MaSDiV

Supporting Mathmatics and Science Teachers in
addressing Diversity and promoting fundamental Values

Data collection instruments for case study

Contents

Executive Summary

To get deeper insight into the effects of the MaSDiV CPD courses all partners will conduct case studies. Each case study focuses on a teacher who took part in the MaSDiV CPD course and implements inclusive science/mathematics education (using IBL for addressing achievement-related diversity; using realistic, relevant context; IBL in multicultural settings) successfully.

The case studies are supposed to be conducted after the last meeting of the CPD course. According to the implementation plans (see Overview of the MaSDIV implementation schedule) we expect the following schedule for the case studies:

Country	Cyprus	Germany	Malta	Netherlands	Spain	Turkey
Month of case study	December 2018 /January 2019	December 2018 /January 2019	July 2018	July 2018	December 2018	June 2018

WP3 developed a guide for a semi-structured interview including instructions on conducting the interview.

The interview guide aims to address the following research questions:

1. How do lower-secondary mathematics and science teachers use IBL to address achievement-related diversity in different European countries?
   What are the key challenges to and enabling factors for effective practice in this regard?

2. How do lower-secondary mathematics and science teachers use contexts relevant to society in different European countries?
   What are the key challenges to and enabling factors for effective practice in this regard?

3. How was the MaSDiV CPD course experienced by teachers in different European countries?
   Which elements of the CPD course supported the development of teachers?
   What are the key challenges to and enabling factors for connecting the CPD course to practice?

The developed interview guide comprises five parts.

The purpose of the first part (A Introduction) is to
- thank teachers for their willingness to participate,
- introduce the interviewer
- introduce the purpose of the interview
- inform about audio taping
- assure confidentiality
- provide the opportunity for questions
- obtain the signature of consent
- teacher code for matching the interview with the teacher questionnaire.

The MaSDiV interview guide provides an introduction text which covers the above mentioned topics. This text can be read text to the teachers or the interviewers can address all issues by themselves. The interviewer has to make sure to get the signature of consent.

The following three parts list the standardized questions of the interview. Interviewers have to stick closely to these three parts.The interview guide includes guiding questions, additional prompts and comments. The guiding questions have to be used in all case studies. The prompts are used to get deeper insight if the interviewee does not answer the questions by themselves. The comments provide a short rationale why we implemented the guiding question and how to implement the questions.

Part B of the interview guide consists of opening questions to explore the background of the teacher and the school context.

Part C focuses on the lesson which has been observed. The interview focuses on using IBL to address achievement related diversity and on using contexts. This part of the interview relates to research questions 1 and 2.

Part D focuses on the teacher's perception of the MaSDiV CPD course. The questions in this section relate to our research question 3.

The final part E closes the interview. The teacher is asked for additional comments. Furthermore, the interviewer thanks the teacher for participating and informs him/her about next steps. The interview guide provides a closing section. Interviewers are free to close in a more individual way.

1. Main report

In the following you will find general instructions on conducting a semi-structured interview and the MaSDiV interview guide for semi-structured interview.

1.1 General instructions on conducting a semi-structured interview

"If what people have to say about their world is generally boring to you, then you will never be a great interviewer. Unless you are fascinated by the rich variation in human experience, qualitative interviewing will become drudgery. "
(Patton, 2002: 341)

In the following we present general guideline on conducting a semi-structured interview.

Before the interview
- Get acquainted with the interview guideline. If possible, practice the interview.
- Translate the interview guide into your language. Be careful about the wording of the questions.
- Think of transition possibilities between the different questions. The interview guide provides suggestions.

