European Perspectives
on Music Education

17

Isolde Malmberg, Thade Buchborn, Lauren Steinmetz (Eds.)

Future-making, Mobility and Networking in Europe

Impulses for Music Education in School, Teacher Education and Professional Development

TEACHER EDUCATION ACADEMY FOR MUSIC

Future-Making, Mobility and Networking in Europe

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Future-making, Mobility and Networking in Europe.
Impulses for Music Education in School, Teacher Education and Professional Development
European Perspectives on Music Education 17
edited by Isolde Malmberg, Thade Buchborn & Lauren Steinmetz
www.eas-music.org
www.teacher-academy-music.org

European Perspectives on Music Education is a peer-reviewed book series.

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Cover design: Marinas Medien- und Werbeagentur GmbH, Innsbruck (basic design);
Georg Toll, tollmedia, Innsbruck (design & layout)
Cover image design: Salomon Kraus
Layout and typesetting: Georg Toll, tollmedia, Innsbruck
Language Check: Lauren Steinmetz
Style Check: Hannah Juval Lessing
Print: Opolgraf SA, Opole
Helbling Verlagsgesellschaft m.b.H., A-6063 Rum, Kaplanstr. 9, productsafety@helbling.com

1st edition / 1st print run 2026
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371131268
ISBN 978-3-7113-1268-6
ISMN 979-0-2071-0815-9

www.helbling.com

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Table of Contents

Ruth Jakobi & Simone Dudt
Foreword **7**

Isolde Malmberg, Thade Buchborn & Lauren Steinmetz
Addressing Music Education Futures in Europe
Through Research and Development: An Introduction **11**

I. MUSIC EDUCATION AND FUTURE-MAKING

Philip Stade, Thade Buchborn, Jonė Girdzijauskaitė-Pocienė,
Anna Houmann, Elissavet Perakaki, Branka Rotar Pance,
Michael Rumpeltes, Lina Van Dooren & Lena Widdermann
Music Education for Future-making:
Integrating Sustainability, Democracy and Digitalisation
through Participatory Design-Based Research **21**

II. MOBILITY FOR MUSIC EDUCATION STUDENTS

Angeliki Triantafyllaki & Jens Knigge
Section Introduction **53**

Jens Knigge, Thomas De Baets, Natassa Economidou Stavrou, Solveig Fretheim,
Rūta Girdzijauskienė, Runa Hestad Jenssen, Kirsti Nørstebø & Lorraine O'Connell
Redesigning Mobility in European Music Teacher Education:
From Barriers to Opportunities **61**

Lauren Steinmetz, Isolde Malmberg, Smaragda Chrysostomou,
Stefanie Kreuzwieser, Angeliki Triantafyllaki, Demosthenes Dimitrakoulakos,
Verena Bons & Wilfried Aigner
Design-Based Research in an International,
Multilingual and Interprofessional Setting:
Facilitating School Internships Abroad
in European Music Teacher Education **79**

Isolde Malmberg, Angeliki Triantafyllaki & Demosthenes Dimitrakoulakos
Mentoring in Collaboration:
Co-constructing Music Education Competencies
in School Internships Abroad **109**

Lauren Steinmetz & Smaragda Chrysostomou
Crossing Borders, Shaping Professional Selves:
Preservice Music Teachers in School Internships Abroad **129**

Runa Hestad Jenssen & Lauren Steinmetz
Designing for Leaks:
An Outro in Movement **151**

III. MUSIC EDUCATION IN EUROPE: MAPPING THE FIELD

Natassa Economidou Stavrou, Smaragda Chrysostomou, Angeliki Triantafyllaki, Elissavet Perakaki & Thekla Andreou
Mapping Music Teacher Education in Europe:
From Design to Implementation **161**

Rūta Girdzijauskienė, Lorraine O'Connell & Karla Stolle
Mapping the Present and Shaping the Future:
Insights on School Music Education in Europe **187**

