



TA TEACHERS CONFERENCE 2018

Learning to Teach Thinking
Riga, 21-22 September 2018

Conference Programme Abstracts and Extended Summaries



TA TEACHERS CONFERENCE 2018

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Welcome from the Organising Committee

I am pleased to welcome you to the fourth international TA Teachers conference, and to welcome you to Riga and Latvia. This conference has already become a good tradition and I am especially thankful to those of you who regularly find the time to join us for this special event.

There are a few important changes in this year's conference. Following the stages of competence development presented on your conference bags, we will start the event by inviting you to think about the challenges in teaching thinking and defining personal learning objectives for the two conference days. This will help you explore conference talks and workshops as a possible bank of ideas for clarifying the notion of teaching thinking and resolving some of the problems in the field. You will also have an opportunity to share your learning experience with fellow colleagues during specially organised reflection sessions.

Learning to teach thinking is the primary topic we plan to address this year. I would like to thank all the speakers who have sent their proposals and all the delegates who have come to attend this conference – you have made it a truly international event. As well as two years ago, we tried to keep the number of proposals to the minimum. Most talks will take place in the same room and all the participants will benefit from each other's input. We will break out for smaller groups for workshop slots to ensure that everyone can be involved in the hands-on learning experience. On Saturday morning you will have an opportunity to take part in an interactive exhibition of study materials and students' works that will demonstrate approaches to teaching thinking in various subjects. The materials will be presented by 15 teachers from three countries: Finland, Latvia and Lithuania.

I would also like to draw your attention that some of the conference sessions have emerged from an ongoing Assessment Suite for Thinking Skills (ACTS) project supported by the European Union. There will be an informal discussion during the lunch break on Saturday, 22 September for those delegates interested in the project and willing to participate in the pilot of ACTS materials next academic year. It is worth noting that the idea of ACTS was conceived at one of our previous conferences, so it is quite likely that your active participation will help you start a new partnership for your organisation.

Social events planned in the programme provide wonderful opportunities for further networking. You can chat with all the delegates at the welcome reception on Friday evening. Informal communication will continue during a guided walking tour of Riga Old Town on Saturday followed by a gala dinner in a newly opened restaurant overlooking the Riga Opera House. On Sunday you are welcome to join a guided tour to Sigulda, one of the most beautiful parts of Latvia. More information about the social programme can be obtained at the registration desk.

This conference would not be possible without the support of the Nordplus Horizontal Programme of the Nordic Council of Ministers. My special thanks to all the members of the Organising Committee for the invaluable contribution to this event. Once again, welcome to Riga and I wish you a very fruitful conference.



Dr. Alexander Sokol
Head of the Organising Committee



Conference Programme

Friday, September 21

09:00 – 12:00	Pre-conference tutorials (separate registration required) Tutorial 1. How does it feel to be a learner in the thinking classroom? Dr. Alexander Sokol, TA Group, Latvia (<i>Room "Venta"</i>) Tutorial 2. ACTS: How to recognize moments of thinking and make choices about how to progress them Sarah Seleznyov and Stuart Twiss, Let's Think Forum, UK (<i>Room "Abava"</i>)
11:30 – 12:30	Registration for delegates
12:30 – 13:30	LUNCH BREAK (Hotel Restaurant)
13:30 – 14:25	Welcome and opening plenary (<i>Room "Lielupe"</i>)
14:35 – 16:00	Workshop round No.1 (<i>Rooms "Abava" and "Venta"</i>)
16:00 – 16:30	COFFEE BREAK
16:35 – 18:00	Workshop round No.2 (<i>Rooms "Abava" and "Venta"</i>)
18:05 – 18:45	Plenary (<i>Room "Lielupe"</i>)
18:45 – 19:10	Discussion of learning experience
19:10	Welcome reception (<i>Lobby next to "Lielupe"</i>)



Conference Programme

Saturday, September 22

- 09:00 – 11:00 **Interactive exhibition** (*Lobby next to "Lielupe"*)
- 11:00 – 11:30 **COFFEE BREAK AND A PROJECT PLANNING CORNER**
- 11:30 – 12:45 **Talks on various aspects of teaching thinking** (*Room "Lielupe"*)
- 12:45 – 14:00 **LUNCH BREAK AND DISCUSSION OF JOINING ACTS AS A PILOT PARTNER**
- 14:00 – 14:55 **Talks on various aspects of teaching thinking** (*Rooms "Lielupe" un "Venta"*)
- 15:00 – 16:00 **Workshop round No.3** (*Rooms "Lielupe" un "Venta"*)
- 16:00 – 16:30 **COFFEE BREAK AND DISCUSSION OF LEARNING EXPERIENCE**
- 16:30 – 17:30 **Workshop round No.4** (*Rooms "Lielupe" un "Venta"*)
- 17:35 – 18:00 **Reflection and closing** (*Room "Lielupe"*)

18:10



Old Riga. Walking Tour (*free for the delegates*)

20:00



Conference Dinner
Restaurant Stage 22, Aspazijas bulvāris 22
(*separate registration*)

Sunday, 23 September



Excursion to Sigulda (*separate registration*)



Pre-Conference Tutorials

Tutorial 1. Room “Venta”

How does it feel to be a learner in the thinking classroom?

Dr. Alexander Sokol, TA Group, Latvia

The Thinking Approach helps the teacher embed systematic development of thinking skills into the learning process. Thinking-based learning can increase motivation of both the teacher and the learners and make the classroom experience truly fascinating. However, we all know that no approach is perfect for everyone. This workshop will put you into the learner’s shoes in the Thinking Approach classroom, so that you can experience what the learner feels and how the process might look like. We will try to become more competent in the subject that is not related to school curriculum in any country but is part of a routine for an increasingly large number of people. And even if you decide that the Thinking Approach is not for you as a teacher, I am sure you will get something useful as a learner.

Tutorial 2. Room “Abava”

ACTS: How to recognize moments of thinking and make choices about how to progress them

Sarah Seleznyov and Stuart Twiss, Let’s Think Forum, UK

ACTS is The Assessment Companion for Thinking Skills. Created by a partnership of schools and universities across Finland, the UK and Latvia, ACTS aims to help teachers who are interested in recognizing thinking and supporting the progress their students are making. The tutorial will introduce you to some of the ‘illustrations’ created in classrooms in the first phase of the project by the UK ACTS partners.

You will have a chance to deeply examine some moments of thinking, interpreting these through different lenses to look at the classroom climate, the language of reasoning or the steps towards solutions to a problem. You will be prompted to make choices about how to progress thinking and have a chance to compare those to the outcomes of the choices made in the classroom at the time.



Conference Day 1

Friday, 21 September

13:30 – 13:45

Official opening and welcome to the conference participants

Conference as a learning experience: introducing a new format
Room "Lielupe"

13:45 – 14:30

Opening plenary

Dr. Alexander Sokol, TA Group, Latvia

Stages of competence development: a practical model that works
Room "Lielupe"

Competence-based education has become a norm in many countries. New curricula and materials have been developed in various countries, theories are there, various research projects have been launched. And yet when it comes to teacher development, there still seems to be a lack of practical models that would help both the teacher and the learner see competence development as a dynamic process that is extended in time. A model that would clarify each stage in the process of becoming more competent and act as a guideline for moving forward.

The first variant of a model for stages of competence development rooted in the Thinking Approach tradition was drafted around three years ago. Since then it has been piloted and polished with various groups of teachers as part of numerous action research projects in Europe and Asia. It is this model that I would like to share with you during this plenary.

14:35 – 16:00

Workshop round No.1

Irina Bučinska & Natalja Kovilina, Daugavpils Russian Lyceum, Latvia

Why is it important to ask right questions?

Room "Venta"

The aim of this workshop is to share experience of developing learners' thinking skills on the languages lessons for learners of 13-15 years old based on the Thinking Approach. We will focus on such an important for learners tool of thinking and problem solving skills development as questioning. During the workshop we will offer to work with a bank of authentic learners' questions examples. We will reflect on when, why and how the teacher can work with this bank, discuss the ways of assessment and improvement the learner's skill to formulate and use questions in the context of solving a learning problem.



