer how the problems which turned up in my research, impacted the beginning teacher during their onboarding in both cases, whether they enter the school through the NK system or not.

Having visualized the problems on the wall I felt intrigued by the messy period during the first year and wanted to dig deeper into that area to see, what is the teachers mental model behind it, what are the motivators and what are the barriers, to find, where is the crucial opportunity area,

that I would want to put my focus down to. When they begin with second year, things ease up a little bit, as you can use materials from last year, students and colleagues are familiar, you master the methodology, etc. So I draw it all out on a paper and marked the connections with colors: red meaning pain points, yellow one the drivers or motivators and green one as a possible opportunity.

Figure 13. Mindmapping teacher mental model between different themes. (Author)



place in parallel, leveraging the stress level. (See Figure 13)

For me mindmapping worked really well, as the connections between different problems emerged, and it became even more evident that the following are very important drivers for the target user group.

- engagement
- self-confidence
- feedback
- self-development

Their need for support and guidance in that period speaks loud.

Looking at it from afar, it seemed to start pointing towards mentorship as a general theme and the impact on new teacher's development. But on the other hand, it points also towards leadership as a root cause.

## Expert interview

To validate if my synthesis was pointing to the right direction, I contacted Triin Noorkõiv, the CEO at AÕTK to reflect upon my research and ask her about the role mentors carry in basic schools and how widespread the use of mentors actually is in Estonian basic schools. Also about their school leaders' coaching program.

She pointed out that with up to five years of experience, only 17% of subject

teachers from 7–9th grade had mentors (TALIS, 2018).

And by the survey that AÕTK conducted itself about the current status of beginning teachers, only 54% of beginning teachers had a mentor agreed by the school (no distinction is made between basic schools and upper secondary schools) (AÕTK, 2017/18).

It describes that mentors use in schools in the purpose to support beginning teachers, is still not widely used and holds space for improvement. To me it was a confirmation on one of the root causes of the problem I was focusing, and an argument to keep in mind in further work.

To change the situation towards the better, AÕTK has negotiations underway in Tallinn to create a pilot program at the first local municipality level and to establish a community of mentors. A good result would be if in the 2020/21 academic year they can train 9–12 mentors during the pilot project, who would supervise thereafter two beginning teachers each. This approach has been introduced also to officials and politicians in the Ministry of Education and Research. At the moment, however, the timetable for moving forward is unknown.

## Reframing insight

Having understood the need for solutions in the problem space I reframed my insights as How Might We questions.

Every problem is an opportunity for design. By framing the challenge as a How Might We question, you'll set yourself up for an innovative solution. (IDEO Design Kit)

- How might we help beginning teacher to see, where they fail/ could do better?
- How might we manage all the tasks and focus during limited time?
- How might we help them avoid burnout and remain healthy?

## Design principles

Design principles are fundamental pieces of advice to make easy-to-use, pleasurable designs. Principles can be applied when you select, create and organize elements and features in your work. (IDF 4)

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### Build self-confidence

The solution should contribute to the continuous development of the teacher, both professionally and personally, and through this boost their self-confidence.

---

### Enable self-management

In the context of information overload and multitasking, self-management helps to avoid burnout and prioritize tasks in hand.

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### Aim at the education strategy 2035

The solution should aim education strategy 2035 that is under compilation, which marks the importance of empowering both teacher and student, flexible forms of work for personnel, and the importance of collaboration in organizational culture.

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### Design for equality

Considering all your colleagues as equal partners in team effort helps to create safety and trust in the organization and supports the free flow of sharing ideas and feedback.

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### Maximum value with minimum time

Teachers are already overloaded. Considering the present daily schedule of beginning teachers, the solution should bring maximum value with minimum time.

## Chapter 4

# Concept development

In this section I describe the steps I took to reach to the final concept

# Ideation process

## Building the workshop

To get ideas going over possible solution, I invited couple of students from the IxD.ma program to join in an hour-long online ideation session. (See Figure 14) Why I chose to go for ideation, because it helps to:

- Bring together perspectives and strengths of your team members.
- Step beyond the obvious solutions and therefore increase the innovation potential of your solution.
- Uncover unexpected areas of innovation.
- Create volume and variety in your innovation options.
- Get obvious solutions out of your heads, and drive your team beyond them.

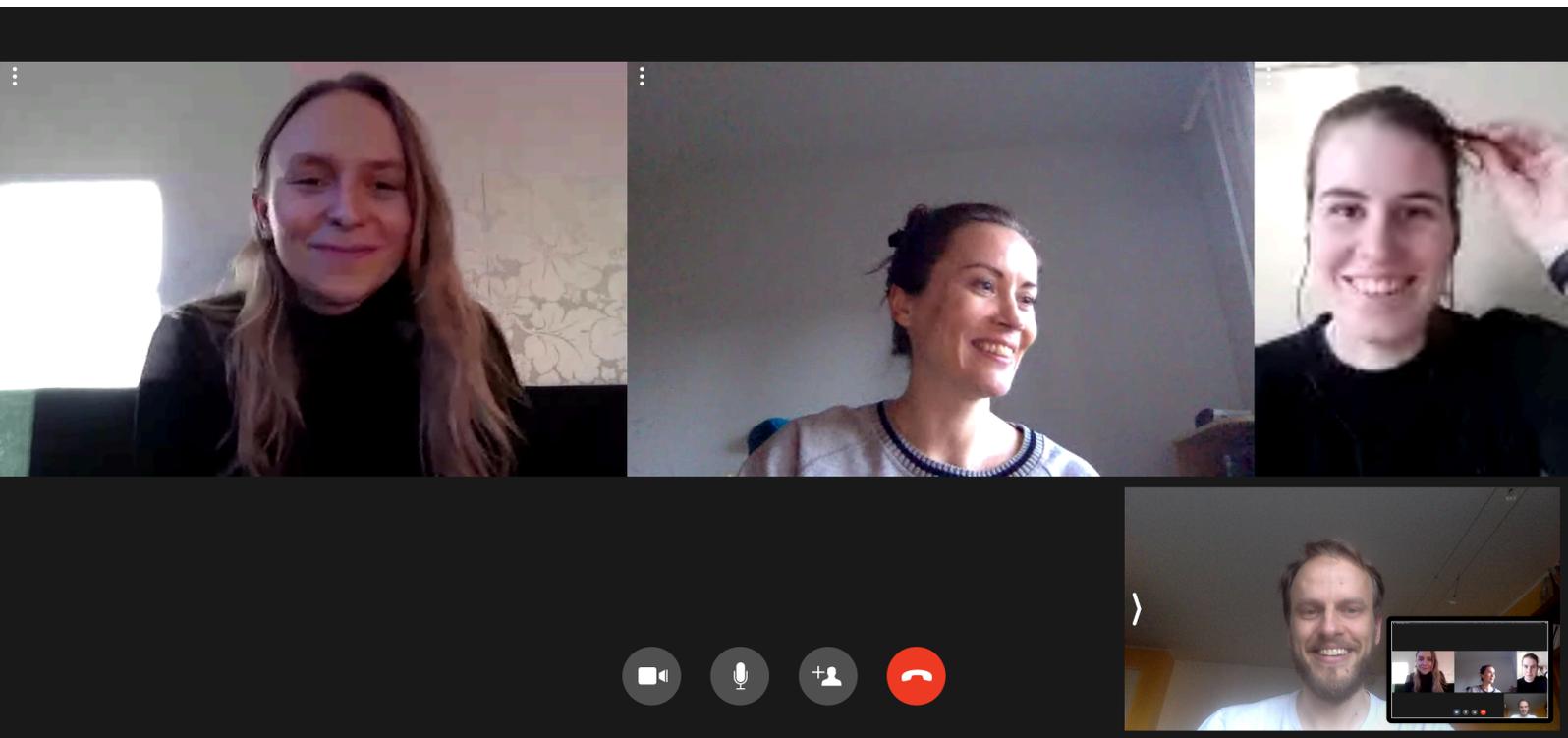
(IDF 5)

How exactly to build up this session, I discussed with fellow student Katre Purga, who was also in a similar spot at that point.

As we were hoping to get ideas both in descriptive and visual form, we first tried out the Figma platform. Unfortunately, it did not allow others to join in with a drawing feature open.

We skipped it and discussed our expectations for the outcomes of the workshop instead. We realized that we might not need even drawing capability. Describing ideas shortly was even more agile, and by this we could produce quick ideas without spending time figuring out, how the platform works, plus other technicalities.

*Figure 14. Doing virtual ideation together with fellow students from IxD MA program. (Author)*



That's why it felt the best form was to hold this session on Google Slides, which is a shared platform, and its structure creates already boundaries. So we left each one of the participants with their own slide and gave empty post-its to fill out.

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## Workshop in action

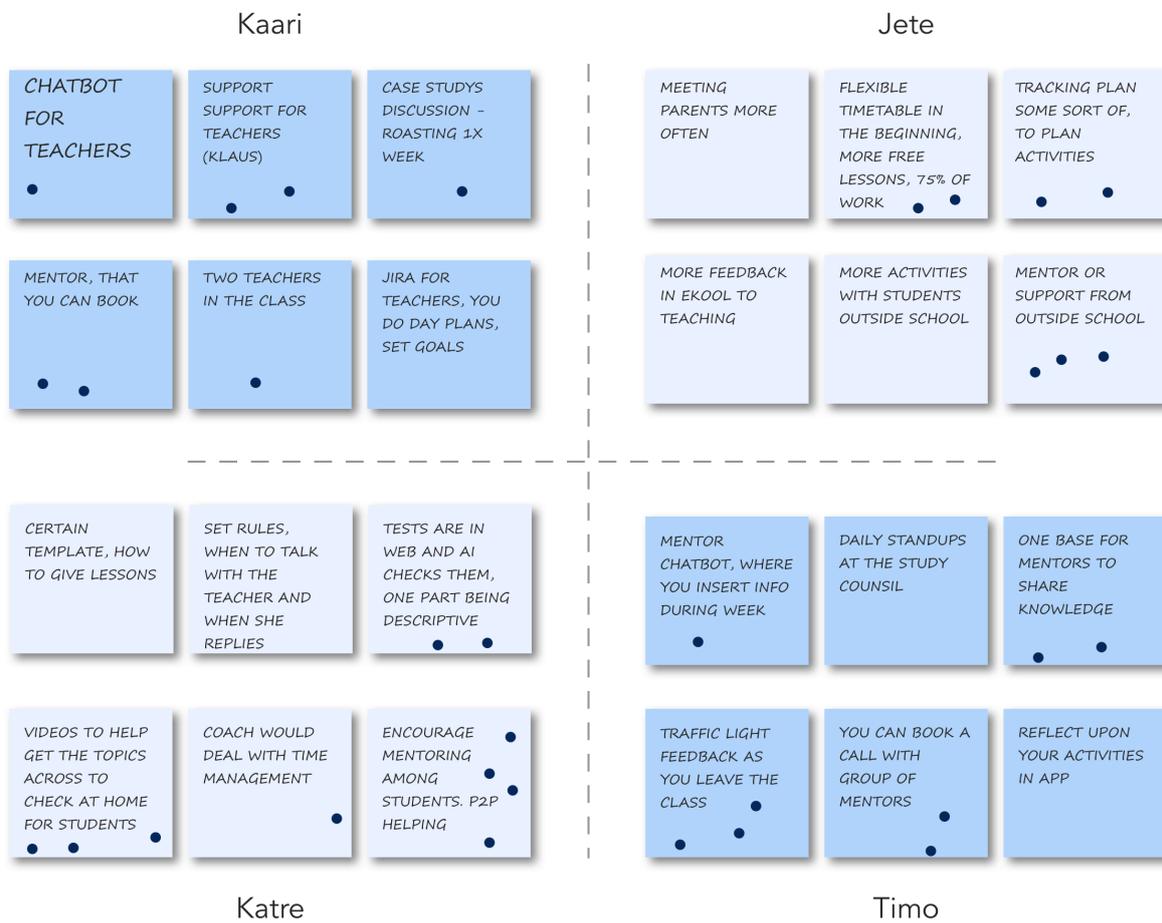
To initiate the ideation, I asked my HMW questions and Katre asked hers. Using this kind of method felt valid, as I wanted to get out rapid ideas without thorough analysis, and use them as the basis for further mental connections with my research results, when working on the initial concept. I had never tried out ideation in that format and it worked surprisingly well. Everybody had 5 minutes to come up with as many ideas as possible. After that one by one, we read out loud all the ideas and described them a little further. As each one had read their posts, we took the time to give votes for our favorites to see, which kind of ideas gain more attention and aspiration. Each one had two votes. If you really-really liked three ideas, then you were free to mark up three posts. (See Figure 15)

Having done that I printed all the ideas out and grouped them via a straight connection or through possible connection that I foresaw. On top of that, I spent also extra time reflecting upon the ideas and see, if any further ideas spring up. (See Figure 16)

I found following general themes from those ideas:

- Some kind of productivity and time management platform
- Platform to reflect with somebody
- External mentor
- AI helper, some kind of chatbot to solve daily problems
- Community bonding, helping p2p through case studys
- Daily discussion corner

Additionally, when grouping the ideas I realized there were some, which I did not connect with and took them out.

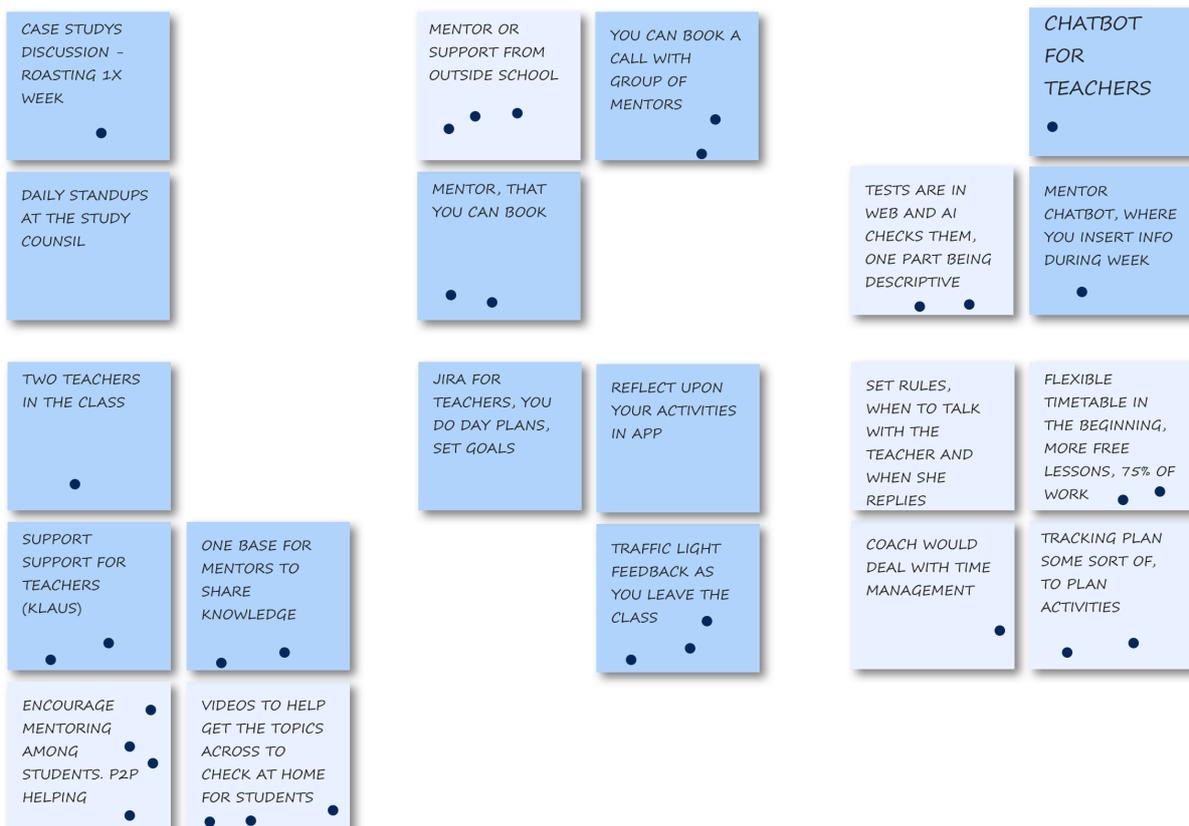


Katre

Timo

Figure 15. (Above) The result of the ideation workshop. (Graph: Author)

Figure 16: (Below) Grouping different ideas and synthesising based on this. (Graph: Author)



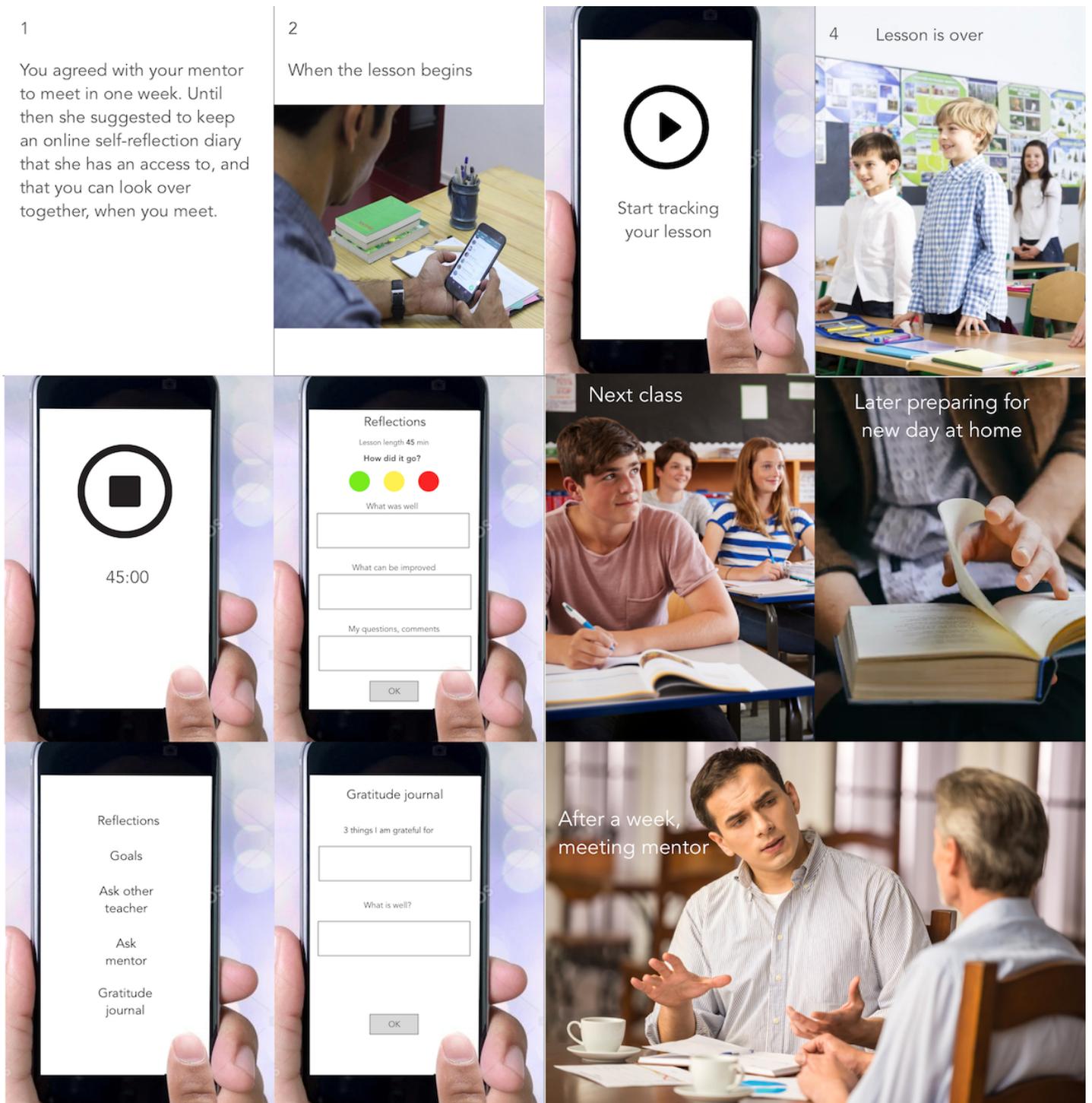
# Initial concept validation

I wanted to move on quickly and hear back users' thoughts on the initial idea, which I built based on top of the ideation. I compiled the idea of self-reflection and having mentor in your phone. I felt the quickest way of not spending too much time on designing the idea nor building it,

was to prototype it in the form of a storyboard. (See Figure 17)

For that, I put couple of stock photos together to bring forward the idea and based on this agreed with younger teachers I had interviewed, to meet over a

Figure 17. Storyboard of an initial idea about self-reflection and mentoring app. (Author)