IV. ADVOCATING FOR MUSIC EDUCATION IN EUROPE

Thomas De Baets, Ann-Sophie De Praitere, Marina Gall & Isolde Malmberg
The *TEAM* Learning Outcomes for Music Teacher Education
in Europe **209**

Isolde Malmberg, Marina Gall, Michaela Hahn & Finn Schumacker
Advocating for Music Education:
Strategies to Sustain Music in General Schools
and in the Wider Music Education Sector **227**

APPENDIX A–H

I. WORK PACKAGE 5
SCHOOL INTERNSHIPS ABROAD AND MENTORING

A: Design Principles for School Internships Abroad & Mentoring **247**

B: Introductory Conversation Guide **251**

C: Cultural Reflection Tree **255**

D: Voice Memo Prompts **257**

E: Photo Journal Prompts **259**

F: Debrief Conversation Guide **261**

G: Checklist for Language-Sensitive Music Teaching **263**

II. WORK PACKAGE 8
MAPPING MUSIC EDUCATION IN SCHOOLS

H: Music Lessons in European Schools **267**

The Editors **273**
The Authors **274**

Lauren Steinmetz, Isolde Malmberg,
Smaragda Chrysostomou, Stefanie Kreuzwieser,
Angeliki Triantafyllaki, Demosthenes Dimitrakoulakos,
Verena Bons & Wilfried Aigner

Design-Based Research in an International, Multilingual and Interprofessional Setting

Facilitating School Internships Abroad in European Music Teacher Education

Abstract

This chapter presents the methodological framework of a large-scale, interprofessional, international, and multilingual Design-Based Research (DBR) project conducted within *Work Package 5* of the *Erasmus+* co-funded *TEAM* project (*Teacher Education Academy for Music*). The project brought together music education researchers, university teacher educators, and school-based mentor teachers across five European countries to develop theoretical knowledge and practical tools supporting school internships abroad (SIAs) for music education students. Drawing on DBR as articulated by Bakker (2018) and McKenney and Reeves (2019), the research unfolded across seven iterative cycles, each comprising a complete SIA with data collection across preparation, placement, and debrief phases. Four data collection instruments and a broader set of open educational resources (OERs) were iteratively developed throughout the project. The chapter traces the evolution of selected design principles, instruments, and tools as exemplars of this iterative process, and reflects on the advantages and challenges of conducting DBR in a complex, cross-institutional setting – offering methodological insights for researchers undertaking similarly broad, multi-stakeholder projects in education.

Keywords: Design-Based Research, School Internship, Mentoring, Teacher Professionalisation, Music Education

Introduction: A Collaborative Large-Scale Design-Based Research Project

This chapter describes and discusses a research collaboration whose scope is diverse in several respects. In the project presented here, music education researchers worked together with university teacher educators and music teachers in schools (mentor teachers) across five European countries to develop both theoretical knowledge[1] and practical tools[2] for diverse actors engaged in music teacher education. The project was therefore designed to be interprofessional, international, and multilingual.

Within the three-year, large-scale *Erasmus+* co-funded project *TEAM – Teacher Education Academy for Music: Future-Making, Mobility and Networking in Europe*[3] we formed the working group *Work Package 5: Internships Abroad and Mentoring*. The first goal of our work package (*WP5*) was to develop *internship formats* for music education students wishing to complete a school internship abroad (SIA) at a general school during or directly following their domestic teacher education programmes. The second goal was to further develop the quality of student support – mentoring – during SIAs by providing helpful tools and informational materials to mentor teachers (MTs). In this text, we present our broad yet systematic research collaboration: specifically, the design-based research approach (DBR) and how it structured our work. We refer to content such as the state of research, results or products only to clarify our methodological decisions, which must of course be appropriate to the object of study. We begin by briefly outlining the state of existing research within our topic and how it was conducted. We then describe our own approach, illustrating it by presenting some of our research instruments in more detail. We conclude with reflections on the advantages and disadvantages of our methodology to provide insights for similar projects in the future.

