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Mid project research-based evaluation of school development with TBL and Socratic seminars

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Colegio Lope de Vega in Benidorm, Spain, and Ramsta skola in Uppsala, Sweden are in a cooperative learning project exploring how TBL, Thinking Based Learning, and Socratic seminars could be merged into planned activities enhancing students' thinking. In the beginning of this Erasmus+ project, the teachers of Colegio Lope de Vega were already using TBL in their teaching as a way to promote students' thinking. The teachers of Ramsta skola were already using Socratic seminars in their teaching as a way to promote students' thinking. Teachers from each school have been involved in the Erasmus project for a year when this rapport is written. They have visited each other's school 3+3 times during the period, one group teaching the other their way of working. The aim of the project is that the two methods of promoting thinking will merge into an extended way of enhancing thinking and learning among students in both schools.

This report with suggested changes is the first of two, a final report will be presented after August 2020. This is hence the first research-based evaluation aiming to show what are the major results from the project at this stage. In the over-all plan of the research, teachers, and to some extent students, are involved in the evaluation processes, hence also promoting research-based evaluation methods in the participating schools. This has been done by using *Participatory Research*, and *On-going Evaluation* as research methods. The final results of the research-based evaluation, being presented at the end of the project period of two years, will also result in a research paper.

Methods

There are several research methods that allow the project participants to be active in evaluation of their ongoing development: On-going Evaluation, Action Research, Participatory Research, and Participatory Action Research are some. Common to all these methods is the idea that knowledge is developed through action. Participating in a research project on their praxis, teachers will learn more about the outcomes of what they do. A central idea is also that projects, as well as research, will benefit from a systematic cooperation between the researcher and those who are being subject to the research. Different methods within this area have different theoretical background and vary when it comes to how they are performed (Starrin, 2007). In this particular project a combination of two methods is used: Participatory Research and On-going Evaluation.

Participatory Research

Participatory Research differs from conventional research in three ways (Kemmis & McTaggart, 2003; Starrin, 2007):

- Shared ownership of research projects between the participants and the researcher. The participants are participating in the research process.
- Community-based analysis of problems. The participants formulate the research questions and participate in analyzing the results.
- An orientation toward community actions. The research results shall be useful to the organization or group participating.

In this project, the participants are mainly the teachers, to some extent the management of the school, and the students. The organizations that will benefit from the results are the two schools but also, in an extended meaning, other schools that might learn from the project. The aim of the Participatory Research is to implement and learn from research methods in the teacher groups. This collecting of results is conducted chiefly by a group of 1-3 selected teachers from each school. This selected group is guided by the researcher Ann S. Pihlgren. The process in the Participatory Research is as follows (Kemmis & McTaggart, 2003):

1. Planning of change: Stating research questions
2. First action and observation
3. Reflection on the process and its consequences
4. Re-planning
5. New action and observation
6. Step 3-5 are repeated several times with different content.

This was built in within the working order of the education teams at each school, their dialogue and improvements, by constructing an evaluation form that addressed these aspects, see Appendix A.

On-going Evaluation

On-going Evaluation is a research-based evaluation, where an ongoing project is evaluated and the researcher is able to give feedback to the project group, contribute to systematic learning, generate research-based knowledge and enlighten more sustainable solutions in practice through knowledge distribution (NUTEK, 2008). Through critical analysis of the project and by acting as a discussion partner to the project managers, the task of the researcher is to contribute to making the project reach the goals more productively (Brulin m. fl. 2009). The aim of the On-going Evaluation was to critically analyze the process of the development program and suggest alterations.

The On-going Evaluation focused on the process in the PaRT group, the participatory research teachers, and the materials and results that they produced. This meant collecting data from meetings and discussions and interviewing the PaRT teachers in the beginning and at the end of the project. A phenomenological approach to the material was taken, where Eisner's (1991) 'educational connoisseurship' and 'educational criticism', were used: By knowing the research area, the researcher can decide what is important features and nuances in the material (connoisseurship). This is combined with a critical approach where results are examined and valued (criticism). The researcher then describes the results in such a way that the recipients can visualize and experience them. The researcher interprets, analyzes and decodes why the results occur and evaluates the value for school development in general, as well as points out themes and dominating features. The result is also compared to other research in the area.

The researcher is responsible for the ongoing external evaluation. This means that the researcher has to be closely involved in the project, and also has to be able to take a distance, to make critical

observations (Ahnberg et al., 2010). The Swedish Agency for Economic and Regional Growth (Tillväxtverket, 2009) proposes the following elements for the researcher in an On-going Evaluation:

- Ongoing documentation showing the progress of the project
- Participation in important activities and meetings in the project
- Collaboration with the project manager, giving feedback and support, and being a discussion partner
- Continuously reporting results to the project owner
- Keeping informed about On-going Evaluation in other projects
- Independently presenting the experiences and results from the project on conferences, research seminars, and discussions

As a part of the On-going research, lesson plans were collected in the beginning and in the middle of the project, and will also be collected at the end. Special focus is paid to the merged plans. These written plans were subject to a basic form of discourse analysis (Winther Jørgensen & Phillips, 2000), using Fairclough's (2013) three-dimensional analysis, analyzing the material in three dimensions:

- Written language dimension
- Discursive practice dimension (production, distribution, use)
- Social practice dimension

Every dimension was analyzed separately and in relation to each other.

Ethical aspects

Concerning the research part of this evaluation the participants were informed that they could refrain from participation in this part of the evaluation and research. However, they could not refrain from participating in the written project evaluation. Names are anonymized in the evaluation and in the research paper.

Research questions

The focus of the research and evaluation of the cooperative learning about TBL, Thinking Based Learning, and Socratic seminars at Colegio Lope de Vega and Ramsta skola is guided by these main research questions:

- How did the chosen development program work to develop the teaching in the two schools?
    - What factors of success and what problem areas were detected, and how were these dealt with during the project?
    - How could future collaborative learning projects benefit from the experiences?
- What development (if any) could be found in the teaching at the two participating schools?
    - How did the teachers describe the method presented to them and its results?
    - What use of the methods could be detected during and after the project?
    - What discourses could be detected in the lesson plans and why?
    - What effects did students experience from the presented methods?
    - How could the results on thinking development among students be captured?