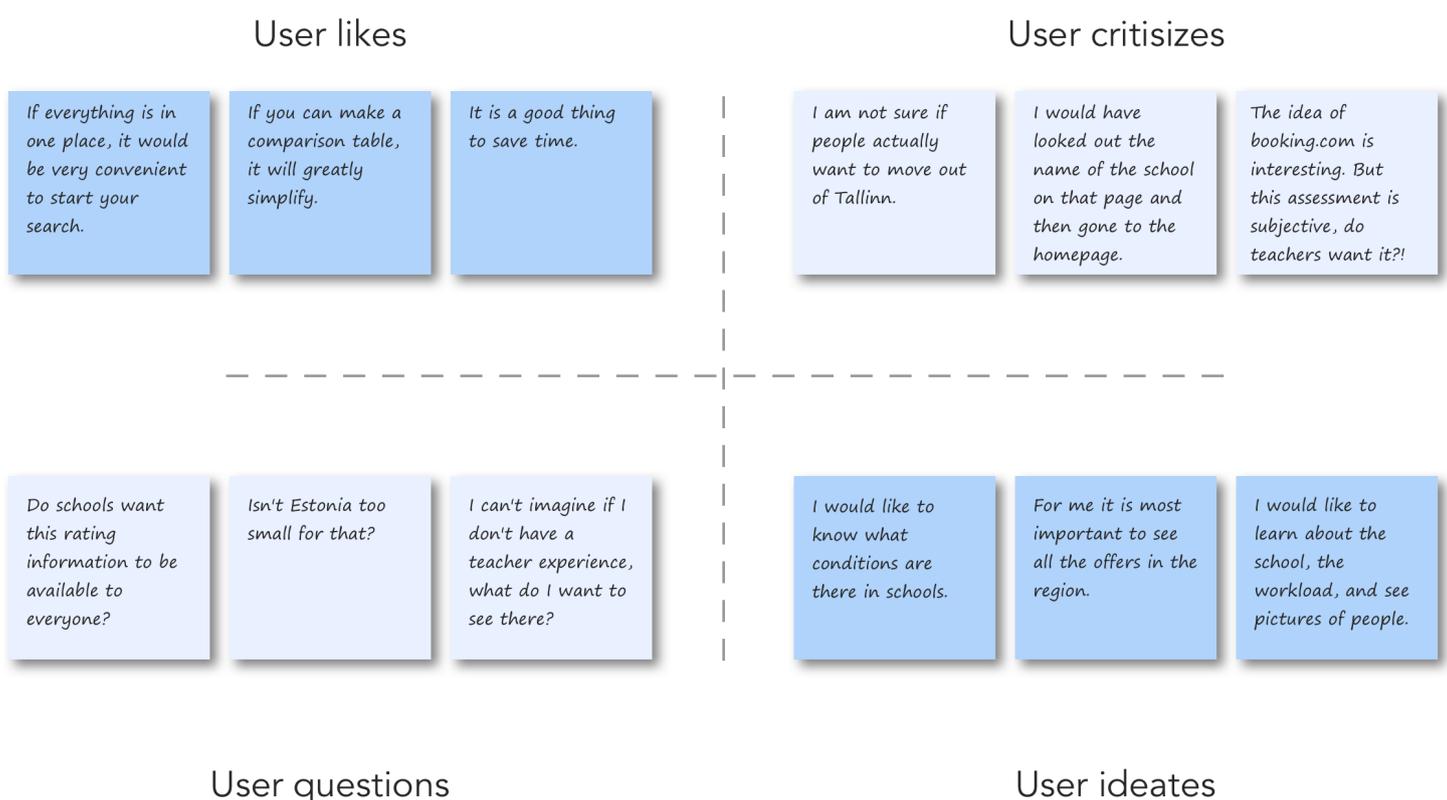
video call and hear their feedback. I spoke to four teachers and grouped their thoughts into four, following the Feedback Capture Matrix frame (see Figure 18). The grid helps you be systematic about feedback, and more intentional about capturing thoughts in the four different areas. (dschool)

Considering teachers' response to the idea, I understood the following:

- In the context of overall multitasking and lack of time, reflecting via writing is an extra task for them.
- Having the first year of your teaching career, it is full of emotions that seek output. Writing — either to the mobile platform or to the notebook — does not suffice. The target group needs human contact to reflect instantly.

- Mobile phones are not allowed to be used in all of the schools during the day.
- Time is a very critical aspect for them. The solution should rather save their time, not to add up.
- Keeping goals in front of the eyes, it helps to stay on track.
- They like if self-development comes through motivational support or gamification.

Figure 18. Teachers feedback on Feedback Capture Matrix (Graph: Author)



Having synthesized the feedback, I realised that the idea about regular self-reflection via the mobile app does not create enough value, at least in that form, so that they would actually use it. And it does not provide real relief to the pain point. What they are looking for, is something that instantly reduces their workload or helps them to carry the load.

## Secondary research

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### Interviews with teachers

As the direction evolved into designing for new teachers, the focus of the second round of interviews was on the onboarding process of beginning teachers.

I decided to do two new interviews to validate my new hypotheses. For the interviews, I spoke to an Estonian language and literature teacher and a Social studies teacher, who:

- are in their mid 20's
- have graduated from the university as basic school teachers
- are going through the first steps in their career of being working teachers in basic schools

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### Hypothesis

- For the new teacher, it is very hard to cope with a full-time workload in the beginning.
- Social buddy alongside professional mentor is as important during the onboarding process.
- New teachers stick together, have a similar mindset, and help each other willingly.
- Mentors' quality across the schools varies, depending on how much time they personally have to focus on mentee's issues.

## Findings from the interviews

I mapped out the main insights first (see Figure 19). Then I started analysing.

At the beginning of September, new teachers face high expectations. They want to be good in what they do, also they **do not want to fail** in the eyes of their new employer. Therefore they end up **multitasking heavily**. Also, there are activities with a very low time-to-efficiency ratio, such as **formative assessment**. They do not know whether a student or parent values the feedback at all.

What helps a new teacher to find a way out in complex situations, is to get expert advice. Most of the schools in Estonia provide mentor help for the beginners. But the **quality is very volatile**. Contact with a mentor may not be very good. Teachers miss out sometimes the structured framework around mentoring. Also, as many questions arise in the beginning, **mentors are not always around**, leaving new teachers to struggle on their own.

Clear to release the pressure from the beginning teacher, is to **reduce the workload and work as an assistant teacher**. Less workload leaves more energy for the creativity in the work with students. The assistant teacher can cover teachers also on their holidays, and smaller workload creates a smooth way to settle in the school first and understand, if this place responds for their needs. An

assistant teacher can also help out with SEN students to manage the lessons together with the main teacher.

It is also as an excellent way to practice the teacher's role, at the same time feeling that the **practice the university provides, does not respond to the reality**. For them, university is not preparing enough for what is waiting them in front of the class. The practice, they get, is merely an observation, which does not provide practical participatory connection, how to deal with complex situations, group dynamics in the class, verbal or even physical violence, etc.

What motivates and empowers beginning teachers, are the colleagues they are close with. **They are not just colleagues, it is a circle of trust**. Mostly these colleagues are the ones that have recently gone through the same stage and understand the struggles of the new teacher. These are people the new teacher can always go to. That helps them to move on.

What else empowers them, is a **reflection** on the issue or how the day went. But this works rather in oral, not written form.

As it is very stressful work, new generation of teachers do not see themselves carrying this role for long time, like typically older generation of teachers. For them, **being a teacher is something that they want to do only for a period of time**. It is a good opportunity to grow together with the students and help them.

---

## Analysis

Of all the findings I found the following most fascinating to take forward.

1. Their need for social circle and trustworthy community around them.
2. After graduating the university and becoming a teacher, they realise the reality in the class is something different that they were prepared for in the academy.
3. Due to facing sudden heavy workload, when they have become a teacher, they see that being an assistant teacher first, before being fully professional, would help to build the capacity.

## Close colleagues

The teachers I interacted more, were a year older. They shared kindly their wisdom, and tips and tricks on what to do and what not.

A young teacher joined in autumn. I introduced myself. She has a mentor, but she still writes to me, being afraid to ask.

It's horrible what health problems I got. I felt that's it. But I have such a strong company there and it is the most important thing that keeps going

## Mentor's help

I went to see the mentor's lessons and she on the opposite gave lessons in my class. Then we could discuss.

I was assigned a mentor, but I didn't know it at first. It came out at some meeting.

School provided a mentor and I can't say she wasn't supportive. But the other teacher, with whom I got along well, helped more.

## Reflection

I don't need to write anything down. That would be another work to do. I am seeing it on the students if I'm improving.

When I'm done in 3 lessons, I'm so tired. But if it's 5 lessons, I can't even insert done work to eKool. No extra writing!!!

The reflection worked for me in a way that I did not write, but that I spoke immediately after class

## Part time teacher

I didn't start at full capacity. The first year was perfect in this respect.

In the beginning, I had time. I thought, this is how it should be. With students we could do so many things, and I had the energy to teach. It lasted 2 y.

School provided a mentor and I can't say she wasn't supportive. But the other teacher, with whom I got along well, helped more.

## Expectations

In the beginning, I tried to prepare for everything, but I could not do what I wanted. The real pace was something else.

At first I wanted to do everything. The school made it feel like running a marathon. You are under pressure all the time.

## Assistant teacher

One teacher assisted two classes throughout the year. She could look from aside and prepare.

We have an assistant teacher. The number of hours/week she has, is small. You can invite her to your class to help with SEN 1: 1 e.g.

Young people would become a teacher if they can settle in at first and understand better if this is their place.

## Time cost

The fall is so severe coming from university. In class, there are behavioral disorders, diagnosis, and chairs are flying, etc.

Before I saw my class, I became a secretary as I had to do so many things and fill in so many papers before the beginning of the school year.

The first year was quite difficult. Colleagues said that good thing is that it can't get any worse.

## University preparation

That internship was something I would have expected from my university.

What is taught at university is not quite in line with reality. Trial year or smth is so necessary.

Being an assistant teacher for at least 1/2 a year, you go to work for only a few hours a day, it's such a big and important thing.

Figure 19. Main findings from the interviews. (Graph: Author)

## Near future trends

To be able to frame my concept according to the near future trends and tendencies, I looked into what is happening now and soon in human resource management, onboarding, and self-development. I did not concentrate specifically on trends in education as I wanted to have more broad perspective and pull in ideas also from other sectors.

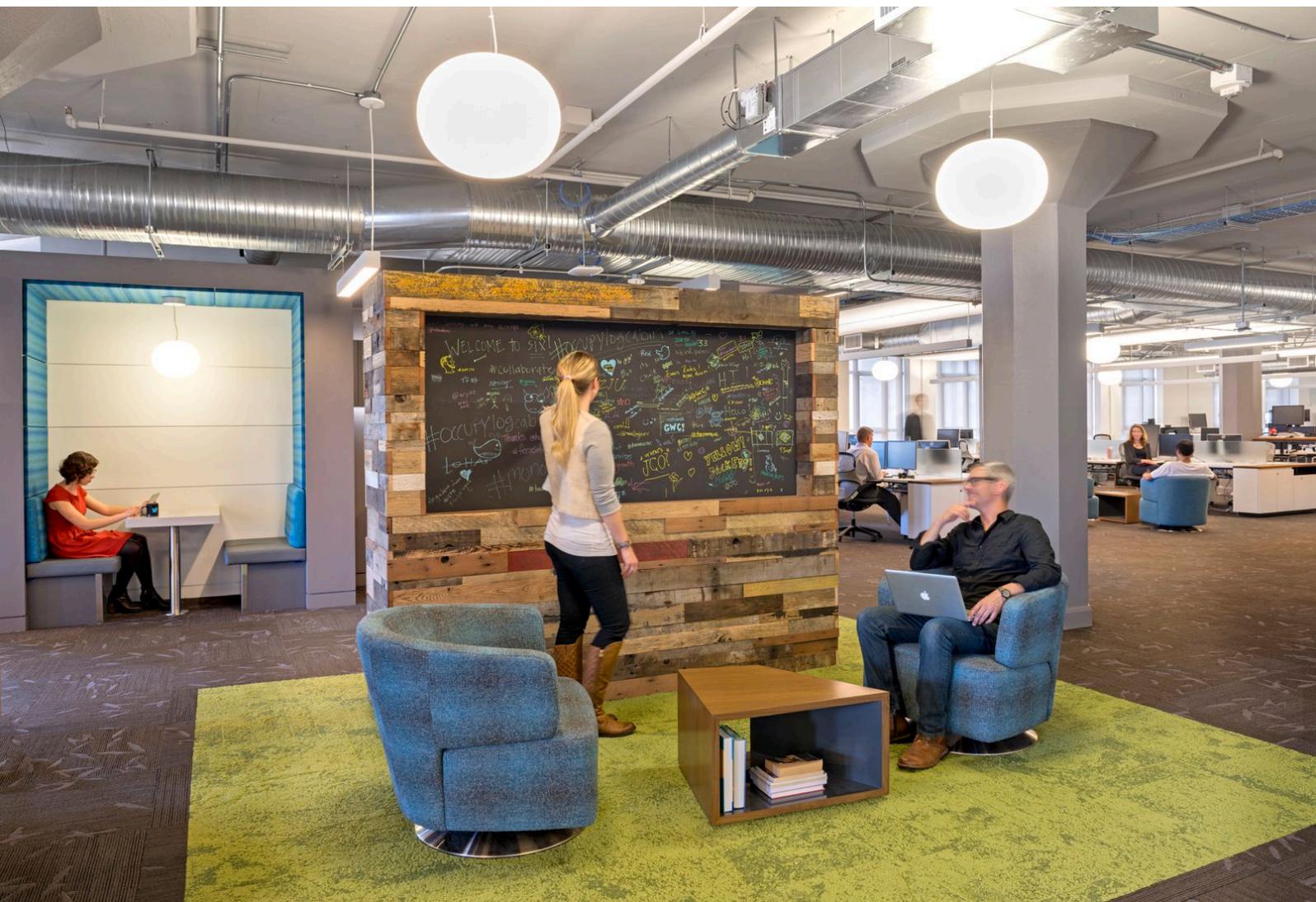
## Near-future trends in onboarding

### Onboarding from Day One

Onboarding is a pivotal moment for making employees feel included from day one. It sets the tone for a person's tenure at the organization, laying the foundation for their knowledge of and experience working for the organisation. This is why building an inclusive onboarding experience is so important.

Twitter's **Yes to Desk** employee onboarding program for e.g. focuses on

*Figure 20. Work mood in Twitter's San Fransisco headquarter. (Photo: Women Hack)*



making the time period between when an employee says “Yes” to a job offer and the employee arrives at their “Desk” as productive as possible. The program includes 75 different touchpoints between the new hire, recruiting, HR team, IT, and more. The key goal of this employee onboarding program is to provide an exceptional experience to all new team members right from the start. (Kempton, Hireology)

On the new hire’s very first day, they are allotted their desk, their email address, and the numerous other resources they’ll be needing, along with some fun gifts. Their workspace is kept deliberately close to their team members’, so they can get to know who they’ll be working with and understand what the team dynamic is like.

Breakfast with the CEO kickstarts the new hire’s first day at work, after which they

are given a tour of the office, followed by customized training on the tools and training they’ll need to succeed in each of their roles. Twitter also hosts a new hire happy hour each month and rotating presentations each Friday, so employees can learn about projects on other teams.

---

### AI-powered onboarding

AI-powered bots are now becoming trusted HR advisors to employees—for e.g. by answering questions about leave or remote-work policies that a new hire might otherwise be uncomfortable asking on their first day. (Roy, 2019) With the help of AI, onboarding doesn’t have to happen within regular business hours or at a fixed office location. **AI and chatbots can work around the clock**, guiding a new hire

*Figure 21. Russian Artificial intelligence robot Vera that recruits new people. (Image: Ali Smart Videos/Youtube)*



**THIS  
ROBOT  
WILL  
TAKE  
YOUR  
INTERVIEW**

through all aspects of onboarding and answering questions as they arise. This lets employees get the help they need while minimizing calls, emails, and meetings with HR. Ideally, this is done through gamification to make it a more interactive, fun process.

It works both ways and can help a lot also the employer. There are several startups established in this field. E.g. Verint HR Assistant can provide employees with quick access and personalized answers to HR-related questions. (Verint homepage)

Russian startup Straforoy. They developed Vera, which searches for suitable candidates in online job portals, independently carries out interviews using video chat or phone calls, and answers the candidates' questions (See Figure 21).

She also gets better as she time goes by as Vera is AI and learns from every interview that she undertakes. (Palmer, 2018)

## Starter kit

First impressions are massively important on an employee's first day. When welcoming a new employee, **greeting new hires with an onboarding welcome kit is a key to getting them started on the right foot.** (Rise, 2018) Although it is not a replacement for strong company culture and good benefits. It is a strong component of it and sparks employee

Figure 22. Welcome kit that Ogilvy Cape Town has been giving to new employees. (Image: Adweek)



engagement, promotes company culture, and makes the new hire feel welcome.

In LinkedIn, new employees are given a **90 Day New Hire Onboarding Plan**—designed to help their transition into the company. It’s a week-by-week guide that supports them to be productive and successful in their new role. (Anderson, 2020)

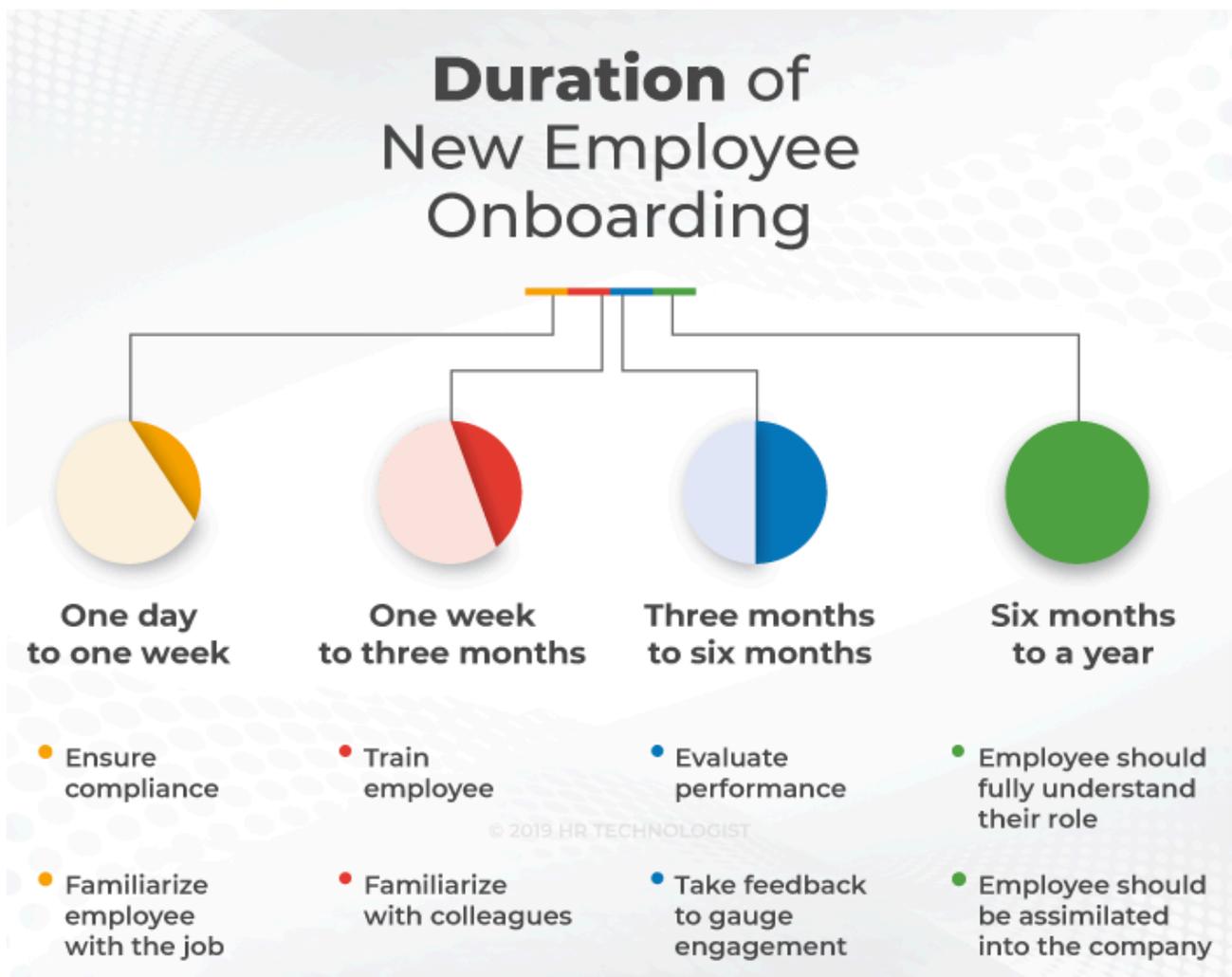
Ogilvy, one of the world’s most renowned advertising agencies, really leans into this reputation with its employee welcome kits. The inside contains a book written by Ogilvy himself, as well as a list of his eight creative habits. (See Figure 22)

These components reflect the company’s rich history, while setting the stage for what your time will be like at the agency, whom to talk, where to find help, while also offering something a bit fun and unexpected.