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1 see Malmberg et al., 2026, in this volume; Steinmetz & Chrysostomou, 2026, in this volume

2 https://teacher-academy-music.eu/

3 *TEAM*, the *Teacher Education Academy for Future-Making, Mobility and Networking in Europe* aims to provide mappings of European music educational systems, foster mobility (Erasmus semesters as well as Internships Abroad), and offer future-making OERs and a set of European-wide Learning Outcomes for Music Teacher Education. https://teacher-academy-music.eu/
TEAM is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Research on School Internships Abroad and Mentoring: Scope and Approaches

The teaching profession faces increasing challenges, including digitalisation, global uncertainty, and increasingly diverse student populations, alongside the imperative of preparing students for complex and unpredictable futures (Townsend & Bates, 2007; Westerlund et al., 2020). Music teachers, serving as both mediators of musical tradition and agents of change, play a key role in supporting students' engagement with evolving cultural and societal realities (Westerlund et al., 2020, p. 4). Consequently, music teacher education must equip future teachers to "think globally, have international experience, and […] integrate a global dimension into the teaching process" (Auni et al., 2022., p. 2763).

Over recent decades, this has led to an expansion of exchange programmes, school internships abroad, and interinstitutional collaboration in teacher education broadly (Bates, 2008) and in music teacher education specifically (Westerlund & Karlsen, 2018; Westerlund et al., 2020). These initiatives provide crucial opportunities for the development of both intercultural competencies – broadly understood here as the ability to engage in appropriate and effective interaction, exchange and negotiation between two or more cultures (Deardorff, 2006; Byram, 2020) – as well as broader professional competencies.

In parallel, a substantial body of research has examined student mobility and the benefits students gained during periods of study or internships abroad (Bloch et al., 2022, p. 107). For example, Kercher and Schifferings (2019) conducted a meta-analysis of 33 international studies investigating the impact of student mobility programmes on student teachers (STs). Of these, 30 studies demonstrated impact across several key areas: increased cultural sensitivity and intercultural competence, a reduction in stereotyping and an increased openness to new experiences. Similarly, Giorgi Di Pietro (2022) carried out a systematic review of international internship programmes, focusing on the competencies and skills students acquire or develop during these internships abroad. In his review, Di Pietro (2022, p. 13) proposes an understanding of intercultural teacher competence acquired through SIAs that encompasses cultural awareness, cultural sensitivity and cultural appreciation alongside adaptability, flexibility and open-mindedness. However, though his findings indicate considerable potential for the development of intrapersonal skills, they also reveal "no consensus on what students actually gain from this experience" (Di Pietro, 2022, p. 19). Di Pietro (2022) argues that the existing studies rely too heavily on student self-reporting and have other methodological issues, which makes achieving consensus difficult.

Within the field of music teacher education, research on immersive intercultural learning experiences – both short- and long-term – indicates that prospective music teachers often report meaningful and sometimes transformative learning experiences. Studies in this area point to the development of intercultural awareness, as well as professional and personal skills that can be applied in international and culturally diverse contexts (e. g.,

Emmanuel, 2005; DAAD, 2018; Westerlund et al., 2020; Miller and Gonzalez, 2016). Nevertheless, empirical research on international teaching experiences within music teacher education – particularly in the European context – remains limited. More broadly, comparable data on their effects on professional competence and the long-term sustainability of these effects are still scarce (Goethe-Institut e.V., 2022, p. 10; Bloch et al, 2022, p. 107).