These questions were worked out with the management and teachers of the two schools. In Ramsta school management, educators, and all teachers participated in reflecting about the questions in a lecture and workshop, conducted by the researcher before the project started. In Colegio Lope de Vega

the management and the group of educators participated in the reflections about the questions when the project started.

Results by mid-project

Several activities have been initiated during the first year of the project. The results stemming from these will be presented here, as well as a discourse analysis of teacher plans.

Activities

The aim of the participatory research was to involve as many teachers as possible in the development program as well as in the research work, carrying out different roles in the process. However, this has not really been the case. It has been hard to find the time for meetings and there have also been some difficulties in involving all teachers because of language problems. When it comes to the research part this has been solved by selecting two teachers from each school to work as contacts, a participatory research teacher group (PaRT). They have collected material during the period and worked as contact between the researcher and the staff.

The researcher has met with the management and educator group of the two schools on four occasions, planning and revising the project. The researcher has also been taking part in meetings with groups of teachers from both schools to discuss materials and methods at two times. The two schools partly chose different models for how to engage the teachers: At Ramsta school all the teachers were involved in the mobility program, in Colegio Lope de Vega the English-speaking teachers were involved. This was also the case when planning the mobility weeks: At Ramsta more or less all teachers were responsible for some tasks during the Spanish teachers' stay, in Colegio Lope de Vega a smaller group of teachers were responsible for several of the tasks.

A lecture with workshop about Socratic seminars as a method was held by the researcher to all teachers at Colegio Lope de Vega the 12th of December 2018. The lecture was held in English, and interpreted into Spanish to give all the Spanish teachers possibility to learn about the method. Workshops were conducted in Spanish and in English. A video of the lecture was distributed on the internet for the benefit of absent teachers. A lecture and workshop about school research and on-going evaluation was also conducted by the researcher at Ramsta school in August 2018, before the project was started. Introductory lecture and workshop were also held for all the Ramsta skola staff before the project started in June 2018 by one of the teachers of Colegio Lope de Vega, Silvia Berenguer. The researcher supported with written material and support for the educators for the mobility training weeks in Socratic Seminars.

At the beginning of the project, some assessment forms were produced to make it possible to follow the progress of the project. A planning template and checklist for the final merging methods sessions were also produced. These have been attached as appendixes to this rapport. The material was produced using the following steps:

- Tentative reflections were first held in the group of school management, educators, and researcher, setting the frames for the content of the form or template
- A first prototype was presented by the researcher, building on research and/or quality-based work
- The first prototype was then discussed, tested and revised by the group of school management, educators, and the researcher

- The form was uploaded to TwinSpace for use during the first year

The results from using the forms is presented here.

Evaluation of the mobility training

One form was constructed to evaluate the quality of the mobility training (see appendix A). This focused on five criteria:

- What *development* the training resulted in, according to the participating teachers and educators
- How the *exchange* between teachers was rated
- How *structures* as time-efficiency, planning and preparations worked
- How the *after-training activities* were perceived and
- The quality of the *merging methods last session*

The form also contained a column for general comments. The educators of both schools divided the questions into two forms after the first mobility exchange, so that some questions only were answered by the participants and some by both participants and educators.

The results of each group of questions are very high, with the rate 5 (highest) being most frequent, rate 4 second and only a few rates 3 and no rates 1-2. There is a clear tendency towards higher rates as the mobility exchanges continue during the year, indicating that the team of educators and organizers learn from experiences. This also seems to be the case of the last merging session:

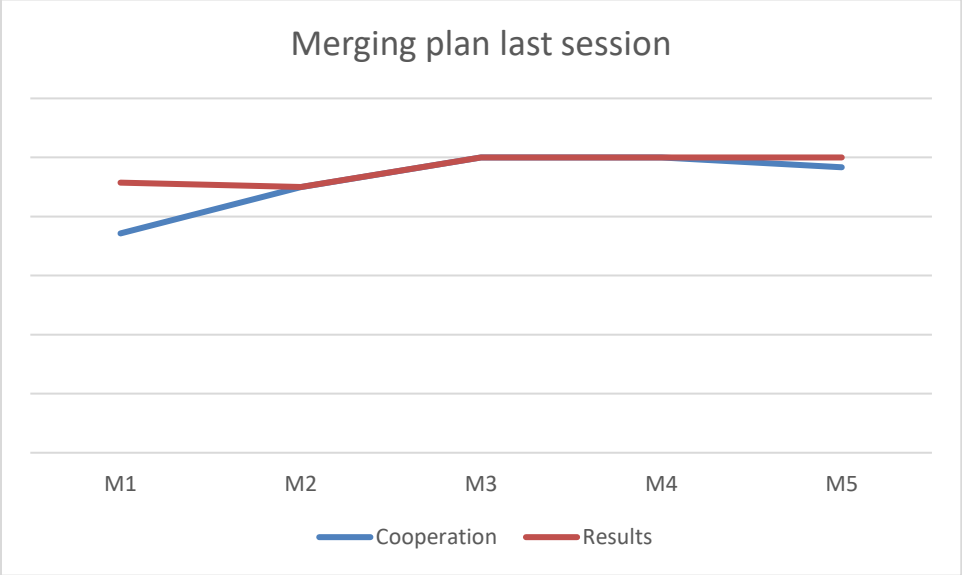

Figure 1. Rates 4-5 rising from the first mobility week (M1) to the last (M5) during the first year.

The answers are slightly more favorable when the mobility weeks conducted in Sweden are assessed. Explanations might be that the last recorded meeting was held in Sweden, and that this was most highly rated. The Spanish teachers might for some reason also have rated their experiences higher. The data is very limited, showing the opinions of a group of 3-7 persons. Hence, the trends are within the margin of error. Despite this, the form for evaluation seems to work well to evaluate the experienced outcome. The participating teachers also make general comments about how interesting and satisfying their meetings have been and how much they have learned and experienced:

Wonderful mobility meeting, very interesting and rewarding. My knowledge increased surprisingly and I believe I can put into practice all things learnt.

Participating teacher, mobility meeting 1.

All the teachers, both Swedish and Spanish, have put all our effort in thinking effectively, sharing, showing and learning from each other. It's been a fantastic experience and we all have come to very similar conclusions regarding the blending of Socratic Method and TBL. I feel we can do great things together.

