PRACTICAL SOLFEGE AND MUSIC THEORY IN VIOLIN EDUCATION

HOW TO TEACH VIOLIN STUDENTS THE CONNECTION BETWEEN SOUND AND NOTATION?

ACTION RESEARCH IN THE YOUNG TALENT DEPARTMENT AT THE ROYAL CONSERVATOIRE IN THE HAGUE

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APPENDICES

Table of contents

▶ :Comment on the ground of the video of the lesson	ABC and interval names are not always translated into English, but their Dutch name is used:
	Note names with flats: ces, des, es, fes, ges, as, bes
	Note names with sharps: cis, dis, eis, fis, gis, ais, bis
	Interval names: secunde, terts, kwart, kwint,

What exercises can help violin students put their fingers in the right places on the fingerboard to achieve good intonation when they start to play from written music?

What exercises can help violin students?

- *design exercises*
- *for violin students*

put their fingers in the right places on the fingerboard

- *imagine the process*
- *there are no signs, keys...*
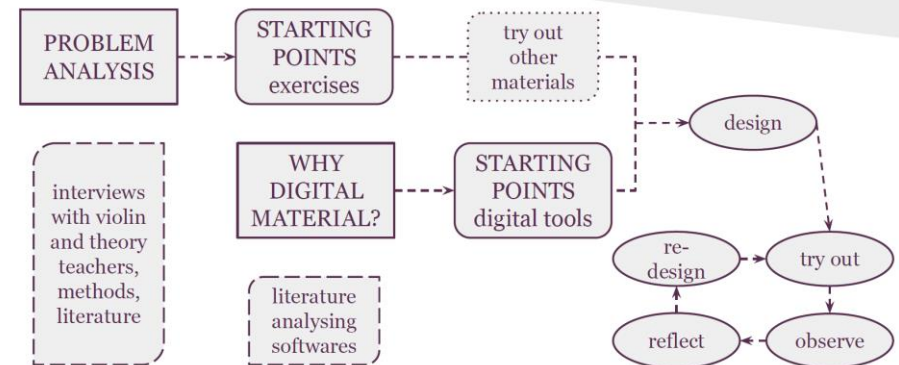- *understand the structure*

to achieve good intonation

- *hearing*
- *listening*
- *singing (mentally)*

when they start to play from written music

- *somewhere at the beginning of the study*
- *follow the instructions*
- *understand the structure*

Explanation

Problem analysis

What skills and knowledge are needed?

- sing the note mentally
- find the right muscle movement of the left hand
- knowledge of intervals, triads and scales

1. design interviews
2. conducting interviews
3. methods
4. literature

Starting points - exercises

What are the criteria for the exercises?
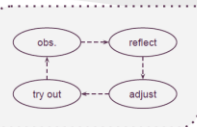What are the ways to learn intervals skills?

Why digital material?
What are the benefits of a digital form?

1. literature
2. analysing existing softwares

Starting points - digital+other tools

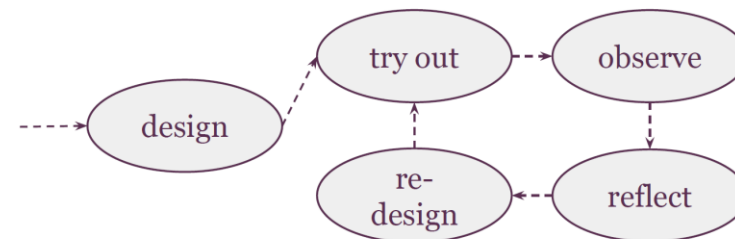try out exercises on the lessons and at home
- fill in forms
- plastic mat

obs. → reflect
try out ← adjust

What are the criteria for digital tools?

- interaction
- feedback
- motivation
- builds on exercises known from class

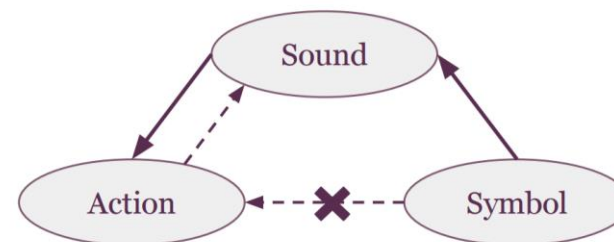## Action research of digital material

design → try out → observe → reflect → re-design → try out

How to Help Violinists Achieve 'Symbol - Sound - Action' Musical Literacy?

Integrating the efforts of violin and theory teachers within the Institute

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Model of Music Literacy Development

James Mainwaring

Sound

Action ✖ Symbol

"THINK IN SOUND!"

Can you play tunes on the violin by ear?
- continually link sound with action

Can you also translate the language of music to the violin?
- learning "violin grammar"

While we have ONE key on the piano for playing the two-lined octave 'g', on the violin we can choose among FOUR options to play this note.
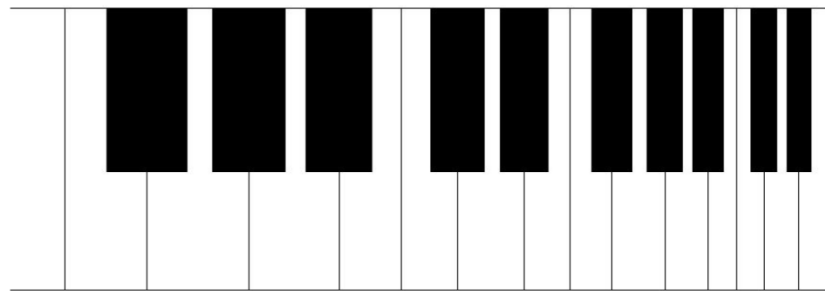
Finding the notes on the violin is not as obvious as it is on the piano.

Could you play a melody on the instrument to the right, using all four keyboards?
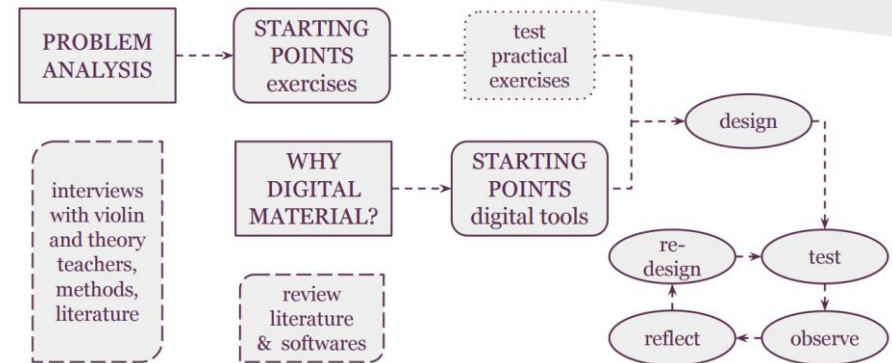
Could you find the notes if the shape and colour of the keys were all the same?

Also the distances between the notes on the violin are not equal, as you can see on the next page!
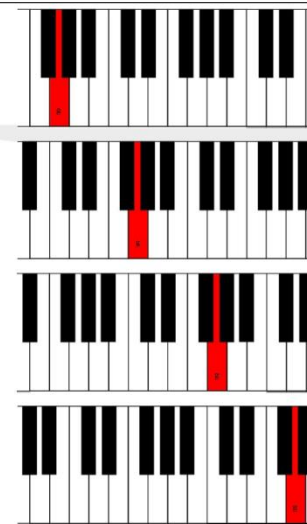
Explanation

Problem analysis

How to help students during violin and
other music lessons:
1. to continually link sound with action?
2. to introduce 'the grammar'?

1. observing theory and violin teachers teach
2. discussing their work
3. studying different methods
4. reading literature
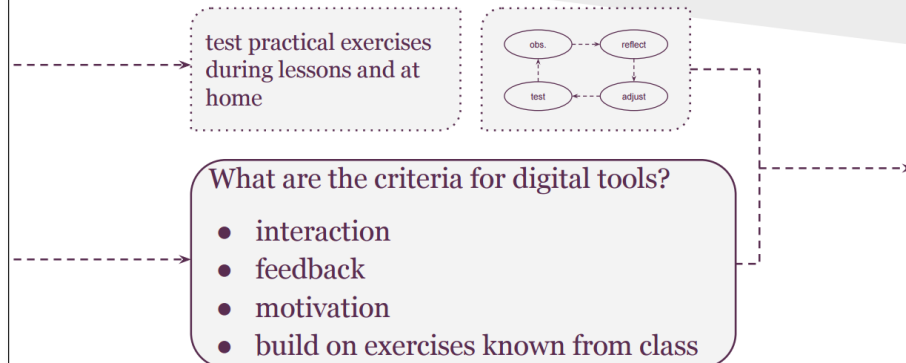
Starting points - exercises

What kind of exercises would be helpful
for the students?

Why digital material?
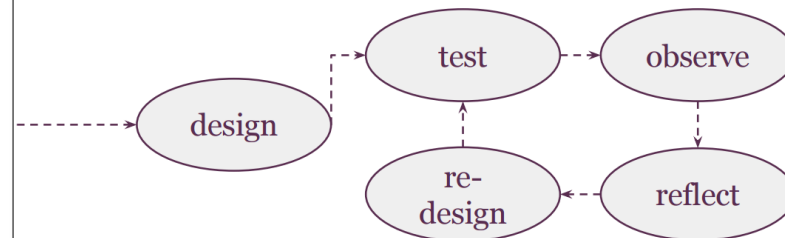What are the benefits of a digital form?

1. studying literature
2. analysing existing software

Starting points - digital+other tools

test practical exercises during lessons and at home

obs. - - - reflect
  | |
test - - - adjust

What are the criteria for digital tools?

- interaction
- feedback
- motivation
- build on exercises known from class

Action research of digital material

design → test → observe → reflect → re-design → test

IN PROGRESS:
- OBSERVING THE LESSONS OF FIVE VIOLIN AND FIVE THEORY TEACHERS

- SHARING IDEAS AMONG TEACHERS

- TESTING SOME EXERCISES IN CLASS

- STUDYING VIOLIN METHODS

- REVIEWING LITERATURE

NEXT STEPS:
- REDESIGN THE EXERCISES ACCORDING TO HOW CHILDREN AND TEACHERS RESPOND

- DISCUSS FINDINGS WITH THE TEACHERS

- ANALYSE DIFFERENT VIOLIN METHODS

- RESEARCH LITERATURE ABOUT DIGITAL TOOLS

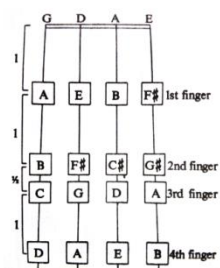How could violin students better sight read and play more securely by heart?

WHY? Violin teachers spend a lot of time in the individual lessons to explain the notes to their students.
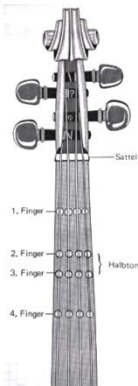
HOW?
- methods
- literature
- research
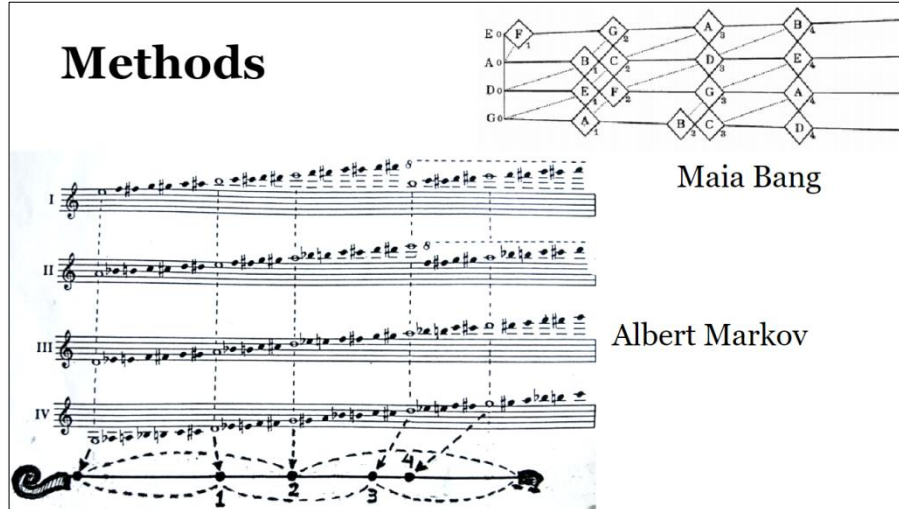
Methods

Louis Metz

Colourstrings

Egon Saßmannshaus

Methods

Maia Bang

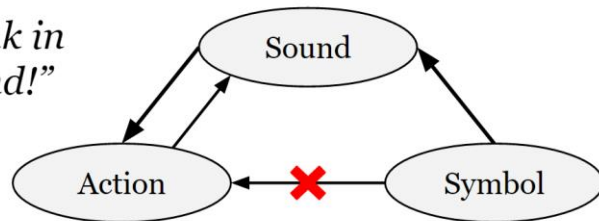Albert Markov

Literature

Model of Music Literacy Development
by James Mainwaring

"Think in sound!"

Research

How can the understanding of
pitch and **harmony**
be addressed when teaching group violin lessons in the young talent department at the KC?

Action Research

Planning

observing five violin and five solfege teachers

- 40 violin lessons
- 28 solfege lessons

Observing

- a violin or a solfege teacher was present at my lesson 9 times

- filming the lesson and discuss it with a critical friend

Teaching - first cycle

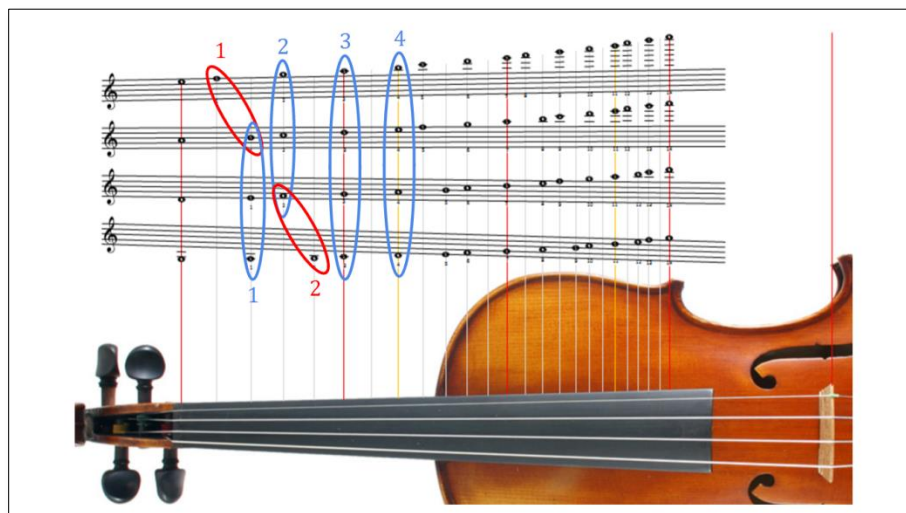|	AGE	NUMBER	DATE	TIME
JUNIOR 1	6-7	6	Wed 18 March 2015	14:00 - 14:45
			Wed 25 March 2015	14:00 - 14:45
JUNIOR 2	7-8	4	Wed 11 March 2015	15:30 - 16:15
			Wed 18 March 2015	15:30 - 16:15
JUNIOR 3	9-11	4	Wed 11 March 2015	14:45 - 15:30
			Wed 18 March 2015	14:45 - 15:30
YOUNG TALENT 1/a	11-13	5	Sat 07 Feb 2015	12:00 - 13:00
YOUNG TALENT 1/b	11-13	6		
YOUNG TALENT 2/a	13-16	6	Sat 31 Jan 2015	13:00 - 14:00
YOUNG TALENT 2/b	14-16	5	07 Feb 2015	13:00 - 14:00
YOUNG TALENT 3	17-18	9	Thu 29 Jan 2015	17:00 - 17:35

My Focus Points - first cycle

1. small intervals
2. the whole fingerboard
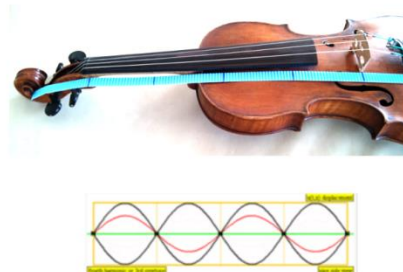
Reflections - five solfege teachers

1. teach always using nice melodies
2. how the two notes sound together
3. learning process of E. Gordon
4. exercise for learning ABC names
5. the sound needs to be in our mind when we sing. We don't measure the distances with our vocal chords.

ház	house
ház**unkban**	**in our** house
ház**uk**ban	in *their* house
ház**aink**nál	**at** our house**s**
ház**ai**knál	at *their* house**s**
házunknál	at our house
házuknál	at their house

há - za - ik - nál
há - zunk - nál
há - zuk - nál

My findings so far

playing from written music on the violin requires different approach to sight singing
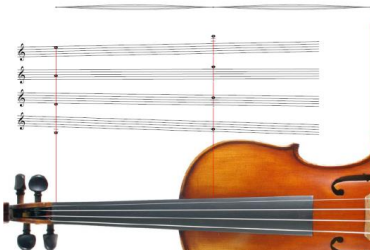
learning is a long term process where a lot of repetition is needed

Orientation cycle

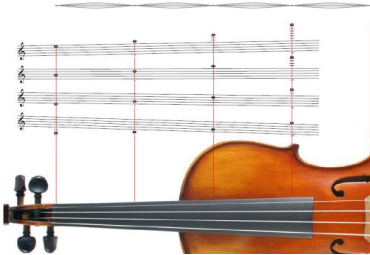### 0/1 – Older age group – Lesson transcription and observations
29-01-2015 Thursday 17:00-17:35 (16-17years) Room 402

T=Teacher (researcher), S=Students, TS=Teacher and Students together		R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher 'sound-action-name-symbol' playing the violin mistakes
ONE		COMMENTS
T	"What is this diagram about?"	→	R: "My interest was to understand how they explain the diagram at first sight."
S	"There are 4 staves for each of the strings. The red lines show the two ends of the strings."	→	R: "They seemed to understand the structure quickly."
T	"The upper horizontal line shows the vibration of the string. Tune your violin and look at how the string vibrates."		
TWO		
T	"Play what I am playing." G-string g-g' (with the harmonic)	→	R: "They play the violin by ear."
S	playing: G-string g-g'		
T	playing: A-string a"-a' E-string e"-e'" G-string g'-g D-string d"-d'	→	R: sound (violin) →action (playing) → symbol (imagining, reading)
S	playing: A-string a"-a' E-string e"-e'" G-string g'-g D-string d"-d'		
T	"What were the notes?"	→	R: "They name the notes."