In response to the complexity, scale, and multi-stakeholder nature of these initiatives, broader research and development infrastructures that bring together international research teams with institutional partners have begun to emerge. For example, the *Forschungshub* (research hub) at the Goethe-Institut combines theoretical and empirical approaches to evaluate processes of internationalisation in teacher education, adopting an interdisciplinary perspective on international internships and aiming to generate systematic insights into the significance and effectiveness of mobility programmes for educational systems in general (Goethe-Institut e.V., 2022, p. 7–8). Within this context, Kluge et al. (2022) represent a move toward more systematic, longitudinal research by examining the development of STs' competencies, beliefs, and motivations during international teaching internships.

Alongside these research initiatives, universities have developed formats that structure and accompany international internships in teacher education. For instance, the University of Cologne has implemented the programme *internships@schoolsabroad*, which offers a unique form of support for both students completing internships abroad and partner schools. The programme includes preparatory meetings, an accompanying online seminar during the internship, and a follow-up seminar aimed at reflecting on the experience (Felske et al., 2022, p. 30). Similar approaches can be found at the University of Potsdam, where accompanying online seminars focus on language-sensitive subject instruction during internships abroad following Felske's online seminar approach (Felske et al., 2022, p. 39), and mentoring formats, which aim to provide subject-didactic guidance during placements (Buschmann & Malmberg, 2025).

Beyond individual support, some institutions embed internationalisation within broader collaborative frameworks that involve sustained partnerships with schools, universities, and educational organisations abroad. At Goethe University Frankfurt, for instance, the field of *International Teacher Education* was established in 2016 to support students going abroad while strategically coordinating exchange between universities and partner schools. A key component of this programme is a blended-learning concept designed to support students, facilitate self-directed learning, and foster collaboration between university staff and MTs at host schools (Hänssig, 2019; Felske et al., 2022, p. 33). In addition, the university has built up an international network of cooperating schools (Felske et al., 2022, p. 35). Collectively, these initiatives illustrate how large-scale, international programmes provide a framework for the investigations into the professional and institutional development of internships in teacher education.

In European teacher education, formalised structures for SIAs appear to be less common outside of Germany. Rather than being organised as independent programmes, opportunities to complete SIAs may be embedded in existing internship structures in many European contexts (Steinmetz et al., in review). In summary, it can be said that while there is evidence of significant international cooperation to enable STs to complete SIAs, development is uneven overall. Initial materials for supporting such internships are available in some places; however, accompanying research either covers only small samples or describes bilateral exchange programmes between two countries and their limited effects. Moreover, most of the research focuses on exchange programmes in which the local language does not pose a major obstacle to students – either because they are studying the language of the host country (foreign language internship) or because the programmes involve schools abroad that use the same language (e. g., German Schools Abroad, or U. S. students going to England). To date, no research on projects involving interprofessional teams with a broad international and linguistic profile has been published.

Addressing these research gaps, the *TEAM* project (*WP5*) is exploring and mapping different models, designs and structures for music-focused SIAs in Europe. By investigating the perspectives of multiple stakeholders (universities, schools, student teachers, mentor teachers), the project aims to understand the impact of international experiences on both an individual and institutional level.

Yet in this chapter, we do not primarily focus on our research results or the theoretical insights acquired (for detailed accounts of these findings, see Malmberg et al., 2026, in this volume; Steinmetz & Chrysostomou, 2026, in this volume) but rather show in detail how we worked methodologically. We therefore pose and discuss the following question: How can a coherent research design be established and implemented in a large-scale DBR project on internships abroad and mentoring within an interprofessional, international and multilingual educational context? What advantages can such a broad research setting offer, what difficulties arise, and how can these be mitigated?

Methodology

In the following section, we describe our research approach and the stakeholders involved. We also provide selected examples of the research instruments used, the sample, and our analytical method to illustrate our work.