Participating teacher, mobility meeting 2.

It was a great experience to have an insight into the Socratic dialogue and into the Swedish culture.

Participating teacher, mobility meeting 5.

The educators

Both schools have used the same group of educators meeting with new participants each mobility week. This seems to have been a positive factor for the outcome. The educators have had time to adjust their teaching as they learn from each mobility training session. Their training has been highly appreciated by the participants, 3-6 each mobility week:

Wonderful mobility meeting, very interesting and rewarding. My knowledge increased surprisingly and I believe I can put into practice all things learnt.

Participating teacher, mobility meeting 1.

I 'm thankful for the education I got so far when it comes to TBL. I 'm looking forward to use both Socratic dialogue and TBL with my students. The educator did a great job to help me understand TBL.

Participating teacher, mobility meeting 2.

The schools sent their own educators and management for the first and second mobility weeks to be able to learn the method of the other school and later guide the merged planning sessions. The second-generation teachers were also chosen from those who were more skilled in the methods of their own school. This guaranteed a high competence in the first merged sessions. However, this might also mean that the groups participating the second year will need more instruction or time to incorporate the methods into their teaching.

Observations in classrooms

Part of the teacher mobility training has been to participate in lessons where the taught method is exposed and used. To help teachers to focus on the central issues of the critical thinking teaching in Socratic seminars and in TBL, thinking based learning, rubrics for the classroom observations were constructed, see appendix D. These rubrics were focused on three criteria, shared by both methods:

- Dialogue – how dialogue was used to create a respectful and investigating atmosphere
- Thinking activities – what kind of thinking was exposed by students
- Learning process – how progress was made visible in the lesson

The observation rubrics were used as a way to gather qualitative data for an analysis in the group of teachers learning and of educators, after the observation. The observation rubrics seem to have worked well as a way to concentrate the observations to some particular areas of observation. However, the evaluations show the importance of having time after the observations to discuss what has been observed and how to interpret this.

Planning the merging of methods of TBL and Socratic seminars

One of the main objects of the project is to try and merge the two methods for thinking into an extended way of enhancing thinking and learning among students. This was to be done at the last session of each mobility week. There are many different aspects that the teacher has to consider when planning a lesson or theme, if the teaching is to be successful. The teaching will have to encourage and develop the students' experiences by allowing them to explore, experiment, and experience with multiple senses and from a variety of angles. This must be balanced by also letting students use their abstract thinking by challenging tasks, complex and authentic problems, by uncovering patterns, making analyses, and by using problems where the solution and the process of solving them isn't obvious or known to the students on beforehand (Pihlgren, 2013). Every student must also have the opportunity to develop by having an appropriate influence over his or her learning process. Experience and praxis-close research have shown that this is possible if it is done in a systematic way (Wiggins & McTighe, 2011). Research has shown that superficially covering of big areas or large amounts of material is an unproductive way of helping students to acquire competences, skills, and abilities that will prepare them for future work and learning.

To support the merged planning a template was produced, building on understanding by design or *backward design* (Pihlgren, 2013b; Wiggins & McTighe, 2011). *'Backward design'* was in the Erasmus+ project used in the last day's merged methods planning session. The backward design planning has been constructed from research results, showing how planning to support learning could be done (Griffith & Burns, 2014; Wiggins & McTighe, 2011). By using a particular workflow when making a lesson plan, the teacher can avoid shallow content or unclear goals. The planning starts by targeting a goal area where objects, goals, and motives to why the area is important are specified. The teacher then specifies how the results from teaching will be assessed in the group of students – choosing what criteria will be assessed and how the assessment will be performed. The goal area and the definition of assessment precede the planning of activities. This is what is meant by backward design: The teacher starts by setting what the final results will be, before the activities are planned.

Working with backward design, and using a time-effective and helping structure, the teacher can base his or her teaching on research about learning and cognition. The planning process will consider the students' deeper understanding and the curricular goals, as well as students' abilities and skills. By using backward design alignment between activities, goals, and assessment methods will be easier to secure. The backward design planning template was adapted to the purpose of this project (see appendix B). A checklist to use during the merging session was also constructed, see appendix C. To the template a TBL planning and a plan for Socratic seminars were added by the educators.

The checklist and the template seem to have been supporting the planning sessions. However, they were not used during the first two mobility sessions. The educator group seemed to put the merged planning aside for the benefit of understanding both methods. By the third mobility week, when the

merged planning was done using the template, the results were considered very satisfying by the participants:

> *This is the first mobility in which we have worked as a group on the teaching unit. We have found some difficulties to start it how we managed to work it out. Both methods have many aspects in common and the thinking questioning is very important in the process. We have learnt how to improve in this aspect by using the best parts of each method. We need to continuing working on the design of tools and resources that combine both methodologies which will help in the observation, evaluation and in the learning and teaching process. /--/ We are very happy with this exchange as it has been very enriching for all of us. We are grateful for everything we have learnt during this experience.*
>
> *Participating teacher, mobility meeting 3.*

By the fourth and fifth mobility weeks there seems to have been a deepening of understanding of how to use the template:

> *We have all worked very efficiently together and the result of this is a well-structured teaching unit that combines both methods. The activities created for the teaching unit will make students think about their lifestyle and this will make them enjoy while learning. Swedish teachers and Spanish teachers have shared many ideas that can be used in our classrooms.*
>
> *I think we did a perfect teaching unit. Interesting to see the result.*
>
> *Two participating teachers, mobility meeting 4-5.*

However, some teacher comments indicate that the planning needs more time:

> *Maybe we would need some more time to work with the planning template.*
>
> *Participating teachers, mobility meeting 4.*

Three plans for thematic units were made during the period: *Oceans*, *Emotional health*, and *Words are not innocent*, directed towards teaching of younger students, grade K-6.

Student panels

To evaluate students' experiences of the teaching, focusing on thinking development two student panels are planned. These will be conducted in September and at the end of the project, and the results from these will be included in the final evaluation.

Results from discourse analysis of plans

The analysis of plans was carried out by using a revised and simplified version of Fairclough's (2013) three-dimensional conception of discourse, presenting an analytical frame for empirical discourse research, see figure 2.

Figure 2. Fairclough's (2013:73) three-dimensional conception of discourse.