Conference Day 1

Hilppa Jankama, Rauman Normaalikoulu, Finland

Thinking as a tool for collaborative learning

Room "Abava"

The Finnish Curriculum for basic education (2014) sets thinking as one of the seven core skills crucial to lifelong learning and encourages teachers to emphasise child centred approaches to learning all skills. Learning thinking skills requires thinking and acting based on that thinking which is essentially a creative process. Creative thinking requires intrinsic motivation and fostering intrinsic motivation in a classroom requires open but structured learning environments where the autonomy of learners is respected. This workshop aims to simulate such a learning experience.

This simulated (but accelerated) process of collaborative learning has been tested in Rauma teacher training school several times during the past three years in different learning projects. This method of collaborative learning was originally developed as an attempt to solve low motivation and poor learning results of students with special needs by improving their self-efficacy through creating a social learning culture.

16:00 – 16:30

COFFEE BREAK

16:30 – 17:55

Workshop round No.2

Stuart Twiss, Let's Think Forum, UK

Creating the climate needed to explore problems that have a mathematical solution. A Let's Think perspective on the role of group work

Room "Venta"

In this workshop I begin with the assertion that mathematical problems are challenging. I therefore believe that learners will need to feel able to keep working on solutions when faced with potential failure.

When learners work with others the teacher determines whether this will be collaboratively or competitively. What can a teacher do to ensure the climate for learning is more helpful for mathematical solution finding?

The workshop will be a demonstration of the approaches I recommend so come prepared to collaborate with others and solve some mathematical problems.

We will reflect together on the lessons learned for our own practice.



Conference Day 1

Michael Walsh and Leah Crawford, Let's Think Forum, UK

Let's Think in English: explore a research-informed programme that develops reasoning

Room "Abava"

Let's Think in English is based on 30 years' research at King's College London which shows that structured development of pupils' cognitive skills over two years raises their attainment. Previously called Cognitive Acceleration, it is one of only three programmes which have repeatedly been shown in international trials to have this effect.

Let's Think in English is a teaching programme developed at King's College London to help young people hone the reasoning skills needed for success in English. In the workshop you will learn about the pedagogy and research that underpins the programme, sample lessons and explore how LTE works in classrooms.

18:05 – 18:45

Plenary address

Sarah Seleznyov, Let's Think Forum, UK

Professional development for teachers of thinking. The Let's Think Approach

Room "Lielupe"

This session shares findings from the Let's Think (Cognitive Acceleration) project led by King's College University London, which has been exploring the best ways to support teachers to teach thinking lessons in English, mathematics and science for over 30 years. Let's Think lessons encourage pupils to work collaboratively to solve challenging and unfamiliar problems, and to reflect collectively on the strategies they share with each other. The project's unique approach to professional development mirrors the thinking approach Let's Think offers pupils: it encourages teachers to work collaboratively to solve problems of practice, and to reflect deeply on how these experiences relate to their day-to-day classroom practice. The Let's Think approach has been shown to be effective across several age phases and subjects, and has evolved over time so that it can operate at greater scale and with greater numbers of teachers.

18:05 – 18:45

Discussion of learning experience

19:10

Welcome reception



Conference Day 2

Saturday, 22 September

09:00 – 09:15 **Reflection on the learning experience**

09:15 – 11:00 **Teachers learning to teach thinking: an interactive exhibition of teachers from Finland, Latvia and Lithuania**

Study Materials as Resources for Thinking-based (SMART) Learning project started in August 2016 and comprised partners from Finland, Latvia and Lithuania. The ambition of the project was to develop materials for learners of different age groups and subjects that will help them develop thinking skills along with the development of subject-matter competences. The project group includes both experienced teachers who have been working in the field of teaching thinking for an extended period of time and new colleagues who have just started experimenting with the approach. For the past two years over 50 worksheets for 10 subjects were developed and tested with learners in the three countries. Despite multiple differences all the materials are based on the same competence development framework that comprises five stages:

Stage 0. Can I? Accepting a learning problem

Stage 1. What am I dealing with? Developing the passport of an element

Stage 2. How to make a choice? Formulating a hypothesis

Stage 3. Does my hypothesis work? Developing an algorithm

Stage 4. Do I still need the algorithm? Becoming competent and facing a new problem.

During this interactive exhibition session, you will have an opportunity to see some of the developed study materials, do the tasks as a learner, browse through pupils' works, talk to teachers and discuss the relevance of materials to your context. The session will also be a kind of mini action research project for you as a learner.

11:00 – 11:30 **COFFEE BREAK AND A PROJECT PLANNING CORNER**

11:30 – 12:45 **Short presentations on various aspects of teaching thinking.**
Room "Lielupe"



Conference Day 2

11:30 – 11:55

Irina Bučinska, Daugavpils Russian Lyceum, Latvia
7 bricks on the path of teaching thinking
Room "Lielupe"

Developing learners' thinking is an interesting, inspiring but challenging area for teachers. When a teacher decides to work in the context of integrating teaching thinking and subject matter, they have a set of questions. What is thinking? How to teach thinking? How to integrate thinking and subject? How to help the learners to think more effectively? In the presentation we will try to answer some of the questions basing on our experience of working with developing learners' thinking in teaching languages. The talk will focus on 7 important in our view aspects of the process of teaching thinking.

11:55 – 12:20

Anita Backhouse, University of Lincoln, UK
Assessment Companion for Thinking Skills (ACTS) project
Room "Lielupe"

Erasmus+ is a European Union initiative that aims to modernise education, training and youth work across Europe. The Assessment Companion for Thinking Skills (ACTS) Project is part-funded by Erasmus+ and is a partnership between seven institutions in the UK, Latvia and Finland. The project aims to make the identification and assessment of thinking skills more accessible to teachers in the classroom so that they can recognise the progress their pupils make in their thinking. ACTS will help teachers diagnose their pupils' thinking development and help the teachers to direct their support towards guiding their pupils to become more skilful thinkers. This session will present the background to the project, the intended outcomes, the impact that it is having so far within the project as well as the more widespread impact that it hopes to achieve.

12:20 – 12:45

Michael Walsh and Leah Crawford, Let's Think Forum, UK
The Let's Think professional development model: developing teachers' reasoning
Room "Lielupe"

Let's Think in English (LTE) is one of the reasoning programmes that has grown out of the initial ground-breaking work of Adey and Shayer's (1994) Cognitive Acceleration in Science Education (CASE). LTE requires that teachers develop pedagogical skills which often sit counter to their existing practices and beliefs about the nature of teaching and learning: teachers themselves need to think differently before they can support their students to do so. In this lecture, Let's Think in English tutors Leah Crawford and Michael Walsh will explain the guiding principles that sit behind Let's Think professional development and some of the practical ways in which they can be enacted.



Conference Day 2

12:45 – 14:00 LUNCH BREAK AND DISCUSSION OF JOINING ACTS AS PILOT PARTNERS

14:00 – 14:55 **Short presentations on various aspects of teaching thinking**
Rooms "Lielupe" un "Venta"

Room "Lielupe"
14:00 – 14:35 Irina Buchinska and Renata Jonina, TA Group, Latvia
Towards a tool for assessing the thinking competence: quality of description

The need to develop and assess students' thinking competence has been featured in educational programmes of many countries. However, many teachers still have a lot of questions about what exactly should be developed and how it can be assessed.

We have been trying to address this issue by working on a tool that focuses on one aspect of the thinking competence, that of the description of an element under study.

The aim of the developed tool is threefold. It should allow teachers to see which exactly components of this competence can be assessed, how they relate to each other (namely, how these separate components work in a system), and, finally, it should allow teachers assess where their students stand on this thinking line and how they can progress.

During our talk, we will share the first draft of the tool. The participants will be expected to provide feedback in order to help us improve the tool and advance in its improvement and further development.