### Onboarding duration

A study by analyst firm Aberdeen Group found that 86% of respondents felt that a new hire’s decision to stay with a company long-term is made within the first six months of employment (Campanella, 2014). It takes about six months to get employees up to speed, which is what research indicates as the amount of time employees feel they start to add value. However, this is not a rule of thumb, it can easily take nine to 12

Figure 23. The ideal duration of onboarding an employee. (Image: HR Technologist)



months, depending on the role and size of the team.

Though it varies from organization to organization, the amount of time spent on the various facets of onboarding can be broken down into these four phases (see Figure 23):

**1. One day to one week:** Ensure compliance, familiarize the employee with their role

**2. One week to three months:** Train the employee to perform their job. Familiarize them with their colleagues who are key to their function. Help them get a sense of the culture of the organization.

**3. Three months to six months:** Evaluate their performance and ensure that they have everything they need to perform their

jobs optimally. Take their feedback to gauge their engagement.

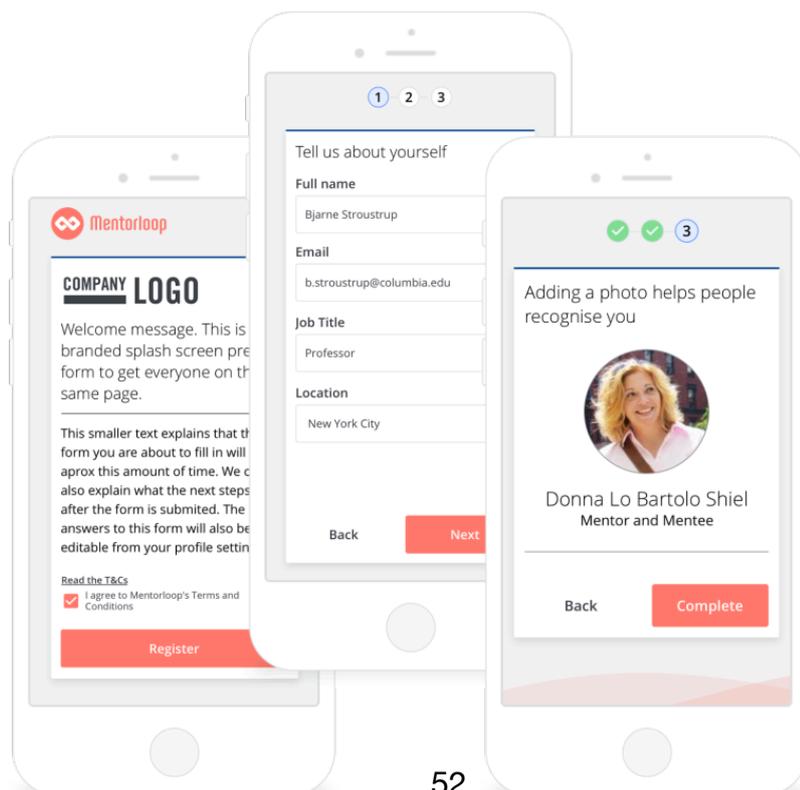
**4. Six months to a year:** The employee should have developed complete knowledge about their role, the market, the company, and the industry. They should have assimilated into the company and company culture. (Lalwani, 2019)

## Near-future trends in self-development

### Mentoring

Mentoring will cease to be a ‘nice to have’ and will become a core metric that the leadership of every education institution tracks and seeks to improve. **The future**

Figure 24. A cloud-based mentoring software platform Mentorloop. (Image: Capterra)



**of mentoring will be that one person can be both a mentor and a mentee.**

(Cohen) Being on different sides is equally rewarding and allows to learn and grow as both a person and professional.

By mentoring an early career colleague for e.g., a person will gain more and more confidence, expand their own network and expertise, and increase the positive feeling they get from altruistic behavior. Also, mentoring sessions will no longer have to be deep and heavy commitments, rather much more flexible, lighter, and more spontaneous. Flash mentoring is the future.

Through a digital platform, more people want to engage in this type of mentoring because it is flexible, and gives them instant return without a long-term commitment. There is also software available, that can easily match employees into engaging mentorships (and save time on admin), like Mentorloop. (See Figure 24)

---

## P2P learning

If done right, not only it is the biggest catalyst for the culture of learning but also **teaching others is the best way to learn there is.** (See Figure 25) In Google, for e.g., they believe it is the people that make Google the kind of company it is via maximizing peer-learning and collaborative practices. (Mulholland, 2018) These practices reduce isolation, enhance

collegiality, and increase employee morale and job satisfaction. They simply can't afford the unproductive employees, high turnover, or wasted potential that comes with a crappy onboarding program.

**For Google, learning is in big part is personal and social.** When googlers need to figure something out, they turn for their colleagues for information, advice, and support. They have created an extensive P2P learning network called G2G network, which delivers more learning programs and support than people ops team do. It is all-important so that people can be their best personal and professional selves.

People typically have open discussions about fields they want to develop with a peer than with somebody who has power over income and their career.

A secondary advantage of P2P learning is that the format itself helps employees develop leadership and management skills. Group reflection discussions help employees learn the intricate abilities to accept and giving honest, constructive feedback.

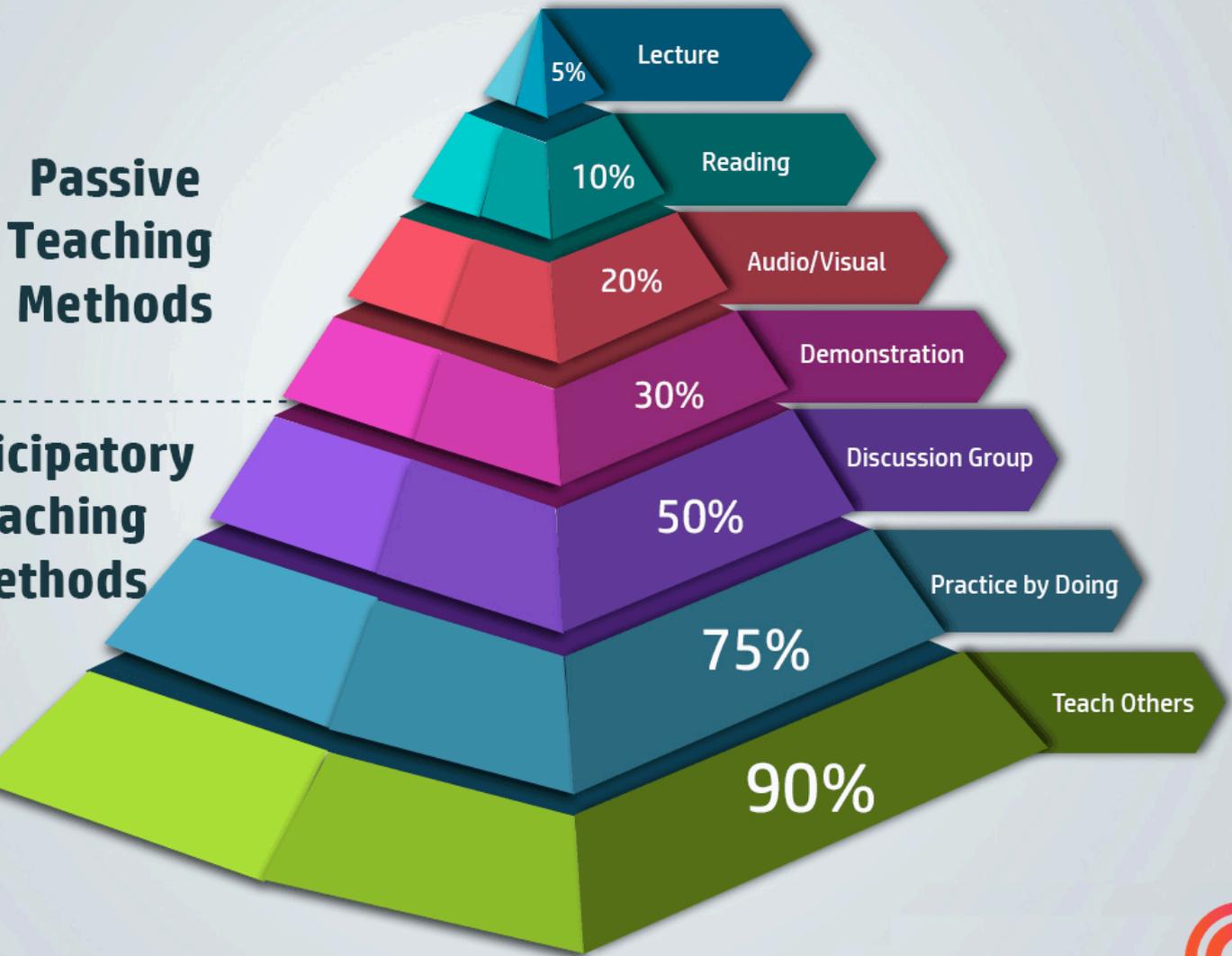
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## Learning timing

People are more open to learning something new, when they are in transformation points and take up new challenges, such as starting out with new project or career. Therefore they are more inclined to engage, learn, and recall new

# THE LEARNING PYRAMID

## KNOWLEDGE RETENTION RATES



Adapted from National Training Laboratories, Maine



skills if they're learned in the course of addressing a challenge. Learning happens in real life.

### Near-future trends in human resource management

#### Community feeling

In today's world, connected companies are using communities to create effective

Figure 25. A learning pyramid model, developed by the National Training Laboratories Institute in the early 1960s. (Image: Tofas Akademi)

processes that get things done faster. Once you get beyond salary what really keeps people connected with their work is **feeling like part of a team**.

Eventbrite has consistently been named one of Fortune's best places to work. Partly because they have exceptional onboarding. One of the expressed goals of their onboarding program is to **connect**

**new hires to everyone within their organization.** (Enboarder) The HR team puts up new hire profiles around their office so that everyone can get to know them. Additionally, every quarter, the HR team also hosts a new-hire social for those who joined within the last three months so that they could make connections with other new team members. Because of this, new hires quickly feel like a part of Eventbrite and invested in the company culture.

## Incubator

A startup incubator helps a business in its early stages thrive. People that start or join the initiatives in the startup community have become movers and shakers in society. The startup incubator program is all about learning. (Campos, 2019) The main skill you need to master is networking. Being in the incubator, you need to make the most from your mentors and network in every single aspect to help

your business. People in startup incubators are encouraged to get ready to conquer the world and fail. **Failing is the key to development.**

**Industries will see the creation of their own dedicated incubator programs** which makes absolute sense as the whole point is to offer startups personalized, tailored advice and guidance. Attracting market experts and specialists into the mentorship program will cut out generalizations and focus on the specifics of any given industry. (Pavin, 2019)

**One of the effective mechanisms of growth will be the Community effect.** Effective accelerators and incubators would be focusing a lot more on this aspect and helping fellow founders help each other grow. We would also see more accelerators and incubators getting

Figure 26. Starter business idea development program designed by eight universities. (Image: Starteridea.ee)



Program

Timeline

Mentors

Alumni

Partners

Contacts

News

Sign up



## Program

@tallinn

@artu

@kohtla-järve

@narva

@pärnu



### 3-month program

Free business idea development program (trainings and workshops with real entrepreneurs) worth 5000 €



### 50+ mentors

50+ mentors and stellar business advice from the best industry experts



### Diploma or a certificate

Diploma or a certificate issued by the university upon program completion



### 8 universities

Combined competences and resources of 8 Estonian universities



### Events and networking

A lot of events and networking opportunities (matchmaking events, hackathons etc.)



### Awesome prizes

Awesome prizes and access to further development programs

Join the business idea development program designed by 8 universities and learn everything you need to know about starting your own business. The program is free of charge and does not require any previous knowledge of entrepreneurship.

into smaller cities and the countryside, where the need is much more pressing.

E.g. Entrepreneurship education programme Starter to encourage the enterprising spirit in Estonian students and teachers, and to ensure that creating the sense of initiative and developing entrepreneurial competencies would become a natural part of education. (See Figure 26).

## Culture

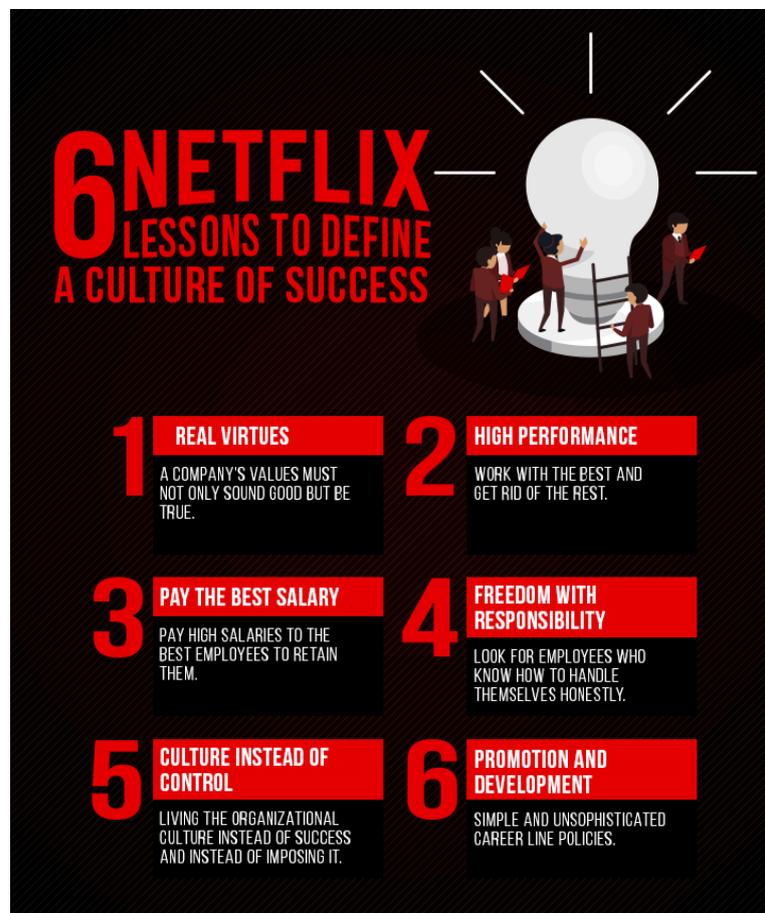
Strong organization culture attracts better talent, and more importantly, retains that. When people feel like they belong to an organisation, they are more likely to stay there for the long term.

Millennials are the generation driving the workplace changes in the near future. Notoriously labeled “job hoppers,” millennials are more likely than previous generations to leave if they feel the fit isn’t right. That said, **millennials desire a strong organisation culture** more than anything else when deciding who to work for.

Netflix company culture, e.g. is well documented and has been openly shared since 2009. At its core, Netflix culture is about “people over process”. When building an innovative, disruptive, high-performance organization like Netflix, that attracts and retains the best talent, you need to be deliberate about the culture you create. This kind of strong culture is

demanding and hence not for everyone. Potential and current employees need to analyze the culture, evaluate if they fit the values and expectations of the employer, and then can decide whether they want to commit to that culture or not. (Netflix Jobs) (See Figure 27)

Figure 27. Netflix has opted for a unique organizational culture and talent approach.. (Image: workana.com)



## Expert interviews

I spoke to two experts to expand my knowledge, collected through the latest interviews with young teachers, and after secondary research on future trends.

---

### Interview with a mentor

The first interview I did, was with Estonian language and literature teacher, also a mentor to new teachers at Tallinn English College. (See Figure 27)

“If a new teacher were particularly cunning and would work part-time in the first year and endure financially, he/she would do very well as a teacher.”

Mentor at Tallinn English College

What I learned from that interview is that there isn't special mentoring preparation and it rather takes place in trial-error method, having not much time for mentees as she has many of them. At the same time mentees are afraid to ask some things. Question is, how they get to solve their questions then?

The mentor acknowledged that newcomers face sudden increase in workload, when entering school, but collaboration helps. These themes I will carry forward.

## Findings from the interview with a mentor

### About mentoring

Initially, meetings between them were arranged after every few weeks. Some space for trust must be left as well.

She has not completed a mentoring course. Mentoring for her comes through a trial-error method.

In the beginning, she clarifies the school's system, going through the modules, system for assessment, work structure, and share tips, how to succeed.

### Contact with mentee

Mentee receives a work plan asap. She typically asks about a specific task, like how to do this work, did I understand the guide correctly, etc.

At times she feels that Mentee looks her as a senior colleague and would not dare to ask some things, as it feels embarrassing.

The mentee can ask additional questions in the internal mailing list or during the break.

### P2P learning

Collaboration and exchange of materials come up all the time between mentor and mentee, which is not very common in Estonia.

she feels that they complement each other with the mentee. There is no such thing as a hierarchy. Learning is reciprocal.

She sees that the best learning experience comes through teaching.

### Newcomers and workload

She is mentoring a trainee, who is big help, as the workload has grown a lot. The trainee contributes 4h as an assistant teacher

For the mentee, using other teachers' materials is a big time-saver.

I don't know what they're learning at TLU, but they don't have the experience of standing in front of the class, and they are too optimistic.

### Motivation

She gets a small extra pay for mentoring. This motivates and is paid throughout the year.

The management asks if she can do it, but there is no possibility to say NO. In the autumn she mentored 4 people and that was too much.

Figure 27. Findings from the interview with a mentor. (Graph: Author)

## Interview with a principal

I talked also with Martin Öövel, principal of Tabasalu Ühisgümnaasium (Tabasalu Joint Gymnasium, hereafter TUG), school that started operating in 1986 and is the largest with its 48 class sets in Harju county with 1,077 students and 120 teachers. Martin Öövel has created a unique learning environment, where modern and high-level studies are connected with hobby education. Most importantly, in TUG they turn full attention to human resource management. (See Figure 28)

“The teacher doesn’t have to run the organisation, we do it all for them.”

Martin Öövel, CEP at Tabasalu Joint Gymnasium

I learned about a good example, how to build up two-layer mentor system—having methodical and a social mentor, which help beginning teacher to settle in. Also, what I find very interesting, is using P2P learning among their school personnel to complement and support each other and adding a best practices sharing event on top of that.

Figure 28. (On the right) Findings from the interview with a principal. (Graph: Author)

## Findings from the interview with a principal

### School system

Everything in the management is done by voting, and most of the board members are teachers.

We have a system of chairs. There are subject-based groups with 1 leader — a teacher with reduced workload.

The turnover among school personnel is 10%.

### Chair leaders

Chair leaders are the best teachers in the subject segment, who have 7 hours of free time to direct back to managing the team.

The role of the chair is to remove barriers to employment and the mentors are rather psychological.

To assess teacher's progress, there is a system what the chair follows.

### Financial motivation

If you managed to develop based on the evaluation of the previous period, then the corresponding financial motivation follows.

If you get 2 monthly salaries extra in a semester, people will work for it and want to help.

We have not increased salaries, but the motivation fund is very large, which also includes the support of the municipality.

### Mentoring

When a new person comes, the focus is on helping them.

We have chosen people' people for this. Harmony is the main goal to remove obstacles.

We enforce people through a dual system: support from the chair and a volunteer mentor support.

### Support

Some of our teachers are digital geniuses, and they volunteer to be a IT support team, which is always available at Google Hangouts.

We have a peer to peer learning in order to complement each other, taking place every school break.

To upgrade we have mobilized in-house best practices. Thanks to the mentoring system, we know where they come from.

### Future of school

Data processing capacity and individual curriculum development are growing because every child has a special need.

How can we empower talented kids with SEN so that they can do nuclear physics, while they don't know how to eat bread?

The closest match to the ideal of the future is Khan Academy, where you have your own pace so that every step you feel you are the smartest.

## Secondary research synthesis

In many of those examples, given in the future trends chapter, people are truly valued in the organisations they work for. These companies have put people over the process. To make the cultural change and cultivate collaboration among employees, it needs mindset change at the executive level to support this.

If an organization expects a good contribution from its employees, the organization must also contribute to the employee. This can be built on top of onboarding, self-development and human resource management components that have to be actively present. Beginning teachers don't want simply to work for the organisation, they want to enhance their skills, create meaning, be supported, engaged and have a community. How can we implement this experience in the school environment?

Having analyzed the feedback that I gathered from the initial concept validation, and looked on it from the new knowledge perspective, I understood that the initial concept based on self-reflection app as I proposed, does not suffice! It rather adds something on top of the time they already spend doing daily tasks. Besides, phones are not allowed to be used in every school.

Rather, I realized that when a beginning teachers enter the school as a new employees, they do take a big step to be able to handle everything, hitting the wall of reality of all the things they did not even imagine. Therefore, "Swim or drown!" principle is still valid in schools.

But when you hold an open mindset and support collaborative initiatives in school, you can create a community. As human beings, we need a sense of belonging and support, and that is what connects us to the relationships we develop. Especially when you can merge people from the same context to learn through P2P and to make things happen together. This creates a network, relationships, community, trust. Just like in startup incubators. When Estonia is being praised for its startup scenery and the mindset of solving problems and changing status quos, can't we interpret that mindset in school environment?

Another interesting layer that came out of the secondary research is that when you cut the full work-load into steps, it is possible to avoid burnout and drop-out. Like with everything else, we learn gradually. Becoming a teacher is no different. If private sector companies build up step-by-step onboarding plans so that the process for the newcomer would be like a stairway and their personal development continuous, then can we do it also for basic schools?