Fairclough suggests that three dimensions should be addressed in an analysis:

1. Analysis of (spoken or written) language texts.
2. Analysis of discursive practice (processes of text production, distribution, and consumption).
3. Analysis of discursive events as instances of social practice (the wider social practice that the analyzed communication is part of).

These three dimensions were analyzed separately and together.

Discourses attempt to fix webs of meaning through 'nodal points', particular systems of meaning or chains of signification (Laclau & Mouffe, 2001). Other signs will be organized around the nodal point. Nodal points in this study are objectives, assessment, and teaching, helping us to find the specific signs forming the discourses and giving the studied material meaning. Signs will get their meaning in relation to each other through articulation (Winther Jørgensen & Phillips, 2000). The concept 'objective' could be interpreted in different ways, but when other signs are added, we might understand how the concept is interpreted within a certain discourse. This will function as a frame, excluding other meanings of the sign.

The three chosen nodal points are central in planning teaching for learning. Objectives – goals and aims – are in backward planning used as a way to guide the teacher's actions toward the sought learning of the students. Assessment is used to check that this sought learning is taking place. Teaching – lessons and activities – is used to make the sought learning happen. However, we know from research (Pihlgren, 2013; Wiggins & McTighe, 2011) that the more common way for teachers to start their planning is to construct the teaching activities first, and later choose the objectives that fits the chosen activities. Assessment tools and criteria are often chosen under the teaching process, leading to a validity problem – the teacher tend to assess what she or he has taught, not the intended objective (Jönsson, 2011; Wiggins & McTighe, 2011). This will not result in good quality learning. The signs added in the plans will show how the participating teachers construct meaning in the plans.

Text

The text analysis was concentrated on the formal features of the texts, specifically content, and ethos (what identities are constructed?). The 6 Spanish plans and 5 Swedish plans are constructed for longer thematic teaching units for grade K-5. Both the Spanish and the Swedish teachers use preconstructed

templates and the plans within each school is thereby similar in structure, regardless of subject or age of students. The Spanish plans specify the following content:

- Objectives
    - Units and timing
- Assessment criteria related to content and method
    - Profile features shown in assessment
- Teaching – activities (not all plans)

The Swedish plans specify the following content:

- Objectives
    - Understanding, abilities, knowledge, facts, and skills aimed at
- Assessment criteria and method
- Pre-diagnosis
- Teaching – activities (not all plans)
- Learning environment (not all plans)

The plans of both countries specify objectives, assessment criteria and teaching activities, and most of them activities and methods. The Spanish plans are generally more specific when it comes to teaching activities. The Swedish plans refer to the Swedish central curriculum, whereas the Spanish refer to profile features. The language is short, specific, and professional in all the plans.

The text analysis shows that the teachers of the two schools have a professional and collective approach to their planning. The plans are constructed to be used several times and to be understood by others. However, short teaching activity descriptions or lack of descriptions in some of the plans will make this ambition more difficult.

When looking at the three merged plans from the last day session of mobility week, the texts show a similar professional and collective approach to their planning, using the planning template. In the 4th mobility week the teaching connected to TBL and Socratic seminars have been specified clearly in two separate plans, and other activities have been explicitly listed in the template. In appendix E the complete plan for thematic unit *Emotional health* is included.

There seems to be a benefit from having worked together to understand the content, discussing and analyzing, the merged plans are more specified and clearer when it comes to objectives, assessment, and teaching, something also confirmed in the evaluations of the participating teachers:

> *All has gone really smooth and we've had time to learn from each other, exchange ideas and come up with a really good teaching unit. I'm sure students will enjoy learning that way. Giving them the opportunity to think and express themselves using Socratic Seminars and TBL lessons is a fantastic opportunity for them to become better thinkers.*
>
> *Participating teachers, mobility meeting 4.*

Discursive practice

The relationship between the texts and the social practice is mediated by the discursive practice. This analysis was concentrated on intertextuality – what influences from other genres and texts that could

be found in the texts, and contextuality – what socio-cognitive and contextual dimensions of production and interpretation have influenced the texts.

The analysis of discursive practice of the collected previous lesson plans shows greater similarities than differences, when comparing the plans from the two countries. The plans show less influence from the discourse of the specific country where they were constructed. Instead, the templates are related to a discourse of teaching thinking, promoted by research in thinking skills, thinking based learning, and thinking abilities (c.f. de Bono, 1998; Buzan, 2006; Gardner, 1999; Perkins, 1992; Pihlgren, 2013; Roberts, 2019; Swartz et al, 2010; *Visible thinking*; Wiggins & McTighe, 2011). This might explain why the merging sessions, when taking place, seemed to have been productive, even though the teachers didn't have any previous experience of working together, and even though it might be expected that they would be relating to discourses of respective country. The orientation of both schools towards critical thinking by students seems to have resulted in a similar discursive practice. The template used in the merged sessions (see appendix B) also relates to this discursive practice and seems to have promoted a deeper analysis in the mixed teacher groups when making the plans.

Social practice

The analysis of the social practice focused on the three nodal points, if the discourse practice reproduced the field or transformed it, if there were hidden structures of inequality or new ways to present reality, and the consequences of the social practice.

Objectives were addressed in all of the Spanish and Swedish plans, and assessment in all but one of the Swedish plans. Teaching were specified in some of the plans but not in others. Sometimes the plans showed detailed teaching plans, sometimes only the area of teaching was mentioned. There seems to be a mutual understanding of how objectives and assessment should be interpreted, both in the previous plans and in the merged ones. There is a high stress on specifying the objectives, both in the previous and in the merged plans, indicating the connection to influences of the critical thinking paradigm.

As pointed out before, the teaching is not described in all the previous plans. However, when described in the merged plans teaching is influenced by the two methods TBL and Socratic seminars (se appendix E). The merged plans include both TBL and Socratic seminar lessons, and the content seems to support the intended objectives. However, the plans are more or less incomplete, which might make them more difficult to use for teachers who haven't been present during the planning process.

Analysis by mid-term of the project

Analyzing the mid-term results, using the research questions above, shows some positive results. The chosen Erasmus+ project seems to have worked to develop understanding for the respective countries and for their cultures in the two schools. There seems to be a beginning understanding of the use and benefits of the two methods in each school, and there also seems to be an understanding of how the two methods could work together to enhance students thinking. Success factors of projects seem to be the following:

- The mutual understanding of the critical thinking discourse in both schools when the project started made cooperation at start quicker and analysis deeper.
- The high competence and professional status of the participating educators and teachers made the mobility weeks effective.