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S	"g, d, a, e"		
T	"What was the highest?"		
S	e'''		
T	"How many ledger lines does it have?"		
S	"4, 5, 3"	→	R: "They visualize the images of a note."
	THREE		
T	Look at the notes we've played. Play them all in order from the lowest to the highest. Stay in the first position except when you play the e'''.	→	V: "I don't understand the exercise. What was this about?" R: "I explain the notes later. I wanted them to play 'normal' notes and not harmonics."
S	??		
T	Teacher is showing on the diagram where each note is - from the lowest to the highest note: g d' g'a' d" e" a" e''' , then from the highest to the lowest note. Play the notes on the violin.	→	R: sound (violin) → action (playing) → symbol (imagining, reading)
S	Playing in first position.		
T	"Play the same notes up and down, but using the harmonics. Please think of the images of the notes in your mind."		
	FOUR		
T	"Play what I am playing!" g-g" ,d'-d''', a'-a''', e'-e''''	→	R: "This natural harmonics at the 3/4 point of the string sounds the same as the natural harmonics at the 1/4 point of the string. They
S	playing: g-g", d'-d''', a'-a''', e'-e''''		
T	"What were the notes?"		

|				
S	"g, d, a, e"			could figure out that I want them to play the one which is at the 3/4 point of the string because they saw the position of my left hand."
T	"What was the highest?"			
S	e""	→		R: sound (violin) → action (playing) → symbol (reading)
T	"How many ledger lines does it have?"			
S	no idea			
T	6			
	FIVE			
TS	Shifting exercise from harmonic to harmonic with 3rd finger on all strings. From the 1/2 way point of the string to the 3/4 point of the string. Example: G-string g'-g", g"-g	→ →		R: "These harmonics are can be used as reference points similarly to the open string." R: sound (violin) → action (playing) → symbol (reading)
T	"Now try to find the harmonic 1/4 of the way up the string. It should sound the same as the harmonic at the 3/4 point."			
S	Not clear for everyone.			
T	"The 1/4 point is at the same place that you would put your 3rd finger in first position. Example: G-string 3rd finger playing c' then playing the harmonic which is g"." They play the same shifting exercise as above (using harmonics) but now from the 1/2 way point of the string to 1/4 of the way up the string. "It is strange because your finger goes down and the pitch becomes one octave higher."	→		R: "Exploring the fingerboard."

S	They play shifting exercise.		
T	"Which harmonic did you hear in between?"		
S	"The harmonic 1/3 of the way up the string."		
T	"What is the interval from the open string to the harmonics you can hear?		
S	Perfect fifth."		
T	"Name them!		
S	G-string - d, D-string - a, A-string - e, E-string? ... b"		
T	"How many ledger lines does the b''' have?"		
S	?		
T	5		
	SIX		
T	"Repeat the melody which I am playing!"	→ →	R: "They need to play by ear; I did not ask them to sing before." R: sound (violin) → action (playing) → symbol (reading)
S	They repeated the melody. Some of them were not familiar with the idea of a 3 bar (rather than a 4 bar) phrase in 4/4 time, and wanted to continue playing.	→	R: "I didn't expect that phrasing would be a problem. I was afraid that it distracts students and they cannot concentrate on the pitch of the notes which was the aim of the lesson."
T	"Play the same on the G-string. Which position you are in?"		
S	"4th"		
T	"Now we will play one octave higher on the A, D and the G strings. Follow the note images on the diagram and mind the notes which can also be played with natural		

	harmonics. In which positions are we playing?"			
S	"3rd , 7th , 11th"			
T	"We will now play two octaves higher on the E and the A strings. In which positions are we playing?"			
S	"6th , 10th"			
T	"Now three octaves higher on the E string! In which position are we playing?"			
S	"13th"			
	SEVEN			
T	"Memorize the positions! 1/4 string 3rd pos. 1/3 string 4th pos. 1/2 7th pos. 2/3 11th pos. 3/4 14th pos. It is interesting that, for example on the D string, the distance between g'-a' (major second)is physically the same as the distance between a"-d''' (perfect fourth)."			
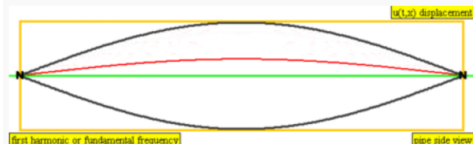
0/1 – Older age group – Path analysis

29-01-2015 Thursday 17:00-17:35 (16-17years) Room 402
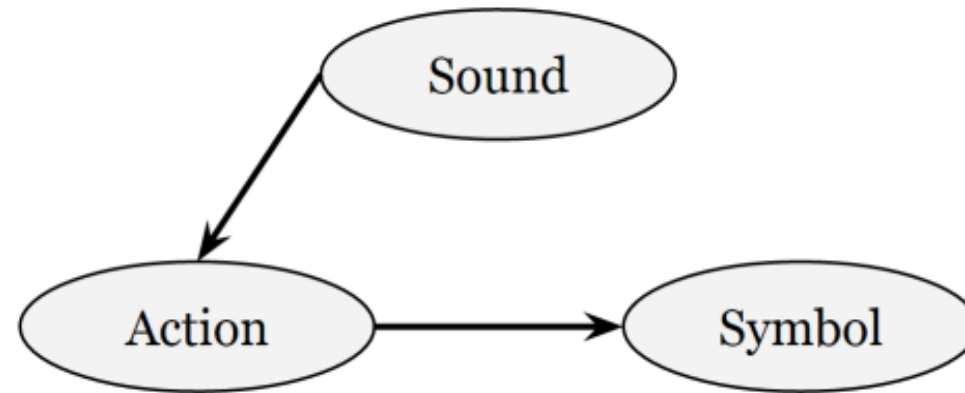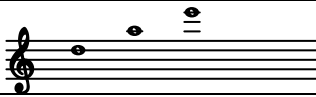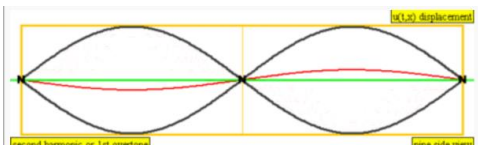
0/2 – Younger age group – Lesson transcription and observations

07-02-2015 Saturday 12:00-13:00 (11-13 Years) Room 508
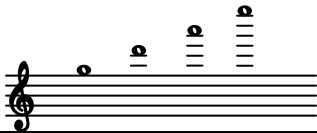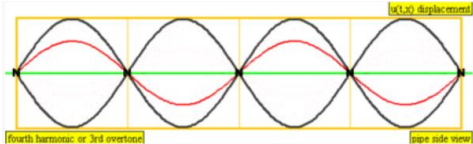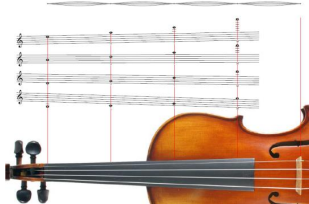
T=Teacher (researcher), S=Students, TS=Teacher and Students together			R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher
			'sound-action-name-symbol' playing the violin mistakes
	ONE		
T	"Please sit on the floor in a circle. Please observe how the G-string vibrates when I play with a bow." (The violin is on the floor in front of them.) "Here you can see an illustration of a wave:" http://en.wikipedia.org/wiki/Harmonic (The red line is moving up and down.) **Wave Representation** |u(1,x) displacement| first harmonic or fundamental frequency pipe side view "Touch the body of the violin! Do you feel the resonation?"	→	R: sound (violin) → action (touching)
S	"Yes."		
T	"What are the end-points of a violin string?"		
S	"The bridge and the nut."		
T	"I will measure the string with a paper strip." The paper strip is lying near the G string and the teacher is marking it with a marker at the bridge and at the nut, folding the paper into half and marking it		

	again. "I will put back the paper strip near the G string. Do you know why this is an important point?"	
S	"This is the middle of the string…"	
T	"Why is this a 'magic' point? If I touch the string here I can play a natural harmonic, listen! What is this note? How do we write it?"	
S	"This is a g' and it is on the second line."	
T	"And what would be the notes if I would play in the same position on the other strings?"	
S	d" a" e'''	→ R: "Here I used the stave instead of letter names for representing the notes. I supposed that it made reading the transcription easier."
T	"Observe how the string vibrates everywhere but the middle." "If I stop the string with my finger at the middle we will hear the same pitch but just one half will vibrate, the other half will be stable."	
	TWO	
T	"Now I will fold the paper into four, and mark the quarter-points of the strip, then I will play the new flageolets (harmonics). What are the new notes at the quarter point of the G, D, A, E-strings? How do we write them?"	

S	g'' d'' a''' e'''' 	→	V: "It is easier to understand the transcription I can see the notation and not just letter names."
T	"Count the ledger lines!"		
S	"The a''' has 4 ledger lines, the e'''' has 6 ledger lines!"		
T	"Observe the string!" 		
	THREE		
T	"Work in pairs! One will choose a paper strip and the other will help to mark the strip. You need to mark the end-points, the half and the quarter points. Check if you really can hear the natural harmonics at the marked points." "Now take turns!" "Is everyone ready?"		
T	"Put your paper strip into the case and let's try to find the natural harmonics by ear! In the meantime look at the diagram and memorize the images of the notes!" "Try with the first finger. In which position are you at the half way point of the string?"	→	R: sound (inward) → action (playing) → symbol (read)

S	"… 7th"		
T	"Right. The interval is an octave, so it is the 7th position."		
T	"We will do shifting exercises, with the 3rd finger. • move from the ¼ to the ½ point. • move from the ½ to the ¾ point."		
S	1/4 is hard to find for some		
T	"The 1/4 point is at the same place that you would put your 3rd finger in first position."		
	FOUR		
T	"Play the 'es' note with the 1st finger on the D-string. Play two bars from 'Vader Jacob'. Which notes did you play? Sing with ABC names!"	→	R: sound (inward) → action (playing + singing)
S	"es – f – g – es – es – f – g – es"	→	V: "Here I should have written the notes with notation instead of letter names."
T	"Instead of the 3rd finger 'g' play it on the G-string with the flageolet!"		
T	"Start with 'bes', 1st finger A-string. What are the notes?"		
S	"bes – c – d – bes…"		
T	"Play the 'd' on the D-string with flageolet!"		
T	"Starting with E-string f --------------------- Do the same exercise!"		
T	"Start with f, but on the D-string. What are the note names?"		
S	"f – g – a – f…"		

T	"Play the 'g' on the G-string and the 'a' afterwards with the 4th finger on the D-string!"		
T	"--------------------- Do the same exercise using A-string 'c' and E-string 'g'!"		
S	It is challenging to find where the 4th finger should be placed in 1st position after the flageolet.		
	FIVE		
T	We are sitting in a circle. "I will play a note in first position. Please _____ (the first student on my left) play it back, name it!"		
S	"It is an 'a' 1st finger, G-string."		
T	"Play the note that is a major-second higher than this and name it!"		
S	"It is a 'b' 2nd finger G-string."		
T	"Now you play a note for the person who is on your left and repeat the whole exercise."		
T	"In the next round they need to play the note a minor-second above."		
	SIX		
T	"Put your bow into your case; keep your violin in your hand!" (The teacher is putting three chairs next to each other.) "Please everyone stand in a line (or they can sit on chairs or on the ground) facing the chairs." "_____ please sit on the chair on the left? Please play a note 'c' by plucking the string!"	→	R: action (pizz.) → sound (violin)
S	playing pizzicato: 'c'		

T	"Right, you are the note 'C' then." "_____ please be note 'd'. Where do you need to sit? Next to 'C' or do you need to leave one note place out? Is there a note between the note 'c' and the note 'd'?"	→	V: "I don't get it, what did they do exactly?" R: "I wanted to check their knowledge about minor and major seconds. And also wanted them to remember after the lesson that e-f and b-c are minor seconds."
S	"Yes there is one note."		
T	"Right, then sit on the right chair, and pluck the 'd'. What is the interval between the two notes?"	→	R: "If I want to make my description more understandable I should add two pictures to this exercise. One for major, and one for minor seconds."
S	"Major second."		
T	"And now 'C' wants to invite 'D' to sit next to 'him/her'. Please 'D' sit on the chair which is next to 'C'! But you are not 'D' anymore. What is your name then?"		major second
S	'DES'		
T	"Please 'C' and 'DES' pluck your notes. What is the interval between the two notes?"		
S	"minor second"		
T	"I would like to ask you 'DES' to be 'D' again and go back to your original chair. What happen if 'D' would like to invite 'C' next to 'him/her'? Please 'C' sit on the chair which is next to 'D'! But you are not 'C' anymore. What is your name then?"	→	R: "I needed to give lots of verbal explanations during this exercise. It was not fluent because sometimes it was not clear for them what they have to do."
S	'CIS'		
T	"Please 'CIS' and 'D' plug your notes. What is the interval between the two notes?"		minor second
S	"minor second"		

T	"Thank you 'C', please go back to the end of the line! Please 'D' sit on the chair to the left. Please _____(the next person in the line) be the 'E'! Where do you need to sit? Next to 'D' or do you need to leave a space for another note? Is there a note between the note 'c' and the note 'd'?"
S	"I need to sit on the chair to the right, not on the middle chair as there is another note between 'c' and 'd'."
T	--------------------- Do the same exercise! When they get to 'e'-'f' or 'b'-'c', the teacher is putting in one extra chair and they will sit next to each other and they will continue in a similar way: 'es'-'f' and 'e'-'fis' or 'bes'-'c' and 'b'-'cis'.
	SEVEN
T	"Get your bow! I will split you into two groups. Group one will play only major seconds and then group two will play only minor seconds. Sing the notes 'c'-'d' with me! What is the interval between the two notes?"
S	"major second"
T	"Please group one play it! Sing the notes 'd'-'e' with me! What is the interval between the two notes?"
S	"major second"
T	"Please group one play it! Sing the notes 'e'-'f' with me! What is the interval between the two notes?"
S	"minor second"

→ R: "The majority of students knew the intervals; they could refresh their knowledge and enjoy this exercise as a game. But there was one student who didn't have a clue about it. He told me, that he doesn't understand the intervals."

V: "That particular student didn't follow PI lessons and came to the institute later. Therefore she needed to join to a solfege group where the others already had some knowledge. There is no time on the violin lesson to explain everything

T	"Please group two play it!" Continue with the rest of C major scale looking at what are the major and minor 2nds. ('f'-'g', 'g'-'a', 'a'-'b', 'b'-'c').
T	"What are the minor seconds in a C-major scale then?"
S	'e'-'f' and 'b'-'c'
T	"Please play these two intervals in the first position one by one."

because we need to deal with the techniques."