14:35 – 14:55 Merja Toivanen & Hilppa Jankama, University of Turku, Finland
Finnish teacher trainees' perspectives to enhancing the thinking skills of primary school students

The Finnish curriculum for basic education (FCBE, 2014) has thinking skills as one of the core aims. According to the FCBE thinking skills are closely intertwined with learning to learn skills and they both underline the development of other competences and lifelong learning. In this study, we investigate the portfolios of 10 teacher students. In portfolios the students describe their training experiences in classrooms, which concentrate on different thinking pedagogies and are part of the international project ACTS (Assessment Companion for Thinking Skills). The aim of this study is to ponder the pedagogical approaches students have tested during their three month training period. The data (portfolios and a supporting questionnaire) are analyzed via qualitative content analyses, implemented mostly data-driven. The results show, that one of the key elements in creating space for thinking is giving children time to think and discuss as well as providing them with tools to problem-solving.



Conference Day 2

14:00 – 14:25 Room "Venta"
Dr. Sergei Modestov, Nevsky Institute of Language and Culture, Saint-Petersburg, Russia
The future: do-it-yourself, or non-obvious literature

We had started a creative imagination development project aimed to find a space where everyone could create without any limits. It is the creation of science-fiction and fantasy literary texts especially — since they are dealing with development, the future and other worlds. For this reason, we developed a training course that consists of three main parts: drama text structure, the basic writing skills of authors, and algorithms of creative activity. Later we faced a new problem. Students come up with many bright and interesting ideas and stories, but do not intend to complete their works. The possible solution is to provide the participants with inspiring pragmatic goals and add some competition. Sci-Fi literature ideas are solutions to problems formulated years ahead. Therefore, we present the to the participants some actual future challenges. Participants try to invent possible solutions through fantasy and science fiction narratives and build them into an attractive context.

14:25 – 14:50 Simona Farina, Scuola Primaria Martiri di Belfiore di Mantova, Italy
Interdisciplinary learning pathways: "the flower between art and science"

Interdisciplinary education project in primary school, based on the "Laboratory" experience as an instrument that offers the possibility of dialogue between the Knowledge, in the complexity of a system of knowledge. A non-place in which to promote with the cooperative method: the inclusion, respect, valorisation of the resources involved in the project, appreciating the diversity . Narration and metaphor as a working tool to promote the development of equal dignity to different disciplines: a new humanism. Education as a system for a "sustainable" society.



Conference Day 2

15:00 – 16:00

Workshop round No. 3

Kirsi Urmson, Rauma School and Susan Granlund, Kirkonkylä School, Finland

Using pictures to motivate young learner thinking

Room "Venta"

In this workshop we will discuss how we have used pictures as a springboard for learning subject content as well as for improving learners' thinking competences. We will describe what we ourselves have done in a primary school mother tongue (Finnish) class, and in the English (EFL) class, sharing examples of worksheets developed during the Nordplus SMART project. We will consider what kinds of pictures might be most motivating for young learners and useful for the purpose of making suitable diagnostic tasks which can then be followed up and lead to the making of aims, to making banks and to research into the subject matter.

We aim to share some of our own banks of pictures with the workshop participants and to invite them to consider how some of them might be used in their own learning contexts and with different age groups.

Natalia Melchenkova, Luidmila Talzi, Khoroshkola secondary school, Moscow, Russia

Writing: critical thinking challenge

Room "Abava"

This workshop is about developing critical thinking skills through "writing-to-think" approach (the origin: Bard College, USA). It is being successfully implemented in Khoroshkola secondary school, Moscow, Russia. The workshop is divided into three parts: 1) individual writing aimed at establishing beyond the text communication between the reader and the author; 2) collaborative learning practice to explore the background of the participant; 3) metacognitive writing to produce reflection on the collaborative work.



Conference Day 2

16:00 – 16:30

COFFEE BREAK AND DISCUSSION OF LEARNING EXPERIENCE

16:30 – 17:30

Workshop round No. 4

Tetyana Kasima, Audentes School, Tallinn, Estonia

Why do things work out differently than predicted? Developing thinking skills through project-based lessons

Room "Venta"

Current workshop aims to answer practical questions that arise while using project-based learning to develop competences. The audience will be able to analyse a series of lessons presented by the speaker and discuss real life situations that highlight the gap between planning and implementing a class. The participants will have an opportunity to think what they would do in a given situation and then compare their ideas with those implemented in the classroom. The main aim of the workshop is not to be prescriptive but rather create a space where everyone can test their ideas based on concrete examples.

Vira Danylova, Lyceum MIR, Kharkiv, Ukraine

Ability to raise questions as a condition of thinking and learning

Room "Lielupe"

Current workshop aims to answer practical questions that arise while using project-based learning to develop competences. The audience will be able to analyse a series of lessons presented by the speaker and discuss real life situations that highlight the gap between planning and implementing a class. The participants will have an opportunity to think what they would do in a given situation and then compare their ideas with those implemented in the classroom. The main aim of the workshop is not to be prescriptive but rather create a space where everyone can test their ideas based on concrete examples.



Extended Summaries of the Presentations

Conference Day 1

Dr. Alexander Sokol, TA Group, Latvia

Stages of competence development: a practical model that works

Friday, 21 September, 13:45 – 14:30, Room "Lielupe"

Competence is a system of knowledge, skills and dispositions necessary for transforming a non-typical situation into a typical one (if..., then...). As a result of competence development, a student becomes competent in this or that question. Competence, however, is a multi-level concept. The students face new problems all the time, therefore a need for the development of new competences arises.

The proposed model of competence development comprises five stages:

Stage 0. Can I? Accepting a learning problem

Stage 1. What am I dealing with? Developing the passport of an element

Stage 2. How to make a choice? Formulating a hypothesis

Stage 3. Does my hypothesis work? Developing an algorithm

Stage 4. Do I still need the algorithm? Becoming competent and facing a new problem.

Each stage offers a set of possible tasks for the learner and clearly describes learning outcomes to be reached before moving to the next stage. The process always starts with a real life situation that lets the learner decide how competent s/he already is. Based on this experience, the learner decides to what extent there is a need for further learning and what is to be achieved. Thus, Stage 0 results in a problem to be resolved and a learning objective aimed to help the learner achieve this.

During Stage 1, the learner collects information about the object of his/her investigation. This may be a lengthy process at the end of which the learner drafts a model of the research element by describing it through essential features. This model is referred to as a passport of an element.

The next step, Stage 2, is connected with generation of hypotheses based on various parameters in the passport developed at the previous stage. These hypotheses aim to help the learner resolve the initial problem faced at the initial stage.

When the hypotheses are in place, they are to be tested. Depending on the subject area, the approach to testing may be different and it may vary from theoretical proof to empirical testing against a data bank. In any case, a hypothesis is transformed to a rule or an algorithm at the end of Stage 3.

Finally, at Stage 4, the developed algorithm is being put to practice. Here the learner formalises the research strategy s/he has been following and reaches the mastery level when no specific algorithm is required any longer. At the same time, s/he faces a new problem that unfolds a new competence development cycle.



Extended Summaries of the Presentations

Conference Day 1

Irina Bučinska & Natalja Kovilina, Daugavpils Russian Lyceum, Latvia

Why is it important to ask right questions?

Friday, 21 September, 14:35 – 16:00, Room "Venta"

Learner's thinking and problem solving skills have been viewed as key skills in modern education. While the importance of these skills is widely acknowledged, the ways of how to develop these skills in the school education context and especially how to assess and monitor the process is still under discussion. During our workshop we will share our views on these issues.

This workshop is based on the experience of working with Thinking Approach (TA) that originates from the General Theory of Powerful Thinking (OTSM) based on the Theory of Inventive Problem Solving (TRIZ).

The aim of the workshop is to share our views on the role and place of questions in the process of learning. While the role of questions asked by teachers has been a common practice in modern education, we would like to focus on the importance of creating a context when the learners take the initiative of putting questions and using them as an effective tool for dealing with problems during the lessons of native and foreign language learning. In our point of view generating questions is a skill that is extremely important for the intellectual development of students. To ask valid questions, learners should establish links, structure their previous experience, draw conclusions and put forward hypotheses. Solving all these problems leads to a deeper understanding of key concepts and an ongoing learning process.