## Reframing opportunity area

Considering the secondary research findings, I add on top of previous opportunity areas:

- How might we change the onboarding process for the new basic school teacher during their 1st year to achieve the goals below?

## Design principles refresh

In the view of secondary research and opportunity areas, I looked over also my design principles.

---

### Raise self-confidence

The solution should contribute to the continuous development of the teacher, both professionally and personally, and through this boost their self-confidence.

---

### Focus on things that matter

To avoid information overload and multitasking, the solution should help teachers to set goals and deal only with

tasks that are helping to grow and develop and avoid burnout.

---

### Aim at the education strategy 2035

The solution should aim education strategy 2035 that is under compilation, which marks the importance of empowering both teacher and student, flexible forms of work for personnel, and the importance of collaboration in organizational culture.

---

### Build a community

Colleagues at school are equally facing a stressful situation. Helping, supporting, having fun, and learning from each other helps to overcome that, create safety and trust in the group, and carries the free flow of ideas and feedback.

---

### Maximum value with minimum time

Teachers are already overloaded. Considering the present daily schedule of beginning teachers, the solution should bring maximum value with minimum time and ease the pressure for them during the 1st year.

# Model development

Realizing that the journey of the teacher has to be gradual, I came up with the idea of a model, how the 1st year onboarding, can be a stairway from getting the needed education to becoming a full-time teacher. (See Figure 29) It would be a year, where beginning teachers go through a development incubator to get needed support and mentoring, have time to focus and build up relationships. On top of that, I started ideating and came up with the

questions for which I wanted to get the feedback together with the model. What if:

- You could be assistant teacher in several schools?
- There is a booklet that helps to onboard the teacher?
- There is a web platform, that profiles all the schools adding life conditions around to it, making finding suitable school easy?

Figure 29. First sketch of the model idea. (Graph: Author)

## Teachers' incubator

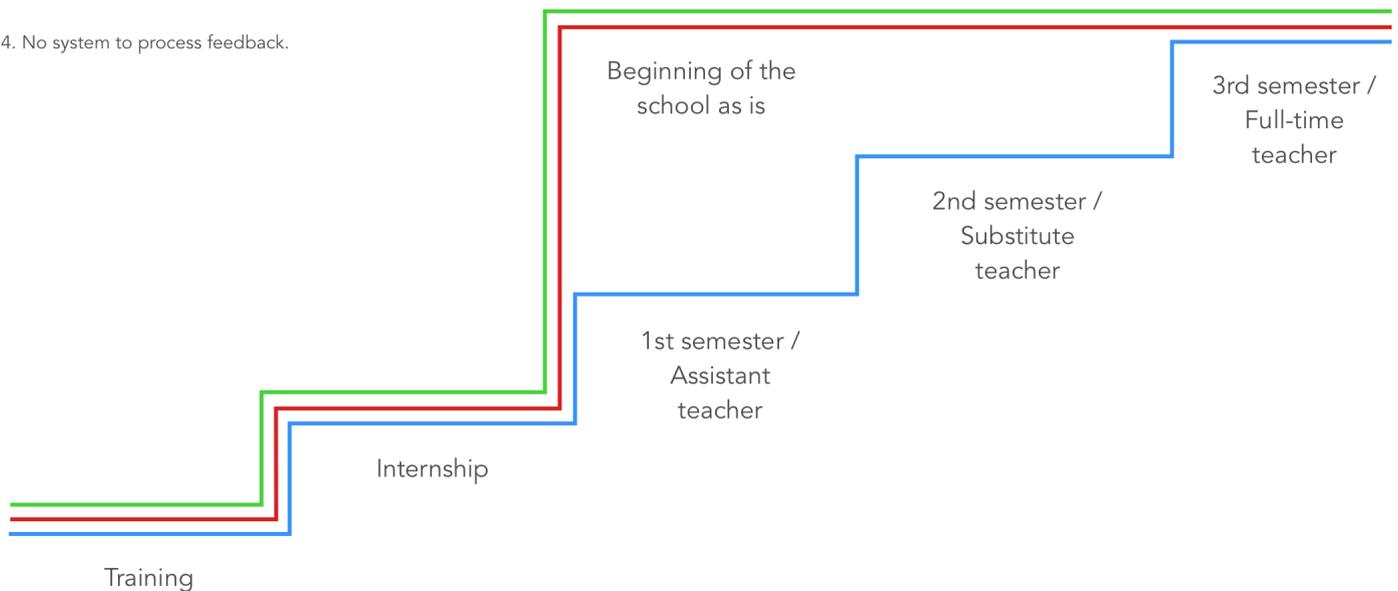
- Career changers, NK program
- University graduates

1. Work load is full time (22-24 contact lessons)
2. Some have mentor provided by the school, but the contact can be weak and the framework loose.
3. Getting support from personal contacts/ NK mentor.
4. No system to process feedback.

## As Is

1. Hard to do everything the teachers wants, and handle all the tasks in time
2. Leading towards stress and anxiety
3. Hard to focus on their own goals

1. Leading to burnout
2. Low self-confidence
3. Leading to leave the school



## To Be

- Applies to all candidates

1. Work load is part time (15-16 contact lessons)
2. Includes more time for self-develop.
3. School mentor + introduced to other teachers (track to meet teachers in person)
4. Mandatory observations with mentor & new teachers (once or twice a month)

1. In the beginning you are slow, smaller work load leave you space to reflect, focus and learn.
2. As an assistant, they can take part of lessons and learn, how students are taught and behave.
3. As a substitute, they can take first steps as independent teacher (holidays, trainings etc) .
4. Apart from mentor you need likeminded teachers around you to learn and ask from.

1. Being a mentee during year 1, on the 2nd year becoming mentor for new teacher.
2. The school, students and personnel are already familiar to you on 2nd year as you start.
3. The experience has helped to build yourself up.

# Feedback and co-creation

To get feedback on the model and the questions I had created, I spoke again to Triin Noorkõiv from AÕTK to ideate together on top of those. (See full list of findings from this session in Appendix 2).

She liked the idea of a rotation program, where beginning teacher could try out different schools as an intern, before signing contract with one of them. Encouraging was to find out that she would be willing to cooperate to pilot the rotation idea in Tartu schools, where she has good contacts.

“I see this could be piloted in Tartu. We have good cooperation with the local municipality and their school network.”

Triin Noorkõiv, CEO at School for New Teachers

Rotation program or assisting generally would help to train beginning teachers with hands on practice, which is valuable especially when you start as a teacher to gain knowledge, how to run the lessons in the class and manage students.

She had some additions in mind for the booklet, which could be put in use also immediately as she found. Maybe most serious comments she had, were about the financing model behind beginning teachers one year onboarding. But this

## Main ideas

### Work time

- I agree, for the new teachers, the workload should be under 1,0 position.
- The principal should design the work position so that everything fits inside 35h. But it doesn't. That is the ideal.
- To teach 3 parallel classes 1 subject is relatively easier than teaching different subjects and classes (different preparation adds up).

### Extra costs

- If they work part-time elsewhere, it means also a different financing model for schools. Who is going to pay it? Local municipality?
- The school could earn expenses back with additional services, opening up sports facilities to the local community for e.g.
- Maybe the retiring teacher is willing to give up part of their salary, then for the school it is easier to pay for the assistant teacher.

### Rotation

- This is super idea! By going through different schools, you learn about the environments and cultures and find an appropriate one.
- In this rotation, you could create your own package of schools to try out.
- I see a need also for a mini version, where you can do it for a week as a volunteer work shadow.

### Platform

- It would be good if schools can inform about potential vacancies in advance when there are retiring teachers.
- Maybe some job portal would be interested in this. They could create layer for teachers.
- It simplifies finding the right school quickly.

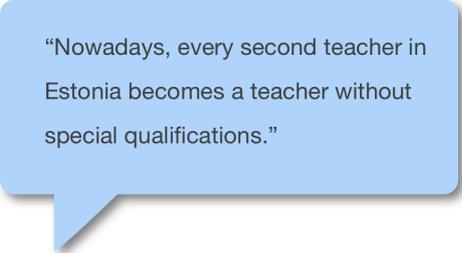
### Booklet

- Such a cool idea.
- This could involve basic information, who is my class teacher, where can I get markers, etc.
- This is so easily doable and could be uploaded on to School for New Teachers homepage as a pdf.

Figure 30. Main ideas that grew out from discussion. (Graph: Author)

could be worked out in collaboration with school and local municipality, if there is a will. More thoroughly the outcome of the

discussion can be seen on post-its. (see Figure 30).



“Nowadays, every second teacher in Estonia becomes a teacher without special qualifications.”

**Triin Noorkõiv**, CEO at School for New Teachers

Through this I got validation to the direction I was heading—lowering the beginning teacher workload through an assistant teacher role. Another important realisation from this session was that there could be even several ways in to the school for the beginning teacher. Beside rotation program, there can be a track for assistant teacher in one school, but with different workloads.

## Workshops

Based on the feedback I received for the model, I wanted to do co-creation workshops with young teachers and learn, what are the areas of work that they prioritize themselves during the first year at work. I also wanted to learn, which of those areas work out well for them and which feel more challenging. For that, I created a canvas in Google Slides. (See Figure 31 & 32) I chose Google Slides as a collaborative platform because of the low threshold to use it by the participants to keep the focus on the topic and not on technicalities.

## Testing the workshop format

Before having agreed on the workshops, I did a beta test with one of the NK teachers to **test out the canvas and see if it works or where the user gets stuck and what needs to be changed.**

By testing it, I realized that the canvas needs a task description on aside, otherwise the participant feels lost from time to time, what question is she answering again. Also, I understood that some of the fields of work that impact new teachers in basic school were not included on the canvas.

**I learned also that I could use this workshop to get a better understanding of the onboarding experience before**

**entering school,** as well as to get feedback on the ideas/questions I had in mind, how to change the new teacher's experience in the incubator. Apart from that, the test itself went well. The abovementioned questions I put in the test were the following.

- What if there is a platform, where you can filter schools, where to work?
- What is the ideal workload per week?
- What if you had only 1 class in the beginning?
- What if you start as an assistant teacher?
- What if you could be assistant teacher in several schools?
- What if you could self-reflect during that time?

On the canvas, areas of work have been marked out with a short description collected from the user research I did in earlier stage. These fields are placed around the worksheet, as the journey of the teacher is not linear either and reminds rather a cloud of things to keep in mind. This gives an idea, how scattered it can get for the new teacher.

For prioritization, teachers could use a separate symbol, and a color to mark out emotion.

I also used rapid prototyping to sketch three mockups that I wanted to get also early feedback to. Rapid prototyping is a

design workflow that consists of ideation, prototyping, and testing. It helps designers quickly discover and validate their best ideas. (Schwarz, 2018)

These were for the following areas:

1. Database of schools—where all the schools are profiled, making finding them easy. Profiles include list of data about schools, its personnel, location etc. (See Figure 33)
2. Reflection app—an app for teachers to self-reflect upon their own work and goal achievements. (See Figure 34)
3. Booklet—a booklet that would be part of a welcome kit, handed over to new teacher during the onboarding. (See Figure 35)

Noored Kooli track:  
Recruiting



New teacher's 1st year

1. Prioritise topics

Choose the ones, that are more **important** to you during **1st year** - things that help **YOU** to **move forward** or **settle in** or have **great impact** on you

2. Colorcoding

Mark them all with colorcode, based on which of these topics are frustrating/irritating/annoying (RED) and which ones take you forward/help you/give you joy (GREEN).

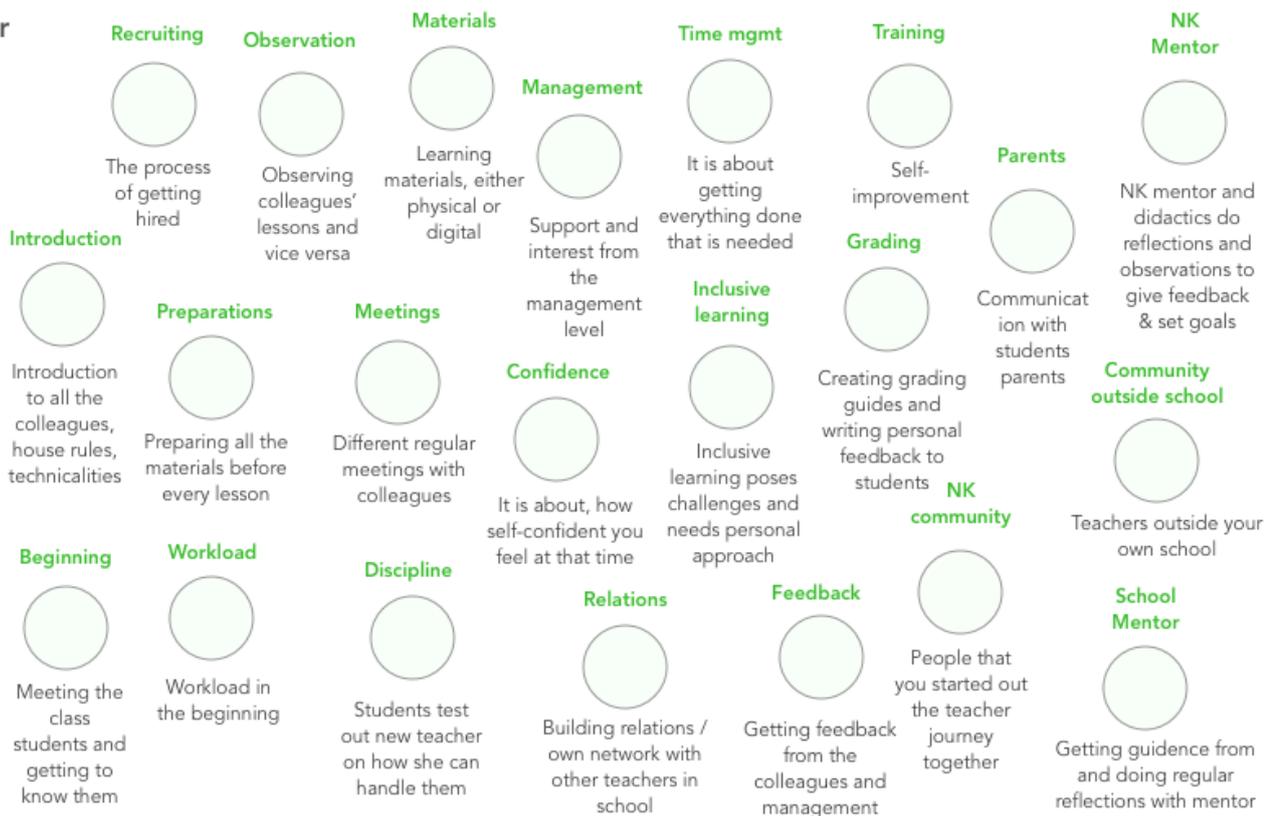


Figure 31 & 32. Canvases that I used in the workshops. (Graph: Author)



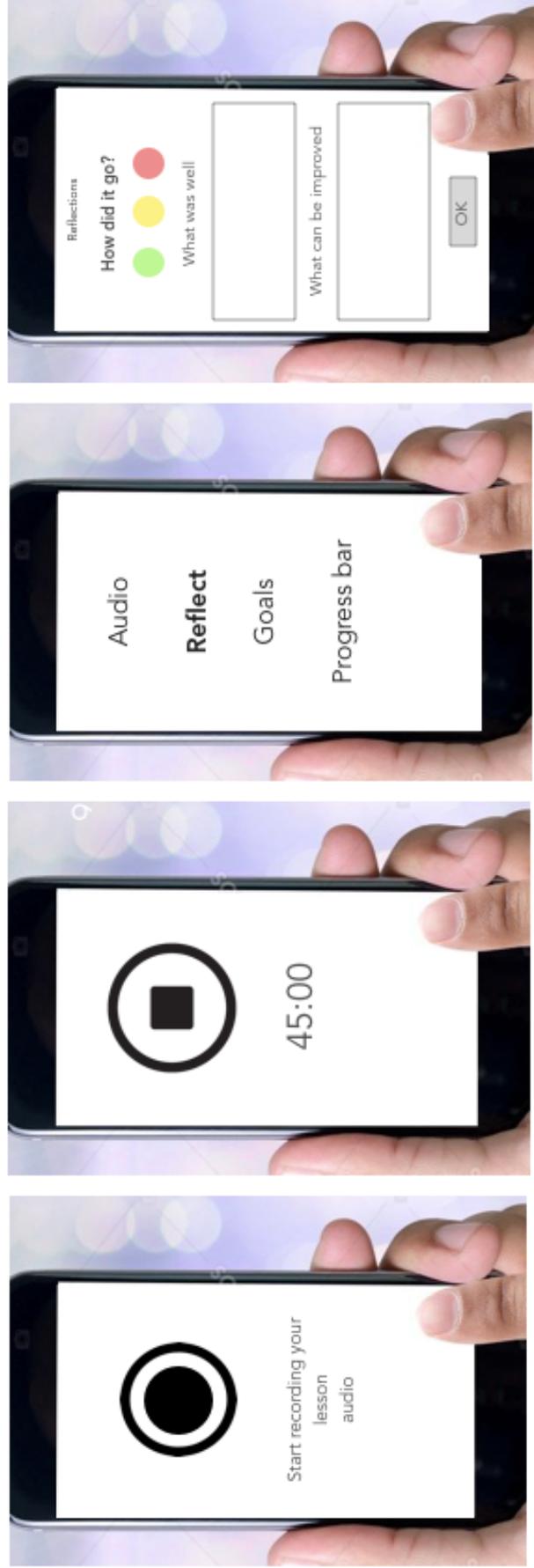


Figure 34. Mockup that I used in the workshop to pass on the idea about self-reflection app. (Mockup: Author)



## Workshop results

I decided to carry out the workshop individually, as in group form people might affect each other's opinions, and at the same time, their journeys are a little bit different also. I was interested to see patterns.

For that, I created two tracks: for Noored Kooli teachers and for teachers that come from the university, and did a workshop with two people on either track. For both I used canvases shown on Figures 31 & 32, and mockups on Figures 33, 34, 35 as probes to initiate discussion over possible solutions and asked the following questions. Following is the feedback per idea that I received. (See full list of answers in the Appendix 3). (Filled out canvas can be seen on Figures 36 & 37).

---

### School database

- *If there is a platform that profiles all the school by the same parameters, where beginning teacher find everything in one place.*

They liked, if there is such a platform, where beginning teacher can compare and filter schools by all the parameters, that would create them better understanding of their career opportunities. Also, they welcomed the idea of having additional information about the school neighbourhood.

They were critical about the idea of people being so willing to move around Estonia and choose work place at this platform. It could work only for those, who don't have kids or spouse. They were not sure either if all of it is necessary, rather using schools homepages. The additional layer, where users can leave comments about schools and teachers, posed questions as well. It leaves space for trolling.

The biggest question they raised was that Estonia might be too small for this kind of platform.

Through ideating they listed things and staff photos they would like to see on the school profile, but mentioned also that this is a good way rural schools can attract new teachers, and it could be crowd reviewed.

---

### Workload

- *If teacher workload in contact is 22–24 hours, what would be ideal for beginner? Would mandatory observation help?*

They supported the idea of having mandatory observation in the beginning, as for the workload, for beginner it should be 16 h, leaving also time to do other things, like running hobby group, preparing materials, do projects. Teaching only one set of parallels would save time also.

"This would be so cool! I feel like a dog that flags the tail."

Young teacher from basic school

---

## Parallels

- *If teacher would work only with couple of parallel classes at first?*

They liked the idea, but felt that they need a variety, so this can be implemented into a 2+2 for example, where the teacher has set of parallels from subsequent classes. Then they can discuss all the matters with the teacher of other parallels. It helps to keep all the parallels on the same line.

---

## Assistant teacher

- *If teacher would work only as an assistant teacher in the first year?*

It is much better and they had a good feeling about it as it leaves more time to settle in and learn from the experienced teachers. While learning the workload could be 0,7 positions. Doing 15 h + observation + hobby groups, this would be super nice. This could work out as an introduction year to them. And as with SEN students it gets harder and harder, it helps to get acquainted with the situation.

---

## Rotation

- *If teachers could work as an assistant teachers in several schools?*

They felt it is a great idea, as then you get to know, what would have happened if you considered also other schools to work for. It is easier to do it in one city.

Knowing, whether this school fits for the teacher, is so important, especially in the beginning of the career. At the same time it makes the principals to attract the teacher to work at their school. And this is, how it should be, they said. six months altogether would be doable with three

"It is the same with work as with marriage. You simply don't take the first one, or you miss out, what is still available. You might feel missing out on the best stuff on the market."

Young teacher from basic school

schools. After you get a taste, what it is like to be in that school, you can decide.

---

## Self-reflection

- *What if there was an app for self-reflection?*

They find self-reflection important and valuable, but would not do it in such a framed manner, not in an app, not even maybe in a notebook. Questions need quick response and they rather want to reflect face to face with their peers.