0/2 – Younger age group – Path analysis

07-02-2015 Saturday 12:00-13:00 (11-13 Years) Room 508
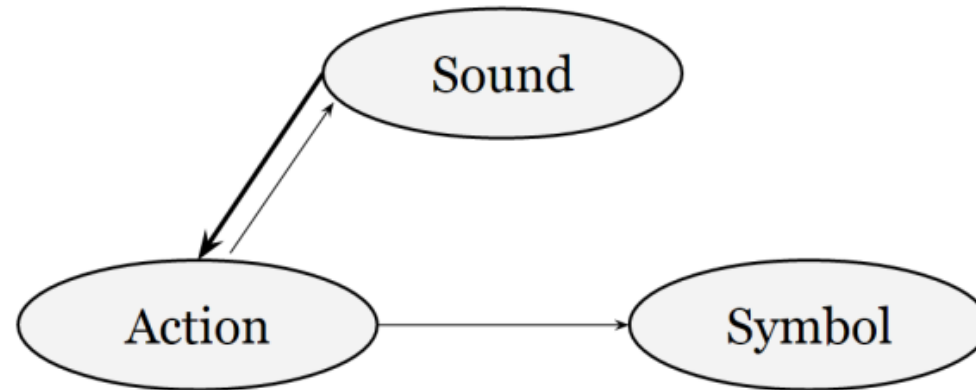
0/3 – Junior group – Lesson description and observation

18-03-2015 Wednesday 15:30-16:15 (6-8 Years) Room S202

		R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher 'sound-action-name-symbol' playing the violin mistakes
ONE: I sang 'do-re' then 're-mi'…. to them and asked them to sing the notes back. We found out the intervals between the neighbouring notes step by step. We put LEGO bricks in a row according to the distances. Red bricks mean major seconds, figures mean minor seconds. We also counted them. There are 5 major and 2 minor seconds in a major scale.		R: "Here I used a lesson description instead of a transcription. I found transcriptions more useful because that is more detailed. Therefore I transcribed all the other lessons and I used them during the discussion of teachers."
I asked them to build something similar at home. They may use other bricks than these but they need to keep the distances between the bricks like: major-major-minor-major-major-major-minor. 	→	R: sound (teacher's voice) → action (singing)
TWO: I played the following notes, they built the interval patterns from LEGO bricks: 	→	R: sound (violin) → action (singing)

THREE: We sang these notes according to the interval patterns. Then I asked the pupils to play the notes string by string copying the appropriate interval pattern.	→ R: sound (inward) → action (playing)
FOUR: Then we used four note patterns: I played four-note patterns from a major scale. I asked the students to repeat the notes. Then we sang with sol-fa names at first and with ABC names after. I asked them to fill in a worksheet at home, where they always needed to write four ascending notes according to	→ R: sound (violin) → action (playing + singing) → symbol (writing)

the pattern on the top of the page.

d r m f

and also: so-la-ti-do

r m f s

and also: la-ti-do-re

m f s l
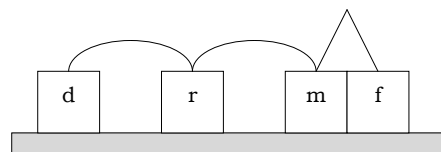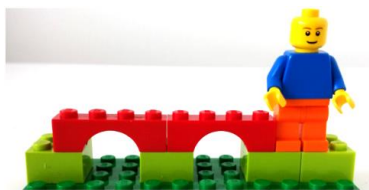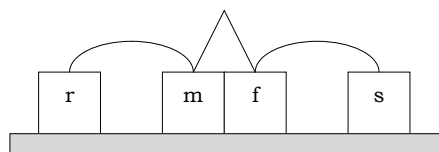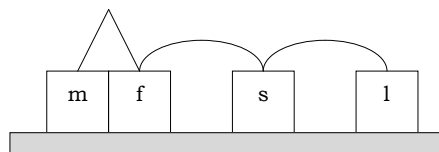
and also: ti-do-re-mi

f s l t
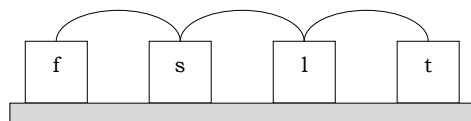
FIVE: I asked them to fill in a worksheet, where they always needed to write four ascending notes according to the pattern on the top of the page. They needed to use sharps and flats if it was necessary, to get the right distance from the previous note.

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0/3 – Junior group – Path analysis

18-03-2015 Wednesday 15:30-16:15 (6-8 Years) Room S202
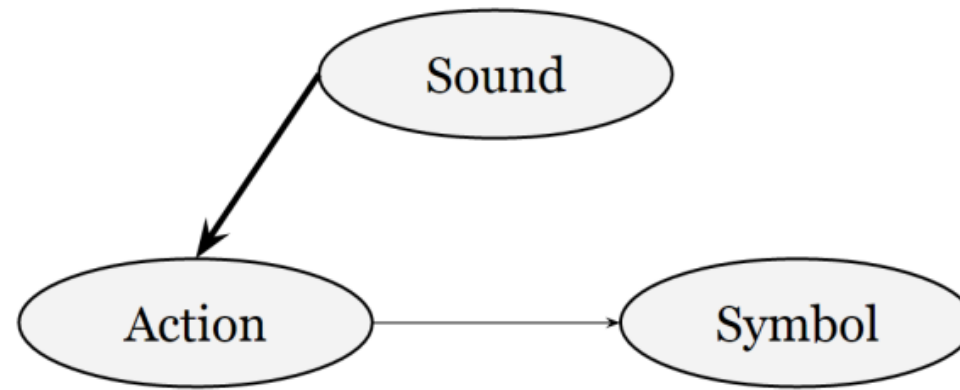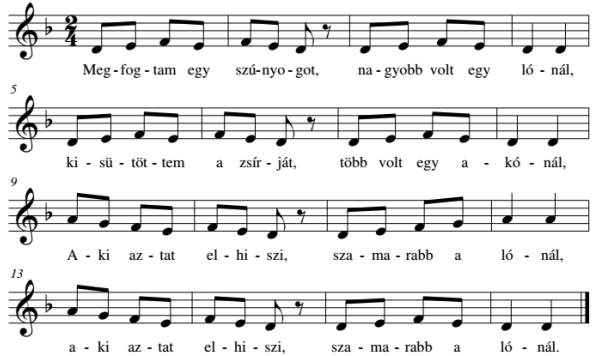
First cycle

1/1 – Lesson transcription and observation

27-06-2015 Saturday 14:10-15:00 (11-12years) Room 307

T=Teacher, S=Students, TS=Teacher and Students together, S1=Student1, S2=Student2...

ONE – 3 minutes

T	"I sing a Hungarian folk song; you will need to sing it back. Now we train to learn a song by just hearing it once. You need to be very careful and listen." MOSQUITO DANCE - Béla Bartók: 44 Duos for 2 Violins No.22 *[musical notation with lyrics: Meg-fog-tam egy szú-nyo-got, na-gyobb volt egy ló-nál, ki-sü-töt-tem a zsír-ját, több volt egy a-kó-nál, A-ki az-tat el-hi-szi, sza-ma-rabb a ló-nál, a-ki az-tat el-hi-szi, sza-ma-rabb a ló-nál.]* "Do you remember what the first note was?"
S	They sing it back correctly.
T	"Do you remember what the first line was?"
S	Singing (na-na-na) *[musical notation]*

R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher   'sound-action-name-symbol' playing the violin mistakes

COMMENTS

R: sound (singing) → action (singing)

S&T: "Perhaps you could even do a little preparation exercise about the rhythm before you start singing. So you could start the lesson by asking them to walk the pulse. And you are clapping the rhythm, while they give the pulse. Because it helps them to focus. Because if they have the rhythm already, they don't need to care about it anymore.

What you can also do, if you have more time is to start also with the pentachord already. So you can put there the system already using another melody with the same notes. You could write la-ti-do-re-mi into the blackboard and you ask them to sing the notes you show to them. Or you show the notes which they need to sing silently but one in a sudden you ask them to sing it out loud. It is a very good preparation exercise. When just depending on the level of the students you introduce already melodic motifs of this melody, or not. I mean it depends on how good they are. If they

T	Help with singing together with the students to continue (la-la-la): *[musical notation]* "Perfect! It comes two times in the song. Let's sing together!"
TS	*[musical notation, 2/4]* *[musical notation]* (na-na-na)
T	„Do you remember what the next note was"?
S	Singing an 'f', but then correct to an 'a'
TS	Singing together (na-na-na) *[musical notation]*
T	„Sing just the second part again! What was the starting note?"
S	They sing 'd' then correct to 'a'
TS	Singing together (na-na-na) *[musical notation]*
T	„What was the beginning of the song?"
S	*[musical notation, 2/4]* (na-na-na)

are good, I would not do that. Then the melody should be new. And then you say OK, now we are going to learn a melody and I will sing it just once, and you have to learn it by hearing it just once. And then they will be silent."

→ S&T: "Didn't you do this with sol-fa? But you didn't use solmisation here."

R: "No, but I already got a critique on this from the teacher who was present at the lesson. I already concluded that I will build on their knowledge of solmisation in my next teaching. When I observed theory lessons I found that teachers usually use more the solmisation then the ABC names. I had this impression. And then I thought that I will use just the ABC names. But after this lesson I found that because they have a firm knowledge on solmisation, I can use it as a tool for helping with the ABC names."

S&T: "Basically when I make this link between solmisation and tone names that is also the place where I introduce the circle of fifths. Because there you can really see which accidentals you need to use."

	They needed a little help.		
T	„What notes do we have in the first part? We have [♪ notation] (with na-na) and?"		
S	[♪ notation] (with na-na)		
T	„and?"		
S	[♪ notation] (with na-na)		
T	„and?"		
S	[♪ notation] (with na-na)		
T	„Remember, the first line was: [musical staff notation] (na-na-na) Do we have more than three notes?"	→	S&T: "This all good, I like this all. I like this too, that you don't say that they are wrong, you just ignore that they told a mistake. And you say to do it once more, and then they check it and correct themselves automatically. That is very good".
S	„No"		
T	„Just three notes. Keep in mind! And then? Count the notes!"		
TS	[musical staff notation] (na-na-na) „'a'-one, 'g'-two, 'f'-three, 'e'-four, 'f', 'e', 'd'-five"		
S	„Five notes all together."	→	R: sound (inward) → action (playing)
	TWO – 5 minutes	→	S&T: "This is a little bit weak, could you describe this better? Which kind of mistakes, and how they solved this mistake. Did they correct each other?"
T	"Who is ready to play the song on the violin? Start from 'd' and please stay on the D string!"		R: "I played with them." S&T: "Could they see your fingers then?"
TS	Playing together the whole song. Students make some mistakes but they are always able to continue.		R: "Yes, they could, but I think that they weren't

T	"Very good! Listen what I play. I will change something. You need to recognise what has changed." _[musical notation]_		watching my fingers; they played it by ear and corrected it by ear. I remember that the mistakes were more because of the structure. The third line goes up and they wanted to play a down phrase already." S&T: "It wasn't about the notes; it was about the form then. If the form is not that what you wanted to teach, than it is irrelevant. But if you want to teach the form as well, then you need to be careful here. This is for your thesis as well. I would make that clear that the form is not what you were teaching about. Because this is very important which intention you have. Ok, then I understand this."	
		→	R: sound (violin) → action (imagination of playing the violin)	
<mark>S1</mark>	He is playing on the violin. _[musical notation]_	→	S&T: "I wouldn't have done it major, because the difference between major and minor is so obvious to them. It is the most obvious change. I would have made it either a diminished (locrian) or frigian. Because this minor major they do this already for ten years. This is why they chose these very tricky things at the end of the lesson. Basically it tends to be too easy for them. The rest I really like, I think the rest is really good".	
S2	She is explaining with words, that the second note is half tone higher. And she feels that there is also something else.			
T	"Yes, that note has changed. Let's play the second versions together and listen if there has changed something else or not."			
TS	Playing together. "There were no other changes."	→	R: sound (violin) → action (playing)	
T	"Correct. Which note was different then?"			
S	"'c', oh no we are not on the A string. The 'f' has changed."	→	R: "The student had a very strong connection between the sound and the feeling in the hand namely the fingering. When she heard the mutated version of the	
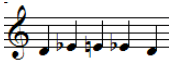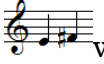
			melody she unconsciously translated the change in the sound to the change in the fingering. She knew that the note which has changed is the one that she played with the second finger. When she answered to my question she named the second finger but on the A string which is 'c'. Then she corrected to 'f' which is also the second finger but on the D string - where we played the original melody and where I played the mutated version."
	THREE – 8 minutes		
T	"Now we will build the pattern of the notes by using 'LEGO'. Imagine, that this is your D string: and these are the five notes: Please put a block to the beginning of the 'string'. This will represent the note 'd'."	→	S&T: "This is fun!" (laughing) R: "They liked this part very much!" S&T: "Is this the whole D-string?" R: "No, this is just the beginning of the string; it shows the first position only." S&T: "So the first brick is the beginning of the string, not a finger?" R: "It is not a finger, just the open string."
S			
T	Singing with na-na. "Sing with me!"	→	R: sound (voice) → action (singing) → structure (interval)
T S	They sing together with na-na.		
T	"Do you know what this interval is?"		

S	"This is a second."		
T	"Do you know if it is a major or a minor second?"		
S	"Major."		
T	"How would sound the minor second?"	→	R: structure (interval) → sound (inward) → → action (singing)
S	singing [music notation] with na-na.	→	S&T: "Well done, this is good."
T	"If it would be minor we would put the LEGO brick very next to the previous one. But this is a major second, so we need to leave one space out. Please build a major second then, with leaving out space between the two bricks!"		
S	[LEGO brick image]		
T	"This is actually the same what we do when playing the violin. When we play major second, we put our fingers a bit further and we leave one space out." Playing 'd' 'e' and showing the distance on the fingerboard. "When it is a minor second, we put our first finger next to the edge of the fingerboard." Playing [music notation] Singing [music notation] (with na-na). "What is the name of the upper note?"		
S	Singing [music notation] (with 'd'-'e')	→	R: sound (voice) → action (singing)

T	Singing 🎼 (with na-na). "Sing it with me!"	→	R: sound (voice) → action (singing) → structure (interval)
TS	singing 🎼 together (with na-na).		
T	"What is the interval between 🎼 (with na-na)? Is this a major or a minor second?"		
S	"Minor."		
T	"How would sound the major second"?	→	R: structure (interval) → sound (inward) → → action (singing)
S	Singing 🎼 with la-la.		
T	"Sing it with minor second then with major second, and repeat the whole sing several times."		
TS	Singing together 🎼 with la-la-la.		
T	"Please put on the following LEGO brick, which represents the 'f'."		
S		→	S&T: "They already can do it on the violin, the Lego comes after. Is it an instruction tool for playing or for notation?" R: "Yes, they already can do it on the violin by ear. Here I wanted to add some	S&T: "Why don't you use different colours for the notes, then the minor second would have been more obvious? In this way it is hard to see". R: "Yes, you are right; I should take this photo from a different angle. For the children it is obvious, because we build that in the lesson, they see how it is built. I wanted to avoid using
T	"When you play a minor second, you put your fingers next to each other." Plays also on the violin showing the positions of the fingers.			
T	"What is the next note? 🎼 (with la-la-la), sing this together!"			
TS	🎼 (with la-la-la)			

T	"What is the interval between 🎵 (with la-la)?"		knowledge about being conscious of the distance between the two notes."	different colours, because some of the children have the synaesthesia. I thought that is better to not differentiate the notes by their colour."
S	"minor second, oh no, major second"			S&T: "Ok, I see."R: "This is from a further lesson transcription:"
T	"Right, let's build also this note!"	→	R: sound (voice) → action (singing) → structure (interval)	
S		→	S&T: "You can see how nice is that it is symmetric."	
T	"What is the name of the fourth note?"			
TS	Singing two times with ABC-names. 🎵 ('d' 'e' 'f' 'g')	→	R: sound (inward)→ action (singing)	
T	"And then?"			
S	Sings 🎵 'a' with ABC-name.	→	R: sound (inward) → action (singing) S&T: "Still on the d- string with 4th finger?"	
T	"What is the interval between 🎵 'g' 'a'" (sings with ABC-names)			
S1	"minor second"			
T	"Well please take the violin and try this out! Play 'g' and 'a'!" 🎵 (sings with ABC-names)			
S1	Plays: 🎵 "major second"	→	R: sound (voice) → action (playing) → → structure (interval)	
T	"Right, play it with minor second!"	→	R: structure (interval) → action (playing) → sound	

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		(violin)
S1		→	R: "Once he experienced by playing, it became obvious for him that previously he was wrong. He could correct his answer immediately. I also asked him to try out the song with a minor second 'g-as'. Again everyone could recognise the difference right away."
T	„Such a difference!" „Build the last note then!"	
S		
T	„And now, please put the red bridge when there is a major second, and the little figure, when there is a minor second!"	
S		→	S&T: "If I may be honest, I found this a little bit confusing. I wouldn't use the bridges and the figure with them. The bricks are already enough. It is not contributing to the lesson." R: "Yes, I see I have used this with the younger kids, and I thought why not? But I see what you mean." S&T: "I feel that this is not contributing to the lesson. I mean it is fun, and fun is always good, but still…" R: "Ok, thank you for this comment."
	FOUR – 6 minutes	
T	"When you look at your fingers while you are playing the song, you can recognise that the positions of the fingers are quite similar to the LEGO pattern." "Let's play on the violin again, but now start from 'a'!"	
TS		→	R: sound (inward) → action (playing)
		→	S&T: "Ok, so now it is on another string." R: "Yes, this is the same fingering; it is easy on the violin." S&T: "Because, I mean it is not a critique, but I am thinking that the distances between the fingers are getting smaller and smaller when you play the same

T	"Let's play from the low 'g'!"		interval in higher positions, so the LEGO is not the best thing to illustrate this."
TS			R: "Yes, I know, this is absolutely right. Yes, this is true. But basically we use the same fingering also in the higher positions and the distances between the fingers are getting smaller equally, so the feeling in the hand is very similar considering the whole and half steps. And I also feel that for violinist it is better than showing the piano as a visual example."
		→	R: sound (inward) → action (playing)
T	"Start from 'e'!"		
S		→	S&T: "So this is basically a transposition exercise." R: "Yes, it is, and here they played with another fingering, because here they started from the first finger, and not from the open string." S&T: "And they just played, they don't call the tones." R: "No, here not, but later when it became more difficult, then we called the tones." S&T: "So you just call the tone, when you start." R: sound (inward) → action (playing)
		→	S&T: "From now they need to play on two strings,
T	"Please 'Student1' tell a note where should we start next?"	→	right?" R: "Yes, they play on two strings."
S1	'c'		
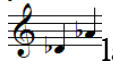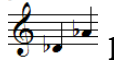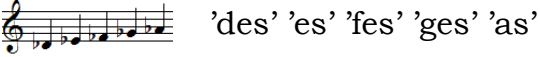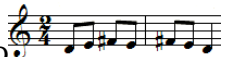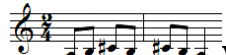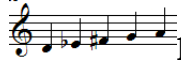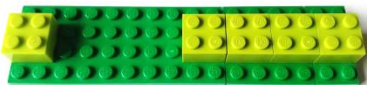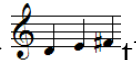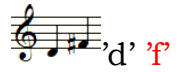
TS		→	R: sound (inward) →action (playing)
T	"Please 'Student2' tell a note where should we start next?"		
S2	'd flat'	→	S&T: "Oh,' d flat' minor, this is a good key to start."(laughing)
T	"Right, when we will reach the second part, what will be the note then? la-la"		R: "It was."
S	Playing on the violin.	→	R: sound (voice) → action (playing) → structure (interval)
T	„Do you know this interval: la-la?"		
S	„kwart? kwint!"		
T	„Yes, it is a 'kwint' and this is a very easy interval to play on the violin When it is a perfect fifth. What you need to do is just put your finger at the same place to the other string."		