During the interview
- Choose a place for the interview that's quiet and free from interruptions
- Test the recording system
- Record the interview. Transcript the interview afterwards. Taking notes only will miss important information
- Begin with an explanation of the purpose of the interview; intended uses of the information and assurance of confidentiality (see interview guideline). If appropriate, clarify that the interview has been approved by relevant officials.
- Ask only question at once. Stay close to the wording you prepared in your interview guide.
- Enjoy the silence.
- Use probing technics to get a deeper insight. (Would you give me an example?, Can you elaborate on that idea?, Would you explain that further?, I 'm not sure I understand what you' re saying. , Is there anything else?)
- Maintain a neutral attitude. Interviewers should avoid giving the impression of having strong views on the subject under discussion.
- Do not put words into teachers' mouths. Let them say things in their own words.
- Provide feedback and reinforcement during the interview (Your comments on weakness are really helpful. We are about halfway through. You have been telling me really important things. How is it going for you?)
- Maintain control by knowing what you want tofind out, by having prepared the interview guide and by listening attentively.

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A)   Introduction

I want to thank you for allowing me to observe your lesson and for taking time to meet with me today.

My name is _____. I am _____ <is appropriate, short introduction of the interviewer, position in the project>.

 I would like to talk to you about

the MaSDiV CPD course about inquiry based learning and diversity.

The interview is part of the evaluation of the MaSDiV project which involves 6 European countries.

The aim of this interview is obtain insight into how teacher perceived the MaSDiV CPD course and how to improve the CPD course. Furthermore, we want to find out how mathematics and science teachers deal with diversity in their classrooms. The interview will take about 45 min. I will be recording the session because I don't want to miss any of your comments. *(Afterwards we will transcribe the interview and we will send you the transcript for approval).*
All responses will be kept confidential. We ensure that any information we include in our report does not identify you as the respondent.
Remember, you don't have to talk about anything you don't want to and you may end the interview at any time. Do you have any questions?

Are you willing to participate in this interview?

I am willing to participate in the interview

_____   _____   _____
Name   Signature   Date

(*If it is more appropriate you can ask for the code at the end of the interview*)
We would like to match your interview answers with your questionnaires. This would enhance our analysis of the effectiveness of the CPD course greatly. Therefore, please fill out the following code:

Check the first letter or <u>your</u> first name.																									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Check the <u>first</u> letter of your mother's first name.																									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Check the <u>second</u> letter of your mother's first name.																									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Check the <u>day</u> of your birthday.																													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

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Starting time:_____

Start recording the interview

B)   Opening questions

Teacher's Personal Background and Context

	Guiding question	Prompt	Comment
1.	**Why did you decide to become a teacher?**	• What are your most important goals as a teacher? • For how many years have you been a teacher? • How long have you been teaching at this school?	The guiding question will help to understand the teacher. It might give insight into the values of the teacher. We ask broad question to get the teachers' story. The prompts asked for further information to get insight into teachers' professional biography Starting the interview it is important to show interest in the person. You do not have to stick with to the written questions. Try to create a good atmosphere for the interview. You might ever talk a little about yourself.
2.	**How would you describe your school?**	• How many teachers and students? • What are the main challenges in you school? • How would you describe the diversity in your school? • How would you describe the achievement-related diversity in your school? • How would you describe the social-cultural diversity in your school?	Start with the more general guiding question, to find out what is important for the teacher. The prompts are used to get insight into the school climate, the "well-being" of the teacher. Contextual factors and prior experience in dealing with diversity are important factors for the perception of the effectiveness of the CPD. Listen carefully (like all the time) for you might make references to the school context later during the interview.

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| 3. What does 'inquiry-based learning' (IBL) mean to you? | What do you think are the main characteristics of teaching IBL? What are the benefits from IBL from your perspective? What kind of prior experience do you have using IBL? What kind of professional development on IBL did you have? How do you implement IBL in practice? | IBL is central for MaSDiV,

 The prompts are used to get insight into teachers' beliefs about IBL and their practice.

 Make sure to ask for teachers' beliefs and not for general accepted belief. "What <u>do you think</u> are the main characteristics". |

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C) Main questions – Lesson & Teaching practice

	Guiding question	Prompt	Comment
1.	What were the objectives of your lesson?	• What was in your opinion successful/less successful during the lesson? • How do you feel about the lesson?	This questions aims to get teachers' opinion on the observed lessen. Central is to ask for their feelings to probe into values and beliefs. Nevertheless, the guiding question is more neutral. We think this one is easier to start with. You have to plan for transition from the opening question to the observed lesson. "Looking at the lesson we just saw … ." This question is the introduction into part C "Lesson&Teaching practice". Create a good atmosphere to talk about teaching practice.
2.	How did you try to address achievement-related diversity of your class?	• What strategies for addressing diversity did you implement? • How did you experience the implementation? • How did your students react to the strategies and methods you used?	Make sure that you make reference to question B2, "diversity in particular school context", e.g. you told me that …., how does this apply for your class. Teachers have to experience that you are listening carefully. Transition could be done using "The CPD course you attended was about how diversity in class can be valued and how different needs may be addressed."