Otherwise using an app comes with extra time cost. Another strong barrier is that

the usage of phones is not allowed in many schools.

---

## Welcome booklet

- *What if there was a notebook given at the beginning of the school year with all the important information inside?*

If it is actually usable notebook and carries all important information, contacts, house plan, dates and dead-lines, also the history of the school, it would be helpful and they would use it. But there should be left the space for personalisation of the notebook.

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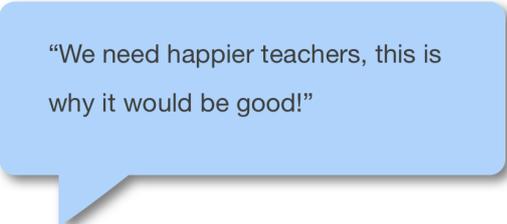
## Whole package

- *What if all of these things come together?*

They see real value in this and a big step forward to support beginning teachers. As many teachers stick to one school for years, this programme helps to make a reliable choice. If the schools, where to do practice, were not even looking for a teacher, you still can get an idea of a school. One way to get introduced is by doing it via work shadowing. If you come to substitute a retiring teacher, it should be

agreed upon one year's notice. If an assistant teacher becomes full time teacher, then they can train the next new teacher. It is very important to add also mentor to this list. But app seems to be most unsolving thing.

This could be applied also as a practice in university. On the 3rd year of university teacher's work load is lower, then you could do the practice. And this kind of practice feels like an essential addition to university studies making them more meaningful.



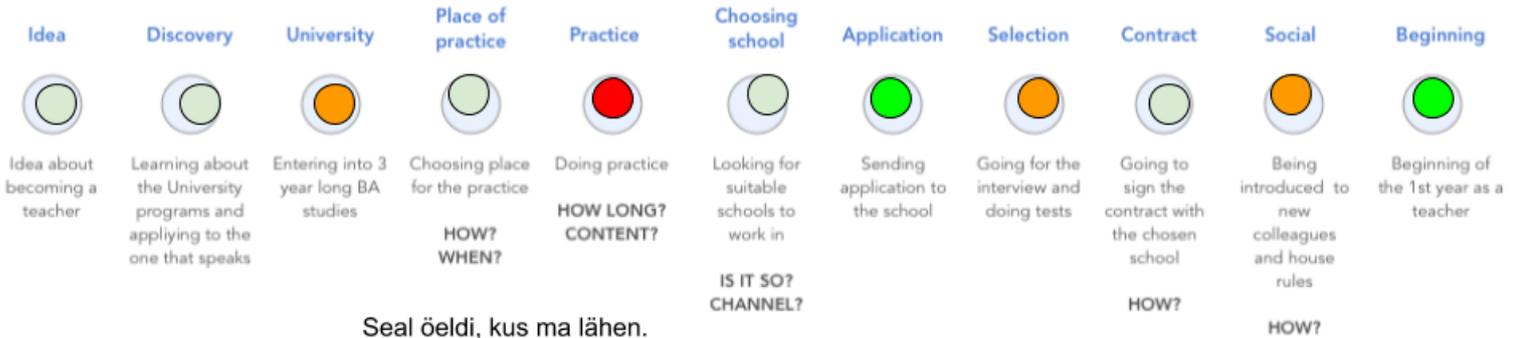
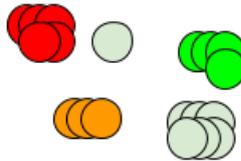
"We need happier teachers, this is why it would be good!"

Young teacher from basic school

# Workshop results

University track:  
Recruiting

Arukülla II aasta?



Seal öeldi, kus ma lähen.  
Ei mäleta, vbl 3-4x,  
vaatlesin 1-2 tundi, see oli  
vaatluspraktika.  
Oli 3 kooli, kuhu saadeti:  
Laagri, Ühisgümna, GAG.  
Pandi nimekirja, mulle jäi  
elukoha lähedane.

## New teacher's 1st year

### 1. Prioritise topics

Choose the ones, that are more **important** to you during **1st year** - things that help **YOU** to **move forward** or **settle in** or have **great impact** on you

### 2. Colorcoding

Mark them all with colorcode, based on which of these topics are frustrating/irritating/annoying (RED) and which ones take you forward/help you/give you joy (GREEN).

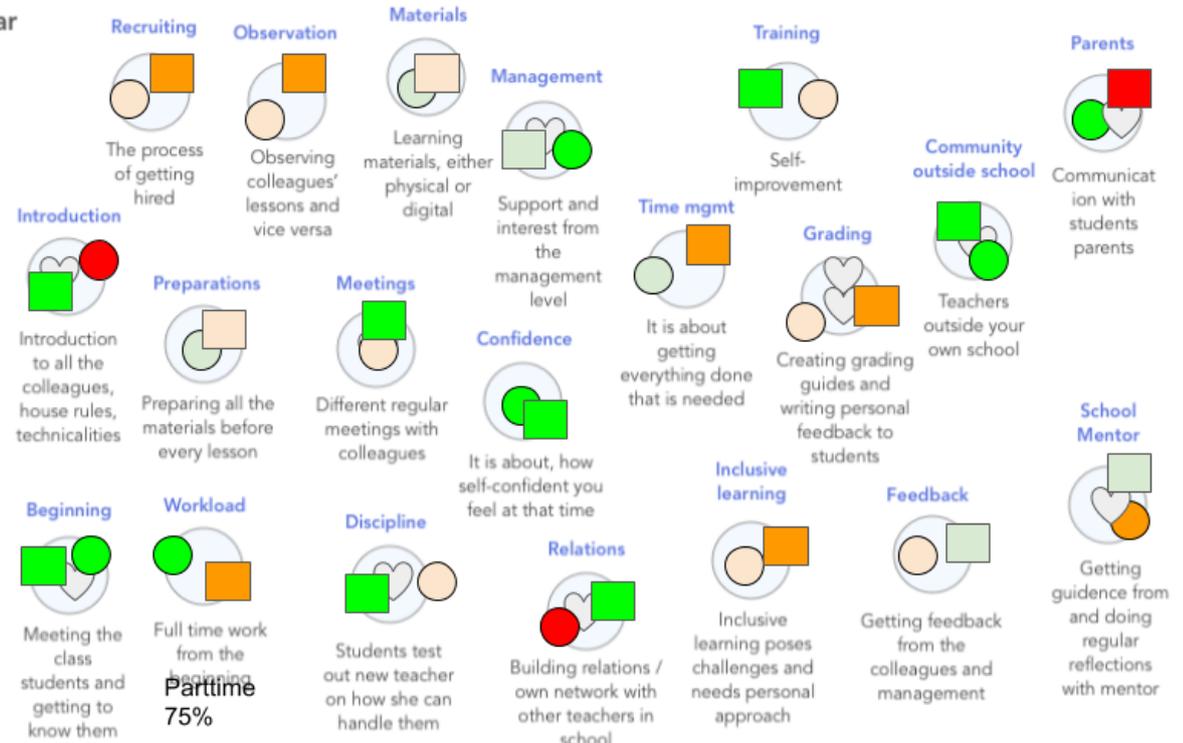
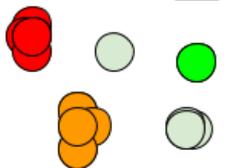
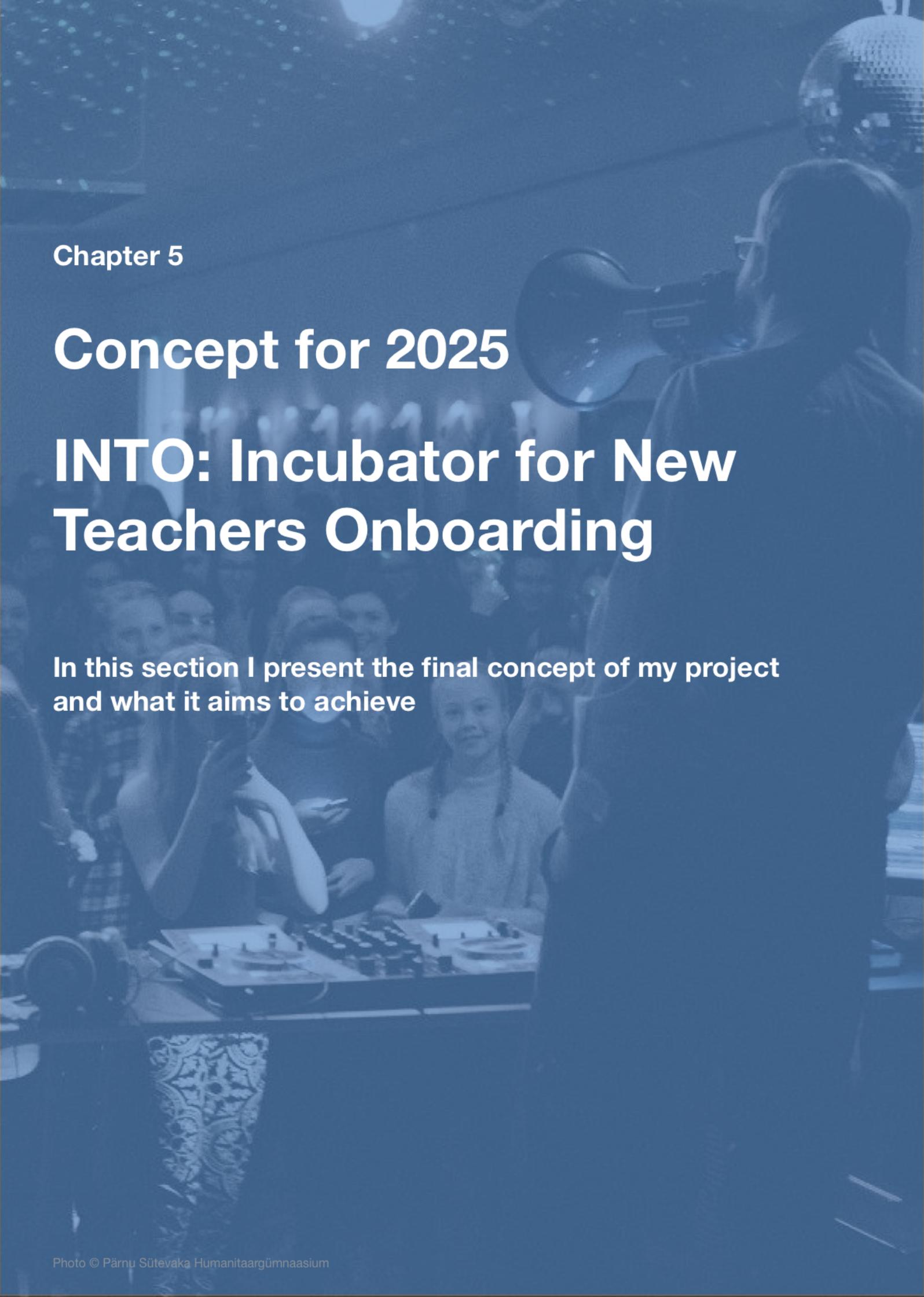


Figure 36 & 37. Canvases filled out by the participant, young teacher from the basic school.  
(Graphs: Author)

## Synthesis of the workshop results

In summary, I learned the following through these workshops:

1. The digital platform could help to find the suitable school and it would save time a bit, but the usage is short term, moving on to the homepage of the school quickly.
2. With beginning teacher workload they agreed that it must be under 20 contact lessons. How much exactly, depends on, whether the teacher takes extra tasks or not.
3. They also see observation as a valuable addition.
4. Doing just one set of classes — all parallels — sounds for them like little bit underloaded. Also for the sake of variety, they'd prefer teaching two classes
5. Beginning a teaching career as an assistant teacher seems a needed step before full-time work as a subject teacher.
6. Assistant teacher internship in several schools is a great way to get a wider perspective on the organization culture, teamwork dynamics, and students. The internship could be done in one-two-month length in one place and then move on.
7. The younger generation of teachers does not see themselves writing down notes as a self-reflection in the app. Neither do they want to audio record it, not to mention that it is prohibited actually to record any media in the classroom.
8. Booklet with onboarding information earned a positive response.
9. Doing university practice as assistant teachers going through three schools would make so much more sense, giving better practice and understanding of the work.



## Chapter 5

# Concept for 2025

# INTO: Incubator for New Teachers Onboarding

**In this section I present the final concept of my project and what it aims to achieve**

## Concept description

INTO is a service and a system targeted to the people that have a definite plan to become a subject teacher in basic school. Through the optimisation of workload, focus to self development activities and participation in the teachers community, the onboarding for the new teacher becomes gradual.

---

### The roles are changing

In the era of digitalisation and active usage of social media channels, more and more learning materials, courses and lessons for students become available on screens. It helps to turn learning process more personal, following students individual progress and guiding them through the content most conveniently for them.

In this context, teachers role is changing. Times, when they were in front of the class for the sake to give knowledge to the young ones top-down is becoming more personal. **The teacher of the future is more in the role of the facilitator and a general knowledge designer, helping students to achieve their own goals.** To make the study process more personal for the students, teachers need to rethink the process in the class to adapt with the trends.

Schools in turn need adapt their in-house systems so that the processes and

support can also be adjusted according to the teachers personal needs. So personalization and self-development is not important only for the end user (the student). In the perspective of Education Strategy for 2035 it is becoming as important also for the service provider (the teacher).

---

### Personalized onboarding

INTO is a concept of a system, how to make onboarding process for the new teachers in the basic schools more personal, attracting more teachers to join in. During the first year of their new role, due to the reduced amount of contact lessons in class, **they can focus more on their professional and self-development**, learn from the experienced teachers, try out strategies and methodologies, get acquainted with the colleagues and the management, as well as with the students and their special needs, and take time for self-reflection to settle in to the role.

In INTO, new teachers can choose between different tracks to enter the work in school. There are altogether four ways in. Depending on their present skillset, they can either try out work shadowing, internship in three basic schools, assistant or full time teacher positions. This helps to set clear expectations and cuts off unnecessary burden, that the beginner cannot bear.

**While on the self-development and reduced workload, these tracks direct the newcomer also to community building.**

The purpose of this is multidirectional. It creates stronger joints between the personnel, especially between all the newer teachers, as they have all experienced recently the same, which helps to bond, also support each other to withstand difficult times. Important factor in this is P2P learning, reducing workload for the school provided mentor and raising self-responsibility of the new teacher.

Collective global attention span is narrowing due to the amount of information that is presented to the public. (McClinton 2019) In the school context it means the teacher has to be more present for each individual student, take time to explain, discuss and do 1:1 sessions. INTO allows new teachers to help out the experienced teachers in the class. This guarantees that all the students get attention.

By going through this incubation, new teachers gain stronger basis of self-confidence, learn to manage their time and achieve their goals, create connections with colleagues, be familiar with the material and the students, before they start off as a full time teachers.

---

## Assumptions

In a relation to this concept some of the assumptions for 2025 should be mentioned, which act also as the basis to some extent. It involves fin

1. Schools or local municipalities are willing to finance extra costs that INTO adds to their budget, to pay for the new teacher internship and the school community building events.
2. School mentors will be put in use more actively in the schools around the country, and their coaching level will also improve, with the help of the program initiated by NGO AÕTK for e.g.
3. Schools leadership becomes more aware of the human centric approach and be more open to the opportunities that enhance the well-being of their personnel.
4. AI takes also bigger stake in education, helping both teachers and students in on preparations and assessment.

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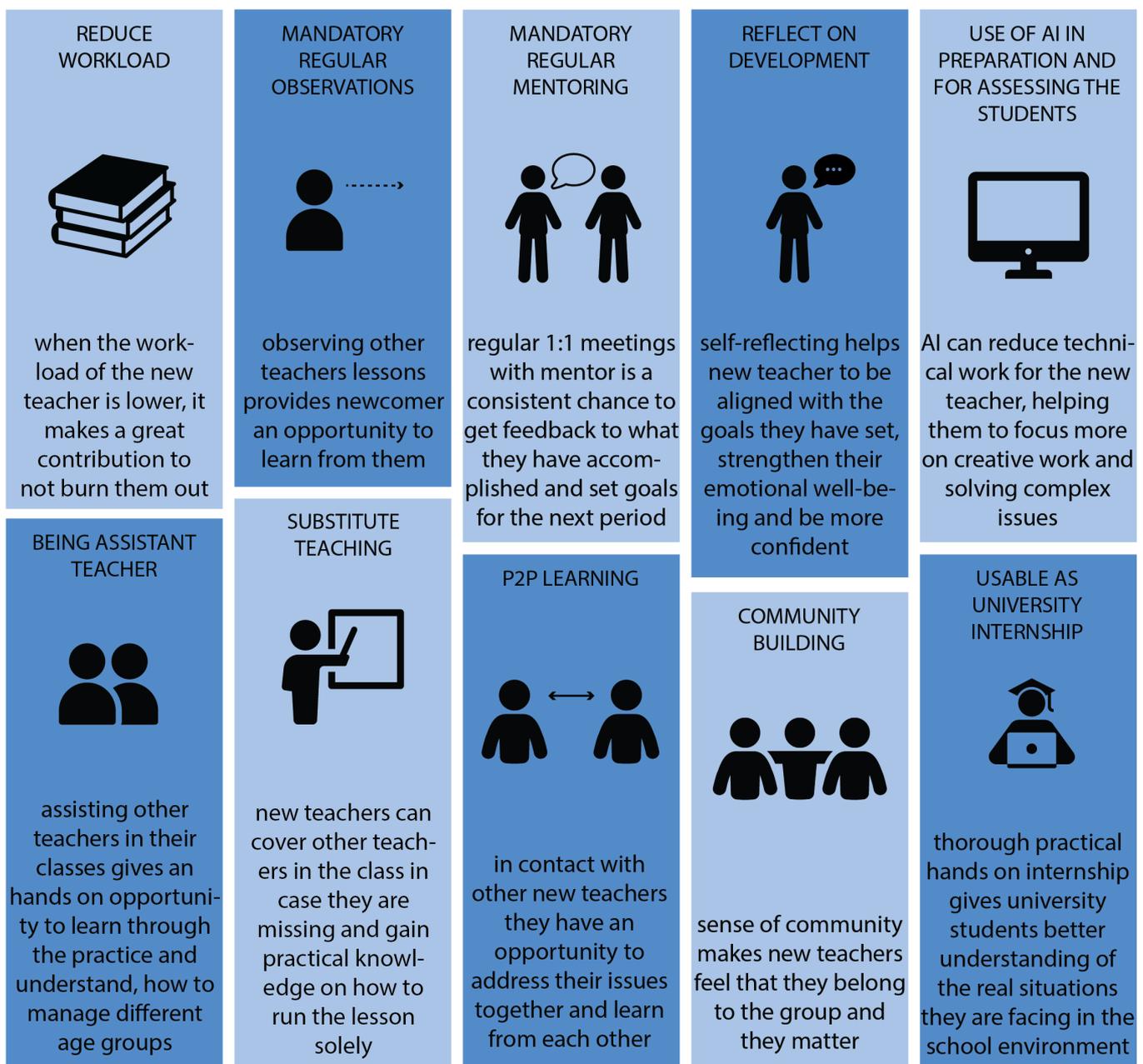
## Timeframe

By the proposal, this concept could be in place by 2025. Still the preparation for the implementation of most elements of the system could begin already now. As said in the research part, by 2025, the schools in Estonia need to substitute 3,000 teachers. The earlier we make the profession more attractive to the target group, the better.

Next couple of years could be the time to pilot this program with two to three schools (as trying it one school might not create the value) collect live feedback and then develop it further. This can generate interest in other schools and create a snowball effect around the country, which could help to improve the system even more. Market is ready to move in the

proposed direction, as showed also interview with the principal of TÜG.

## Guidelines



pictograms from the Noun Project

Figure 38. Guidelines for the incubator.

(Graph: Mae Köömmemägi)

## Model description

INTO is based on a step by step model (See Figure 39), which focuses on onboarding beginning teacher during their 1st year. It holds reduced workload, and leaves more time to self-development and community building.

There are altogether four ways in to the incubator. Depending on the way in, the workload is different, also some of the conditions. It leaves a beginning teacher with a choice to assess, which track they prefer, how much they want to learn about the work, the school, its culture and colleagues before entering into agreement. During the period of incubator they can gradually build up their skills and relations.

As TALIS 2018 has pointed out, teachers who felt that school hosts collaborative culture and mutual support, were more satisfied with their work and did more collaboration themselves also.