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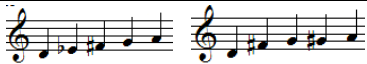
TS		→	S&T: "Well, is this the same fingering?" R: "No, because I asked them to stay in the first position. In this way it is not possible to use always the same fingering. It is easier for them to play in position and use the same fingering, but I wanted to avoid that. Here they started from the 4th finger." S&T: "Ok, I see."
T	„Do you know the name of the notes? Very difficult."	→	R: sound (violin) → action(singing) S&T: "Very difficult!"
S	Singing the notes together with ABC-names: 'des' 'es' 'fes' 'ges' 'as'	→	R: "Yes, but they knew these notes, I was absolutely amazed by that." S&T: "So they had learned it before in another way?" R: "Yes, indeed."
T	"Correct, well done!"		
	FIVE – 6 minutes		
T	"Please change the LEGO pattern to la-la-la"		
S			
T	"I will put my finger on the fingerboard and sing that note what we would hear if I would play." Teacher is singing: with ABC-names while she is putting the fingers silently on the fingerboard. „Do this with me!"	→	R: "This is also a possible way to practise the ABC names, connect the feeling in the hand with the sound and develop inner hearing at the same time. The disadvantage of this exercise is, that we cannot check whether the fingers are playing in tune or not."

	Move the fingers like playing this while sing with ABC-names.	→	R: sound(inward) → action (singing while moving the fingers)
T	„This song is used in the no. 22 duo from Bartók. Let's play both parts of the beginning of this piece!"	→	R: symbol (reading) → sound (inward) → action(playing)
		→	S&T: "This is out of the Bartok duets, yes." R: "Yes, it is. When we played I asked they to play without the slurs. With the slurs we would need to practise it more, because then it is complicated."
SIX			
T	"Please 'Student1' build a pattern from LEGO for 'Student2'"		
S1		→	S&T: "This is interesting! 'do-ra-mi-fa-so'." R: "Yes, but you can also sing like harmonic minor from the dominant 'mi-fa-si-la-ti'. And the student,
T	„Can you sing it yourself? Do you have the sound		

	of it in your head?"		who built this, was really able to sing it! I was amazed by this." S&T: "Did she sing it on sol-fa, absolute names or la-la-la? All of these exercises without playing the violin?" R: "She sang it la-la-la, and she did not play it on the violin, it was just singing."
S1	„Yes I can."		
S2	He sings: (la-la) but then stops.		
T	„Can you (Stdent1) help?"		
S1	singing la-la-la	→	R: sound (inward) → action (singing)
T	„Please (Student2) try again!		
S2	singing la-la-la	→	▶ R: "They sang the right pitches but they were searching for the note names. I could check S1's singing only on the video, S2 was copying her.
T	„Sing with ABC-names!		
S	singing 'd' 'es' 'fis' 'g' 'a'	→	At first she sang d-es-fis and named the notes d-es-cis. She felt immediately that this is not correct so she sang the notes again naming them: d-es-gis She sang again but with using the right names: d-es-fis"
T	"Please 'Student2' build a pattern from LEGO for 'Student1'"		
S2			
T	„It will be easier if you imagine that there is another (white brick) note in between the first two notes."		
S1	Sing then with la-la-la.	→	R: sound (inward) → action (singing)
T	„(Student2) can you sing it too?"		

S2	la-la-la	→	R: sound (voice) → action (singing)	
T	„Please sing with ABC-names!"			
S2	sings: 'd' 'f'	→	S&T: "So this student sang 'd – f sharp', but called as 'd – f'." R: "Yes, and this f-f sharp' is actually very difficult for some student."	R: "Here a student sang 'd-f sharp' correctly according to the pattern what he has built, but named it as 'd-f'. When I asked to play an 'f' he played an 'f sharp' on the violin. I asked again and he played 'f sharp' again. Then I wanted to help, so I asked to play 'd-e-f' because this is the way how he probably started to learned playing the note 'f'. He managed to do this, so he finally played an 'f'. Then I asked him to play according to the pattern what he has built (which was 'd-f sharp') Now he played 'd-f…' So I sang an 'f sharp'. He copied that note and played correctly and he was able also to name it correctly and said 'f sharp'."
T	„Please play an 'f' on the violin!"	→	R: aural instruction (ABC name) → action (playing): wrong note because he was led by the sound which he has sung before. He did not change the inward sound according to the given name.	
S2				
T	„Please play 'd' 'e' 'f'"	→	R: aural instruction (ABC name) → action (playing): playing the open string first and then reach the given note step by step helped to correct the inward sound."	R: "I watched back the previous part when they played in 'd flat' minor and checked that he had no problem at all to name the notes there (d flat-e flat f flat-g flat-a flat)" R: "This is interesting, that he
S2				

			had problem with naming the 'f sharp' while 'f flat' was no problem." R: "Also interesting, that when he didn't have the sound of the note just the name 'f' he was very confused."
T	„Please play this note: (la). What is the name of this?"		
S2	Sings: 'fis'		
T	„Please sing the whole pattern with ABC-names!"	→	R: sound (inward) → action (singing) → symbol (writing) → structure (interval)
S2	'd' 'fis' 'g' 'gis' 'a'		
T	„Write down these two patterns on the staves, starting from 'd'!"	→	S&T: "Was this the first writing on the stave exercise?" R: "Yes, it was. But it was not planned. I thought that once they came up with this idea, I should teach about this also by let them notate these notes."
S	Writing these down:		
T	„Do you know the interval between 'es' 'fis'?"		
S	„Not really."		
T	„Is this a 'second' or a 'third'?"		
S	„Second"		
T	„Yes, this is definitely a second, because these two notes are after each other in a scale. In a written form one is on the line, the other is on the space next to each other." „But this sounds as a minor third." „Maybe you haven't heard this before that the name of this interval is an 'augmented second'"		
S	„Augmented second"		

S&T: "Did you plan to get the augmented second on the lesson?"

R: "No, absolutely not."

S&T: "Because they came up with this, he? They wanted to trick each other. It was just a game. It could have been even crazier."

R: "Yes, but I thought once they came up with this, we need to discuss it."

S&T: "Ok, so actually - I don't know - but did you hope that they had something like la-ta-do-re-mi?

R: "Yes, I hoped that they would build major and minor seconds. The beginning five notes of any mode. I was not prepared for that."

S&T: "But you see they actually came up with the craziest idea, and you just wanted to do it. I mean in a lesson it can happen, I think it is really good, I like that. You could indeed after this; you could use this concept to modulate the original melody. I mean you already did a modulation from major into minor, but you could then use their scales, and let them play the melody with that scale."

R: "Oh, yes! I like that idea! Thank you!"

S&T: "Or you can avoid this super augmented scale by saying to them; you may change one of the notes. Because then you can get just one augmented second and not more."

R: "Oh, yes! Very good, thank you!"

S&T: "Basically you train two things in this lesson. You train both the mutation (minor – major) but you also train the transposition. And these are two different things. So you could think of yourself either to do only one of those two jobs, transposition or mutation, or you find an easy way to combine them. Basically the last one you did but then I would have stressed the idea of giving tone names a more important part of the lesson. Because in transposition that is actually what they are learning."

S&T: "But I really like your lesson, because it is also a very spontaneous lesson. The students took the initiative too and then they learn the best. So if you get critiques on this let's say that, I mean there are some teachers who want to keep the grasp on learning, but here you lost it, you let them do it. I think it is clear quality, it is something very good."

Comment from a solfege teacher who was present at the lesson:
"Maybe you can also check their knowledge of whole and half steps with the LEGO in connection with the

Comment from a solfege teacher who watched the video of the lesson. Tone quality Preparation, rhythmical, melodic Lego don't show the fingering, just the distances
R: "There was an example when a student gave elaborative help to the other. I asked them to challenge each other by building interval patterns from Lego bricks and the peer student needed to sing the notes according to the pattern. They have built extremely difficult patterns. We have been working with five notes during the lesson and the intervals were three major seconds and one minor second between the notes. At the end of the lesson one student built this pattern 'd-es-fis-g-a' so that minor second, diminished second and two major seconds. The other student built d-fis-g-gis-a' so that major third and three minor seconds. Of course it was difficult to sing the notes but they could give help to each other by singing the right pitches. I felt that they would remember to this very well even after the lesson."

1/1 – Path analysis

27-06-2015 Saturday 14:10-15:00 (11-12years) Room 307

1/2 – Lesson transcription and observation

07-11-2015 Saturday 11:00-11:40 (11-12years) Room M306
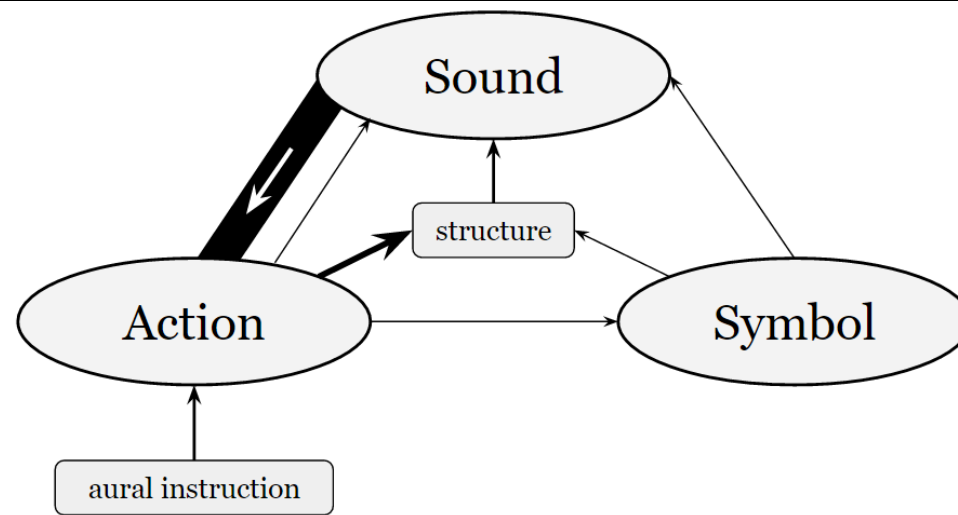
T=Teacher, S=Students, TS=Teacher and Students together, S1=Student1, S2=Student2…			R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher 'sound-action-name-symbol' playing the violin mistakes
ONE – 3 minutes			
T	Starts an ostinato: 🎵 where 🎵 means: hitting on the desk with both palms, and 🎵 means clapping.	→	R: "This is a preparation exercise
TS	Doing continuously 🎵 while singing the following lines.		
T	Singing 🎵 with na-na.	→	R: sound (teacher's voice) → action (singing)
TS	Singing 🎵 together with na-na.	→	R: "Here I used notation in the transcription but I didn't write the syllables under the notes. I think it would be easier to get a quick overview about what happened in the lesson if the syllables were under the notes."
T	Singing 🎵 with na-na.		
TS	Singing 🎵 together with na-na.		
T	Singing 🎵 with na-na.		
TS	Singing 🎵 together with na-na.		
T	Singing 🎵 with na-na		
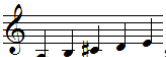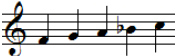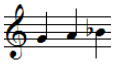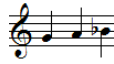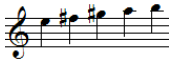
TS	Singing ♪ *(musical notation)* together with na-na.		
T	One more time repeats the song in the same way. Stops the ostinato. "Do you know how many notes are there in this song?"		
S	"four" , "five"		
T	"Ok, let's find this out! What is the sol-fa name of the first note?" Singing this again: *(musical notation)* *(musical notation)*		
S	Singing: *(musical notation)* with 'do' 'mi' 'so'.	→	R: "Here it would be also better if in the transcription the sol-fa names were under the notes."
T	"Sing the song with sol-fa names!" Starting the ostinato again.		
TS	Singing with sol-fa *(musical notation)*		
T	Stops the ostinato. "The first note is 'do'" "What are the other notes there?"		
TS	Sing and count on the fingers *(musical notation)* together 'do-re-mi-fa-so' "Five notes"	→	R: sound (inward) → action (singing) → structure (count the notes)

T	"So we have five notes in this song."		
	TWO – 6,5 minutes		
T	"We will look at the distances between the notes. This is interesting, because they are not the same." Each of them gets five LEGO bricks and a panel. "Let's sing and then build do-re! What is the distance, whole or half?"	→	R: sound (inward) → action (singing) → structure (interval)
S	Sing do-re. "Whole"		
T	"Let's sing and then build re-mi! What is the distance, whole or half?"	→	R: sound (inward) → action (singing) → structure (interval)
S	"Half."		
T	"Take the violin! Play the firs finger on the D string. Play do-re-mi from this pitch." singing: (do – re – mi)	→	R: sound (teacher's voice) → action (playing) → structure (interval)
S	Playing: "Re-mi is a whole step."		
T	"And now sing with me!" do-re-mi-fa What is the distance between mi-fa?"	→	R: sound (inward) → action (singing, playing) → structure (interval)
S	They also try out on the violin and say: "half"	→	R: "They can decide if it is a whole or half step by playing it and by feeling the distance in their hand."
T	"Sing with me! do-re-mi-fa-so What is the distance between fa-so?"	→	R: sound (teacher's voice) → action (playing) → structure (interval)
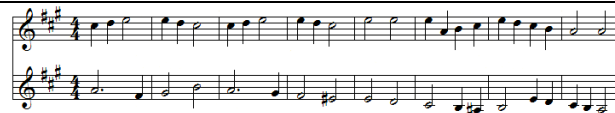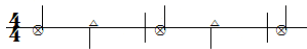
S "Whole"		
T	"Play these notes from the first finger on the G string 'a'!"	→	R: aural instruction + structure (note name + tonal pattern) → action (playing, singing)
S	They play: ♪♪♪♪♪	
T	"What are the ABC-names?"	
S	They play: ♪♪♪♪♪ and sing at the same time 'a-b-cis-d-e'.	→	R: "They played with the bow and sang at the same time. I need to be careful with this exercise because violin can be much louder than the singing. Here with four students it was all right, I could hear their singing too. Otherwise I would ask them to play softer or to play with pizzicato."
T	"Start from the third finger on the G string 'c'!"	
S	They play: ♪♪♪♪♪ and sing at the same time 'c-d-e-f-g'.	
In this exercise, from now on the teacher always points out a child who needs to sing the notes with ABC-names and play them on the violin. After that the whole group repeats the singing and playing.		→	R: aural instruction + structure (note name + tonal pattern) → action (playing, singing)
T	"Start from the second finger on the D string 'f'!"	→	R: aural instruction + structure (note name + tonal pattern) → action (playing, singing)
S1	playing: ♪♪♪♪♪ singing: 'f-g-a-bes-c'.	
T	"Start from the second finger on the G string 'bes'!"	
S2	playing: ♪♪♪ singing: 'bes-cis'	→	R: "This mistake was from a student, who came to the institute not long ago.."
T	playing: ♪♪♪ singing: 'b-c' "Whole or half?"	
S	"half"	
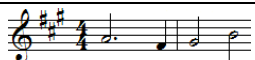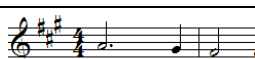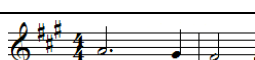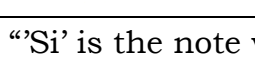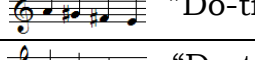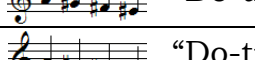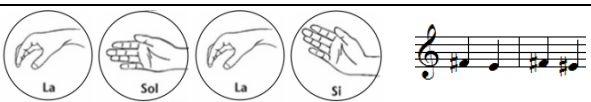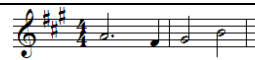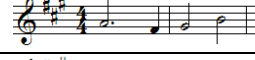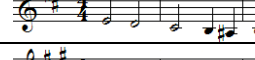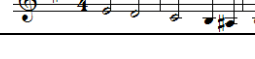
T	"If we change 'b' to 'bes' it becomes half tone lower, so the distance changes also to whole note."		
S2	playing: singing: 'bes-c-d-es-f'.	→	R: aural instruction + structure (note name + tonal pattern) → action (playing, singing)
T	"Start from the third finger on the D string 'g'!"	→	R: aural instruction + structure (note name + tonal pattern) → action (playing) not correct R: "They did not have the right sound image in their minds." R: sound (inward) → action (singing) correct R: "Singing with sol-fa reminded them the inward sound image and they sang the correct note."	R: "It was a tricky question because if they stay in the previous tonal concept (b flat major) they automatically sing a scale from the VII scale degree (g) as a minor scale. But I asked them to sing the same major pattern from g. This shows that their tonal concept is firm, but they also need to be able to change to an other tonality."
S3	playing: singing: 'g-a-bes'.
T	Stops him. "Please everyone sing with do-re-mi, from this pitch!"
S	They sing: 'do-re-mi' as they sing it they immediately correct the pitch of 'mi':
S3	playing: singing: 'g-a-b-c-d'.
T	"Start from the open E string!"	→	R: aural instruction + structure (note name + tonal pattern) → action (playing, singing)
S4	playing: singing: 'e-fis-gis-a-b'.
THREE – 9 minutes			
T	"Listen to what I am playing!" "Play the melody with me!"	→	R: sound (violin) → action (playing)
TS			

T	"We have played two times the same. And what is next? Listen:"	
TS	They play two times.	
T	"Play the whole song with me!"	
TS	Playing two times on the violin.	
T	"Can you sing this with sol-fa names?"	
S1	Sings with sol-fa names.	
T	"Can you sing also?" Every student sings with sol-fa one by one. "This is the beginning of the No.1 duo from Bartók. Let's play the first line together. I will play the lower part and you will play the upper part by heart."	→ R: sound (inward) → action (singing)
TS		→ R: sound (inward) → action (playing) → structure (tonality)
T	"In which key did we play?"	
S	"E-major"	
T	"Right, because 'e' was the 'do'" "Let's play in A-major! Which will be the starting note?"	→ R: structure (tonality) → action (playing)
S	They play:	
T	"What is the name of this note?"	