The skill of conscious putting appropriate questions will be viewed through 5 basic stages of metacognitive competence development with discussion of the peculiarities of the stages, the challenges the learners and the teachers might face and suggestion how to deal with the challenges. We will also offer and discuss the assessment tool and assessment strategies the teacher can use to analyse, reflect on and foster learners' progress.

The participants will be offered samples of problem based tasks learners work with, banks of authentic learners' questions and an assessment tool for analysing the bank. The participants will also have an opportunity to complete a practical task and get a deeper insight into the approaches offered.

Hilppa Jankama, Rauman Normaalikoulu, Finland

Thinking as a tool for collaborative learning

Friday, 21 September, 14:35 – 16:00, Room "Abava"

Step in to the shoes of a primary level learner and experience a process of collaborative learning. This process will be facilitated in the same manner it has been used in several projects in Rauma teacher training School with children aged 9-12. This workshop aims to demonstrate how thinking skills can be used as a tool for both developing thinking skills and promoting students own agency in learning in age appropriate ways.

Getting children to think and act in a predefined learning environment, where they have little possibility to effect the learning situation can lead to accurate results but leave the learners uninspired. When you involve the students right from choosing the topic for your studies and creating outcomes for your learning project you are creating a learning culture that enables students to bring their own agenda to situation. Creating open ended learning challenges together with the students also sets a framework for naturally differentiated learning. This enables each student to work within their own zone of proximal development and builds up motivation and self-efficacy.

All of these processes are based on the requirements of the curriculum. In the beginning of each year students are involved in making the contents of the curriculum visible for everyone. When starting a new project single or multidisciplinary topic is chosen from the curriculum by democratic decision making based on the interest of the students.



Extended Summaries of the Presentations

Conference Day 1

Students are then challenged to set learning outcomes both individually and as a group and to plan steps and activities that help them to achieve these outcomes. These first steps are important in building a student centred learning culture. Teacher acts as a facilitator and makes sure that the requirements of the curriculum are met, but students are given autonomy to construct a learning path based on their own interests. Outcomes of projects are naturally difficult to predict, but as students feel more control over what they are trying to achieve, most of them tend to be more invested in the projects and willing to set their aims high. Assessment is based on criteria set in the curriculum, but focuses for assessment can be chosen together with the students.

The participants of this workshop will be taken through the same, but accelerated process as the students in the classroom. The session will start with a brief description of the method and a few examples of the projects it has been used on. After the introduction participants will be invited to take part in an actual process using democratic decision making, refining learning outcomes and gathering data in collaboration with others as basis for learning to give the attendants a first hand experience of the method. Thinking skills are integrated in different steps consciously throughout the process. The session will end in evaluation and brief discussion.

Michael Walsh and Leah Crawford, Let's Think Forum, UK

Let's Think in English: explore a research-informed programme that develops reasoning

Friday, 21 September, 16:30 – 18:00, Room "Abava"

Let's Think in English draws on research by Piaget and Vygotsky that young people learn best when exploring ideas together. The lessons are based on structured challenge and include the development of understanding through discussion (social construction), problem-solving (cognitive challenge) and structured reflection (metacognition) which makes pupils more aware of their thinking processes and how they think most effectively.

The programme consists of suites of high-interest lessons all using authentic English texts – fiction, poetry, non-fiction and film – with lessons appropriate for pupils from age 5 up to age 16. They are designed to be used fortnightly and may be used in any order, as part of the scheme of work or independently. The lessons stimulate the reasoning patterns which underpin deeper understanding of English relating to the writer's intentions, narrative structure, figurative language, symbolism and genre. They can lead to written work if the school wishes.

The lessons systematically develop pupils' skills of inference, deduction and analysis, increasing their confidence, resilience, understanding and ability to express their ideas. They provide experience of 'verbal drafting' which develops pupils' ability to draft analytical answers in exams in primary and secondary schools.

Let's Think in English is based on 30 years' research at King's College London which shows that structured development of pupils' cognitive skills over two years significantly raises their attainment. Previously called Cognitive Acceleration, it is one of only three programmes which have repeatedly been shown in international trials to have this effect. As with the original CA programmes, Let's Think in English is most effectively delivered to groups of mixed prior attainment. The challenge is pitched to the shared cognitive capacity of the group. With careful mediation of the group's thinking, all pupils can make progress from their starting points over time.

The workshop will be led by Michael Walsh, co-originator and developer of Let's Think in English and Leah Crawford, Let's Think in English Tutor and Hampshire Lead. In the workshop, attendees will sample lesson simulations by adopting the role of students in LTE lessons and evaluating their impact. They will also learn more about the research Let's Think in English is built upon and the pedagogy that underpins the programme.



Extended Summaries of the Presentations

Conference Day 1

Sarah Seleznyov, Let's Think Forum, UK

Professional development for teachers of thinking. The Let's Think Approach

Friday, 21 September, 18:05 – 18:45, Room "Lielupe"

This session explores the learning from the Let's Think (Cognitive Acceleration) project led by King's College University London. The project has been exploring the best ways to support teachers to teach thinking lessons in English, mathematics and science for over 30 years.

During each Let's Think lesson, pupils work collaboratively to come up with solutions to increasingly challenging series of problems or 'episodes'. Pupils then engage in metacognitive discussion to explore the way in which they have tackled the problem and worked together. Teachers normally teach a Let's Think lesson once a fortnight, either as a discrete learning experience or on a topic that relates to current learning. The lessons enable pupils to move through Jean Piaget's stages of development.

Drawing on the work of Vygotsky, teachers in Let's Think lessons mediate pupils' discussion, making sure everyone has a chance to participate but do not provide the answers or judge the success of pupils' responses. Instead the pupils are supported to justify their own and evaluate each other's responses, creating their own solutions. The pedagogy relies on teachers being able to teach contingently, or 'in the moment' and in response to students' often unexpected responses.

Numerous research papers published over thirty-years have shown that the effects of Let's Think teaching:

- are permanent, do not fade with time
- operate across subjects, not confined to the subject they address
- are proven to have a statistically significant effect on pupils with even a moderate use

The Let's Think professional development approach seeks to change teachers' pedagogy beyond the taught fortnightly lessons, as well as deepening their subject knowledge so that they can act contingently during the lessons. This change is deeply challenging to many teachers' practice and therefore requires a particular approach to supporting teachers.

The initial Let's Think researchers took a 'discovery' approach to professional development with teachers, allowing teachers to develop a deep understanding of the subject matter and pupils' likely response by encouraging them to critique the proposed lessons, to try them out with 'live' classes of pupils and to reflect on their success. This approach mirrors the approach taken to Let's Think with pupils in the classroom in that it relies on teachers working collaboratively to tackle a problem of practice and reflecting on their success with the help of an 'expert other'.

Over time, and as the project has expanded its reach, Let's Think professional development sessions have evolved in order to meet the needs of working at a greater scale. Each session now engages teachers in deep discussions about recent evidence on subject-specific pedagogies, invites them to explore a lesson from the perspective of their pupils, and then provides them with an opportunity to teach that lesson in collaborative groups to unfamiliar classes of children. This provides a non-threatening opportunity to explore their own practice in relation to Let's Think's expected pedagogies and to reflect on future teaching of the lessons with their own familiar classes of pupils.



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Conference Day 2

Irina Bučinska, Daugavpils Russian Lyceum, Latvia

7 Bricks on the Path to Teaching Thinking

Saturday, 22 September, 11:30 – 11:55, Room "Lielupe"

One of the main requirements of modern education/teaching is to establish such learning conditions when learners can develop their autonomy skills in the learning process. This might include learning to solve problems in the context of the subject matter, to define aims of their learning activities, to organize their activities, to choose appropriate sources of information, to find effective ways to achieve their aims, to assess the received results, to co-operate with other learners. In our vision these requirements create a beneficial context for introducing, integrating and mastering effective thinking skills.

This talk views the mentioned above points through the experience of working with the Thinking Approach (TA) that originates from the General Theory of Powerful Thinking (OTSM) based on the Theory of Inventive Problem Solving (TRIZ).