# Voluntary Teacher's Shadow

## Target group:

- 3rd year university students
- University graduates
- Career turners

## Duration:

- 1 day to 1 week as per volunteers choice

## Conditions:

- Meeting the principal
- Work shadowing
- Lesson observation

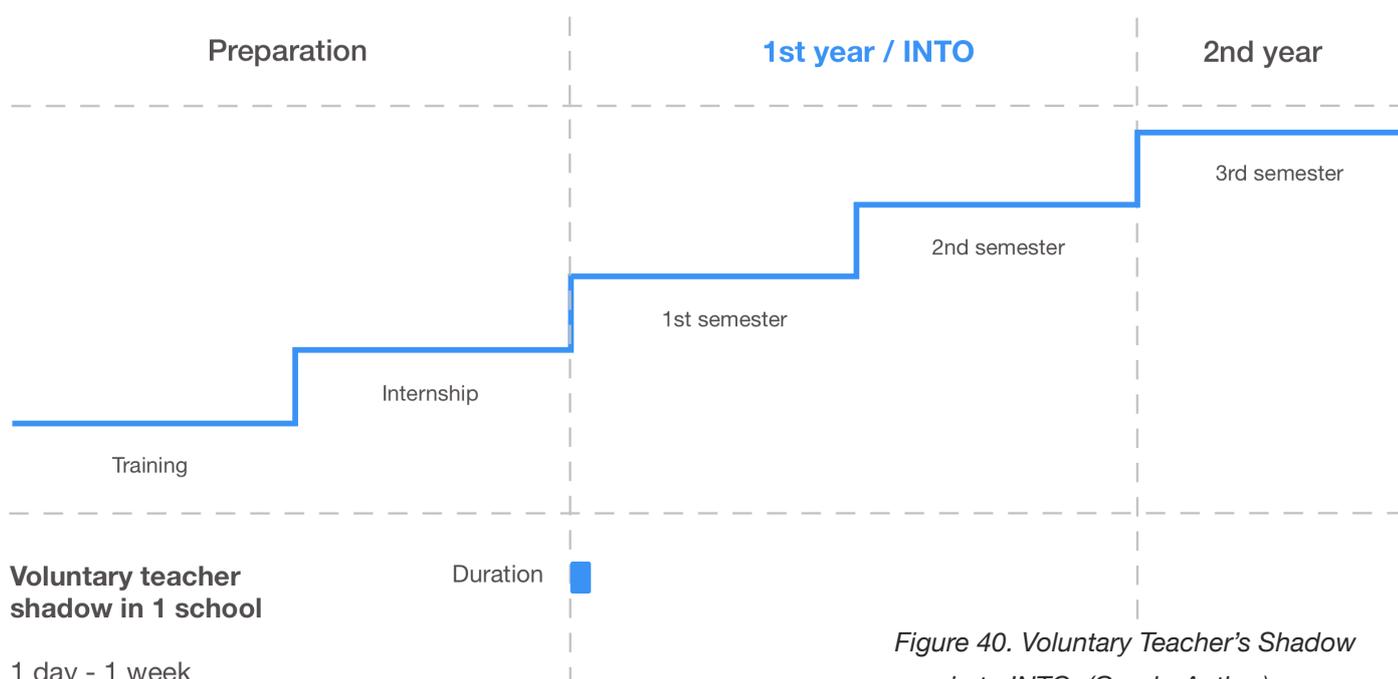
## Self-development and community building:

- Inhouse P2P programs
- Networking night

## Description:

Voluntary teacher shadowing in the basic school gives to the interested ones a sneak peek into the daily work of a teacher. Through this they can get a quick overview how the lessons are given and managed by the teacher, how are the relations with the colleagues and students, and more generally, how does the work culture in that school look like.

if the voluntary shadowing happens to take place at the time with the P2P learning events in the school, they can take part of those and meet the other (rather) new teachers, who can share about their working experience in the school.



1

**Voluntary teacher shadow in 1 school**

1 day - 1 week

Figure 40. Voluntary Teacher's Shadow way in to INTO. (Graph: Author)

# Internship as an Assistant Teacher

## Target group:

- 3rd year university students
- University graduates
- Career turners

## Work load:

- 0,4–0,7 positions, i.e 10 contact hours/week

## Duration:

- 3–6 months

## Conditions:

- Pick 3 schools to try out
- 1–2 months in each school
- Meeting the principal
- 1–2 free days/week

- Assisting the subject teachers in the class
- Doing 1:1 consultations
- Running a hobby group
- Assistance booked pre-hand
- AI helps to assess students' work

## Self-development and community building:

- Lesson observation 2 x month
- Weekly meetings with the mentor
- Mandatory self-reflection
- In-house P2P programs
- Networking night
- Weekly coffee mornings

## Description:

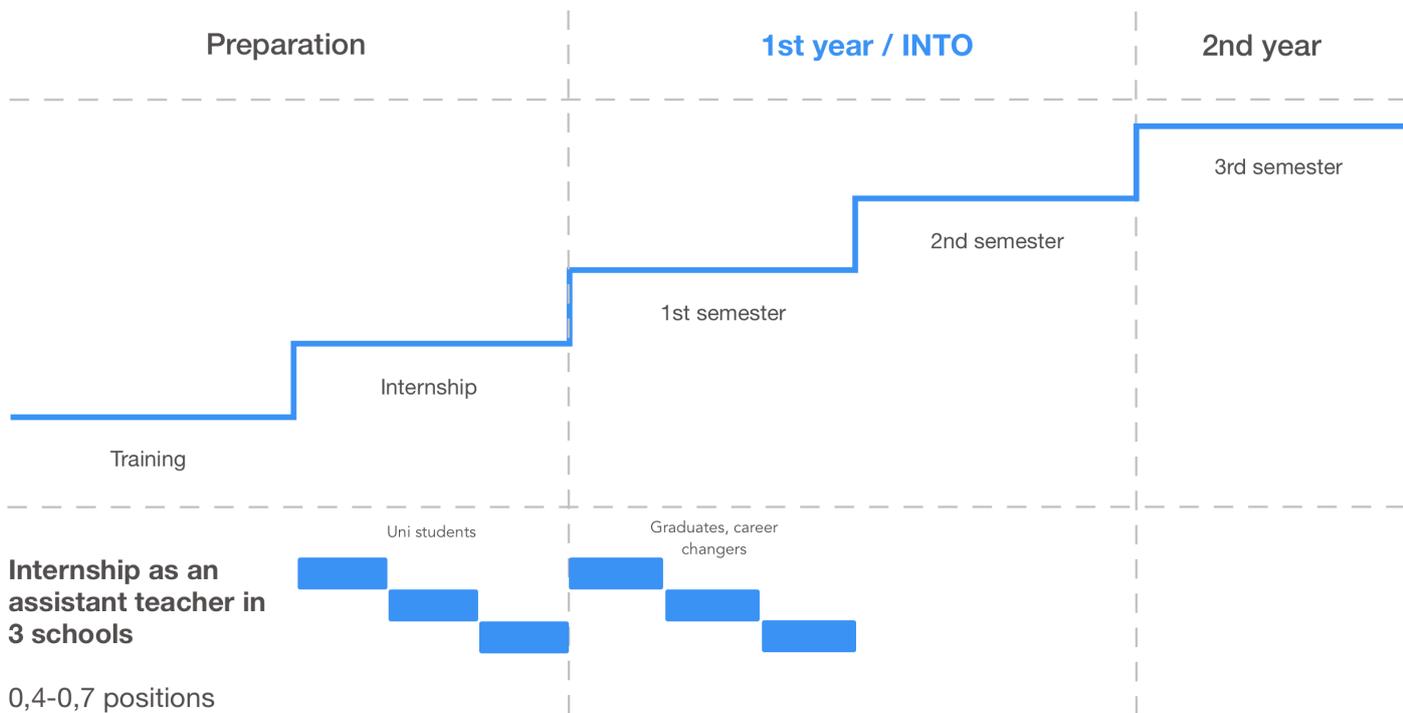
By doing internship in several schools as an assistant teacher, you can witness how different schools are run, compare the organisation culture and potential workload. It creates an opportunity to try out working in these pre-selected schools and choose thereafter, where to actually work. This turns the tables in the current context by making the management to make an effort to win the heart of a newcomer.

Internship in every school lasts one-two months. They can start working in either of them in the beginning of new school

year or due to shortage also in-between two semesters.

This internship could be connected with the university mandatory internships in pedagogy disciplines. But is open to anybody, who is interested, after graduation, when changing career, etc.

During the internship they can participate in P2P learning events, networking nights and coffee mornings to meet the rest of the school staff. Ideally it is paid internship.



2

**Internship as an assistant teacher in 3 schools**

0,4-0,7 positions

Figure 41. Internship as an Assistant Teacher way in to INTO. (Graph: Author)

# Assistant Teacher

## Target group:

- 3rd year university students
- University graduates
- Career turners

## Work load:

- 0,7 positions, i.e 15 contact hours/ week

## Duration:

- 1 year

## Conditions:

- Meeting the principal
- 1 free day/week

- Assisting the subject teachers in the class
- Doing 1:1 consultations
- Running a hobby group
- Assistance booked pre-hand
- AI helps to assess students' work

## Self-development and community building:

- Lesson observation 2 x month/ I sem, 1 x month/ II sem
- Weekly meetings with the mentor
- Mandatory self-reflection
- In-house P2P programs (if it falls at the same time)
- Networking night (if it falls at the same

## Description:

Assistant teacher work takes place in one school. This is an opportunity to take over a class of a retiring teacher, who should inform the management about it in advance. This allows them to find assistant teacher that will work along and help the retiring teacher throughout the whole year. The new teacher will continue with these students after that. New teacher's empty time slots can be filled in with assistance to other subject teachers. It could also work out as internship of the university pedagogy students.

On the second semester, as they have gathered self-confidence and know the class, they could already cover the

Running a hobby group is a valuable add-on, as these groups involve typically highly motivated students that boost also newcomer's motivation. There they can try out different methods to teach and to manage the students.

In the beginning of second year they can look back and do self-reflection on how it went and what were the learnings. Ideally it is paid internship. One way to cover the expenses is to raise the budget in collaboration with the local municipality. Or if school is willing to raise it or if retiring teacher is willing to give some of hers away.

3

**Assistant teacher  
in 1 school**

0,7 positions

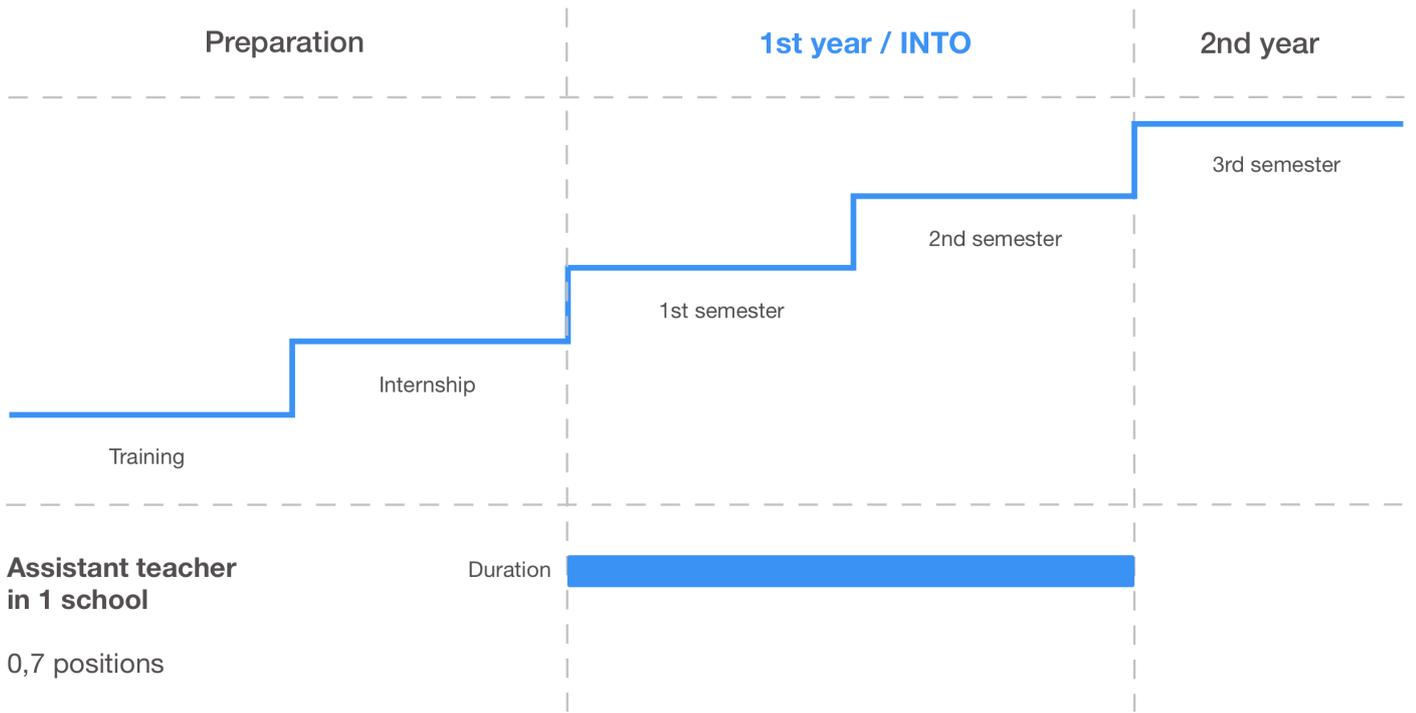


Figure 42. Assistant teacher way in to INTO. (Graph: Author)

# Beginning teacher

## Target group:

- 3rd year university students
- University graduates
- Career turners
- Noored Kooli attendants

## Work load:

- 1,0 positions, i.e 20 contact hours/ week

## Duration:

- 1 year

## Conditions:

- Meeting the principal

- Preparing and sharing materials with a parallels class teacher
- Assisting and replacing if needed/if there is time
- Doing 1:1 consultations
- Running a hobby group
- AI helps to assess students' work

## Self-development and community building:

- Lesson observation 1 x month
- Weekly meetings with the mentor
- Mandatory self-reflection
- In-house P2P programs
- Networking night

## Description:

Although with little less contact hours than typically teachers have (22–24 h), in this full-time track the new teacher is solely responsible for their own subject and give lessons to the classes. But to the limited amount—only to parallels. To keep the variety, for two sets of parallels.

If there are more parallels than two, other teacher can take those. It suits well for bigger schools—two teachers being responsible for same batch of classes (two+two e.g.), can co-work with the material and share tips and tricks. Through this they can learn from each other.

Although their schedule is already pretty full, still empty slots can be filled with

assisting or being a substitute, that can give also side perspective to give lessons.

This track involves also running a hobby group, which adds great value to teachers skillset as typically highly motivated students are involved, which boosts also teacher.

At the beginning of second year they can do self-reflection on how it went and what were the learnings. It has also all the rest of the self-development components.

It is paid job and by the income no different from other subject teacher's work.

4

**Beginner teacher in 1 school**

1,0 positions

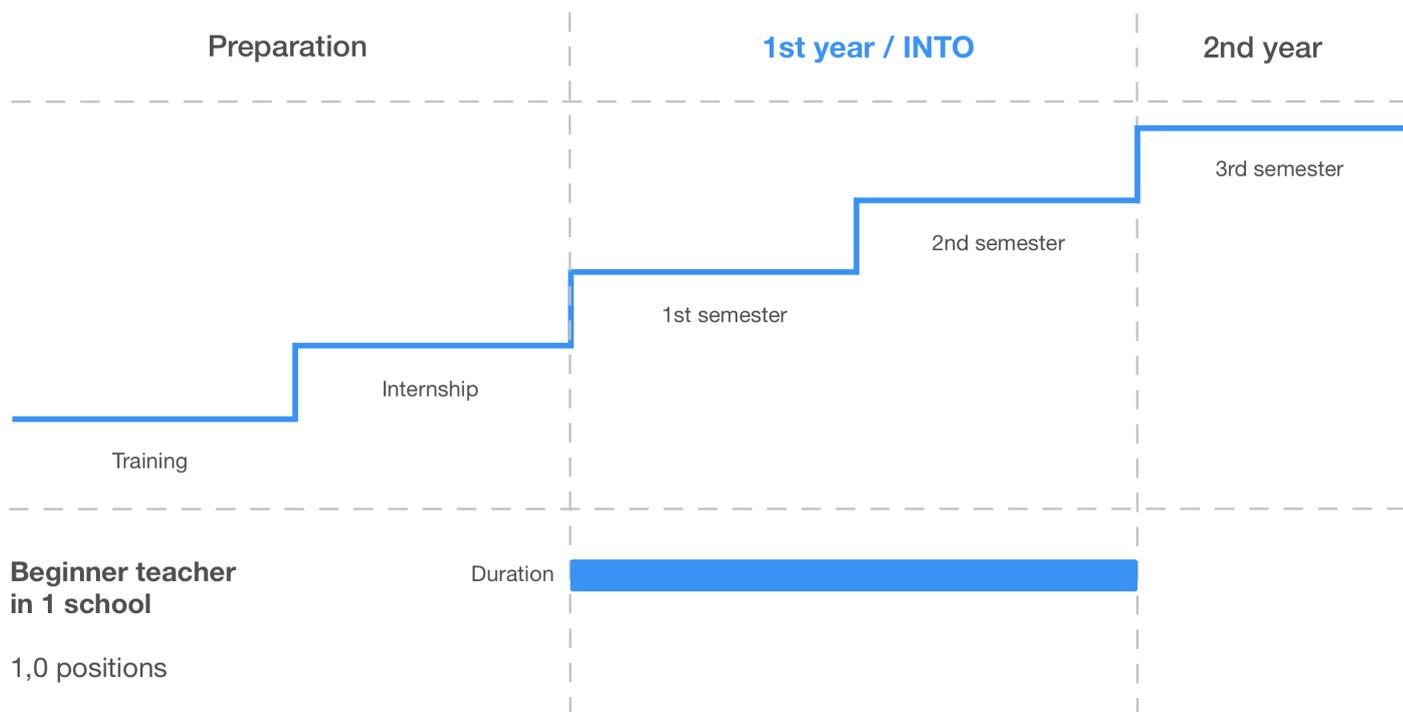


Figure 43. Beginner teacher way in to INTO. (Graph: Author)

# User groups

The user groups that I see could benefit from this kind of service divide into two.

---

## University

University graduates in pedagogy disciplines are the ones that educate themselves several years before they can start out as a teacher. Via INTO they could get a glimpse of the work earlier or go about it step by step after graduation. Also, as universities' own practise may be limited to class observation and theoretical studies, INTO would fit undergraduates well, as it provides a chance to get a fully hands on practice before getting a degree.

---

### Person from this user group:

- Lives active social life
- Is surrounded by strong network of people, many of them from the university or high-school
- Is willing to work as a teacher for an indefinite period
- Does not have much work experience
- Wants to do good for the society or create something meaningful
- Is a vital person
- In the age between 20–30

---

## Career change

Career changers are the most fastest growing teachers group—people that might not have any pedagogic preparation, but plan to change their career paths or improve it via becoming a teacher in the field they know about, e.g. an IT-technicians become math teachers. For them this would fit well, as it provides step by step practical learning curve before taking over full-responsibilities. To apply, they can turn straight to schools or enter via NK or AÖ

---

### Person from this user group:

- See this as a good opportunity to improve their leadership skills and build up career
- Wants to work part-time
- Is willing to work as a teacher for some years
- Has side-projects in hand
- Lives active social life
- Is collaborative and has open mindset
- Has considerable experience working in other discipline
- Is in the age of 30–45

# Persona.

## University track



### Bio

At the end of high school, she wanted to learn something that would ensure financial security in the future. So she studied initially accounting.

Then she got the idea of becoming Estonian language teacher and entered Tallinn University. She worked as a baby-sitter to cover her living. Besides financial security she values creating a meaning and having a real impact on students lives in teacher role.

She is social, with an open mindset and straightforward girl who actively interacts with her coursemates from TLU. Together they go to Viljandi Folk Music Festival every summer. She loves animals and keeps at home a cat named Harry.

### Demographic

Name: Linda

Age: 25

Place of living: Tallinn

### Goals

Contribute to changing the lives of young people, and help out the troubled students.

### Quote

*"Your own crowd is sooo important. Because of them I also forget my headaches. I'm afraid that if I don't have that kind of company at work, I won't be able to go to there."*

### Pains

She doesn't like being looked down upon.