S	They say 'c' then they correct to 'cis'.	→	R: "They need to consider if it is a c or c sharp. It is no obvious yet."	
TS				
T	"Please start on 'fis' from the E-string!"	→	R: aural instruction + structure (note name + tonal pattern) → action (playing) not correct	R: "Again they stay in the previous tonality. This leads them more than keeping the same distances between the notes as it was in the original melody. They tend to transpose diatonically and not chromatically."
S	They try out:			
T	"Please sing the melody first with sol-fa names, starting from:		R: "They did not have the right sound image in their minds."	
S	They sing with sol-fa:	→	R: sound (inward) → action (singing) correct	
T	"In which key are we now?"		R: "Singing with sol-fa reminded them the inward sound image and they sang the correct note."	
S	"D-major"			
TS				
T	"Please play the beginning of the sixth bar. What is this interval?" playing:	→	R: sound (violin) → action (play) → structure (interval)	
S	playing: "Perfect fifth."			
T	"Yes, we play it with the same finger on the next string."			
	FOUR – 10 minutes			
T	"Let's learn the lower part!" Starts ostinato:	→	R: sound (voice) → action (singing)	

	Sings with sol-fa:		
S	"Do-la-ti-ré"		
T	"Do-ti-la-si"		
S	"Do-ti-la-si" "What is 'si'?"	→	R: "A student explained this quickly to the one who didn't know before I could say a word."
S1	"'Si' is the note which is half tone higher than 'so'."		
T	"Do-ti-la-so"		
TS	"Do-ti-la-so"		
T	"Do-ti-la-si"		
TS	"Do-ti-la-si"		
T	Shows hand signs and sing together with the students. La-so-la-si...	→	R: "I decided to present the hand signs in my transcription. Here inserted the pictures before the notation and in a way that they are in the same vertical position."
TS			
S1	A Student takes the role of the teacher and shows the hand signs. Everyone is singing according to the hand signs.		
T	Sing with sol-fa.	→	R: sound (voice) → action (singing)
S	Sing with sol-fa.		
T	Sing with sol-fa.		
S	Sing with sol-fa.		

T	Shows the notes on the vertical LEGO model.		
		→	R: "Because of practical reasons I inserted this picture in a landscape style, but during the lesson I held that vertically."
TS	re'-do'-ti-la-so-fa-mi-re-do	→	R: structure (distances are seen in the Lego model) → sound (inward) → action (singing)
TS	do-re-mi-fa-so-la-ti-do'-re'		
TS	re'-do'-ti-la-si-so-fa-mi-re-di-do		
TS	do-di-re-mi-fa-so-si-la-ti-do'-re'		
TS	re'-do'-ti-la-si-so-fa-mi-re-di-do		
TS	re'-do'-ti-la-so		
TS	la-si-la-so-la-si-la-so		
TS	so-fa-mi-re-di-re-do-re-di-re-do		
T	"Play the original piece in two voices!"		
S		→	R: sound (inward) → action (playing)
		→	R: symbol (reading) → action (playing)

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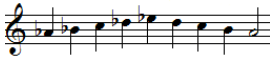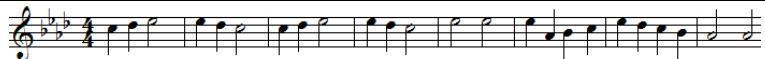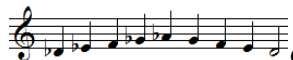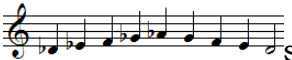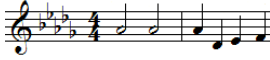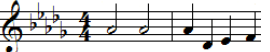
07-11-2015 Saturday 11:00-11:40 (11-12years) Room M306
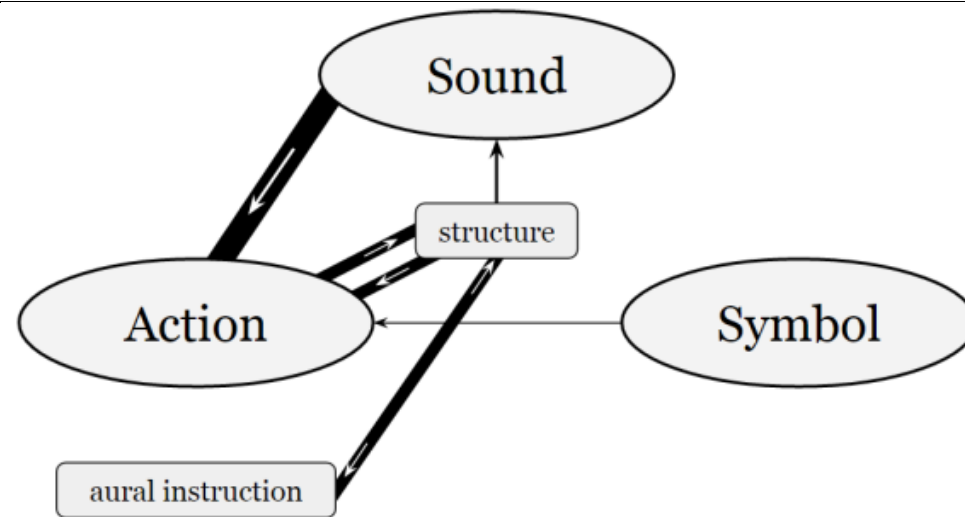
1/3 – Lesson transcription and observation

21-11-2015 Saturday 11:10-11:50 (11-12years) Room 309

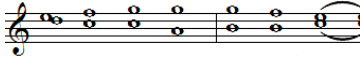| T=Teacher, S=Students, TS=Teacher and Students together, S1=Student1, S2=Student2...		R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher 'sound-action-name-symbol' playing the violin mistakes	
	ONE – 7 minutes		COMMENTS
T	"Do you remember the song what we have learned last time?"	→	R: sound (inward) → action (playing)
S1	Playing on the violin. *(musical notation)*		R: "I didn't expect that any of the students would remember the melody that well. Rhythm was perfect and notes were correct except that he played the first four bars a third lower as a diatonic transposition. I hope that this is a consequence of the preparation exercises with ostinato what we practised last time at the beginning of the lesson."
T	"Well done! The second part was absolutely perfect!" *(musical notation)* Playing on the violin. "The first part was almost the same, but instead of do-re-mi, it started on mi-fa-so." not: *(musical notation)* but: *(musical notation)* "Let's play together!"		
TS	*(musical notation)*		
T	"In which key have we played? What was the 'do'?"		
S	"'a' was the 'do', it was 'a' major."		
T	"Correct! Now 'a flat' will be the do! Sing with me: *(musical notation)* do-re-mi-fa-so-fa-mi-re-do."	→	R: sound (voice) → action (singing)
TS	*(hand sign illustrations: Do, Re, Mi, Fa, Sol, Fa, Mi, Re)*		

	singing together			
T	"Sing with ABC-names!"			
TS	'as-bes-c-des-es-des-c-bes-as' They also sing this one by one.	→	R: sound (voice) → action (singing)	
T	"Let's play the song from 'c' then!"			
TS		→	R: sound (inward) → action (playing)	
T	"Now 'd flat' will be the do! Sing with me: do-re-mi-fa-so-fa-mi-re-do."			
TS	singing together	→	R: sound (voice) → action (singing)	
T	"Sing with ABC-names!"			
TS	'des-es-f-ges-as-ges-f-es-des'			
T	"Let's play the song from 'f' then!"			
TS		→	R: sound (inward) → action (playing)	
	TWO – 3 minutes			
T	"Sing from the second half 'so-so-so-do-re-mi'" 	→	R: sound (voice) → action (singing)	
S	they sing: 'so-so-so-do-re-mi'			
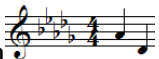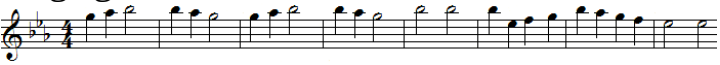
T	"What is the distance between ♪♪ 'so-do'?"	→	R: sound (voice) → structure (interval)
S	"septiem", "sext"		
T	Sings and counts the notes with fingers.		
S	"kwint"		
T	"Yes, 'kwint' means the fifth note from the first." "How do we play 'reine kwint' on the violin?" "Please 'Student1' play the 'd' with third finger on the A string."		
S1	♪		
T	"Please play 'so-fa-mi-re-do-so-do'" ♪♪♪♪♪♪♪ singing it	→	R: sound (voice) → action (playing) → structure (interval)
S1	♪♪♪♪♪♪♪ plays		
T	sings 'so-do' ♪♪ "This is a perfect fifth." "Play do-re-mi-fa-so" ♪♪♪♪♪		
S1	♪♪♪♪♪ plays	→	R: sound (voice) → action (playing) → structure (interval)
T	sings 'do-so' ♪♪ "This is also a perfect fifth. Is it easy to play this?"		
S1	"Yes, because you just put the same finger to the next string."		
T	"Please Student2 play 'cis' on the A string."	→	R: aural instruction + structure (note name + interval) → action (playing)
S2	♪		

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T	"Perfect fifth up!"		
S2	[musical notation]		
T	"Perfect fifth down!"		
S2	[musical notation]		
T	"Play again and tell the ABC-names too."		
S2	cis [notation] gis [notation] fis [notation]		
T	"Please Student3 play 'es' on the D string! Play perfect fifth up and down, tell the ABC-names!"	→	R: aural instruction + structure (note name + interval) → action (playing)
S3	es [notation] bes [notation] as [notation]		
T	"Please Student4 play 'f' on the D string! Play perfect fifth up and down, tell the ABC-names!"	→	R: aural instruction + structure (note name + interval) → action (playing)
S4	f [notation] c [notation] bes [notation]		
	THREE – 2 minutes		
T	"Let's play the song from 'g' on the E string! Sing with ABC-names while you play!"	→	R: sound (inward) → action (playing, singing) → structure (tonality)
S	sing: 'g-as-bes...' [musical notation]		
T	"In which key have we played?"		
S	"In 'e' flat major."		
T	"Let's play the song from 'd' on the A string! Sing with ABC-names while you play!"	→	R: sound (inward) → action (playing, singing) → structure (tonality)
S	sing: 'd-es-f...'		

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	♪ (musical notation in b flat major)		
T	"In which key have we played?"		
S	"In 'b' flat major."		
T	"Let's play the song from the open E string! Sing with ABC-names while you play!"	→	R: sound (inward) → action (playing, singing) → structure (tonality)
S	sing: 'e-f-g...' (musical notation)		
T	"In which key have we played?"		
S	"In 'c' major."		
T	"Let's play the song from 'fis' on the E string! Sing with ABC-names while you play!"	→	R: sound (inward) → action (playing, singing) → structure (tonality)
S	sing: 'fis-g-a...' (musical notation)		
T	"In which key have we played?"		
S	"In 'd' major."		
	FOUR – 18 minutes		
T	"Let's write down this song! Start with the rhythm! Write the time signature, what is 2/2 to the beginning of the staff! Please draw the bar lines to make 8 bars!"		R: "Here I originally wanted them to write both parts down. But then I decided to write just the upper part. It went very slowly because I needed to explain each step in a detailed way. After the lesson I admitted that it wasn't the best choice for practising the writing. It was far too complicated especially because of the rhythm. I felt that I could have done other exercises during these 18 minutes which more related to my topic."
S	(empty staff with 2/2 time signature)		
T	„Do you remember the ostinato, what we did last time?		

	4/4 (rhythmic notation with ostinato symbols) ⊗ means: hitting on the desk with both palms, and ⊤ means clapping. „When you hit the desk that is always the first beat of a new bar. Sing with ostinato!"		
S	sing while doing ostinato		
T	"Please write down the rhythm with rhythmic notation!"		
S	(rhythmic notation, two staves)	→	<mark>R</mark>: sound (clapping, hitting) → symbol (writing)
T	"Please write the sol-fa names above the rhythm!"	→	R: "They were singing the melody all the time during the writing process."
S	(rhythmic notation with sol-fa names: mi fa so / so fa mi / mi fa so / so fa mi; so so / so do re mi / so fa mi re / do do)	→	<mark>R</mark>: sound (inward) → action (singing) → symbol (sol-fa syllables)
T	"Now we are ready to write the song down with normal notation. Please make 8 bars again by drawing the bar lines!"		
S	(empty staves)		
T	"Please draw the tremble clef at the beginning of each staff."		

S			
T	"We will write it in 'd major'. What will be the key signature?"		
S	"Two sharps."		
T	"What are the names of them?"		
S	"'f sharp' and 'c sharp'"		
T	"Please write them at the beginning of each staff!"		
S			
T	"Write the time signature down but just to the beginning of the first staff!"		
S			
T	"Copy the sol-fa names from the Rhythmic notation!"		
S			
T	"Draw the note heads below the sol-fa names!"		
S		→	R: sound (inward) → action (singing) → symbol (note heads)
T	"Draw the stems too!"		