According to these theories and approach it is believed that thinking can be developed when the learners deal with non-typical or unknown for them learning problems. That is a starting point on the path of the problem-solving process, which is followed by identifying the problem, researching the problem and solving the problem. And this is how we can integrate thinking and subject competence development as in every subject there are themes for a thorough research, thus the context for developing respective thinking skills.

Within the framework of the Assessment Companion for Thinking Skills (ACTS) project co-funded by the Erasmus+ Programme of the European Union a group of teachers applying the Thinking Approach in their teaching classroom have summarised their experience and have defined the following important aspects of learners' thinking skills development: attitude towards uncertainty, assessment of solution building, quality of questions, aim definition and refinement, bank collection and analysis, algorithm development, strategy building and improving.

In the talk we are going to share our ideas, which we believe will be useful for teachers to become more aware of the thinking component of their teaching practice. They will help the teacher better understand the complex process of their learners' thinking skills development, better organize the teaching process, more successfully create their teaching materials and finally better organize the assessment of the learners' progress. We think they will also help their learners be able to organize, reflect on and self-assess their work.

Anita Backhouse, University of Lincoln, UK

Assessment Companion for Thinking Skills (ACTS) project

Saturday, 22 September, 11:55 – 12:20, Room "Lielupe"

The Assessment Companion for Thinking Skills (ACTS) project arose out of discussions that took place at the second TA Teachers Conference in Riga in 2014. The theme of the 2014 conference drew attention to innovation in developing thinking in the classroom and the professional development needs of teachers in association with this. In recognition of this, the ACTS project was developed and a successful bid made to Erasmus+ in 2017 saw the beginning of a three-year transnational strategic partnership between seven partners:

- three in the UK – the University of Lincoln (lead partner), the Let's Think Forum (an educational charity) and Carter School (a secondary school);
- two in Latvia – TA Group (an educational company) and Daugavpils School (a secondary school);
- two in Finland – the University of Turku (teacher training unit) and Kirkonkylän School (a primary school).



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Each of the partners comprises long-established and successful thinking skills practitioners. The aim of the ACTS project is to strengthen the education and training paths of pre-service and in-service teachers by equipping them with high quality support and guidance to develop their confidence and competency in identifying and assessing thinking skills; in so doing achieve high quality educational and lifelong learning outcomes for their pupils. The project will have met its aim when teachers tell us that the training they have received, and their use of the ACTS assessment tools, has made them more confident to assess children's progress in thinking – they will better know what effective thinking sounds like and looks like.

To achieve this aim, three project objectives were identified:

- to develop diagnostic and formative assessment tools that support the teaching of thinking and improve pupils' ability and capacity to think at a high level;
- to test and validate the tools across a wide range of school settings in partner countries to ensure it is fit for purpose for both pre-service and in-service teachers;
- to disseminate and encourage the uptake of the tools by teachers across Europe to improve learning outcomes for pupils and provide a sustainable professional development resource for the future.

Partners in the UK, Latvia and Finland are currently working on the development of the assessment tools ahead of the trialling period in 2018/19.

The impact that the project is having on the partners at this stage is important. Whilst each ACTS partner brings their own notions of effective thinking and how this can be achieved in the classroom, a developing shared understanding and amalgamation of ideas is strengthening the theoretical and pedagogical underpinning of ACTS. It is hoped that through this first-hand experience of working together to increase awareness and flexibility in approach between the project partners, this will translate into a useful and effective resource for teachers that results in improved thinking skills competency in their pupils. The ACTS project partners are keen to hear from anyone who might be interested in helping them with the pre-testing of the resources in the coming year.

Michael Walsh and Leah Crawford, Let's Think Forum, UK

The Let's Think professional development model: developing teachers' reasoning

Saturday, 22 September, 12:20 – 12:45, Room "Lielupe"

Teaching teachers to teach is not a straightforward process: teaching teachers to teach reasoning is a particularly 'hard case' (Adey, 2005: 49). Cognitive Acceleration is a well-established approach to the promotion of higher level thinking in students aged 5-16. The research of the lead tutors for over 30 years has clarified the importance of using the same principles we use to teach students as we do to teach teachers, and indeed tutors of those teachers: a 'nested' pedagogical model (Gamble & Shayer, 1994).

The structured challenge that sits at the core of each CA lesson draws on developmental psychology: the cognitive psychology of Jean Piaget and on the socio-cultural psychology of Lev Vygotsky. The aim of each lesson is to disturb learners' existing reasoning patterns with a shared challenge, then maximise the productive interactions between students as they work towards constructing new understanding and new ways of understanding. Herein lie two significant challenges for the teacher of reasoning:

- supporting students to collaboratively work through challenge, rather than bypass it.
- supporting them to share ideas, to build arguments and to notice and understand the thinking of others.

This approach is rooted in a teacher belief that knowledge and understanding have been constructed over time, through dialogue. The best way for students to make progress in their reasoning is to enter the dialogue and be supported to make new connections, rather than be told what and how to think (Wegerif, 2018). The third principle of CA is therefore to:



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- support students to become more aware of their thinking processes, and develop a degree of control over them: in short, to become more metacognitive.

The lecture will explore how Let's Think in English programme tutors take these principles of cognitive conflict, social construction and metacognition and apply them to the design of professional development.

Guiding teachers through cycles of theory, practice and reflection in a professional learning community offers the potential for transformation (Timperley, 2007) but can also present a threat to a teacher's sense of professional self-efficacy (Niessen et al., 2009; Stronge, 2006). This is particularly acute if teacher development sits in an educational culture focused on performativity. A culture of constant monitoring and high accountability can limit teachers' potential to take risks and to enter a more exploratory dialogue about their own practice and within their own classrooms (Lofthouse and Thomas, 2017). Michael and Leah will also, therefore, explore some ways in which they have used the CA principles to ensure that teacher learning cycles are building confidence as well as competence.

Irina Buchinska and Renata Jonina, TA Group, Latvia

Towards a tool for assessing the thinking competence: quality of description

Saturday, 22 September, 14:00 – 14:35, Room "Lielupe"

When speaking about the thinking competence in educational context, one may find different interpretations of this concept. We view the **thinking competence** as "a set of knowledge, skills and attitudes for structuring and reorganising information aimed at identification, analysis and effective resolution of non-typical problems (i.e.. avoiding a large number of trials and errors) in situations when no standard solution is available (Sokol, 2007, pp. 46, 56; Нестеренко, 2006, p.3)". This conception is based on OTSM-TRIZ theory and presupposes the mastery of certain thinking models (e.g. ENV model, multi-screen, etc.) that help the learner be an effective problem solver.

Hence, the tool we are currently developing, is supposed to help a teacher assess this type of the thinking competence. Such a tool may be rather complex and it is so far not our ambition to create a comprehensive tool that would include all aspects of the thinking competence. We have limited ourselves to its one aspect, namely, **systemic description of an element under study**.

Having said that, we can now proceed to outlining the tool we have been developing that should allow assessing the above defined aspect of the thinking competence. Let us further name it **the thinking competence for description**.

The tool can be represented on a three-dimensional scale.

- One dimension, includes four main components of the thinking competence for description :
 - ◆ choice of values,
 - ◆ choice of parameters,
 - ◆ choice of function,
 - ◆ choice of model.

Each component can be assessed through a number of criteria. For instance, when assessing how well a student can work with values, one can assess the quantity of the generated values, their measurability or their scope.

One of our tasks is to identify these criteria for every component.

This dimension addresses the following question - which components of the thinking competence can be assessed and what exactly should be assessed for each component?