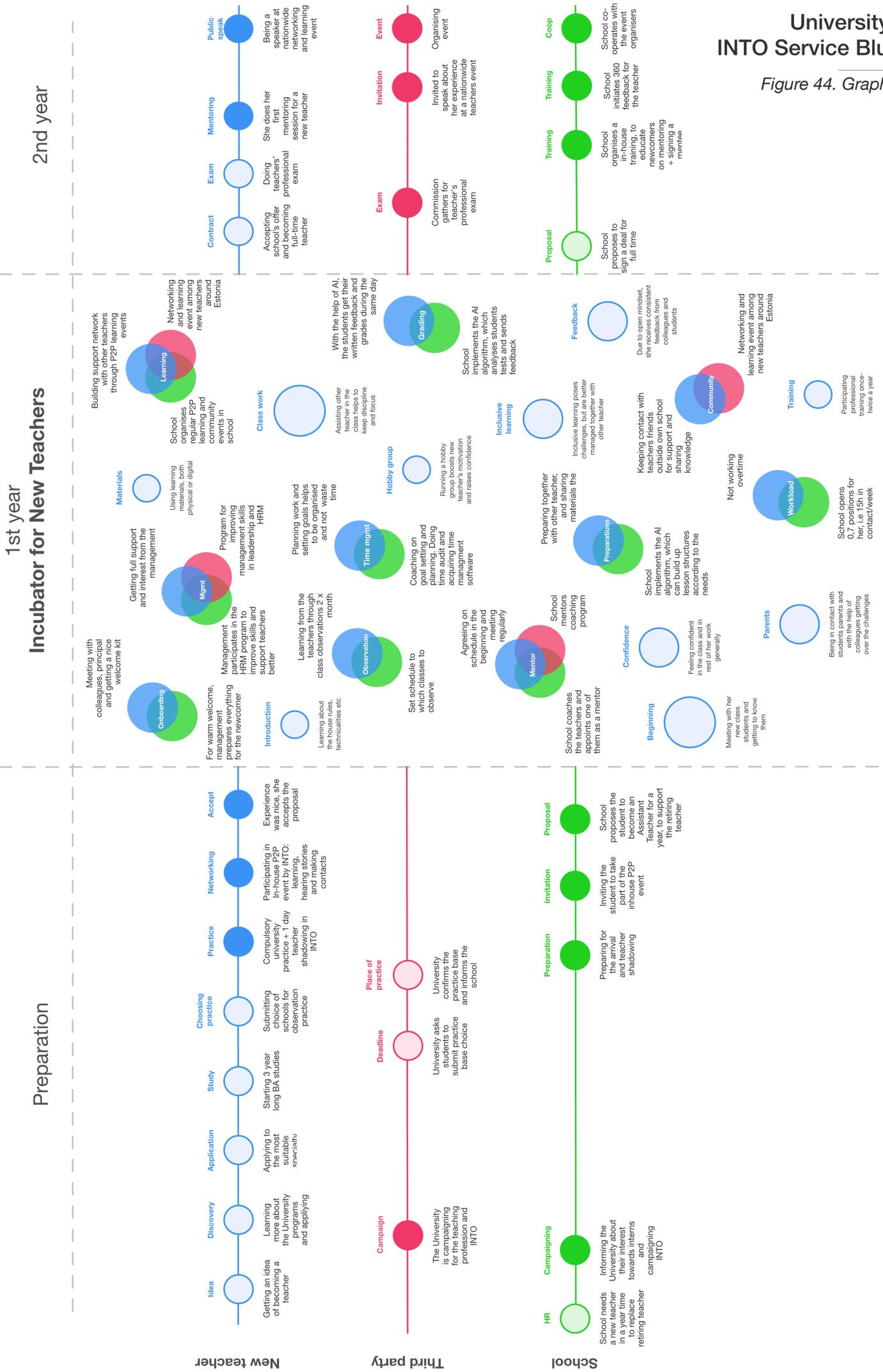
It frustrates her, when she is excluded from the group.

### Gains

She likes new challenges that would put her on test.

If she manages to create somebody a lasting memory or something meaningful, this carries her forward.

Inside, she wants to be a role model of change.



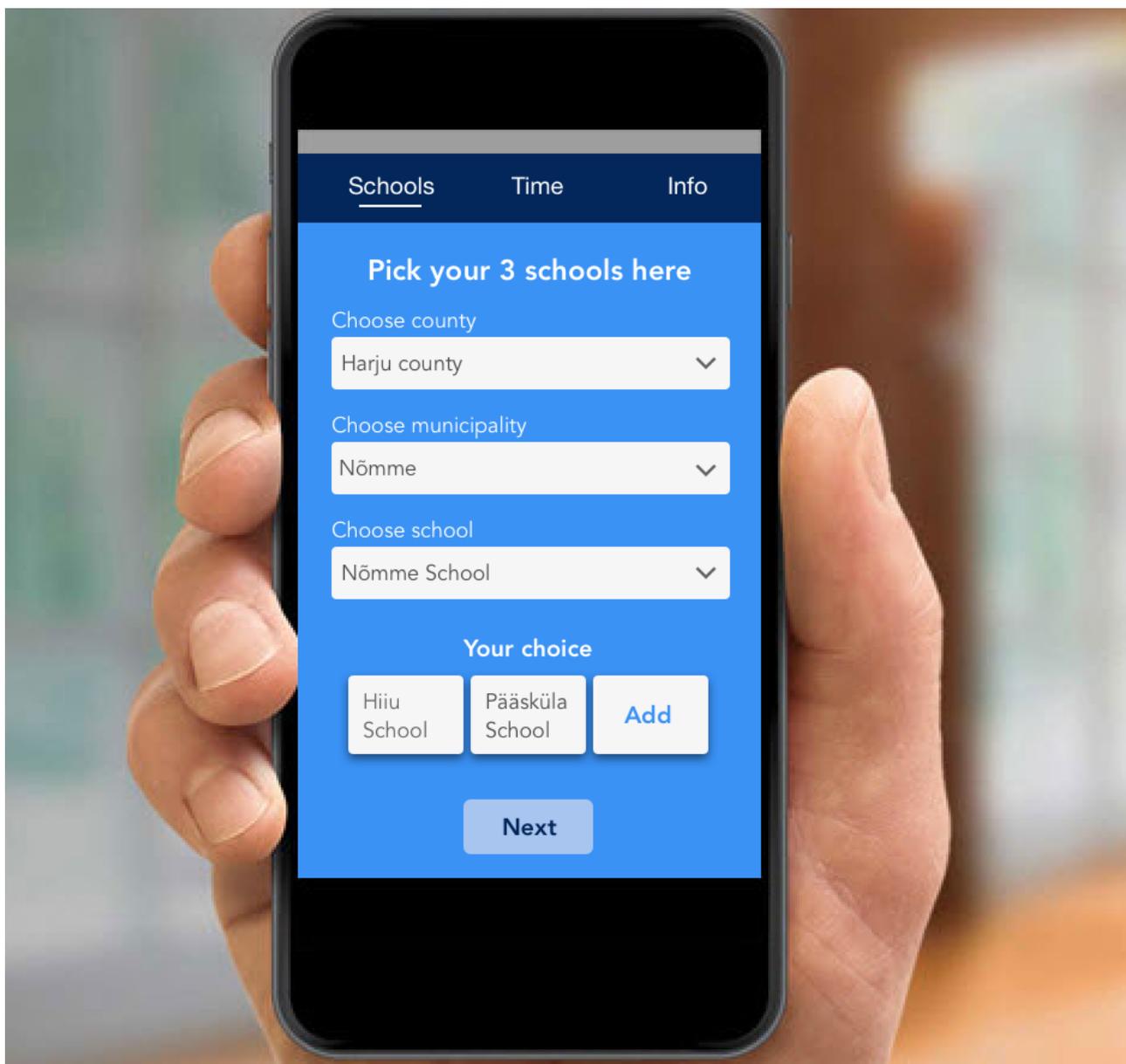
## Future developments of the service

### Choosing internship schools

To sign up for an internship in 3 different schools, there is a service or an extension to existing publicly available education web platform such as [opetaja.eu](http://opetaja.eu), [haridusportaal.ee](http://haridusportaal.ee), or other, where the users can pick the schools of their taste, mark down preferable time to start the internship and leave contact information about themselves.

Schools will automatically be notified about this interest and can respond back via e-mail or phone call to ask over about the qualifications, clarify the details for a meeting or agree on exact timeframe of the internship, the tasks to be covered by the intern, etc. (See Figure 45)

Figure 45. Mockup with possible mobile app functionality to choose internship schools. (Image: Author)



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## Community building

- **P2P learning**

People are generally more open to discuss the fields they need to develop with a peer, that shares the same context with them or has recently been in the same situation. This is why some of the topics might not be addressed with the mentor at all, as mentor is somebody, who is older and more experienced and knows, how things work in this specific school. Therefore a new teacher might perceive some of their own questions as shameful.

Monthly P2P learning session with other newer teachers provides a channel, where they can regularly discuss those and other challenges that have been difficult. Each meeting could carry a topic and participants can prepare the talks about their experiences in that specific focus to learn from each other.

As there might not be enough of new teachers, then this event could be done also in the wider audience by including all the teachers in the school. Everybody in the room can empathise and share their opinions on the topic. This helps to ventilate some stress, but also contributes to strong teachers community.

- **Weekly coffee mornings**

Weekly coffee morning is a way to gather up all the colleagues once a week. Through this you can create the connection between newer and older

colleagues and contribute also to the stronger community in the school. This is also a way, how to pull everybody out from their everyday routine. It is a non-formal way to build new contacts or refresh the old ones. It is a small change, but might have a big impact, and needs only schools approval on little raise of expenses for snacks and beverages. It would be one simple way to show, how schools prioritise relationships and fun at work, which helps to raise their employees satisfaction, as Google has proved.

- **Networking night**

Networking night is another form of social event that helps to build community. This would be more focused on learning aspect from the peers that are in the same position. At a regular times, this event could invite the new teachers around Estonia to join in, listen to each others stories, learn from them and create network connections on top of that. This contributes also to further knowledge sharing between the schools.

People that ask for help and have a place to ask help, develop quicker. Also, these practices reduce isolation, enhance collegiality, and increase employee morale and job satisfaction.

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## Self-development

In a big part self-development activities take place at schools already today. Although the quality can vary school to school. Sometimes it can happen, that either one cannot be done due to lack of time or other reasons so it is important to point it out.

- **Mentoring**

If schools put an effort to improving their mentoring system, everybody in the team learns from that. Teacher competence model and 360° feedback method by Innove or Training program for beginning teacher instructors by NGO School for New Teachers can help to achieve it. In INTO the focus is on the quality of mentoring and making mentoring sessions regular so that learning curve would be high. This is also important to prepare the new teacher with skills so that she is able to mentor also other new teachers hereafter.

- **Observation**

This includes also observing other teachers classes. It is a valuable practice that can be used to level the skillset of every teacher by witnessing, how colleague is doing the lesson, how they manage the class, solve problems, answer questions, etc. And learning takes place at either end, when they also reflect on this.

- **Self-reflection**

Third component in the self-development track of INTO, is self-reflection. Many people reflect through writing in a journal. If that doesn't work for everybody, thinking back and analysing own actions, plus talking with a colleague helps to do it as well (see also chapter Community building). The most useful reflection involves the conscious consideration and analysis of beliefs and actions for the purpose of learning, and gives the brain an opportunity to pause, and create meaning. Important thing is to actually do it to benefit from this.

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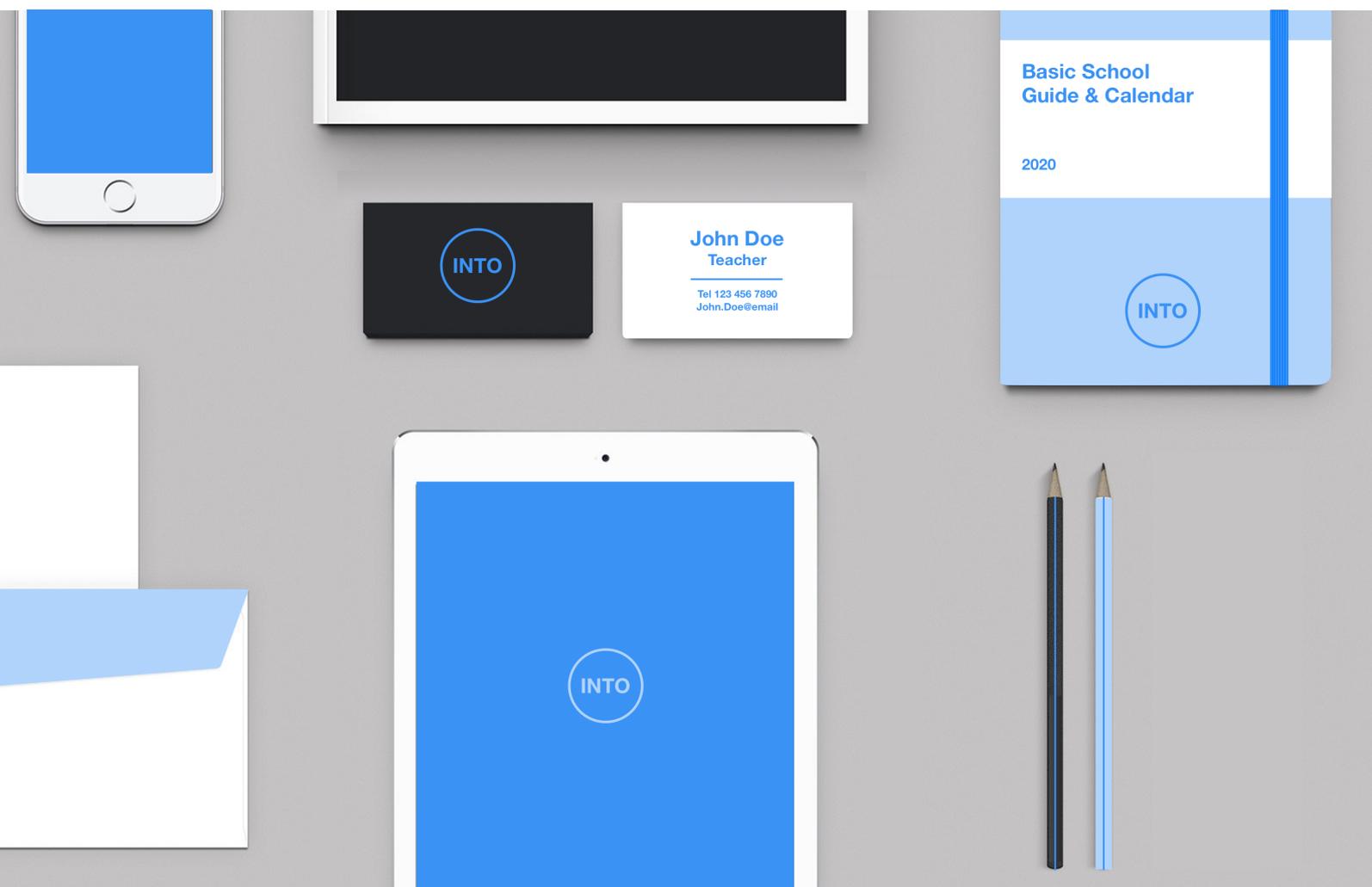
## Welcome kit

An easy and creative way, how to make a new employee feel welcome, is to prepare a welcome kit handover. This pack is the first opportunity to show, how people are truly valued.

The content of the kit is really matter of creativity, but could include a pen, notebook filled with house plan, important names and contacts, events and deadlines. Also re-usable water bottle or a coffee mug or other. It all helps to communicate a message about the organisation culture and the way, how people are seen here.

Meeting the management on the first day, having a coffee with them and/or going through house rules, the way of working, what are new teacher's needs, and how they can work together best is a good way to start. (See Figure 46)

Figure 46. Mockup of possible welcome kit for new teachers that schools could use. (Image: Author)



## Lesson preparation and grading by AI

With the help of AI in the students assessment and lesson preparation, teachers could be freed from huge amount of work, so that they can focus more on inspiring students, building positive school and class climates, resolving conflicts, creating connections and belonging, seeing the world from the perspective of individual students, and mentoring and coaching students. These things represent the heart of a teacher’s work and cannot — and should not — be automated, as states McKinsey report. Those hours could be reallocated so that teachers can do more of what teachers do best: interact with students. (See Figure 47)

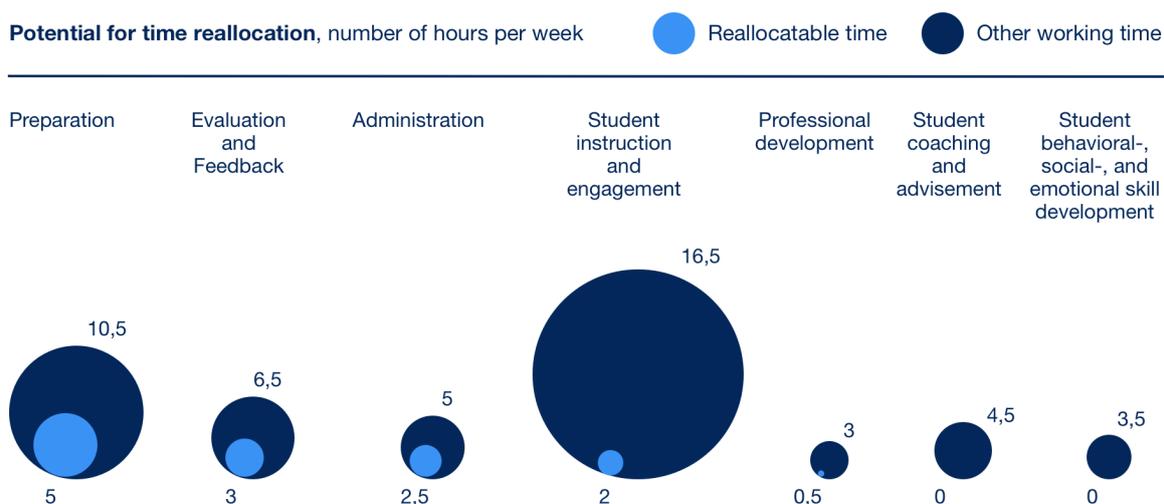
*“Our current research suggests that 20 to 40 percent of current teacher hours are spent on activities that could be automated using existing technology. That translates into approximately 13 hours per week that teachers could redirect toward activities that lead to higher student outcomes and higher teacher satisfaction.”*

*McKinsey & Company*

*14 Jan, 2020*

*Figure 47. Chart that shows, how much technology can help teachers to reallocate their time. (Chart: Author; Data: McKinsey & Company)*

### Technology can help teachers reallocate 20 to 30 percent of their time toward activities that support student learning



Source: McKinsey Global Teacher and Student Survey

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## Time management

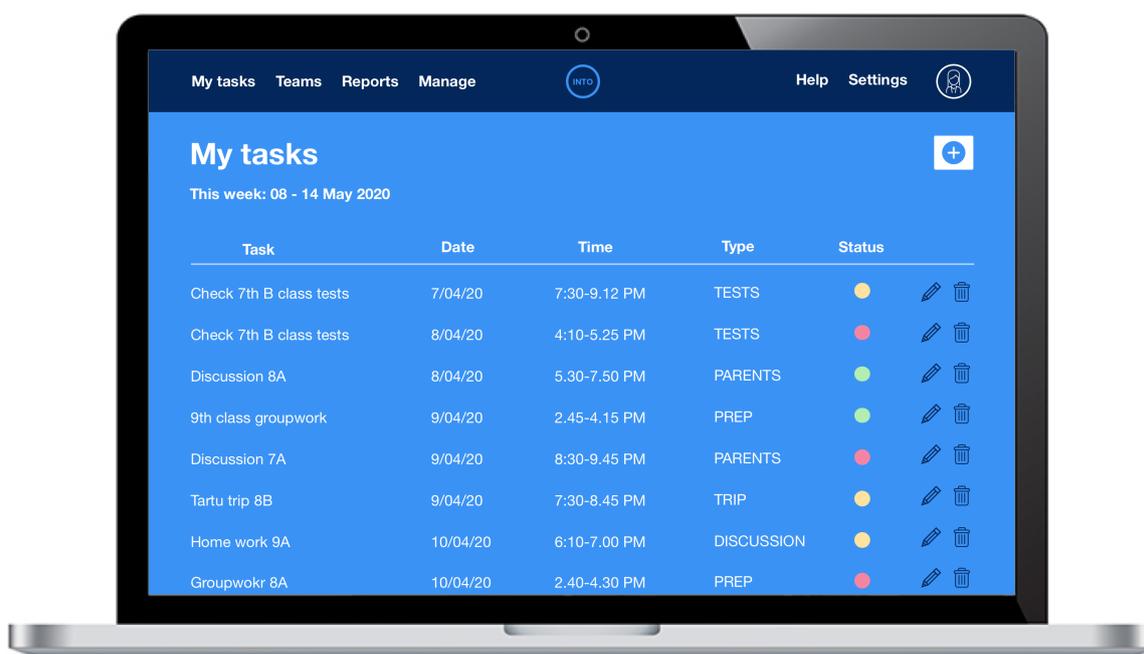
Working as a teacher requires excellent time management skills. Too much work is a matter of planning and setting goals. With effective time management skills, teachers can increase their productivity and provide a better education for their students.

Also TALIS report 2018 states that, greater attention should be paid in particular to the ability of beginners (less than 5 years old) and younger teachers to plan time for teaching activities and to use it effectively to teach students. This is a skill that can be developed in both teacher training and in-service training.

There are a lot of tips and tricks in the web, also several platforms to try out.

In the school, management could address this issue and call for sessions with the time management coach so that teachers could improve their skills in that matter. (See Figure 48)

*Figure 48. Mockup of possible time management platform that schools could use. (Image: Author)*



## The result of the service

Based on the outlined concept we can reduce teachers' stress level and turn their attention from multitasking to focusing. It all matters in the perspective of new teachers health and general well-being, but most importantly on the teaching service quality that the students in the class receive.

By making teaching personal through assisting teacher, they actually get more time to focus on each student's strengths, needs, skills and interests. This kind of personal support nudges the students to take more self-responsibility on their studies as students also work to set both short-term and long-term goals on their studies. If done well, all students will be more engaged in their learning as a result. And struggling students will get help sooner. This in turn creates a generation of people, that can guide themselves and learn from their mistakes.