The Design-Based Research Framework

Design-Based Research (DBR) provided the framework for this research project (Bakker, 2018; Reinmann et al., 2024). We draw on DBR in the sense articulated by Bakker (2018), who suggests it is a "genre of flexibly using existing research approaches for the purpose

of gaining design-based insights and research-based designs" (p. 7). While the notion of design is quite prominent here, McKenney & Reeves postulate the following definition of DBR, emphasising a more multifaceted educational approach: "Educational design research blends scientific investigation with the systematic development and implementation of solutions to educational challenges" (McKenney & Reeves, 2019, title page). According to this definition, the central premise of DBR is to yield both theoretical insights and solutions applicable to practical contexts. Thus, the research process in DBR has a dual focus and can be defined as both theoretically oriented and interventionist: theoretically oriented in the sense that DBR aims at the "development of theoretical understanding" (McKenney & Reeves, 2019, p. 13) and interventionist as it impacts practice, e. g., via educational products or programmes.

The interprofessional composition of this research links practitioners' knowledge with researchers' conceptual and structural knowledge.

Our international research group comprises the following stakeholders from various European countries:

- university-based teacher educators (TE; also acting as practitioner in the ST-MT-TE-triad),
- researchers with expertise in mentoring during practical phases,
- researchers who had developed and implemented mentor training programmes,
- coordinators of practical phases and subject-didactics specialists, and
- individuals who are or have been mentors.

We worked in several national languages, with English serving as the shared language. On the one hand, this collaborative structure accounts for high complexity (in terms of organisational and interactional matters) and on the other hand, this co-designing process enabled reciprocal knowledge transfer (Reinmann et al., 2024) and contributed to bridging the "research-practice gap" (Bogaerds-Hazenberg et al., 2019, p. 1).

Another foundational element of DBR is its cyclic nature and iterative setting, which enable empirical investigation and thus produce usable knowledge (McKenney & Reeves, 2019, p. 6). The term *usable knowledge* can be traced back to Lagemann (2002), who highlighted the importance of educational products as the relevant outcome of such research. Each cycle generates usable knowledge, which is shared and distributed among researchers and practitioners (McKenney & Reeves, 2019, p. 6). As educational research is particularly concerned with practical learning outcomes and applications, the empirical setting needs to be constantly adjusted to newly acquired insights and is therefore highly adaptive (Bakker, 2018, p. 5; McKenney & Reeves, 2019, p. 11). The following sections lay

out the ways in which our initial focus areas – through collaborative research work and the application of DBR framework – developed over time and contributed to the maturation of the tools and insights arising from the SIAs from May 2024 until July 2025.

Pilot Study

Initial discussions within our international research and practitioner group made clear that although domestic school internships are an element of teacher training in all ten *TEAM* consortium countries, their format, allocation and focus differ significantly. Therefore, prior to designing the first cycle, we conducted a small pilot study (Steinmetz et al., in review), surveying music education experts from 18 countries about school internship practices in their respective teacher education programmes. Equipped with knowledge about their domestic school internships, we aimed to develop formats and tools to enable the manageable integration of school internships abroad for as many European music teacher training institutions as possible. The survey revealed that, despite differences, there is significant overlap in school internship content and requirements, providing a shared basis for planning and implementing school internships abroad on a European level.

Having established the theoretical grounding for school internships abroad and having identified the organisational and practical aspects that are necessary for their implementation, we discussed a first set of *design principles* (Euler, 2017). The design principles, which characterise prescriptive theoretical understanding (McKenney & Reeves, 2019, p. 38), guided our intervention design and were themselves iteratively refined three times during our project, as new empirical and theoretical knowledge was acquired.[4]

Cycles and Their Data Collection Instruments

In our DBR process, each school internship comprised three phases: preparation (pre-internship), placement (fieldwork; during the internship) and debrief (post-internship). Data were collected across all three phases using instruments we developed and iteratively refined throughout the project. These instruments also served as prototypes for future practice tools, available as open educational resources (OERs)[5], in keeping with DBR's dual focus on both theory and practice. They are briefly introduced here; a more in-depth discussion of their use and iterative refinement is found below. Each cycle comprised the completion of a SIA in its entirety, including data collection via our instruments across all three phases and subsequent data analysis, which informed redesigns. Between some cycles we also refined our design principles.