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- The second dimension shows the attained development level for every component of the thinking competence. It goes from '0', meaning poor level, to '3' - advanced level. One of our tasks is to define the level of progression for every component and describe observable changes in the learner's thinking competence when s/he moves from one level to another. This dimension addresses the following question - where do my students stand on the thinking line and how can they progress?
- The last dimension is that one of the context within which each component of the thinking competence for description can manifest itself. It includes two main groups.
 - ◆ Group A includes all the components that belong to a context which does not include real problem solving but merely allows a learner to show the mastery of separate skills. For instance, being able to generate many parameters to describe an element is a useful skill, which can be manifested outside the problem context.
 - ◆ Group B, on the other hand, includes those components of the thinking competence that manifest themselves in the problem solving context. One of our tasks is to identify which components of the thinking competence belong to which context. This dimension addresses the following question - how do the separate components of the thinking competence for description relate to each other and work in a system?

During our talk, we will present the visual form of a given tool together with more details about the blocks representing every dimension. Since this is a work in progress, we expect the audience to provide us feedback that would allow us to improve the tool.

Dr. Sergei Modestov, Nevsky Institute of Language and Culture, Saint-Petersburg, Russia
The future: do-it-yourself, or non-obvious literature.

Saturday, 22 September, 14:00 – 14:25, Room "Venta"

We had started a creative imagination development project. The participants of the project were mainly students, young people, and adults. The goal of the project was to find a space where everyone could create without any limits. Traditionally creativity stands for some interior process inside the human's mind, while this process is genetically determined. This shows, for example, in the term "gifted children" and raises the question as to what ordinary, ungifted children, youth and adults can do, if they really want to create – i.e. make something good and useful? In order to make the creative process accessible to everyone, we tried to solve three problems.

The first problem is the genetic determination of most human abilities. For instance, if one has no ear for music there is no chance to achieve great results in this domain.

The second problem is "the blockade of reality". A beginning creator compares his results to the results of experienced creators. This inner competition, however, should not prevent a beginner from attempting. The third challenge is an "algorithmization" of the study of the subject matter. Learning is much easier when instructors can give their audience clear algorithms.

The best foundation for answering to all of these challenges lays in the creation of literary texts – especially science-fiction and fantasy — since they are dealing with development, the future and other worlds. For this reason, we developed a training course that consists of three main parts:

1. A drama text structure.
2. The basic writing skills of authors.
3. Algorithms of creative activity.

Later we faced a new problem. During the classes, students come up with many bright and interesting ideas and stories. But most of them do not intend to complete their works. The main result – the creative product — remains a nice discussion, a mind game; nothing more. Why? We believe there are two reasons.



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1. During class, collective creation, story and novel design satisfy the cognitive needs of the students, while the game ends when the class is over — it is no more fun to go further.

2. Today's youth is more pragmatic: "Why would I do that?"

The possible solution is to provide the participants with inspiring pragmatic goals that can encourage them. Moreover, we add some competition to the project. Sci-Fi literature ideas are actually solutions to problems and challenges formulated years ahead. But this type of development is a stochastic process: authors spontaneously produce some ideas. The practical effectiveness is reduced: only some of these stories are linked to realistic issues and are helpful for our society. Therefore, we changed our project. We find some actual future problems and challenges that require a solution and present them to the participants. Participants try to invent possible solutions through fantasy and science fiction narratives and build them into an attractive context (for instance, adventures).

"Plasma magazine" kindly agreed to publish the best stories. We believe that such pragmatic and interesting goals will inspire our participants and benefit them and humankind.

Merja Toivanen & Hilppa Jankama, University of Turku, Finland
Finnish teacher trainees' perspectives to enhancing the thinking skills of primary school students
Saturday, 22 September, 14:30 – 14:55, Room "Lielupe"

The Finnish curriculum for basic education (2014) has thinking skills as one of the core aims of learning throughout the school years. According to the national curriculum of Finland thinking skills are closely intertwined with learning to learn skills and they both underline the development of other competences and lifelong learning. The national curriculum encourages teachers to invent child-centered pedagogical approaches to support children in their conscious reasoning and intuitive thinking. The possible approaches are described as exploratory and creative working, doing things together, considering things from multiple viewpoints, seeking new information and using the acquired information as a basis for reviewing the way they think and enhancing discussions based on different viewpoints highlighting different ways and levels of thinking.

In this study, we investigate the learning portfolios of 10 teacher students. The students of the study are Finnish class teacher students and implement their second training in a teacher training school at the University of Turku during their second year studies. In their portfolios they describe their training experiences in classrooms, which concentrate on different thinking pedagogies and are part of the international project ACTS (Assessment Companion for Thinking Skills). ACTS is an innovative project designed to strengthen the education and training paths of pre-service and in-service teachers by equipping them with high quality support and guidance to develop their competency and skills in identifying and assessing thinking skills. ACTS is co-funded by the Erasmus+-program of European Union.

The aim of this study is to investigate the teacher trainees' perceptions about thinking in general and what are the challenges and possibilities in bringing child-centered thinking in classrooms. Additionally, we describe the pedagogical approaches students have tested during their three month training period. The data consists of portfolios, lesson plans and a supporting questionnaire, which are analyzed via qualitative content analyses.

The preliminary results show, that the teacher students value enhancing children's thinking and feel that with effective teaching methods and with some simple actions, it is possible to increase children's thinking during a school day. One of the key elements of creating space for thinking is giving children time to think and discuss as well as giving them tools to problem-solving. Additionally, it would be important to incorporate thinking pedagogies more efficiently to the studies of teacher education.



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Simona Farina, Scuola Primaria Martiri di Belfiore di Mantova, Italy
Interdisciplinary learning pathways: "the flower between art and science"
Saturday, 22 September, 14:25– 14:50, Room "Venta"

This project is a path that supports discovery and amazement, as an act that, in change, leads to new and unexpected thoughts and therefore suggests possible learning. The language that expresses complexity is also linked to narrative thinking, which allows us to know the exceptional and the ordinary, possible way of constructing reality. Reading "Linnea in Monet's garden" (Christina Bjork), we have glimpsed a trace, for a path aimed at complexity, the basis of contemporary scientific thought for the natural sciences and for the human sciences. This work has been attributed to Linnea as a guiding function in the process of acquisition and construction of knowledge, because it generates changes in the relationships between things. Believing that learning can be achieved with the competition of several disciplines, we thought of the "flower" (as a field of experience). We tried to maintain our own disciplinary areas, ie organized around specific themes and problems, methods and languages of the disciplines involved: linguistic-artistic-expressive area, historical area, scientific area of natural and experimental sciences; integrating the different languages, to widen the range of expressive possibilities, aimed at a critical and autonomous thought of the child. So how can we express ourselves through different languages on one and the same common topic? This was the meta-reflection that led to the construction of the project. The research conceived, built and acted in a laboratory setting.

The work is divided into three parts:

- Description of the laboratory methodological approach, as possible development and wealth in the teaching of art and science in primary school. We tried to describe a possible systemic approach, oriented to build a network of interdisciplinary connections, capable of activating integrative, compensating processes, expressing them in different forms of language, to open up to a plural thought.
- We tried to tackle, as a field of experience: the flower, "dropped" in the natural and biological sciences. It has been described, classified, studied the flower in its morphological aspect and in the relation with the environment.
- An educational path has been planned and built based on an interdisciplinary project aimed at a direct and concrete experience with the child on the flower. The space was given to the experience, the narration, the experiment, documenting and evaluating the path: creative journey, aimed at change and the enhancement of the difference in humanistic and scientific thought. With the hope of having put these indications to fruition, we started together (teachers, children, parents, auxiliaries, art teacher, helper, translator, in the construction of a "project", an ideal container for comparison, exchange, enhancing spontaneous thinking and generating knowledge.

Kirsi Urmson, Rauma School and Susan Granlund, Kirkonkylä School, Finland
Using pictures to motivate young learner thinking.
Saturday, 22 September, 15:00-16:00, Room "Venta"

When looking at Thinking Competences for young learners we are often dealing with Stage 0 (Can I?), motivating learners to accept a learning problem and Stage 1 (What am I dealing with?), which can involve the creation of a passport. As the learners first have to accept the learning problem, the initial tasks are often diagnostic and subsequent tasks deal with helping the learners to recognize the problem or learning gaps, which in turn can lead them to gradually being able to make their own aims. Beyond this they will see how collecting banks can help them to research and deal with the learning. In further sorting tasks, for example, they can begin to learn to think in terms of parameters and values and make passports to help to organize their thinking and learning.