- The forms constructed before the mobility weeks gave structure and direction to the work, making the development of each week easy to follow.
- The lectures and workshops for the entire staff in both schools gave an insight and a good start to the project.
- Choosing skilled teachers as educators and letting them educate all groups of visitors led to continuity and the possibility to learn from each mobility training session.

There are some areas of possible development:

- Lack of time has in some areas affected the original plans. The researcher's meetings with the PaRT group had to be revised and has instead been carried out through two representatives. The merged planning also would have benefited from more time.
- The language problems meant that not all teachers of Colegio Lope de Vega could participate in the exchange. This was dealt with by offering a lecture and a workshop to all the teachers of the school.
- The results from the evaluations of mobility weeks show a somewhat higher rate in favor of the mobility weeks carried out in Sweden. This might be explained by the Swedish school having involved more staff in the different tasks such as educating, planning the structure, logistics, and after training activities. This might be something to consider during the next period. In such a case, the language issue has to be dealt with in some way.

Conclusions so far is that a collaborative learning projects in general will benefit from:

- A close match of schools when it comes to pedagogic understanding.
- A supportive structure giving direction to the development, such as the forms and the initial whole school lectures and workshops.
- Involving the entire staff in the mobility plans.

To be more specific when assessing the outcome of the two teaching methods there is a need for a thinking development tool that could be used by the teachers to assess students thinking development. Such a tool might be a subject for a new Erasmus+ project for the two schools, building on the experiences of this.

Suggested development

These suggestions might be considered when planning the activities of the project in the second year:

- **Merged plans**: Develop the teaching activities more. This might be the subject for a joint session between the two schools at the end of this project, if there isn't enough time during the mobility weeks.
- **Making methods general**: Secure that both the schools know about and can use the two methods. This would include filming the sessions during mobility weeks in both countries for new staff to use, and offering further workshops to the non-English speaking teachers.
- **Teacher's sense of ownership**: If possible, involve a larger group of staff in both schools in the reception of guests at the mobility weeks.
- **Assess thinking development**: Apply for a follow-up Erasmus+ project, constructing and trying out a tool for assessing and following the thinking development of students, based on research and proven experience.

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Appendix A. Evaluate Mobility Training at Ramsta or Lope de Vega

Use the following matrix to evaluate the mobility training week, both as a participant and as a trainer. Give each area an evaluative point, using 5 when you agree completely and 1 when you disagree completly. Use the comment area if you would like to specify or explain anything or if you have improving suggestions for the next mobility training week.

Rubrics	Area	Evaluation 1–5
Development	The training gave knowledge and tools that I can use	
	The training resulted in new insights and new ways of thinking	
	The presented methods are easily integrated in our curriculum	
	I will be likely to use the presented methods with my students	
	The last day merged planning resulted in improved ideas	
Exchange	The discussions, feedback and reflections were rewarding	
	There was time to share teaching experiences	
	There was time to form relationships between teachers	
Structure	Information before mobility training was apt	
	The preparations were adequate	
	The meetings were structured	
	The teaching methods supported learning	
	Time was used effectively	
After training activities	There was a balance of training, activities, and free time	
	The arranged after training activities were enjoyable	
	The accommodations (lodgings and food) were appropriate	
	Logistics (transports etc.) worked well	
Merging methods last session	The cooperation worked well during the last session for merging the two methods	
	I am satisfied with the result (the plan) deriving from the merging method planning	
	Testing the plan in my class will be interesting	
	Testing the plan in my class will be easy	
General comments		

Appendix B. Planning Template – merging methods TBL and Socratic seminars

<table>
<tr><th colspan="4">Stage 1: Desired Results – What will the student learn, understand and be able to do?</th></tr>
<tr><td colspan="4">1 a. Why is this knowledge important in life?</td></tr>
<tr><td colspan="4">The knowledge and skills are important because:</td></tr>
<tr><td colspan="2">1 b. Established Goals</td><td colspan="2">1 c. Understandings – What will the students understand afterwards?</td></tr>
<tr><td colspan="2" rowspan="2">Curricular goals or standards:</td><td colspan="2">Students will understand that:</td></tr>
<tr><td colspan="2">1 d. Transfer – What abilities will the students develop?</td></tr>
<tr><td colspan="2" rowspan="2">Thinking objectives/goals (use the assessment thinking tool circle included at the end to find the appropriate level of challenge for students' thinking):</td><td colspan="2">Students will be able to independently use their learning to:</td></tr>
<tr><td colspan="2">1 e. Knowledge – What knowledge and skills will the students learn?</td></tr>
<tr><td>The student will know these concepts:</td><td>The students will know these facts:</td><td colspan="2">The student will be able to use the following skills or processes:</td></tr>
<tr><td colspan="4">1.f. What questions will the students consider to foster inquiry, meaning-making, and transfer?</td></tr>
<tr><td colspan="4">The student will keep considering these thought-provoking questions:</td></tr>
<tr><td colspan="4">Stage2: Evidence – How do we know that the students have learnt?</td></tr>
<tr><td colspan="2">2 a. Criteria – What will be assessed?</td><td colspan="2">2 b. Performance Tasks – How will learning be demonstrated?</td></tr>
<tr><td colspan="2" rowspan="2">These criteria and qualities will be assessed:</td><td colspan="2">Formative assessment: Students and teachers will know that students are learning by:</td></tr>
<tr><td colspan="2">Summative assessment: Students and teachers will know that students have reached the goals by:</td></tr>
<tr><td colspan="4">Stage 3: Learning Plan – How and what will be taught?</td></tr>
<tr><td colspan="4">3 a. Pre-assessment – How do we check student's prior knowledge?</td></tr>
<tr><td colspan="4">The student's prior knowledge is checked this way:</td></tr>
</table>

3 b. Learning Events	**3 c. Teaching Environment**
The following learning events will take place:	Teaching environment will be used in this way:
The following thinking methods will be used:	These materials and technical devices will be used:

Stage 4: Evaluating teaching results – How effective was the teaching?