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[4] An overview of the design principles' iterative development is presented from pages 91–95, along with a more detailed presentation of several exemplars. The mature version of the design principles in their entirety can be found in Appendix A.

[5] https://oer.mdw.ac.at/oer/publication?collection_name=TEAM&query=&sort=dateIssued_desc&page=1

Preparation: Reflecting and Preparing

Data Instrument 1: Introductory Conversation Guide (Appendix B)
A conversation guide was developed for use by the mentor teacher (MT) and student teacher (ST), aiming to assist in cultural self-reflection, exploring contextual differences in music education, and articulating goals, hopes and expectations for the SIAs. Furthermore, it aimed to establish rapport between MT and ST. This first prototype proved useful and underwent only minor revisions throughout subsequent cycles.

Placement: Reflecting and Documenting

Data Instrument 2: Voice memo prompts (Appendix D)
STs were asked to record 3–5 voice memos per week during their school internships abroad and send them directly to the researcher studying their placement. The recordings were typically recorded on the STs' smartphones and stored by the researcher in a GDPR-compliant repository, accessible to all research team members. These voice memos encouraged ongoing self-reflection and provided near-real-time data rather than post hoc recollections. An initial set of prompts (Appendix D/see also section Practice Tools below) was refined over the first four cycles as we sought to move from more superficial lists of activities ('This is what I did today') to STs reflecting on a meta-level why events were significant and how actions connected to learning processes.

Data Instrument 3: Photo journal prompts (Appendix E)
Both ST and MTs were asked to take photos during the internship: These photos were to be used as a guide during the debrief interview, allowing the students to talk about people, places and activities that had been particularly meaningful to them. The depth and reflectiveness of the photos were initially inconsistent, so we developed a photo journal guide after Cycle 5 that aimed to help students take more thoughtful, intentional photos for their journals.

Debrief: Reflecting and Transferring

Data Instrument 4: Debrief conversation guide (Appendix F)
A debrief conversation guide was created to gain further insight into the ST's experiences abroad. For data collection purposes, these conversations took place in the form of qualitative interviews between a researcher and one ST. Later, the conversation guide was refined so that STs could also use it for self-reflection, with the option of integrating references to their photo journals and voice memos.

Instruments 1–4 functioned as research instruments and were also iteratively refined to become tools and to be made available as OERs after the conclusion of the project. Further tools were also developed within this research project, including the *Cultural Reflection Tree* (Appendix C), *Checklist for Mentor Teachers* (Malmberg et al., 2026, in this volume) and *Tips for Language-Sensitive Music Teaching* (Appendix G).

			Phases of the SIA		
Tools Developed	**People Involved**	**Data Instrument**	**Preparation**	**Placement**	**Debrief**
Introductory Conversation Guide	ST and MT, Optional TE	Instrument 1	Yes, for planning and preparation	–	–
Checklist for Mentor Teacher	MT	–	Yes, for planning and preparation	Yes, for use during placement	May be helpful in debrief phase
Cultural Reflection Tree	ST, MT or ST, TE or ST, MT, TE	–	Yes, optional	Yes	Yes
Tips for Language-Sensitive Music Teaching	ST optional MT TE	–	Yes, for planning and preparation	Yes, for use during placement	–
Voice Memo Prompts	ST	Instrument 2	Could begin in planning phase	Yes, for use during fieldwork	Could be used during debrief phase
Photo Journal Prompts	ST optional MT	Instrument 3	–	Yes, for use during fieldwork	–
Debrief Conversation Guide	ST and MT or ST and TE or ST, MT and TE	Instrument 4	–	–	Yes, at the end of or after placement

Table 1: Developed tools, target groups, instruments for data collection and their use in phases of the SIA

Data Collection, Sample and Analysis

Data were collected throughout all seven cycles using the four instruments listed above with the STs (N = 10; 7 female, 3 male); instrument 1 was also used with the MTs (N = 3). Data collection was further supplemented by semi-structured interviews with the MTs (N = 3) as well as TEs from the sending universities (N = 2) toward the end of their involvement in the project. All data were digitally captured, stored and managed in a GDPR-compliant repository made available by the host institution. The interviews and voice memos were transcribed and analysed[6] using MAXQDA (VERBI Software, 2022).