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3.	How are you using IBL to address achievement-related diversity in your class?	• What activities/learning opportunities in this lesson were particularly helpful to address achievement-related diversity? • What are key challenges for you regarding using IBL to address achievement-related diversity? • How would you describe a lesson that you consider illustrative of using IBL to address achievement related diversity? • What do you think – is IBL a good strategy to meet the needs of your students?	This questions aims to get insight what teachers consider to be "best practice" using IBL to address achievement related diversity and how they feel about using IBL for this purpose themselves. The last prompt is to get teachers' personal opinion. It might be addressed before. Asking directly, we hope to get insight what teachers really think when it comes to their own teaching.
4.	How did you choose the context for the lesson?	• What was your intention choosing this context? • What (other) context should be used in science teaching? *(If no context was visible in the observed lesson, start with this question)*? Why? • What difficulties usually arise when you use contexts in your class?	This question is closely related to 5. Here we ask for teachers' general intention of using context. Question 5 is directly referring to contexts relevant to society.
5.	In which aspect is the context of your lesson a context relevant to society?	• What does "context relevant to society" mean to you ? • What do you consider challenging aspects of working with context relevant to society more often? • What might be supporting factors for you to use contexts relevant to society? • Which contexts relevant to society would you use in your maths/science teaching? • What do you want to achieve when you using contexts relevant to society?	This question might already be addresses in 4. If there was no context in the lesson start with prompt 1. Do not ask directly for fundamental values because this will influence the answer of the teachers. We want to find out why the teacher implemented a context relevant to society.

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D) Main questions - CPD

	Guiding question	Prompt	Comment
1.	**What motivated you to take up the CPD course?,**	• How did you learn about the course	to start this section on the CPD, to see what kind of expectations, needs, etc. the teacher had and then continue
2.	**From your perspective what impact did the CPD course have on the lesson we saw?**	• How was your planning influenced by the CPD? • Which activities did you implement due to the CPD?	ask not only which activities but also why this activities were chosen
3.	**What aspects or activities of the CPD course were especially useful for you?**	• In which way did the course change your practice? • How did you implement activities of the CPD course into practice besides of the lesson today? • What are the benefits of the CPD course for your students? • What challenges do you encounter of putting CPD ideas into practice? • What will you keep on using? • Do you remember a aha-moment during the CPD course ore related to the CPD course that make	be aware that some aspects may have been addressed already, show the teacher that you have been listening carefully, maybe repeat what has been said before and ask whether something need to be added-
4.	**How did the CPD help you to implement IBL to address diversity?**	• What did you try out? • What are you planning to try out?	Question 3 might already be addressed within question 2
5.	**How did the CPD help you using contexts relevant to society?**	• What did you try out? • What are you planning to try out?	Question 4 might already be addressed within question 2
6.	**How would you change the CPD?**	• What else would you like to have within the setting of such a CPD? • Which activities could be cancelled? • How could the CPD course be improved?	

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E) **Closing part**

<u>Additional comments</u>
Is there anything more you would like to add? OR
What should I have asked you that I didn't think to ask you?

<u>Next steps</u>
I'll be transcribing your interview and will send you the transcript to ask for approval in approximately one month. We will be analysing the information you and other teachers across Europe gave us. We will write a national report in August 2019. Furthermore, we submit an international report to the European commission in February 2020 with recommendations on how a CPD about IBL dealing with diversity should be implemented across Europe. I will be happy to send you the both reports to you, if you are interested.

<u>Thank you</u>
Thank you for your support.

Ending time: _____

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