4 a. Focus – What do we want to analyze? (select when planning)	4 b. **Results** – Analysis after teaching
The focus of our analysis of teaching results will be:	How did the students learn (understandings, abilities, knowledge)? How can these results be explained?
	What could be revised in the plan?

Appendix C. Merging methods in planning: Checklist

Socratic Seminars & Teaching Based Learning TBL

This checklist is a helping tool when the group of teachers from Colégio Lope de Vega and Ramsta School, on the last day of mobility training week, cooperate to merge the methods into a lesson plan.

The merged plan might consist of one lesson, where Socratic seminars and TBL are used separately or merged into a fusion. The plan might also consist of a series of lessons, a theme or a project, using the methods. It can also be a planning schedule usable for different subjects and age-groups.

The plan is to be tried out by the planning teachers with their students after mobility training week. A copy of the plan is sent to the PaRT-group (The Participatory Research Teacher group) of each school.

The checklist is a help, it is not prescriptive. Feel free to use it or find other ways.

Checklist

1. Chose a chairman to keep track of the agenda and the time, and a secretary to take minutes and write down the plan. Use the Planning Template.
2. Start by sharing and discussing some existing models (e.g. the previous mobility group's plan, Great Books plans, own experiences). What are the advantages of these plans? The disadvantages?
3. Decide whether you would like to construct a single lesson, a theme or a planning schedule.
4. Use the Planning Template to plan your lesson, theme or schedule. Start by planning the desired results, stage 1 in the Template.
5. Continue by planning how you will assess the outcome, stage 2 in the Planning Template.
    a. Can any of the methods be used as an evaluation of the students' acquired knowledge (or prior knowledge)?
6. Discuss to which of the chosen goals the TBL methods and the Socratic methods would be beneficial for students' learning. Plan stage 3 in the planning template.
    a. Can parts of the methods be merged together in the same learning event?
    b. In what order should activities be presented to the students for best learning?
    c. How should the activities be presented to ensure progression in thinking?
7. Make the plan in a way that it is comprehensible to your non-present colleagues.
8. Decide what your focus of evaluation of the plan's teaching results will be and write this down in stage 4a in the planning template. Stage 4b is to be answered after you have tried the plan in your class.
9. Evaluate your cooperative work:
    a. How did you cooperate to reach the goal?
    b. Are you satisfied with the result?
    c. What advice would you like to pass on to the next group (or to your next session in this group)?
    d. Decide how you will share experiences from trying out the plan (stage 4 b. in the planning template).

Good luck!

Appendix D. Rubrics for classroom observations Socratic seminars & Thinking Based Learning

Use the following matrix to reflect on what you see when visiting a Socratic seminar or a Thinking Based Learning session.

Rubric	Observation focus	Notes
Dialogue	The teacher uses open-ended or close questions?	
	Amount of teacher talk/ student talk?	
	Student cooperation (students asking other students, listening to others, building on other's statement, helping someone to explain etc.)?	
	The atmosphere is respectful and allowing (all students are heard, talking to all, differing ideas are heard, students are given time to think)?	
Thinking activities	Analysis are made by whom? By how many of the students?	
	Students show logic creative reasoning (arguments are apt, reasonable, logical and substantiated with evidence, presenting creative and new, bold ideas etc.)?	
	Students make use of thinking tools (statements, clarifications, comparisons, similarities, differences)?	
Learning progress	The students and the teacher cooperate to come to a better understanding?	
	Students are aware of the thinking process (e.g. meta-cognitive evaluation of thinking is made)?	
	A progress in understanding is shown during the session?	

Appendix E. Complete plan for thematic unit Emotional Health

Planning Template – merging methods TBL and Socratic seminars

My Future Me: Are you Prepared?

(Physical and Emotional Health) 7-9 year-old students

Stage 1: Desired Results – What will the student learn, understand and be able to do?	
1 a. Why is this knowledge important in life?	
The knowledge and skills students are going to acquire are important because they will learn the concept of well-being in order to have a happy and healthy life and know how to deal with emotional health. They will also understand the importance of making good decisions that will lead the students to think in a creative and critical way.	
1 b. Established Goals	**1 c. Understandings** – What will the students understand afterwards?
Curricular goals or standards: Students will be able to discuss what factors could affect the mental and physical well-being. Students will be able to adopt healthy eating habits and relate them to the correct functioning of the body, adopting preventive measures of common diseases related to bad habits. Recognize and express emotions and feelings of themselves and others in well-known environments reflecting and drawing conclusions to express them in a respectful and creative way.	**Students will understand:** -What factors could affect the mental and physical well-being (food, sleep, hygiene, exercise and social relationships). -The effect of their own choices and how this will affect others. **1 d. Transfer** – What abilities will the students develop? **Students will be able to independently use their learning to:** -Think critically and creatively -Communicate their ideas in an effective way -Work collaboratively and cooperatively