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Looking at thinking lessons with young learners from this perspective we have used pictures with diagnostic tasks attached to motivate pupils to notice what they need to know, to question, to experiment with what they are learning and to reflect on their own results, all the while bringing them closer to understanding the new content and concepts. When using the regular textbook, rules and information are usually given directly and the learners do exercises based on these ready-made descriptions. However, through suitable pictures we elicit far more from the pupils themselves, they can see where they need to learn more and can actively question how they can go about the learning.

In this workshop we will discuss in particular a series of tasks carried out in a third grade mother tongue (Finnish) class, where a picture from a book formed the basis of helping the pupils to understand and be able to explain what nouns are. We will discuss a similar types of tasks done in the English (EFL) classroom where a picture formed the basis for expanding vocabulary, improving descriptive skills in the foreign language and making a bank of questions to be used later in grammatical study.

While reflecting on how we have used pictures with our own learners, in different contexts and for different purposes, we will discuss what kinds of pictures might be most useful for working with thinking competences and what kind of tasks and questioning might be most helpful. We will then share some of our own banks of pictures with the workshop participants and invite them to consider how they might be used successfully as a springboard for improving thinking competences in their own contexts for different subjects and age groups.

Natalia Melchenkova, Luidmila Talzi, Khoroshkola secondary school, Moscow, Russia

Writing: critical thinking challenge

Saturday, 22 September, 15:00 – 16:00. Room "Lielupe"

The implementation of the suggested approach leads to the development of thinkers able to reveal an in-born potential of independent learners. The workshop offers a number of text based activities within the approach of "writing-to-think", developed by Bard College, USA. The succession of the activities, their content and classroom management address the development of learners' critical thinking skills. The approach is being implemented in Khoroshkola secondary school, Moscow, Russia.

The workshop is divided into three parts: the first is working individually with a reading piece and writing a paragraph engaging critically and creatively with the text. Reading is considered as a holistic process of discovering personality behind the text and making connections to the reader's experience as well as establishing communication with the author and gaining personal insights. It is based on beyond the text questions that provoke development of high level cognitive skills.

The second part of the workshop is a collaborative learning practice in small groups to identify areas of agreement and disagreement, doubt, and share their findings as a whole group. The discussion is not aimed at reaching an agreement but exploring views, attitudes and beliefs (VABs), and areas of tension that can be negotiated with tolerance. It can trigger further inquiry, active learning and critical thinking, fostering new and diverse ideas.

After the group work, there is the final stage of a metacognitive writing to produce reflection on the collaboration. The whole process actively involves the participants in analyzing, evaluating and synthesizing information.

While assessing critical thinking skills we take into account the following general principles for assessment: the audience, the purpose, and the performance. After the research, we decided to use the Critical Thinking Worksheet, provided by The Foundation for critical thinking (<http://www.criticalthinking.org>) which assesses the development of such elements as purpose; key question, problem, or issue; point of view and others.



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During the workshop the leaders will provide the text with three odd-angled questions, facilitate thinking process, organize small-group work and whole-group discussions, provoke active sharing of VABs, scaffold and monitor reflective writing process. After being engaged into the critical thinking writing process the participants will be open and tolerant to any VABs of their students. It will be possible for them to employ the suggested tools to let their students express opinions safely in the classroom.

Tetyana Kasima, Audentes School, Tallinn, Estonia

Why do things work out differently than predicted? Developing thinking skills through project-based lessons

Saturday, 22 September, 16:30 – 17:30, Room "Venta"

Current series of lessons were designed during the training course in Riga, 22-28 April 2018. The training was devoted to developing competences for a modern teacher. The training addressed what makes competence-based learning different, what competences learners need and how to determine which competences to develop and how. The main focus was on developing the competences in stages, using a framework by following which a teacher can stage a series of lessons which a particular aim in mind. Based on this training the current workshop offers an opportunity to look at a planning tool as an example of development of learners' thinking skills. More information about the course can be found here <http://www.ta-group.eu/residential-courses>.

The aim of the lessons designed during the course lessons was to create a plan for a student-led project in order to develop certain thinking skills. Project-based learning not only helps students to focus on developing the skills at hand but also develop competences where a combinations of skills, knowledge and attitude is important. Project-based learning gives students an opportunity to see how their ideas fit into a larger picture. They are also able to apply their knowledge practically and creatively. As the driving force should be coming from the students, it is teachers' role to set up the process so that students will be able to carry out their project independently while developing a number of competences. It is extremely important to plan this process.

The focus was mainly on being able to analyse and organise the course content by focusing on the aspects the student consider important. Throughout the project students will move from observing and recalling the content of the course to analysis and synthesising the information. Towards the completion of the course the students will move to evaluating the information by comparing and discriminating between the ideas, assigning value of ideas, making choices and varying value of evidence.

While implementing the plan a series of changes took place. The aim of the workshop is to draw the participants' attention to how those thinking skills would develop when working on the project and compare them to what happened in the classroom during the project. Adapting to the ever changing classroom environment always remains an issue therefore the workshop attempts to address this by presenting the audience with real-life situations. The workshop is a dialogue between the audience and the presenter in which the audience can experiment with their own ideas. The aim of the workshop is to be practical and interactive. The participants will have an opportunity to think what they would do in a given situation and then compare their ideas with those implemented in the classroom. The main aim of the workshop is not to be prescriptive but rather create a space where everyone can test their ideas based on a concrete example.



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Conference Day 2

Vira Danylova, Lyceum MIR, Kharkiv, Ukraine

Ability to raise questions as a condition of thinking and learning

Saturday, 22 September, 16:30 – 17:30 Room "Lielupe"

We suggest, following R.G. Collingwood (1939), that questions are an important part of thinking. Different practices of working with questions have been widely discussed and designed since the end of the last century (Berger, 2014; Rothstein&Santana, 2011). We are sure, that it is necessary to teach students to put their own questions. The ability to generate questions is one of the most important conditions for independent thinking and action. But almost no one teaches this. And even those who understand the importance of questions have little opportunity to learn how to put and use them. Very often teachers are afraid of students' questions. It is necessary to teach both students and teachers how to work with questions. The training of reasonable work with questions should be carried out already in the primary school. For this purpose we develop games and exercises for primary and secondary school students. In these games they learn to raise questions, select, group and transform them. In this work we use the ideas of Dan Rothstein and Luz Santana (2011), Jay McTighe and Grant Wiggins (2013) and develop our own techniques for questioning. We want to present two such techniques - *Map of questions* and *Positional questioning*. Drawing up a *map of questions* includes three main steps:

- a) formulating by each of participants several questions on the common issue being discussed,
- b) placing these questions in a common space, grouping them,
- c) discussing grounds for such grouping and relations between the groups.

This work allows participants to get acquainted with each other's interests and discover new issues.

Before the beginning of a *positional exchange of questions* several positions (functions in a common activity, roles in communication) have to be identified. The procedure is that each of participants determines which questions he should answer to from the position that he occupies, and asks questions to those who are important for his activities. That exchange of questions is an effective tool for both self-organization (to formulate questions that no one except you can answer) and the organization of interaction (expressing what you expect from others in the form of questions).

We used *map of questions* at the beginning of learning new topics (in second grade) and at the beginning of our project week (primary school). Children were interested in the task. They enthusiastically asked questions and during the study of the topic looked for answers to them and put new ones.

Positional questioning was used to reading lessons. Pupils took the places of various characters of fairy tales and fables and asked each other questions. At first it was not easy for them. But when they were able to do this, it helped to understand each of the characters and the relationship between them. Pupils even could find such opportunities for cooperation and mutual assistance that were not in the original text.



Exhibition stand. Self-directed learning applications

Lobby in front of room "Lielupe"

Project background

The rapid changes and increased complexity of today's world present new challenges for adult learners. To succeed in modern times, they need to constantly learn new skills. So, the ability to learn effectively and apply knowledge is a key competency that can effectively counter continuous obsolescence of knowledge, skills and practices.