S			
T	"You can erase the sol-fa names."		
S			
T	"Well done!"		
	FIVE – 6 minutes		
T	"Play what I sing!" 'do-la-ti-re, do-ti la-si-'	→	R: sound (voice) → action (playing)
S	play		
T	"Again!"		
S			
T	'so-fa-mi-re-di-re-so-fa-mi-re-do'		
S			
T	"Again!"		
S			
T	"Play both voices together by heart!"		
S		→	S&T: "You should analyse with them the intervals between the two voices."
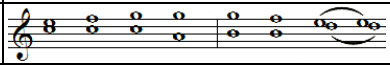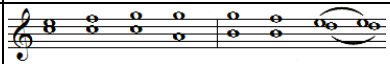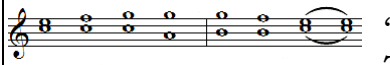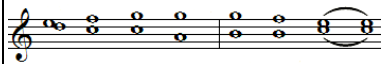
1/3 – Path analysis

21-11-2015 Saturday 11:10-11:50 (11-12years) Room 309
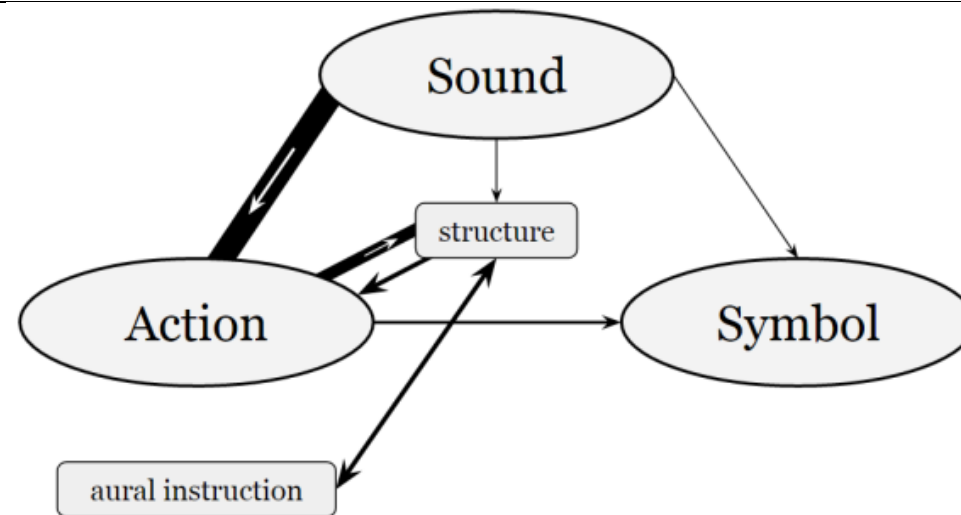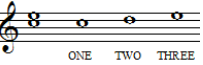
1/4 – Lesson transcription and observation

12-12-2015 Saturday 11:10-11:50 (11-12years) Room M307

	T=Teacher, S=Students, TS=Teacher and Students together, S1=Student1, S2=Student2… B=Boys, G=Girls		R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher 'sound-action-name-symbol' playing the violin mistakes	
	ONE – 7 minutes		COMMENTS	
T	"Girls play the upper notes, boys play the lower notes!"	→	R: symbol (reading) → action (paying) → sound (violin)	
S		→	R: symbol (reading) → action (playing) → sound (violin) → structure (interval)	R: "I asked them to play by reading the notes and not by heart. This notation reminds violin students of double stops. Usually violin method books use this notation when represent double stops."
T	"Boys play the upper notes, girls play the lower notes! Listen to the intervals! Compare the first and the last one!"			
S	"The first interval is calm, the las is exciting."			S&T: "This is very easy to the children to recognise the difference between the third and second. Very consonant and very smooth. As my experience says they have quite often difficulties to differentiate fourths and fifths. Major and minor third are also not too difficult, because they think in triads, but sixth are often very confusing for them."
T	"Play the next example! What has changed?"	→	R: symbol (reading) → action (playing) → sound (violin) →structure (interval)	
S	"The last interval has changed. That is the same as the first."			
T	"Play the next example! What has changed?"	→	R: symbol (reading) → action (playing) → sound (violin) →structure (interval)	
S	"The first interval has changed. That is exciting now."			

T	"Play the last interval again! Do you know the name of this interval?		
S	**♩** "this is a third"		
T	"What number belongs to this interval?"		
S	?		
T	"Let's count the notes!"		
S	ONE TWO THREE		
T	"'Terts' means 'the third note from the first'." "What is the name of the 'exciting' interval? Play it again!"		
S	**♩** "this is an 'secunde'"		
T	"What number belongs to this interval?"		
S	"two"		
T	"Let's count the notes!"		
S	ONE TWO		
T	"'Secunde' means 'the second note from the first'." "Play the following lines and name the first and last intervals!"		
S	1. "first: terts, last: secunde"	→	R: symbol (reading) → action (playing) → sound (violin) → structure (interval)
	2. "first: terts, last: terts"		
	3. "first: secunde, last: terts"	→	R: symbol (reading) → action (playing) → sound

	4. "first: secunde, last: secunde"		(violin) →structure (interval)	
T	"Girls, choose one from the four lines, play that, boys need to recognise the first and the last intervals!"	→	R: sound (students play for each other) → structure (interval)	
G				
B	"first: secunde, last: terts"			
G		→	R: sound (students play for each other) → structure (interval)	
B	"first: terts, last: secunde"			
T	"Boys, choose one from the four lines , play that, girls need to recognise the first and the last intervals!"	→	R: sound (students play for each other) → structure (interval)	
B				
G	"first: secunde, last: secunde"			
B		→	R: sound (students play for each other) → structure (interval)	
G	"first: terts, last: terts"			
	TWO – 10 minutes			
T	"Play third or second and the student next to you will find out what was the interval."			
S1	plays:	→	R: structure (interval) → action (playing)	S&T: "So they already knew how to find third or second on the violin."
S2	"This was a third." plays:		R: sound (students play for each other) → structure (interval)	R: "Yes, they already had knowledge about it."
S3	"This was a second." plays:	→		
S4	"This was a second." plays:			
S1	"This was a third."			

T	"How do we play 'third' on the violin? Which fingers do we use?"			
S	"second finger – open string"			
T	"Yes, this is one option; it works only in first position though." "Play the interval 'third' with second finger and open string! The student next to you will copy that."			
S1	plays: [musical notation]	→	R: structure (interval) → action (playing)	
S2	plays it back: [musical notation] plays a new one for the next student: [musical notation]	→	R: sound (students play for each other) → action (playing) → structure (interval)	
S3	plays it back: [musical notation] plays a new one for the next student: [musical notation]			
S4	plays it back: [musical notation] plays a new one for the next student: [musical notation]			
S1	plays it back: [musical notation]			
T	"I am happy that you've played this: [musical notation] and that: [musical notation] too." "What is the difference between them?" "There are two different types of third."			
S	"Major and minor."			
T	"Sing the following with ABC-names!"	→	R: sound (voice) → action (singing) → structure	
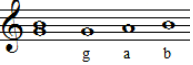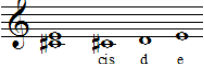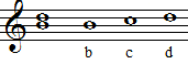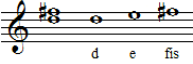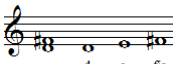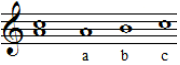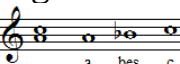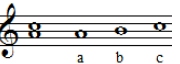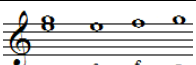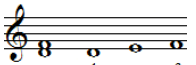
S	f g a		(interval)
T	"What sol-fa names would you use? Sing with it!"		
S	do re mi		
T	"Remember the Lego model what we used on the lesson before!" "Is it major or minor third?"		
S	"Major third."		
T	"Sing the following with ABC-names!"	→	<mark>R</mark>: sound (voice) → action (singing) → structure (interval)
S	fis g a		
T	"What sol-fa names would you use? Sing with it!"		
S	mi fa so		
T	"Remember the Lego model what we used on the lesson before!" "Is it major or minor third?"	→	S&T: "But on the violin they don't experience the third always like this. If there is a sting crossing then the pattern wouldn't be like that." R: "I considered this but I think that it is better if they apply this knowledge to the other situation without a visual help."
S	"Minor third"		
	THREE – 6 minutes		
T	"How can we play 'third' using other fingerings than just before?"		
<mark>S</mark>	"third finger – first finger"		
T	"Yes, and this works in every position." "Play a 'third with third and first finger! The student next		

	to you will copy that and also will tell if it is a major or a minor third."		
S1	plays: [musical notation]	→	: structure (interval) → action (playing)
S2	plays it back: [musical notation]	→	R: sound (students play for each other) → action (playing, singing) → structure (interval)
T	„Play the note in between, sing with ABC-names, then with sol-fa names."		
S2	sings and plays: [musical notation, g a b] „do-re-mi, this is a major third" plays: [musical notation]		
S3	sings and plays: [musical notation, cis d e] "mi-fa-so, this is a minor third" plays: [musical notation]		
S4	sings and plays: [musical notation, b c d] "mi-fa so, this is a major third" plays: [musical notation]		
S1	sings and plays: [musical notation, d e fis] "do-re-mi, this is a major third"		
T	"Any other fingering options, for playing thirds?"		
S	"fourth finger – second finger"		
T	"Yes, this works in every position too." "Play a 'third with fourth and second finger! The student next to you will copy that and also will tell if it is a major or a minor third."		

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S1	plays:	→	structure (interval) → action (playing)
S2	sings and plays: "do-re-mi, this is a major third" plays:	→	sound (students play for each other) → action (playing, singing) → structure (interval)
S3	sings and plays "mi-fa-so, this is a minor third"		
T	"Well, this is a minor third, but we cannot sing it as 'mi-fa-so'. When a third is minor, there is one half and one whole step in it. The half step can be at the beginning, like: Sing this with me with ABC-names and with sol-fa names! But the half step also can be at the end, like: Sing this with me with ABC-names and with sol-fa names!"		
S3	plays:	→	structure (interval) → action (playing)
S4	sings and plays: "mi-fa-so, this is a minor third" plays:	→	sound (students play for each other) → action (playing, singing) → structure (interval)
S1	sings and plays: "la-ti-do, this is a minor		

	third"	
	FOUR – 5 minutes	
T	"Again, which fingers can we use when playing a third?"	
S	"second finger – open string" "third finger – first finger" "fourth finger – second finger"	
T	"And how does a 'third' look like when it is written?" "Write a note to the blackboard! The next student needs to write a 'third' above or below."	
S1	writes on the blackboard:	
S2	writes a 'third' above: writes on the blackboard:	→ R: structure (interval) → symbol (writing)
S3	writes a 'third' below: writes on the blackboard:	
S4	writes a third above: writes on the blackboard:	
S1	writes a 'third' below:	
T	"How they look like? If one of the two notes is on the line, then the other..."	
S	"...the other is also on the line."	
T	"And if one of the two notes in the space, then the other..."	
S	"...the other is also in the space."	
T	"What about the second? How it looks like?" "Write a note to the blackboard! The next student needs	

	to write a 'second' above or below."		
S1	writes on the blackboard:	→	<mark>R</mark>: structure (interval) → symbol (writing)
S2	writes a 'second' above: writes on the blackboard:		
S3	writes a 'second' below: writes on the blackboard:		
S4	writes a 'second' above: writes on the blackboard:		
S1	writes a 'second' below:		
T	"How they look like? If one of the two notes is on the line, then the other..."		
S	"...the other is in the space."		
T	"And if one of the two notes in the space, then the other..."		
S	"...the other is on the line."		
	FIVE – 2 minutes		
<mark>T</mark>	"Play the song in two voices and listen to the intervals carefully."		

S				S&T: "It is a pity that there is no minor second in this fragment."
T	"Swop parts and play again."			
S			→	R: symbol (reading) → action (playing)

S&T: "I think this is a good lesson, but it is not so much a learning lesson rather a practising one. I is more an apply and practise lesson. You could prepare this of course; there are lots of songs with re-mi-fa, mi-fa-so in it. You can explain the two different type of minor seconds then. I would give this lesson after they have learned everything about these intervals, their structure for example. And then I would look at how it works on the violin."

1/4 – Path analysis
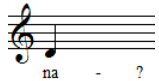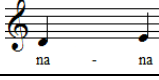
12-12-2015 Saturday 11:10-11:50 (11-12years) Room M307	
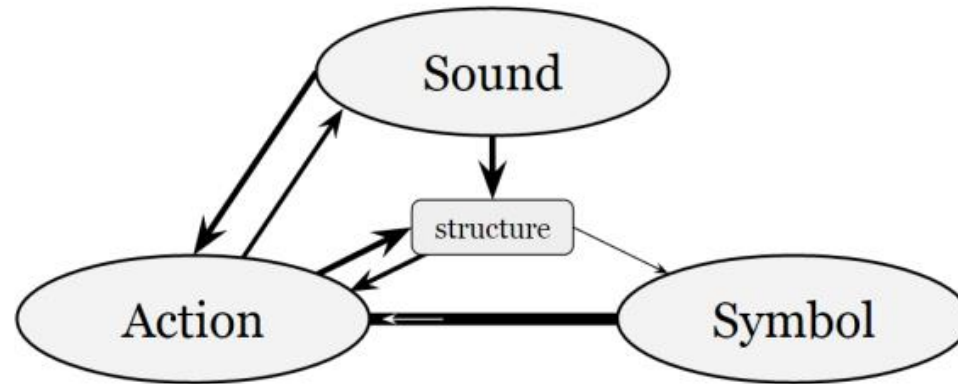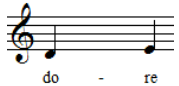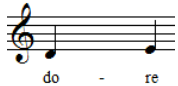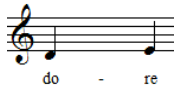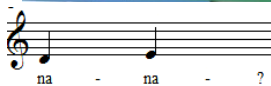
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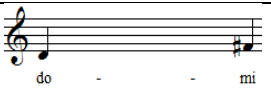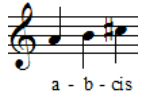
2/1 – Lesson transcription and observation
23-01-2016 Saturday 11:10-11:40 (8-10 Years) Room M308

T=Teacher, S=Students, TS=Teacher and Students together, S1=Student1, S2=Student2...		R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher 'sound-action-name-symbol' playing the violin mistakes
ONE – 3 minutes		**COMMENTS**
T	"We will learn about intervals. The interval is the distance between two notes." "How would you sing this?" 	→ R: structure (interval) → sound (inward) → action (singing)
S	 	→ R: "Originally I intended to start the singing exercise from 'e', because the melody later on the lesson is in e major. In the lesson I forgot to check the first note, this is why I started from 'd'"
T	 	→ R: sound (teacher's voice) → action + name (singing + sol-fa name) →

S	do - re		
T	"What is the name of this interval?"	→	R: → structure (interval)
S	"Major second."		
T	"Do you like the sound of a major second?" do - re		
S	"Yes"	→	S&T: "This is good, so that this melodic interval is becoming a harmonic interval, which is not the same in perception." R: "Yes, I got this advice from a teacher, when talking about one of my previous lesson transcriptions."
T	"And what happens, when we sing the two notes at the same time? Let's sing together" do - re		
S	do/re		
T	"What do you feel?"	→	R: sound (teacher's voice) → action + name (singing + sol-fa name)
S	"This is not calm."		
T	"How would you sing this?" na - na - ?	→	R: structure (interval) → sound (inward) → action (singing)
S			

	na - na - na		
T	do - re - ?	→	<mark>R</mark>: sound (teacher's voice) → action + name (singing + sol-fa name) →
S	do - re - mi		
T	do - - mi		
S	do - - mi		
T	"What is the name of this interval?"		
S	"Major third"	→	<mark>R</mark>: → structure (interval)
T	"Do you like the sound of a major third?" do - - mi		
S	"Yes"		
T	"And what happens, when we sing the two notes at the		

	same time? Let's sing together"			
S		→	R: sound (teacher's voice) → action + name (singing + sol-fa name)	
T	"What do you feel?"			
S	"This is nice and calm."	→	S&T: "How do they find the note to start on when they copy you?"	
	TWO – 8 minutes		R: "They are very well trained to play by ear. They just can recognise for example here that the first note is an open A."	
T	"Take the violin and play with me!"			
TS	Playing together. Students follow the teacher by ear.	→	R: sound (violin) → action + name (playing, singing + ABC) →	
T	"What are the ABC-names of the notes?"			
S	Singing while playing:	→	S&T: "Singing while playing, I like this." R: "Actually I have found that if they play pizzicato while they sing that is better because violin with the bow is louder than the singing, so you cannot hear it. Pizzicato is softer so you can hear the singing, plus when I ask them to write, they don't need to deal with the bow and the pencil at the same time. They can change from the playing to the writing much quicker then." S&T: "Well, but these things are very important actually. Sometimes for very practical reasons your whole plan fails. Because it just, you know, you don't think about these practical things."	
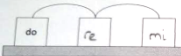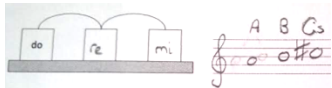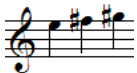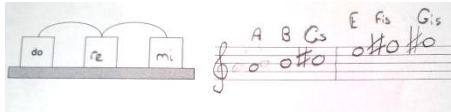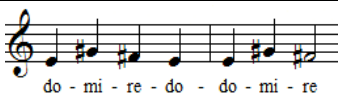
T	Everyone will get a piece of paper like this: "Write the sol-fa names into the little blocks!"		
S	(One student wrote the 'do-re-mi' into the blocks, before I asked. For him it was obvious that this is the same pattern as what I showed with the LEGO.)		
T	"Draw the clef!"		
S			
T	"Write down the notes what we have just played!" Singing: a - b - cis	→	R: → symbol (write)
S1	One of the students notate 'a-b-c' instead of 'a-b-c sharp'	→	R: "She knew that this must be c sharp because we sang it with ABC names. I think that the reason of this mistake was that she probably did not have many experiences about writing notation."
T	Singing: 'a-b-na' What is the name of the third note? Pointing to her third note on the paper.	→	R: sound (teacher's voice) → action + name (singing + ABC) → symbol (write)
S1	Singing: a - b - cis She recognises that she forgot the sharp before the note and corrects it automatically.		