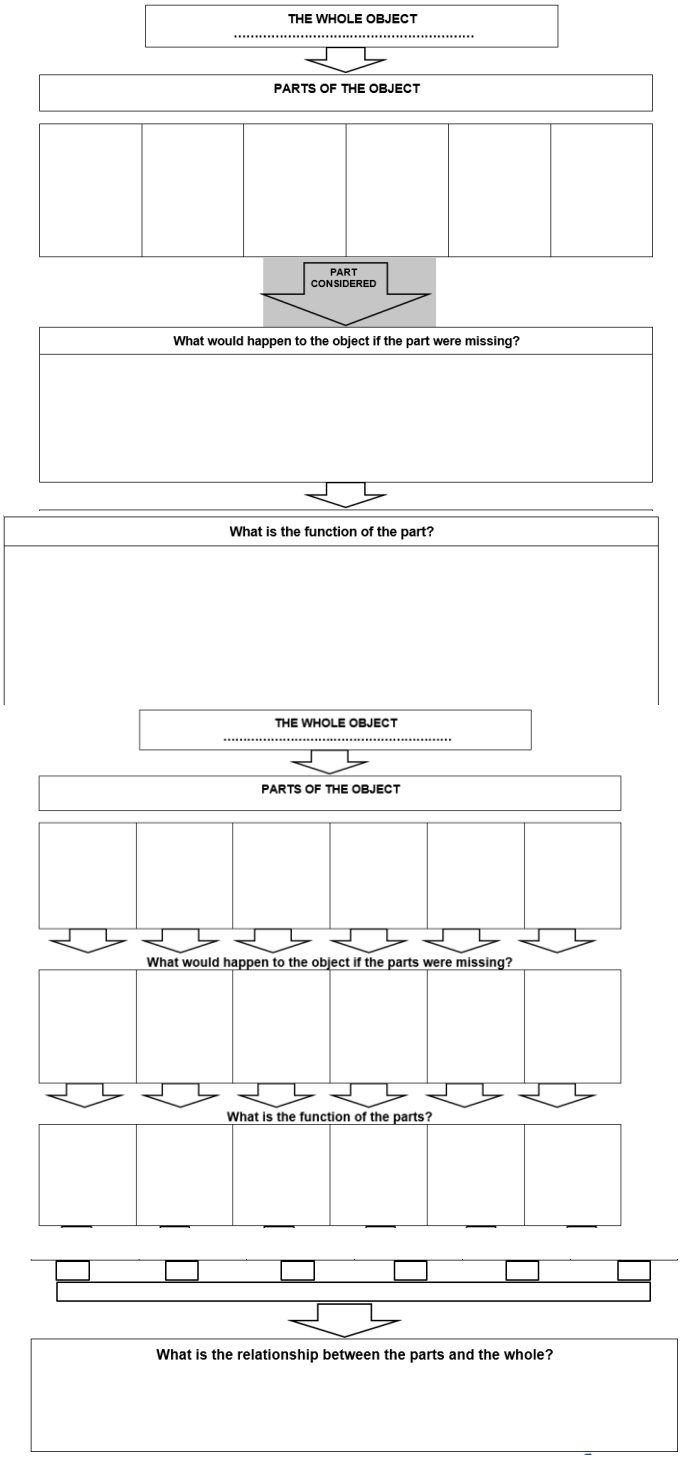
Thinking objectives/goals: Thinking flexibly Taking responsible risks Gather data through all senses. Thinking about the parts of a whole and discover what would happen if the parts were missing in order to learn what the functions of each part are and how they work together.	**1 e. Knowledge – What knowledge and skills will the students learn?**		
	The student will know these concepts: -well-being -emotional health -balance -lifestyle -emotions: happiness, sadness, anger, fear -Factors	**The students will know these facts:** -Actions have an effect -Factors that affect health. - Children's lifestyle today.	**The student will be able to use the following skills or processes:** -Search for reliable information -Reading comprehension -Writing -Calculations
1.f. What questions will the students consider to foster inquiry, meaning-making, and transfer?			
The student will keep considering these thought-provoking questions: -How will you feel and be in 10 years' time if you continue with your lifestyle? -How can my actions affect others?			
Stage2: Evidence – How do we know that the students have learnt?			
2 a. Criteria – What will be assessed?	**2 b. Performance Tasks** – How will learning be demonstrated?		
These criteria and qualities will be assessed: -Support their ideas with arguments -Use the acquired knowledge to come to a conclusion -Give criteria for a good lifestyle	**Formative assessment:** Students and teachers will know that students are learning by: -TBL -Socratic seminar -Observing (Observation sheet)		
	Summative assessment: Students and teachers will know that students have reached the goals by: -Final product - Decalogue *(rubric) Link (Sweden)*		

Stage 4: Evaluating teaching results – How effective was the teaching?	
4 a. Focus – What do we want to analyze? (select when planning)	4 b. **Results** – Analysis after teaching
The focus of our analysis of teaching results will be: How through continuous questioning students reach valuable and enriched conclusions.	**How did the students learn (understandings, abilities, knowledge)? How can these results be explained?** What could be revised in the plan?

	-Oral presentation- Decalogue. Rubric

Stage 3: Learning Plan – How and what will be taught?	
3 a. Pre-assessment – How do we check student's prior knowledge?	
The student's prior knowledge is checked this way: Thinking routine: What do you know? What do you want to know? How you want to learn it? What did you learn?	
3 b. Learning Events	**3 c. Teaching Environment**
The following learning events will take place: 1. Thinking routine: What do you know? What do you want to know? How you want to learn it? What did you learn? 2. Tell your story- Students draw/ write how their lifestyle is. 3. Interview a friend- Know more about their lifestyles. Students and teachers co-elaborate questions that all will use to interview their classmates and show the results on a graph (questions are related to factors) 4. Socratic Seminar: The Invisible Child *(Story)- Seminar plan - link (Sweden)* 5. TBL: Parts of a Whole thinking skill- What's important for good health? - *TBL lesson plan* Group work Research: each group will look for information about every factor to develop the thinking skill. 6. Conclusions: Relating all factors. Decalogue for a happy and healthy lifestyle. It will be presented to other students at school and encourage them to put this in practice. 7. Personal compromise: Each student chooses a habit related to the factors in order to improve their everyday life based on the personal story they drew/wrote.	**Teaching environment will be used in this way:** The activities will be developed mainly in the classroom.
The following thinking methods will be used: Socratic Seminar:The Invisible Child TBL: Parts of a Whole thinking skill - What's important for good health? Thinking Routine: What do you know? What do you want to know? How you want to learn it? What did you learn?	**These materials and technical devices will be used:** Ipads Story / photos Graphic organizers

DETERMINING PARTS-WHOLE RELATIONSHIPS



THINKING STRATEGY MAP

1. What are the parts of a whole?
2. What would happen to the object if the part were missing?
3. What is the function of this part?
4. What is the relationship between the parts and the whole?

Socratic seminar - The invisible child

Seminar plan:

Set personal goals and the goals for the group.

The starting question:

Have you met someone who was like Ninnys old lady? How did he/she behave?

Analytical questions:

Ninny:
What has made Ninny invisible?
How is Ninny as a person?
How did she become that person?
Why hasn´t she become a troublemaker?

The acting of the family:
Why does Too-ticky leave Ninny to the family?
How does the family treat "misbehaving"?
How do the different family members treat Ninny? Which are the consequences of the different treatment?
Are there any similarities?

The visibility:
Why doesn´t Ninny´s head become visible?
What happens, when Ninny gets fully visible?
Who are the persons that make her visible?
What do the recipe for grandma's household remedy look like?
Is it the household remedy that makes her visible?
Does Muminmamma believe in the household remedy herself?