A large amount of open educational resources already exists (especially online) and many more are being developed all the time. This provides a good opportunity for self-directed learning. However just some people have enough skills to learn effectively without outside help. The others must improve self – directed learning skills to stay competitive in current world.

What we are doing?

We are developing mobile applications for self-directed learning.

We believe that people could achieve better results in this field if they had a tool (it could be called mediator / inner supervisor / learning assistant) which provides the right questions and tasks that could help the person move forward.

Main objectives of our project are to create mobile applications for efficient self-directed learning that enables a learning people to:

- define their own learning needs and set themselves meaningful learning objectives;
- evaluate themselves as a self-directed learner's strengths and weakness;
- choose the most effective learning strategies, techniques, methods, tools;
- monitor and control their own learning process;
- use effectively learning resources (time, motivation, social network, etc.);
- evaluate the acquired knowledge and skills and reflect on own practice;
- apply the acquired competences in practice.

Our project is financially supported by EU funds – for scientists, content creators and IT developers activities.

What are our recent achievements?

We have clear vision about possibility to digitalize two components of self-directed learning: reflexion and memory improvement.

We think that not only presenting material for learning but as well introducing learning strategies and showing how they work is the main difference from other apps, intended to enhance cognitive abilities.



Conference as a Learning Experience. Day 1

What are possible problems or challenges you face in the context of teaching thinking?

Based on your answer, define your objectives for this conference:

How do you know that thinking is being taught?

Given your experience so far, put down **features of teaching thinking**.

Teaching thinking:

-
-
-
-
-

During each of the sessions you attend, put down the features of teaching thinking facilitators emphasize. If you are not sure about some of the ideas, put down questions or concerns.

Workshop round No.1:	
Features of teaching thinking	Questions or concerns
<ul style="list-style-type: none">•••••••	<ul style="list-style-type: none">•••••••



Conference as a Learning Experience. Day 1

Workshop round No.2:	
Features of teaching thinking	Questions or concerns
<ul style="list-style-type: none"> • • • • • • • 	<ul style="list-style-type: none"> • • • • • • •

Professional development for teachers of thinking	
Features of teaching thinking	Questions or concerns
<ul style="list-style-type: none"> • • • • • • • 	<ul style="list-style-type: none"> • • • • • • •



Summary of the learning experience during Day 1

Features of teaching thinking you agree on:

Features of teaching thinking you are not sure about:

Questions you are interested in:



Conference as a Learning Experience. Day 2

Listen to the summary of the other groups and put down additional features of teaching thinking you would like to think about.

Possible additional features of teaching thinking (ideas from other groups):

-
-
-
-
-

Your colleagues' experience in teaching thinking: what are you going to be looking for in the context of learning to teach thinking?

My questions:

Based on your experience during the interactive exhibition, put down a number of **hypotheses about teaching thinking**.

If

then

If

then

If

then

During each of the sessions you attend, put down ideas to support or challenge your hypotheses. If you are not sure about some of the ideas, put down questions or concerns.

Short presentations on various aspects of teaching thinking:	
Ideas to support or challenge my hypotheses	Questions or concerns
•	•
•	•
•	•
•	•
•	•
•	•
•	•
•	•



Conference as a Learning Experience. Day 2

Workshop round No.3:	
Ideas to support or challenge my hypotheses	Questions or concerns
<ul style="list-style-type: none">•••••••	<ul style="list-style-type: none">•••••••

Workshop round No.4:	
Ideas to support or challenge my hypotheses	Questions or concerns
<ul style="list-style-type: none">•••••••	<ul style="list-style-type: none">•••••••

Discuss your experience with other team members. Put down the hypotheses that seem confirmed for the time-being. Define the questions you would still like to have answers to when speaking about teaching thinking.

Hypotheses that seem confirmed so far:

Questions for further learning:



Teachers Learning to Teach Thinking – Interactive Exhibition

Put down your thoughts and observations at each of the stands you visit (at least 4).

Stand No.1:

Stand No.2:

Stand No.3:

Stand No.4:



Teachers Learning to Teach Thinking – Interactive Exhibition

What did you notice when being a learner doing a thinking task? What are the questions you would like to discuss with the teacher?

Learning experience No. 1:

-
-
-
-
-

Questions:

Learning experience No. 2:

-
-
-
-
-

Questions:

Join one of the groups and put down the ideas that popped up during the discussion of the learning experience.

INVITATION FOR COLLABORATION IN EDUCATIONAL PROJECTS



Assessment Companion for Thinking Skills (ACTS)



Erasmus+ is a European Union initiative that aims to modernise education, training and youth work across Europe. The Assessment Companion for Thinking Skills (ACTS) Project is part-funded by Erasmus+ and is a partnership between seven institutions in the UK, Latvia and Finland. The project aims to make the identification and assessment of thinking skills more accessible to teachers in the classroom so that they can recognise the progress their pupils make in their thinking.

During the first year of the project, partners have developed and tested a number of materials to help teachers assess thinking in the classroom. This academic year the materials are going to be piloted and schools in various countries are welcome to join the process.

If you are interested in learning more about being a pilot partner in the ACTS project, please join us for an informal discussion during the lunch break on **Saturday (12:45 – 14:00)**. You are also welcome to contact us any time after the conference.

Teacher Education for Thinking Project



Over the past few years TA Group has coordinated a number of **projects on teacher education for thinking** in the Nordic-Baltic region. One of the outcomes of these projects are communities of thinking teachers who you can meet at this conference and also get to know via TA Teachers forum at www.ta-teachers.eu

We would like to collaborate with more teachers and organisations interested in working towards more **systemic approach to learning for thinking**. We would be happy to share our experience and learn from what you know. Let us use these two conference days to agree on possible common plans.

Let us know about yourself during the interactive exhibition on **Saturday (09:15 – 11:00)**, join us in the project planning corner during the first coffee break on **Saturday (11:00 – 11:30)**, come and talk to us at any time or just send an email or call after the conference.

We are always glad to talk to like-minded colleagues!
info@ta-group.eu



TA TEACHERS



TA TEACHERS CONFERENCE 2018

www.ta-teachers.eu



Conference Programme: An Overview

Friday, September 21

- 09:00 – 12:00 Pre-Conference Tutorials
(separate registration required)
- 11:30 – 12:30 Registration for Delegates
- 12:30 – 13:30 **LUNCH BREAK**
- 13:30 – 14:25 Welcome and Opening Plenary
(Room "Lielupe")
- 14:35 – 16:00 Workshop round No.1
(Rooms "Abava" and "Venta")
- 16:00 – 16:30 **COFFEE BREAK**
- 16:35 – 18:00 Workshop round No.2
(Rooms "Abava" and "Venta")
- 18:05 – 18:45 Plenary (Room "Lielupe")
- 18:45 – 19:10 Discussion of learning
experience
- 19:10 Welcome reception
(Lobby next to "Lielupe")

Saturday, September 22

- 09:00 – 11:00 Interactive exhibition (Lobby next to "Lielupe")
- 11:00 – 11:30 **COFFEE BREAK AND A PROJECT PLANNING
CORNER**
- 11:30 – 12:45 Talks on various aspects of teaching thinking
(Room "Lielupe")
- 12:45 – 14:00 **LUNCH BREAK AND DISCUSSION OF JOINING
ACTS AS A PILOT PARTNER**
- 14:00 – 14:55 Talks on various aspects of teaching thinking
(Room "Lielupe" and "Venta")
- 15:00 – 16:00 Workshop round No.3
(Room "Lielupe" and "Venta")
- 16:00 – 16:30 **COFFEE BREAK AND DISCUSSION OF LEARNING
EXPERIENCE**
- 16:30 – 17:30 Workshop round No.4
(Room "Lielupe" and "Venta")
- 17:35 – 18:00 Reflection and closing (Room "Lielupe")



- 18:10** Old Riga. Walking Tour
(free for the delegates)



- 20:00** Conference Dinner, Restaurant Stage 22,
Aspazijas bulvāris 22
(separate registration)



Sun, September 23

- Excursion to Sigulda
(separate registration)