S			
T	"Take the violin and play with me!"	→	R: sound (violin) → action + name (playing, singing + ABC) →
TS			
T	"What are the ABC-names of the notes?"		
S	Singing while playing:		
T	"Write down the notes what we have just played!" Singing: "Don't forget the sharps!"		
S		→	R: → symbol (write)
T	"Please, Student1 compose a little motif using 'do-re-mi'!"		
S1		→	R: name (sol-fa) → sound (inward) → action (singing)
T	Splitting the group into two and showing hand signs with both hands.	→	S&T: "Have they known the hand signs already?" R: "Yes, they knew. With this exercise I wanted to prepare them to listen to functional harmonies."
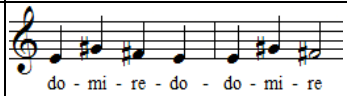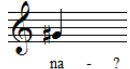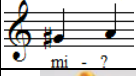
S	do - mi - do - do - do - do - do - do - do - do - mi - do - They are singing in two voices.	→	R: name (sol-fa hand signs) → sound (inward) → action (singing)
T S	do - do - do - do - so - do do - so - do - do - do - do They are singing in two voices.	→	S&T: "That is good, because students always know what to sing because you don't move the two voices at the same time." R: "In this part of the lesson I try to build up really step by step, so they can listen to the harmonies."
T S	do - so - so - do - do - re - do - do - re - do - so - so - They are singing in two voices.	→	S&T: "Yes, I like this, that one stays and the other moves. And I suppose that then they play it. They sing it first, and then play on the violin, right?" R: "We didn't play this, because the aim of the lesson was about the five note melody which is from a duo by Bartók, and the intervals seconds and thirds. This was just a preparation exercise about harmonic concept so I can build on this in the following lesson. I refer back to these harmonies when I introduce the melody, by using a baseline according these scale degrees."
T S	do - so - do - do - re - do do - re - do - do - so - do They are		

	singing in two voices.		
T	"Do you remember Student1's motif?"		
S	 do - mi - re - do - do - mi - re	→	<mark>R</mark>: sound (inward) → action (singing)
T S	 do - mi - re - do - do - mi - re do - do - so - do - do - do - so They are singing in two voices.	→	<mark>R</mark>: name (sol-fa hand signs) → sound (inward) → action (singing)
T S	 do - do - so - do - do - do - so do - mi - re - do - do - mi - re They are singing in two voices.		
	THREE – 2 minutes		
T	"Let's learn more about intervals!" "How would you sing this?" na - ?	→	<mark>R</mark>: structure (interval) → sound (inward) → action (singing)
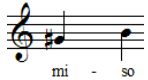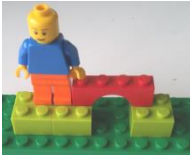
S	na - na		
T	mi - ?		
S	mi - fa	→	R: sound (teacher's voice) → action + name (singing + sol-fa name) →
T	"What is the name of this interval?"	→	R: → structure (interval)
S	"Minor second."		
T	"Do you like the sound of a minor second?" mi - fa		
S	"Yes"		
T	"And what happens, when we sing the two notes at the same time? Let's sing together" mi - fa	→	R: sound (teacher's voice) → action + name (singing + sol-fa name)
S	mi/fa		
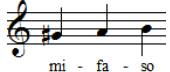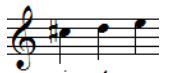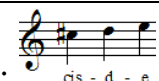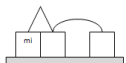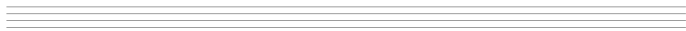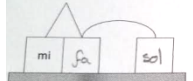
T	"What do you feel?"			
S	"This is very tense."			
T	"How would you sing this?"	→	**R**: structure (interval) → sound (inward) → action (singing)	
	na – na – ?			
S	na – na – na			
T	mi – fa – ?	→	**R**: sound (teacher's voice) → action + name (singing + sol-fa name) →	
S	mi – fa – so			

T	 mi - so		
S	 mi - so		
T	"What is the name of this interval?"		
S	"Major third"	→	R: → structure (interval)
T	"Sing with me 'do-re-mi' again! This is a major third. There are two major seconds inside." do - re - mi		
S	"Sing 'mi-fa-so' again! There is a minor second inside, so this is a minor third." 		
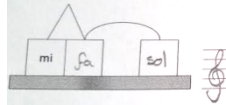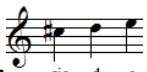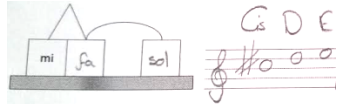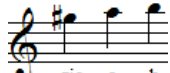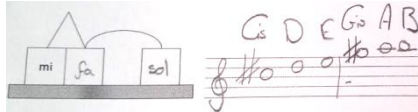
	mi - fa - so		
T	"Do you like the sound of a minor third?" mi - so		
S	"Yes"		
T	"And what happens, when we sing the two notes at the same time? Let's sing together" mi - so		
S	mi/so	→	R: sound (teacher's voice) → action + name (singing + sol-fa name)
T	"What do you feel?"		
S	"This is not tense."		
	FOUR – 5 minutes		
T	"Take the violin and play with me!"	→	R: sound (violin) → action + name (playing, singing + ABC) →
TS			
T	"What are the ABC-names of the notes?"		
S	Singing while playing: cis - d - e		
T	Everyone is given a piece of paper like this: "Write the sol-fa names into the little blocks!"		
S			
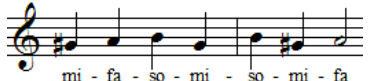
T	"Draw the clef!"		
S			
T	"Write down the notes which we have just played!" Singing: cis - d - e		
S		→	R: → symbol (write)
T	"Take the violin and play with me!"	→	R: sound (violin) → action + name (playing, singing + ABC) →
TS			
T	"What are the ABC-names of the notes?"		
S	Singing while playing: gis - a - b		
T	"Write down the notes which we have just played!" Singing:	→	R: → symbol (write)
S			
T	"Please, Student2 compose a little motif using 'mi-fa-so'!"		
S2	mi - fa - so - mi - so - mi - fa	→	R: name (sol-fa) → sound (inward) → action (singing)

T S	Splitting the group into two and showing hand signs with both hands. mi – fa – mi – do – do – do – do – do – do – mi – fa – mi – They are singing in two voices.	→	: name (sol-fa hand signs) → sound (inward) → action (singing)
T S	do – fa – do – do – do – do – do – do – do – do – fa – do – They are singing in two voices.		
T S	mi – fa – mi – do – fa – do do – fa – do – mi – fa – mi They are singing in two voices.		
T	"Do you remember Student2's motif?"		
S	mi – fa – so – mi – so – mi – fa		

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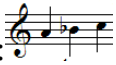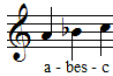|			
T			
S	They are singing in two voices.		
T			
S	They are singing in two voices.		
	FIVE – 12 minutes		
T	"I have a folk song for you." Showing hand signs.		
TS	Singing together with sol-fa.	→	R: name (sol-fa hand signs) → sound (inward) → action (singing)
T	"Sing from the music with sol-fa names."		
S		→	R: symbol (reading) → sound (inward) → action + name (singing + sol-fa)
T	"Sing the lower part too!"	→	R: symbol (reading) → sound (inward) → action +
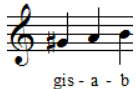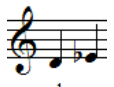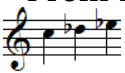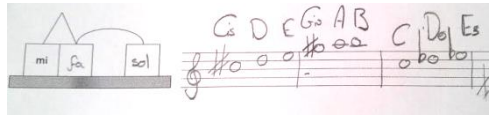
S			name (singing + sol-fa)
T	"Sing both parts together!"		
S			
<mark>T</mark>	"Play on the violin!"	→	**R**: symbol (reading) → action (playing)
S			
T	"We will sing this with another lower line. This is what Bartók composed to accompany this song. Sing the lower line with sol-fa!"	→	**R**: symbol (reading) → sound (inward) → action (singing)
S		→	R: "The phrasing in the lower voice is very difficult. I should have had some concept how to help them in this situation."
T	"Play both lines on the violin!"		S&T: "Maybe you could ask them to learn the lower part without taking care of the bar lines. Then ask them to walk on the beat while they are playing."
S		→	**R**: symbol (reading) → action (playing)
T	"Can you recognise a second? Play again! Where can you hear this?"		

S	 here↑	→	: sound (violin) → structure (interval)
T	"Swap parts and play again!"		
S	 SIX – 8 minutes		▶ R: "They sing the three pitches (e-fis-gis) correctly but they are struggling to find the right name. S4 sings e-fis but naming them as: e-f
T	Giving LEGO panels and bricks to everyone. "I will play notes and you will need to build the intervals from LEGO." Plays:	→	R: sound (violin) → action (singing) → structure (interval) → name (ABC)
S	Singing and building: 		All the others copy and sing e-fis with using the names: e-f S4 quickly sings the notes again but now he calls them: e-fis-g All the others sing using the names: e-fis-g S1 sings again the three notes with the names: e-fis-gis All the others copy her and they finally sing it correctly. (I didn't say anything when they sang wrong names and I didn't tell them that it is finally correct.) S4 is still a bit unsure if e-fis-gis are the names of the notes so he checks by playing the three notes
T	"What is the name of the interval?"		
S	"Major third."		
T	"Sing it with ABC-names!"		
S	 e - fis - gis		
T	Playing:	→	R: sound

S	Singing and building:
T	"What is the name of the interval?"
S	"Minor third."
T	"Sing it with ABC-names!"
S	They are singing: naming the notes: 'a-bes-cis'
T	"Listen to what you've named!" playing on the violin:
S	They are singing with the correct name: a - bes - c
T	Playing:
S	Singing and building:
T	"What is the name of the interval?"
S	"Minor third."

(violin) → action (singing) → structure (interval) → name (ABC)	on the violin. He plays the notes by ear and checks his fingers, if they play f or fis and g or gis. Then he is sure that the names are: e-fis-gis."	
→ →	S&T: "This is interesting that they say 'b flat – c sharp' while it is a major second." R: "Yes, but this can be because on the violin for practical reasons we teach them to play 'c sharp' before we teach 'c natural'. So when it is a second finger it can be more natural to them to call it 'c sharp' and not 'c'." S&T: "And also to say 'b flat – c sharp' a little bit more difficult than to say 'b flat – c'. So this must be very well graved in their head."	▶ R: "They sing the right pitch but some of them names the notes as a-b and some of the as a-bes. S3 who named the notes as a-bes tells to the others that it is bes. They go on and sing the three notes (a-bes-c) but name them as a-bes-cis. S3 says that the third note name is 'c', but all the others sing with calling
→	R: sound (violin) → action (singing) → structure (interval) → name (ABC)	

T	"Sing it with ABC-names!"			the note cis, so he seems to feel that he was wrong."
S	gis - a - b			
T	Playing:	→	R: sound (violin) → action (singing) → structure (interval) → name (ABC)	
S	Singing and building:			
T	"What is the name of the interval?"			
S	"Minor second."			
T	"Sing it with ABC-names!"			
S	d - es			
T	"From now you need to write the notes down." Playing:	→	R: sound (violin) → action + name (singing + sol-fa) → symbol (writing)	
S	singing: (mi-fa- so) Writing:			
T	"This is what you have written." Playing:	→	R: sound (violin) → symbol (correcting the writing)	
S	Correcting: c - des - es			
T	Playing:	→	R: sound (violin) → action + name (singing + sol-fa) → symbol (writing)	

S	singing: with sol-fa and writing:	
T	Playing:	→ R: sound (violin) → action + name (singing + sol-fa) → symbol (writing)
S	singing: with sol-fa and writing:	
T	Playing:	→ R: sound (violin) → symbol (correcting the writing)
S	Correcting:	
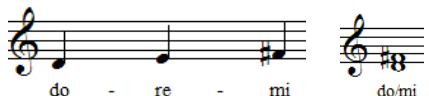
2/1 – Path analysis
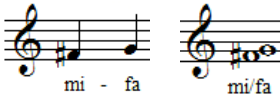
2/2 – Lesson transcription and observation

30-01-2016 Saturday 11:10-11:40 (8-10years) Room M307

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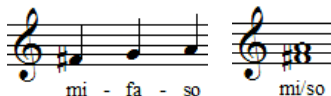<tr><td colspan="2">T=Teacher, S=Students, TS=Teacher and Students together, S1=Student1, S2=Student2…</td><td colspan="2">R=Researcher, S&T=Solfege & Theory teacher, V=Violin teacher

'sound-action-name-symbol' playing the violin mistakes</td></tr>
<tr><td colspan="2" align="center">ONE – 8 minutes</td><td colspan="2" align="center">COMMENTS</td></tr>
<tr><td>T</td><td>"Student1, please build a major third from LEGO! Student2, please build a minor third from LEGO!</td><td></td><td></td></tr>
<tr><td>S1</td><td></td><td></td><td></td></tr>
<tr><td>T</td><td></td><td>→</td><td rowspan="2">R: sound + name (teacher's voice with sol-fa name) → action + name (students and teacher singing with sol-fa names) → structure (interval)</td></tr>
<tr><td>TS</td><td>do – re   do/re</td><td></td></tr>
<tr><td>T</td><td>"What is the name of this interval?"</td><td></td><td></td></tr>
<tr><td>S</td><td>"Major second."</td><td></td><td></td></tr>
<tr><td>T</td><td></td><td>→</td><td rowspan="2">R: sound + name (teacher's voice with sol-fa name) → action + name (students and teacher singing with sol-fa names) → structure (interval)</td></tr>
<tr><td>S</td><td>do – re – mi   do/mi</td><td></td></tr>
<tr><td>T</td><td>"What is the name of this interval?"</td><td></td><td></td></tr>
<tr><td>S</td><td>"Major third."</td><td></td><td></td></tr>
</table>

S2	showing what he has built:		
T	showing hand signs:	→	R: sound + name (teacher's voice with sol-fa name) → action + name (students and teacher singing with sol-fa names) → structure (interval)
S	singing together: mi - fa mi/fa		
T	"What is the name of this interval?"		
S	"Minor second."		
T			
S	mi - fa - so mi/so	→	R: sound + name (teacher's voice with sol-fa name) → action + name (students and teacher singing with sol-fa names) → structure (interval)
T	"What is the name of this interval?"		
S	"Minor third."		
T	"Chose an interval from minor second, major second, minor third, and major third. Play it and the other student needs to play it back and find out the interval."		
S1		→	R: structure (interval) → action (student1 play the violin) → sound → action (student 2 play the violin)

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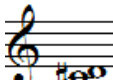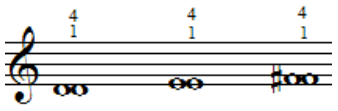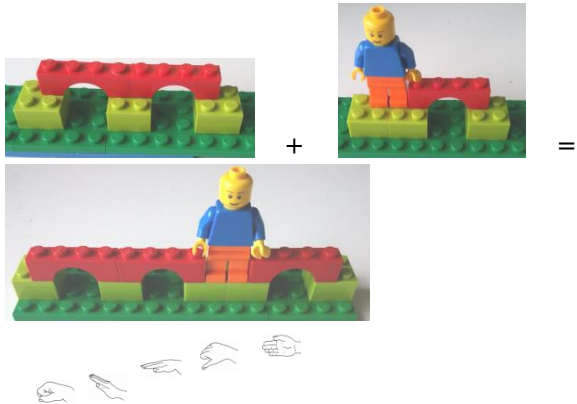
T	"Play together!"		→ name (ABC)
S			
T	"What are the names of the notes?"		
S	'b-d'	→	R: "These two children didn't make mistakes about note names in the previous lesson and in this lesson. This only mistake is a second finger on the G string."
T	"b-d sounds like this: (plays for them)	→	R: sound (violin) → name (ABC) → structure (interval)"
S	'bes-d'		
T	"What is the name of the interval?"		
S	"Major third"		
T	"Please, Student2 chose and play an interval!"	→	R: structure (interval) → action (student2 play the violin) → sound → action (student 1 play the violin) → name (ABC) → structure (interval)
S2			
T	"Play together!"		
S			
T	"What are the names of the notes?"		
S	Singing: 'd-e'		
T	"What is the name of the interval?"		
S	"Minor second."		

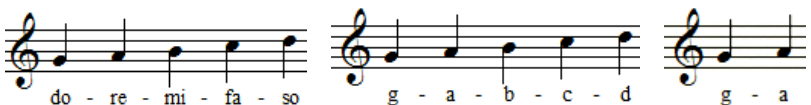|			
T	"The minor second sounds like this: (playing)"	→	**R**: sound + structure (violin + interval) → structure (interval)
S	"'d-e' is a major second then"		
T	"Please, Student1 chose and play an interval!"	→	**R**: structure (interval) → action (student1 play the violin) → sound → action (student 2 play the violin) → name (ABC) → structure (interval)
S1			
T	"Play together!"		
S			
T	"What are the names of the notes?"		
S	They sing: 'c-d'		
T	"What is the name of the interval?"		
S	"Major second"		
T	"Can you make it minor?"	→	**R**: structure (interval) → action (play)
S2			
S1	"Look, I have built a unison!"		
S2	"This is how you play the unison:"	→	**R**: structure (interval) → [sound (inward, he corrected when it was not in tune)] → action (play)
T	"Well done!"		
TWO – 5 minutes			

T			
S		→	R: sound + name (teacher's voice + sol-fa) → action (singing with sol-fa)
T	"Take the violin, play pizzicato and sing at the same time!"		
TS		→	R: sound (inward) → action + name (sing, play + ABC) →
T	"What is the name of this interval?"	→	R: → structure (interval)
S	"Major second."		
TS	Playing pizzicato and singing:	→	R: sound (inward) → action + name (sing, play + ABC) → structure (interval)
T	"What is the name of this interval?"		