In a broad term, this approach has the potential to help reduce the stigma of special education in the society and better meet the needs of kids with learning and thinking differences. Through personalisation, students get support to work on their weaknesses and customize their path, which altogether helps them to take ownership on their learnings in the school. If this generation of adolescents turn adults, they bring along different way of thinking and an ability to solve

problems of future, where everything turns more personal anyhow. So it all serves the purpose to prepare for the mindset in the future society.

INTO gives you time and tools to build up your skills to establish yourself and take time to learn the work of a teacher's hands-on. By supporting open mindset and community creation in the school risks of having strict and unsupportive relationships among the personnel are reduced. Through community and self-development opportunities, such as P2P learning and mentoring, a beginning teacher can feel much more confident.

For teachers, INTO experience is a personal stairway to get onboarded, but it is also a way to start building whole career in education, step by step. Therefore it helps both, the student and the teacher.

## Feedback to the concept

After finalising the concept I introduced the model to couple of target group teachers, who participated also in my workshops, by showing them the model graph, guidelines and the blueprint. One of the participant in the feedback session was Estonian language teacher in big city school, another one Geopgraphy teacher in smaller rural school.

*“Sounds like such a good plan. Too bad I never had one. It's a thorough thing that works well in my eyes. I feel*

*that I can still find help from this, even though I have already worked a little. If I had it in the beginning, I would have become who I am now more quickly.”*

*Young female teacher*

She also mentioned that they self-initiated already a coffee morning as well to build up relationships between colleagues. Week by week more people keep joining in, she said.

Regarding to hobby groups, she mentioned that for a more experienced teacher it is hard to deal with them, because they can't find the time, but it would be very interesting and valuable for a beginning teacher to do it.

*“It is not enough to say that we exist so you can always ask, and we have motivating materials. You feel support when you are in the middle of it. I even think that if you have an assistant, you are actually much more efficient yourself. It also makes children behave differently. They are so excited. They also want to impress. It also changes dynamic among children.”*

*Young female teacher*

Other teacher that I spoke to, was equally positive about this. He can see how this

model helps to keep young teachers in the school.

*“Most people leave work in a few years because they cannot withstand this burden. This model could help against this very well.”*

*Young male teacher*

## Reflection

When I started with this project, at first, I had hard times to find a topic that would drive me. I was looking for a challenge to tackle with service design, but having only vague ideas. Until all signs pointed in one direction—towards education and with extra effort I found also preliminary topic, to dig into the space around teachers workload in public schools. It is a very complex space to work in, I realised soon, and saw so many possibilities to get carried away in different directions. Shortly to get lost. With the help of my peers or supervisors I managed to get back on track, but it was not always easy.

This project was a big learning curve to me on so many levels. In the beginning of the project I asked from a friend at Oslo School of Architecture and Design (AHO), what its like to write a diploma. She told me: “It's like they just need to send us off into the woods so that we can come back as grown men or something.” I wasn't exactly sure, what she meant, but I am now.

In the beginning of my research, I had an ideal understanding of how the process will look like. How it actually ended up, was different and much more challenging —agreeing upon the interviews with teachers was very hard due to their tight schedule. Yet again, the ones I spoke to, literally blew me away with their stories, gave me very inspirational insight about

school environment and taught me many things also personally.

When downloading gathered insights, I started to realise that I work much better in a team. People are social by nature. I really missed out team to regularly reflect with and build on top of each others ideas. I was happy when my fellow students helped to make up the shortfall—Mariin Petofer for checking in once in a while, and Katre Purga, with whom we decided to put stand-ups in good use in every morning at 10 AM during the last phase of the project.

For several moments, I was not entirely sure on the direction I should narrow down to, shuffling with several opportunities and trying to understand, which of them had deeper meaning. I did not want to pick just a problem, but to solve a core problem. Being stuck and overwhelmed with big uncertainty, trying to imagine, on which curve am I now on the Fuzzy Front End, taught me how important it is to keep moving, hold the motion and trust the process of design

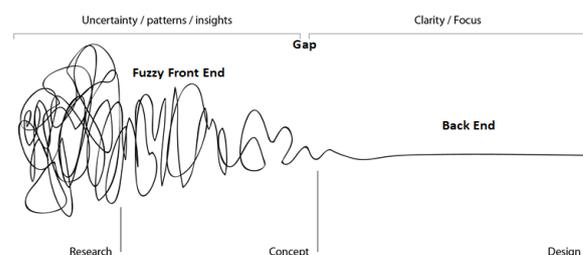


Figure 49. Fuzzy Front End. (Image: Wikipedia)

thinking. (See Figure 49) Especially when days coincided with the worldwide crises caused by COVID-19. I had all the needed information, so I just needed to zoom out and take a bird-eye-view on the findings.

Looking back, I see couple of things I would do differently now. A lot of time and energy evaporated into the air in the very beginning, where I was struggling to find topic. I could've inspired only from one student's story e.g, and move on. Also, with gathered insights, analysing them bit by bit as they were harvested would have made it easier to digest than to do it all at once.

Why should it be any different with the challenge that the new teachers face, when they enter the school for the first time. I understood that the current onboarding process should be overlooked if we want to reduce the shortage of teachers. I would really like to pilot this model at some school to see the actual results.

This concept proves that IxD MA education fits well to re-think complex, slow and sometimes obsolete systems, such as we tend to see in the public sector, to refresh current thinking. In terms of user experience and service design, public sector as a whole in Estonia has a great potential, where to contribute as a designer and think along to create change. IxD creates solid base to address those issues and develop yourself further.

## Acknowledgements

It was a challenging process and I could not have done it all alone.

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## Abbreviations

AI	Artificial Intelligence
AÕ	Asendusõpetajad
AÕTK	Alustavat Õpetajat Toetav Kool
EEMU	Estonian Education Personnel Union
INTO	Incubator for New Teachers Onboarding
NK	Noored Kooli
P2P	Peer-to-peer
SEN	Special Educational Needs
TK	Tagasi Kooli
TÜG	Tabasalu Joint Gymnasium
ÕLHE	Õpetajad loovad homse Eesti

# Appendix

## 1. Insights from the interview with Martin Öövel

### School system

- The school environment is based on a system of chairs. There are subject-based groups with 1 leader — a teacher with a reduced workload. Their workload is 15 instead of 22 contact lessons. They are full members of the management.
- Everything in the management is done by voting. Most of the management members are teachers, i.e. it is impossible for the school to make a decision without them.
- The turnover among school personnel is 10%.
- Historically, it was a weak school. Now I say that if you don't want to, you don't have to be here. This has made the situation clearer.
- We have 1,500 parents, 10 of them are quite crazy characters that I have to deal with all the time.
- I take my work hour as taxpayers' money, and I assume that this money must be handled carefully.

### The chair leaders

- Chair leaders are the best teachers in the subject segment, who have 7 hours of free time to

direct back to managing the team and have a financial motivation for that.

- The role of the chair is to remove barriers to employment and the mentors are rather psychological.
- The content and suggestions of the questions/problems are always prepared by them and the archive is always open to everyone.
- Chair leaders have the framework to manage human resource, mentors do not.
- To assess progress, there is a system where the chair asks specific questions, monitors the exact parameters, uses an hourly observation matrix, etc. This is how evidence-based assessment takes place.
- It is important that the development conversation is not in favor of friends.
- Chair leaders communicate every break. There is a real competition between the chairs.

### Financial motivation

- We have not increased salaries, but the motivation fund is very large, which also includes the support of the municipality.
- The result is that if you get 2 monthly salaries extra in a semester, people will work for it and want to help.

- If you come with an attitude of changing the world, today you are earning the salary of a small school principal.
- If you have managed to develop based on the evaluation of the previous period, then the corresponding financial number follows as a motivation.
- There is a financial motivation for volunteering in IT support, also when volunteering to become a mentor. We pay them a bonus from a motivation fund twice a year.

#### Mentoring

- When a new person comes, the focus is on helping them.
- We enforce people through a dual system: support from the chair (a board member), that is a teacher next to you. Most of the concerns are resolved at that level not involving principal.
- In addition to the chair, there is also a volunteer supporting, who has been motivated to become a mentor by the school. You can apply to join the mentor group once a year.
- The idea is that if you have problems at the managerial level, but there are things you don't want to talk to the manager. Since she/he's a leader who also evaluates performance. Therefore, you have a person of the same level to whom to open it, on whose shoulders to cry.

- We have chosen people' people for this. Harmony is the main goal to remove obstacles.
- The mentors' corner includes 25 volunteers.

#### Other support

- Some of our teachers are digital geniuses, and they volunteer to be a IT support team, which is always available at Google Hangouts, and people can come and ask.
- There's a ticket system behind it. Everything is evidence-based.
- Reflection diary—no no no. All administrative burdens must be removed from the teacher. Their only task is how to better deliver learning outcomes. SOLE TASK.
- We have a P2P learning in order to complement each other, taking place every school break.
- The first priority of the upgrade is to mobilize in-house best practices. Thanks to the mentoring system, we know where they come from.
- We developed an in-house support center information system, which is unique in Estonia. We have student files for staff, data trees, employment contracts, statements, directives, how much the human performance curve is, and so on.

#### Future of school

- Data processing capacity and individual curriculum development are growing because every child has a special need.

- Basic education with basic knowledge is separated. From the 7th grade onwards, you could go for a model that is used in the university. Data processing can tell you that in certain subjects you have better results. Then you can direct the child to a narrow path already.
- The problem: does a 7th grader have the ability to make such decisions? When they get older, they might ask, what you did to me, I didn't learn this and that thing.
- The problem with basic education is how can we empower talented kids with SEN so that they can do nuclear physics, while they don't know how to eat bread?
- The closest match to the ideal of the future is Khan Academy, where you have your own pace so that every step you feel you are the smartest.
- Classical subject teaching changes drastically into a general basic school teacher. It is about general competence! It is the skill of teaching to learn, not the teaching of a subject.
- The question is how to balance general education and autonomy. To what extent can the student choose the pace, which is the general bar that everyone should have etc. But I don't know what the right answer is. If there's education at different speeds, it strikes a balance.

## 2. Insights from the co-creation and feedback session with Triin Noorkõiv

### Work time

- I would not connect the model with contact lessons, as by the law teacher's workweek consists of 35h. It doesn't say anywhere, that 20+ hours have to be in contact.
- The workload is the matter between the teacher and the principal. It is the responsibility of the manager, not a teacher, to save the school.
- The principal of the school should design the work position so that everything fits inside 35h. That is the ideal.
- For the beginner, 24 contact hours do not fit inside 35 h. Teachers have agreed to do it, but complain, why the country does not help.
- We have created a calculator so that as a principal you can calculate the workload, set employee's expectations, and see, how the result changes.
- To teach three parallel classes one subject is relatively easier than teaching different subjects and classes (different preparation adds up).
- For the new teachers, the workload should be under 1,0 position, true.

### Being an assistant teacher

- Very important idea and an interesting step.
- If they work part-time elsewhere, it means also a different financing model for schools. Who is going to pay it? Local municipality?
- If the retiring teacher is willing to give up part of their salary, then for the school it is easier to pay for the assistant teacher and find a little extra.
- The school could earn it even with additional services, opening up sports facilities to the local community for e.g.

### Rotation

- This is simply a super idea! By going through different schools, you learn about different environments and cultures and find an appropriate school for yourself.
- You could experience what it means to be in a small school.
- In big USA universities there you have a whole year for acclimation.
- In this rotation, you can create your own package of schools to try out.
- Many teachers tend to think that the one school they are in, reflects, how all the schools are.
- I see a need also for a mini version, where you can do it for a week or so as a volunteer work shadow. Through this, you can go and

- observe the classes and spend time with teachers.
- Or teachers from other schools of the network can introduce it to their peers along with the manager to share knowledge.
- So there could be two tracks: short and long one.
- For the school the expense is minimal and it is perceptible for the local municipality.
- I see this could be piloted in Tartu. We have good cooperation with the local municipality and their school network.
- This could involve basic information, who is my class teacher, where can I get markers, etc.
- One school used the treasure hunt methodology for onboarding so that you have a track and checkpoints to go through.
- This is so easily doable and could be uploaded on to AÕTK homepage as a pdf.

#### Platform

- It simplifies finding the right school quickly.
- It would be good if schools can inform about potential vacancies in advance when there are retiring teachers. This would allow agreeing with the school in advance and be safer for all the parties. For e.g., two years in advance Estonian language teacher position will be available.
- Maybe some job portal would be interested in this. They could create layer for teachers.

#### Booklet

- Such a cool idea.
- We have 10 principles for beginning teachers on our homepage, which could be also included there, also example flow, which they have on their homepage.

### 3. Response to the concept workshop

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#### Database of schools

##### Likes

It is a good thing to save time. / If you can make a comparison table, it will greatly simplify. / Very cool. You choose the place of living first and then school. / A network of schools would be a pretty good site for a seeking teacher. Schools filter is also good. / This is good information though, how many students, how large the student movement, whether increasing or decreasing, the number of students where it is located, whether in nature, what is nearby, and so on. / If everything is in one place, it would be very convenient to start your search. / It would be really good to have such a page giving the overview and opportunity to compare schools and find information about the vacancies.

##### Criticizes

I am not sure if people actually want to move out of Tallinn?! Maybe those, who don't have kids or a spouse. / We usually have 3 out of 28 participants in the NK program that are ready to move around Estonia, and then they already have a regional preference also. / The idea of booking com is pretty interesting. But this assessment is subjective, do teachers want it? Is it good to be in the middle of

the table? / Teens in grades 7–8, if their brain chemistry is already volatile, is it really good to write about how stupid the teacher is?! / There is a great opportunity for trolling on opinions about teachers. / I would have looked out the name of the school on that page and then gone to the homepage.

##### Questions

It's good, but I can't imagine if I don't have school experience, what can I see from there. / Whether schools would be willing to display this information. Do they want this rating information to be available to everyone? / But isn't Estonia too small for that? It could rather happen in a big country, looking for what that quality of life is there.

##### Ideates

I would like to know what conditions are there in schools, are there laboratories, or what is their policy with holidays for e.g? / It is also an opportunity for rural schools to attract attention. Otherwise, they will not be reached. / Information about choosing a favorite teacher. / In addition to the state exams, there could also be information about the school: the number of students in the class, parallels, the number of students in the whole school, the support staff, whether they have a psychiatrist, assistant teachers, speech therapists, social pedagogue. Also statistics from Haridussilm, % of Estonian-speaking students, salary level, bonuses,

bonuses. / Maybe it could be crowd-reviewed like in Booking.com or Tervisetrend.ee?! / For me it is most important to see all the offers in the region. / I would like to learn about the school, the workload, and see pictures of people. If there are young people, I would like to go there. If there are only names, then I assume they are 50–60+.

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## Workload

**If teacher workload in contact is 22–24, what would be ideal for beginner?**

**Would mandatory observation help?**

Mandatory observation, in the beginning, would be pretty good. / Beginning teacher should do observations for sure! / I would say, for a beginner 18–22 contact lessons, if you don't deal with other things and depends on the support team and students in the class. / I would prefer 16 contact lessons, it gives time to do other things too, like hobby groups, prepare the materials, do projects. / With reduced workload they could do also hobby groups — these students are highly motivated and motivate also you then.

It is a NK requirement that the workload should be less than 20 contact lessons. / Ideal would be 16 + 1 for observation per week. / The less the beginner works in the beginning, the better — best would be around 18+observation. / I would say maximum 20. Or with 18 and 1 day is free.

If they could only teach the 1 set of parallel classes?

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## Parallels

**If teacher would work only with couple of parallel classes at first?**

If I am doing AB classes, someone should take CD. It would be good to discuss and think together. / We have one example in school — one senior taking 2 classes and a beginner 2 other ones and then they share. / It would be even nice to take 2 classes from year 1 and other 2 from year 2. And the same with another teacher. / Cooperation between parallels is so important. / By doing it 2+2 you can get necessary work hours. / This would be so cool! I feel like a dog that flags the tail.

By doing so you can keep all the parallels on the same line. / You would need more classes if you want to get a full-time workload. / As you have prepared for one, you prepared to all of them. / But I need variety. Sometimes you get tired with one, then the other class feels good. / Easier would be to have AB classes in 7–9 grade for e.g.

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## Assistant teacher

**If teacher would work only as an assistant teacher in the first year?**

Will you be paid the full amount? / I would expect to get a full-time salary. / Otherwise, it is much better indeed, you

can settle in calmly and observe the senior teacher. / While you are still learning the profession, you can work, so 0,7 positions would fit. / If you would do 15 contact lessons + observation + hobby groups, then this would be super nice. I would offer this to the beginners myself. / An assistant teacher could help in big schools. / It is like an introduction year for them. / I feel it would work so well. / There was a case, when one teacher assisted a lot, lived in, until she got that class, as other teacher retired. / With SEN students it gets harder and harder, so it helps to get acquainted with the situation. / Our assistant teacher found herself a lot doing substitutes. / There was even a schedule for her so that you can book her time. / Harder classes were privileged to book her time. / But really, before you replace, you need the time to melt in as an assistant. / In our school students go for 1:1 to the assistant teacher.

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## Rotation

### **If teachers could work as an assistant teachers in several schools?**

All new teachers are not that proactive, and rather quiet. If they get cornered in one school, it would be good to show, there are maybe better options. / By doing this, you cannot go deep. / It is a super idea, then you get to know, what would have happened if you considered also other schools. / For the teacher, staying 2 months in one, 2 months in another and

third place, this is a good overview. / As a principal I feel, I need to please the teacher, otherwise she does not take us. But this is, how it should be. / Knowing, whether this school fits for me, is so important.

It depends, where these schools are. It is easier to do in bigger cities. / 6 months altogether would totally doable with 3 schools. You get a taste, what it is like to be in that school. / After you decide, you will go to the school of preference. / At the beginning of your career, it is such a booster. / I like to get that feeling, how it is to work in that school and compare it, what are my opportunities here and there.

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## Self-reflection

### **What if there was an app for self-reflection?**

If the workload would be smaller, I could take time for that, but it should be included in the work time then. / If it is only for my own joy, I would not do it. / It is an additional thing, which you benefit later. / Sometimes I discuss at the end of the day. If I would not have it, this would make sense a little. / I don't write my notes much. / Ideally, I like to discuss face to face.

There are several separate apps like this, but in one place would be cool. / Reflection and progress bar are nice. But I wouldn't use it. / I think you cannot audio record in the class?! / Another thing is that

when you have long recordings of material, do you really have the time to listen to them over? / I would rather record my quick thoughts after class. / I wouldn't do it. / If something goes bad, I remember it and discuss it live. I could not keep a diary or notes.

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## Notebook

### **What if there was a notebook given at the beginning of the school year with all the important information inside?**

If it would be a usable notebook + all the necessary information, then it would be helpful. / It does not have to be a notebook. / Most important are the contacts to remember, events that take place, and deadlines. / I would have liked to know the deadlines to pre-book textbooks from the library. / It should remind me to pre-book and plan things, like when the grades have to be put out. / If a minimal overview of the people, school plan, and important dates and events would be in one place, that would be helpful. / I'd like to personalize it with the lessons I have, meetings, anniversaries. / I'd like to read also about school history.

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## Whole package

### **What if all of these things come together?**

To dream big, I would like to have an assistant teacher in all the classes bigger than 15–18 students. / Real knowledge

comes through practice, not by doing only observations. / App feels like the most unsolving thing from this list. The rest are bigger topics and important ideas. It is important to add also a mentor, as you need human contact. / If it would work out like this, it would be very convenient and useful. / First semester the workload should be lower for sure and more of observation, being an assistant teacher in different schools and that notebook as well. The mentor should be assigned for 2 years. That would be a big step ahead. / It would be hard to start teaching in the middle of the year as you are probably come in to replace somebody. /

If you come to replace somebody, that somebody should give one year's notice, then you can count. / Takeover would be very good, but is there a school nearby you, if you are looking for a position? If a teacher moves on, then they can train the next one last year. / You could apply for an assistant position yourself without a call. / By assisting you get the taste, how to prepare for the lesson, how is work allocation, how classes look like, what methodology they use, etc, but will not get a deeper feeling of the work. And then you can move to the next school. / If the schools, where you do your internship, were not looking for a teacher, you still can't work there but have an idea of different schools. / One way to get introduced to the school environment is by doing it via work shadowing.

I am a good example of how a person does not have a good overview, what is happening in other schools, such a rotation would help me to make a reliable choice. / If I would have had a chance to check out other schools, maybe I would've ended up in a better place. / We have teachers, who stick into one school for 10–15 years, having no idea of other opportunities. / It is best to check it over yourself, how are things in other schools. / We need happier teachers, this is why it would be good! / Sometimes assistant teachers can work even more than the full-time teacher, so it should be paid internship. / Doing it as a university internship, then workload could be 10h. / These are two different things — being in front of the class and the material taught in the university. It was a complete mess. You go to work at school and then you get the feeling that I would get here without a university. / On the 3rd year in university your load is lower, then you can do the internship. / This kind of internship is simply an essential addition to university studies making them more meaningful.

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