Valuation questions:
Make a list as a group, which contains the ingredients of grandma's household remedy out of the acting of the family members that succeed:
Can the recipe make someone visible?
Do you need to change anything?
Is it anything in the recipe that is surprising to you?
Are we acting this way in our school?
What may we change?
Does the "old lady" exist in our school? Within yourself? When and how? Can you do anything about it? Can you help the old lady?

Evaluate the personal goals and the goals of the group.

TBL PLANNING

TEACHER	Kajsa Onwuka, Andreas Edlund, Alexandra Edquist
AREA/SUBJECT	Health / Natural Science
LEVEL	7, 8, 9 year-olds
TITLE	What's Important for a Good Health?
THINKING SKILL	Parts of a whole
DATE	2019

OBJECTIVES

CONTENT OBJECTIVES	THINKING OBJECTIVES
The importance of food, sleep, hygiene, exercise and social relationships to feel well. The lifestyle's importance for the health, for example, how diet, sleep, and the balance between physical activity and rest affects the physical and psychological well-being. Students tell and discuss some factors that affects people's health.	Students will, from a decided topic, identify and understand how each part is important for the whole. To understand how the whole can be affected if one of the parts is removed and what function that part has.

STUDENTS' SOCIAL ORGANISATION / MATERIALS

Group discussion and class discussion.

Thinking strategy map and graphic organizer (Parts of a whole)

Video/photos/story
Socratic Seminar: Invisible child

LESSON

PHASE 1: BUILDING THE THINKING STRATEGY
By using the hand as an example we explain the thinking strategy: Parts of a whole. What are the parts? What happens if we remove the thumb? What function has the thumb? How do the parts work together?
PHASE 2: INFUSION
Relate to the previous Socratic Seminar: The invisible child. Question for the students: What factors are important for good health? Short discussion in smaller groups where the goal is for the groups to come up with a decided number of factors (2 or 3) that they think are important for good health. The factors are shared with the rest of the class, each group share one factor to start with, so that everyone gets to share. The teacher gathers the information and revises the words so the correct words are being used (sleep, exercise, hygiene, food and social relationships). The teacher writes these in a common class graphic organizer on the board. Follow-up questions are being used to lead the students in the right direction. The next step is to give each group a graphic organizer, where the students copy step 1 and 2 of the common organizer and then start to discuss step 3. We decide to remove one of these five factors and the students shall discuss in their groups what will happen with their health if the factor is removed. When the groups are finished we pause and share their suggestions in the common graphic organizer. The groups give some examples so that each group gets to share. Then they start with step 4, to discuss what the function is of the removed factor. After the team discussion we share the answers in class as before. All the ideas will eventually be written in the common graphic organizer.
PHASE 3: METACOGNITION
1. What type of thinking did you do? (Parts of a whole) 2. How did you do the thinking? (Questions of the thinking strategy map) 3. Was that an effective way to do it? Why or why not?

What can you do to improve it?

4. How will you do this kind of thinking next time it is needed?
5. How will you use this thinking skill in your daily life?

EXTENSION CONTENT / WRITTEN EXPRESSION ACTIVITIES (OPTIONAL)

Progression plan 7-9 years old.

1. (7 year-olds) This lesson plan, with a series of lessons when we remove one factor at a time and do each lesson with new factors.
2. (8 year-olds) Focus on one of the five factors as a whole and do a series of lesson that way.
3. (9 year-olds) Each group are responsible for their own factor and does the thinking skill according to the plan.

What is the relationship between the parts and the whole?

TEACHER'S REFLECTION

- How did the materials work?
- How did the cooperative group organisation work?
- Could the students share their thinking and results? Could they learn from each other?
- Did the students understand the thinking skill and the content objective proposed?
- Name something that went really well during the lesson and something that didn't go as

expected. - How would you improve the lesson to the next time?

c

RUBRIC ORAL PRESENTATION

My Future Me: Are you Prepared? - Decalogue for a Happy and Healthy Lifestyle

	EXCELLENT	GOOD / average	NEED IMPROVEMENT
Content	- Is able to explain very well the topic prepared and there are no mistakes in the explanation. - Shows an excellent understanding of the topic.	- Explains the topic well, but there are a few mistakes in their explanation. - Shows a good understanding of the topic.	-Tries to explain his/her topic but there are too many mistakes in the explanation, which makes it hard to follow. -Shows no or little understanding of the topic.
Use of English	- Student's use of English is fluent and with nearly no mistakes. -Controls the register, makes correct use of the specific vocabulary and verb tenses and shows no vacillation. -Very good pronunciation.	-Student's use of English is good with some mistakes but he/she is able to communicate the message with a relative clearness. -Makes use of some of the specific vocabulary	- Student's use of English is very limited. Many mistakes and inappropriate language causes confusion.
Presentation Skills	-Adequate volume and pace. -Student appears confident and at ease. -Engages the audience. -Very good body language. Maintains eye contact.	-Student's volume is loud enough. -Appears confident. -Sometimes makes eye contact. -Reads and uses body occasionally.	-Student doesn't control volume and pace and that makes his speech difficult to follow. -Doesn't make eye contact. -Reads too much. -Doesn't use body language or uses it inappropriately.
Listening to other presentations	-Listens and pays attention without making distracting noises or movements. - Asks questions and doubts. -Actively involved in other's presentations.	-Listens and pays attention most of the time although sometimes loses track. -Does not ask questions.	-Sometimes does not appear to be listening and makes distracting noises or movements. -Does not ask questions.

Rubrics for classroom observations Socratic Seminars & Thinking-Based Learning

Rubric			
Support their ideas with arguments	Have some arguments that are partly supported.	Have some arguments that are supported.	Have some arguments that are supported and developed.
Use their acquired knowledge to come to a conclusion	On their way, by using their acquired knowledge, to make a conclusion.	Can make a subject specific conclusion.	Can make a conclusion that is based on facts, valuated and processed.
Give criteria for a good lifestyle	Can give a few criteria with support from teacher, questions etc.	Can give some criteria based on their own experiences.	Can give many different criteria, valuate them and argue about pros and cons.

Use the following matrix to reflect on what you see when visiting a Socratic seminar or a Thinking-Based Learning session.