S	"Major second."		
TS	Playing pizzicato and singing: b - c	→	R: sound (inward) → action + name (sing, play + ABC) → structure (interval)
T	"What is the name of this interval?" b - c		
S	"Minor second."		
TS	Playing pizzicato and singing: c - d	→	R: sound (inward) → action + name (sing, play + ABC) → structure (interval)
T	"What is the name of this interval?" c - d		
S	"Major second."		
TS	g-b-a-b - c-b-a - g-b-a-b - c-b-a - d - c - d-c-b - a - b - d - c-b-a - g	→	R: sound (inward) → action + name (pizz., singing + ABC name)
T	"Please play the song with the bow!"	→	R: sound (inward) → action (play)
S			
	THREE – 12 minutes		
T	"This is a 'g'" singing: g	→	R: sound + name (teacher's voice + ABC) → structure (interval) → action (singing)

	"Can you place the 'a' on the panel?" Singing: (g – a)	
S1	singing: g – a	
T	singing: g – a – ?	
S	singing: g – a – b	→ R: sound (teacher's voice) → action + name (singing + ABC) → structure (interval)
S2	(G A B blocks)	
T	singing: g – a – b – ?	
S	singing: g – a – b – c	→ R: sound (teacher's voice) → action + name (singing + ABC) → structure (interval)
S1	(G A B C blocks)	
T	singing: g – a – b – c – ?	
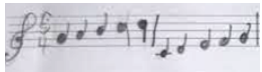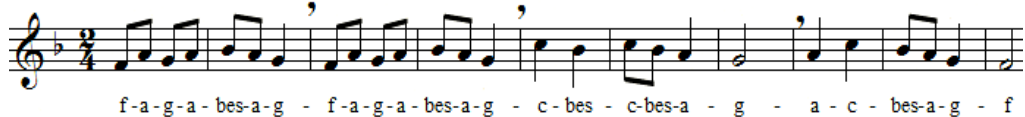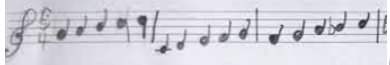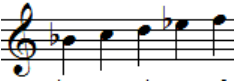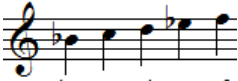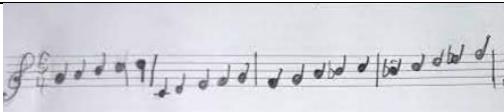
S	sing: (musical notation) g - a - b - c - d	→	R: sound (teacher's voice) → action + name (singing + ABC) → structure (interval) →
S2	(blocks: G A B C D)		
T	"Please write 'do-re-mi-fa-so' into the blocks!"		
S	(blocks handwritten: do re mi fa sol)		
T	"Draw a treble clef and write the notes: (singing)" (musical notation) g - a - b - c - d		
S	(handwritten musical notation)	→	R: → symbol (write)
T	"Play pizzicato and sing at the same time!"		
TS	(musical notation) c - d - e - f - g	→	R: structure (major pentachord) → action + name (pizz., singing + ABC)
TS	(musical notation) c-e-d-e - f-e-d - c-e-d-e - f-e-d - g - f - g-f-e - d - e-g - f-e-d - c	→	R: sound (inward) → action + name (pizz., singing + ABC)
T	"This is 'c'-'d'. Can you place the next note to the panel?" (blocks: C D)		

	singing: c - d - ?			
S	singing: c - d - e	→	R: sound (teacher's voice) → action + name (singing + ABC) → structure (interval)	
S1				
T	singing: c - d - e - ?			
S	singing: c - d - e - f	→	R: sound (teacher's voice) → action + name (singing + ABC) → structure (interval)	
S2				
T	singing: c - d - e - f - ?			
S	singing c - d - e - f - g	→	R: sound (teacher's voice) → action + name (singing + ABC) → structure (interval) →	
S1				
T	"Write the notes:			
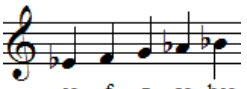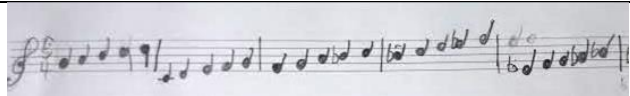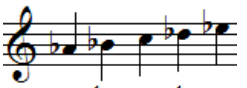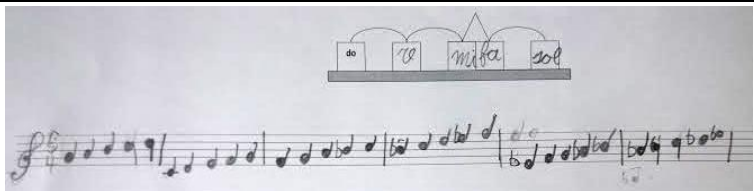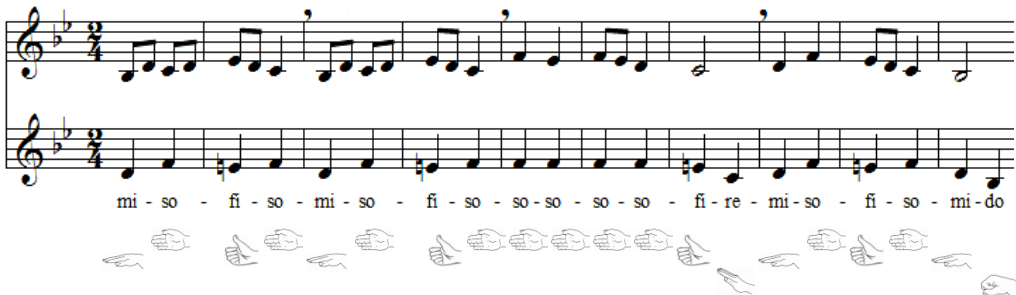
S		→	R: → symbol (write)
T	"Play pizzicato and sing at the same time!"		
TS	 singing: f - g - a - bes - c	→	R: structure (major pentachord) → action + name (pizz., singing + ABC) → later:[symbol (write)]
TS	 f-a-g-a-bes-a-g - f-a-g-a-bes-a-g - c-bes - c-bes-a - g - a-c - bes-a-g - f	→	R: sound (inward) → action + name (pizz., singing + ABC)
T	 "Write the notes from 'f'!" singing: f - g - a - bes - c	→	R: before: [structure (major pentachord) → action + name (pizz., singing + ABC)] → symbol (write)
S	(singing and writing)		
T	"Write the same pattern from 'bes'!" singing: (with la-la-la.) "Do you know the note names?"	→	R: structure (major pentachord) → sound (teacher's voice) → action + name (singing + ABC) → symbol (write)
TS	 singing: bes - c - d - es - f		
S	(singing and writing) 		
T	 "Write the notes from 'es'!" singing:	→	R: structure (major pentachord) → sound (teacher's voice) → action + name (singing + ABC) → symbol (write)

	"Do you know the note names?"		
TS	singing: es - f - g - as - bes		
S	(singing and writing)		
T	"Write the notes from 'as'!" singing: "Do you know the note names?"	→	R: structure (major pentachord) → sound (teacher's voice) → action + name (singing + ABC) → symbol (write)
TS	singing: as - bes - c - des - es		
S	(singing and writing)		
FOUR – 5 minutes			
T	"Student1, play the song with the bow from 'as' Student2, sing what I show you!"	→ →	R: sound (inward) → action (playing) R: name (sol-fa hand signs) → action (singing)

S1 S2	do - re - ti - do - re - ti - do-re-mi-re-do- ti - do - re - ti - do			R: "I had here a problem, because I didn't do any preparation about rhythm and phrasing. Instead of a conventional period there are 10 bars articulated like 2+2+3+3. In addition to this the rhythm pattern changes after the second bar. It was difficult for them to play by heart, while they did not have any problems when they played from the score on the previous lesson."
T				
T	"Student2, play the song with the bow from 'es' Student1, sing what I show you!"	→ →	R: sound (inward) → action (playing) R: name (sol-fa hand signs) → action (singing)	
S2 S1	mi - so - so - fa - mi - so - so - fa - so - so - so - so - fa - so - so - so - fa - mi			
T				
T	"Listen to the interval at the first beat of the second bar! What is this interval?"	→	R: name (sol-fa hand signs) → action (singing) → structure (interval)	S&T: "Well, you can use a poem with the same phrasing as an example. You could ask them to clap the rhythm of the poem.
S	"Major second."			
T	"Student1, play the song with the bow from 'bes' Student2, sing what I show!"	→ →	R: sound (inward) → action (playing)	

S1 S2	mi - so - fi - so - mi - so - fi - so - so-so - so - so - fi - re - mi-so - fi - so - mi-do		R: name (sol-fa hand signs) → action (singing)	And then when the melody comes it is not even necessary to mention that it is the same as with the poem. Well, you can use a poem with the same phrasing as an example. You could ask them to clap the rhythm of the poem. And then when the melody comes it is not even necessary to mention that it is the same as with the poem. "
T				
T	"Listen to the interval at the first beat of the second bar! What is this interval?"	→	R: name (sol-fa hand signs) → action (singing) → structure (interval)	
S	"Minor second."			
T	"Student2, play the song with the bow from 'f' Student1, sing what I show!"	→ →	R: sound (inward) → action (playing) R: name (sol-fa hand signs) → action (singing)	
S2 S1	do - di - re - ti - do - di - re - ti - do-re - mi-re-do - ti - do - di - re - ti - do			
T				
T	"Listen to the interval at the second beat of the first bar! What is this interval?"	→	R: name (sol-fa hand signs) → action (singing) → structure (interval)	
S	"Minor second."			

S&T: "Why do you use the Lego horizontally? You don't show the shape of the melody in this way? Isn't this confusing

to them? I like to use hand signs because there I always shape the melody in a way that I lift my hand upper when it is a higher note and lower when it is a low note."

R: "This lesson is not about describing them which note is higher and which is lower. Then I wouldn't use the Lego like this, then I would build a stair, or I would use the real staircase and practise with stepping on the stairs. But they already have a clear conception on how to play higher and lower tones on the violin; this is an automatism for them. I wanted to teach the connection between the sound and notation."

S&T: "So the goal of the lesson was the connection to the notation. I like that you use a Lego for it. "So this shape of the Lego is more like how they have the notes on the violin then. There is another thing: Do you make difference in intonation between do-re and re-mi? So do you make a difference between a large major second and the small major second?"

R: "I haven't explained that to them, but when I sang or play it I was always thinking, and encouraged also them to think of do-re-mi and not fa-so-la or so-la-ti. I was consequent in this and I had the tonal feeling according to the sol-fa names. But I also feel that in this part I need to be more sensible for the intonation and check carefully their playing. And if it is not in tune then I must correct them."

S&T: "How do you correct them? Physically or aurally?"

R: "Not physically. When a student makes a mistake, for example he/she says that 'g-a' is a minor second, then I ask him/her to play the notes and reconsiders the answer.

When it is not in tune, maybe I would also play it for him/her and ask to compare what he/she played and my playing, or just ask him/her to sing it first and then play it. Because normally they sing in tune more than they play on the instrument. Or I can keep a tone while they sing the other note, so they have a helping tone from me they can rely on."

30-01-2016 Saturday 11:10-11:40 (8-10years) Room M307
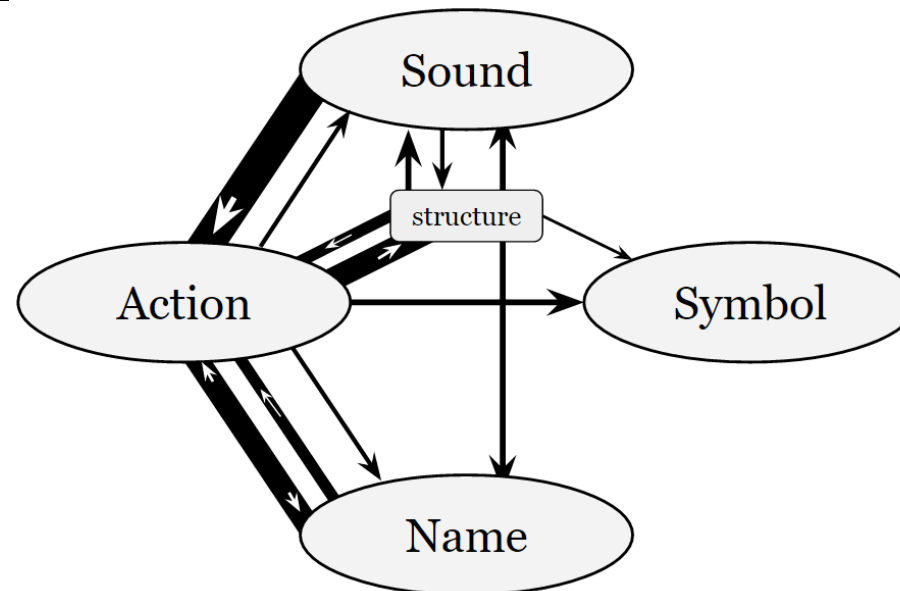
List of the exercises with playing the violin

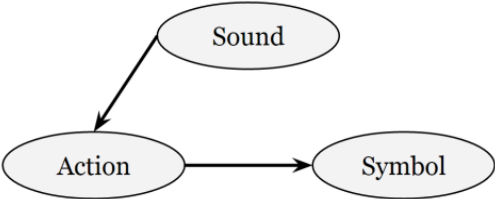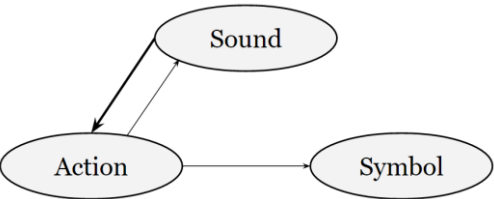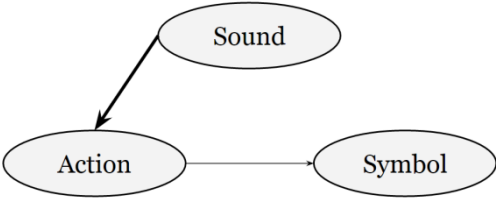|	
play by ear - name the notes what have been played - visualise the note image	0/1 ONE, 0/1 FOUR,
play from the diagram the notes what I show – play from memory imagining the notes	0/1 THREE,
play harmonics – practise shifting	0/1 FIVE, 0/2 THREE
experimenting where the harmonics are	0/1 FIVE
play by ear – play the same notes in every possible places on the violin in each register	0/1 SIX
experimenting the distances between harmonics	0/1 SEVEN
playing familiar song from memory – sing with ABC names – replace the stopped notes with natural harmonics where it is possible	0/2 FOUR
exploring the vibration of the string – touching the violin and feel the resonance – learn about the overtone system – discuss their notation – observe the resonance of the string when it is a harmonics or a stopped note	0/2 ONE
transposing familiar song using the same fingering	0/2 FOUR
transposing familiar song using different fingering	0/2 FOUR
play a note by ear – tell the ABC name – play a new note which need to be for a certain interval from the given note	0/2 FIVE
play a given note with pizzicato – sit on chairs next to the previous player or leaving one chair out according to the major or minor second between the two notes – listen to the interval which is played by pizzicato	0/2 SIX
sing two notes by knowing their ABC names – name the interval - play the two notes	0/2 SEVEN
sing a melody by ear - analyse – play from memory (or audiation)	1/1 TWO; 0/2 FIVE
answering a question by playing the notes which has changed	1/1 TWO
teacher explains the intervals by playing and showing the distances between the fingers	1/1 THEE
take your violin and check your answer that it is a minor second	1/1 THREE
compare the Lego note pattern with the position of the fingers	1/1 FOUR
transposing a melody what they have learned by singing by ear, using same fingering	1/1 FOUR
transposing a melody what they have learned by singing by ear, using different fingering – sing the notes with ABC names	1/1 FOUR; 1/3 ONE
experimenting intervals kwint	1/1 FOUR; 1/2 THREE;

	1/3 ONE
put the fingers while sing with abc	1/1 FIVE
play a piece from written music	1/1 FIVE
find out the abc name play what you said	1/1 FIVE
checking if it is whole or half step by trying out on the violin	1/2 TWO
play according to a given note pattern from a given pitch (leave the tonality and stick to the note pattern)	1/2 TWO
transpose a tonal pattern – sing with ABC while play with a bow – play also with different fingering – name the key	1/2 TWO; 1/3 THREE
play by ear – sing with sol-fa names	1/2 THREE
play from written music	1/2 FOUR; 1/4 FIVE
play the first note of the melody by knowing the key	1/2 THREE
play a melody from memory which was taught a week before	1/3 ONE
play from written music in two voices – listen to the intervals	1/4 ONE; 2/1 FIVE
play double stops for each other to recognise the interval	1/4 TWO
playing thirds with certain fingerings	1/4 TWO; 1/4 THREE
play a tonal pattern by ear – while sing with ABC names – write down	2/1 TWO; 2/1 FOUR
checking the note names by playing	2/1 SIX
play double-stop for the other student who needs to name the interval	2/2 ONE
play tonal patterns with pizzicato while singing with sol-fa, then with ABC names and then naming the intervals, then write down	2/2 TWO; 2/2 THREE
one child is playing the other is singing according to hand signs	2/2 FOUR

Path analysis diagrams of each lessons

Orientation cycle – 0/1	Orientation cycle – 0/2	Orientation cycle – 0/3

| First cycle – 1/1 | First cycle – 1/2 | First cycle – 1/3 |
| First cycle – 1/4 | Second cycle – 2/1 | Second cycle – 2/2 |