[6] The photos in the photo journals have thus far only been used as memory aids during debrief interviews and have not yet been systematically evaluated.

The analysis was conducted as structuring qualitative content analysis combining inductive and deductive coding (Kuckartz & Rädiker, 2022). Two to three researchers independently coded each dataset to achieve intercoder agreement. Broader analyses were discussed either within the research group or the whole *TEAM* consortium (Barbour, 2001), in keeping with the collaborative nature of DBR (Bakker, 2018). The results after each evaluation shaped subsequent cycles and at three points also led to a refinement of our design principles.

The participating students were bachelor or master music education students at universities represented in the *TEAM* consortium. An open call was sent out to music education students at these institutions inviting them to take part in a SIA. Students expressing interest received more information and were invited to participate in the accompanying research project. Once their participation consent was obtained, the students began applying for funds through their university's *Erasmus* office, and an introductory meeting with the MT was scheduled via Zoom. The MTs were all in multiple roles as TEs, music teachers, and/or music education researchers, with two MTs being highly involved in the *TEAM* project. STs were informed by their mentors about school policies regarding photographs; pictures taken by STs and MTs and used as part of data collection were GDPR-compliant and conformed to individual school policies.

Data collection was compliant with the ethical and data protection regulations of the *TEAM* project. Participation in the research component of the SIA was voluntary; informed consent was obtained from all participants, and all data were pseudonymised for analysis.

Process and Results

The following section gives insight into the DBR kitchen and describes key processes in our study which prove relevant to the evaluation of our results. First, we outline the organisational framework of the SIAs we facilitated and provide a brief overview of each cycle, including the actors involved. Second, we introduce the design principles and trace their iterative development across the seven cycles, with particular attention to three exemplars. Third, we present tools designed during the project, highlighting the iterative development of one exemplar (the voice memo prompts).

Organisational Framework

Following consultation with university *Erasmus* officers, two funding programmes[7] were identified as suitable options for SIAs: the blended mobility programme (for stays of 5–30 days), or traineeships abroad (for internships lasting 2–12 months). Learning agreements were in each case set up between a sending university and a host school of general education, but did not include a receiving university as would be typical for *Erasmus* study abroad. The internships could be non-credited, meaning students received no ECTS but rather an addendum to their diploma supplement. Alternatively, the sending university could consider the SIA as an obligatory internship and credit the student the corresponding number of ECTS.

Receiving Institutions (Schools)

Three secondary schools in three different countries hosted SIAs as part of the research project. All internships were focused on music education, and all MTs were music teachers. As presented in Table 2 below, in schools 2 and 3, the local language is spoken, while school 1, an international school, uses English for instruction and all other school activities.

	School 1 (Cycles 1,2,5 and 7)	**School 2** (Cycles 3 and 6)	**School 3** (Cycle 4)
School Type	International private school within a network of similarly structured schools	Public school in local school system in major central European city	Public school in national school system
School Focus	Follows the International Baccalaureate curriculum	Music emphasis	Strong music specialisation; emphasis on choral singing and traditional folk music
Age of Pupils	Secondary school, grades 6–12	Lower secondary school, grades 5–8	Secondary school, grades 5–12
Instructional language	English as *lingua franca* for all school communication	Local language	Local language
Student Body Composition	Diverse student body, highly international with no one dominant culture	Diverse student body diverse both linguistically and culturally	Relatively homogeneous student body

Table 2: Internship schools: Levels, student body and teaching languages

[7] https://erasmus-plus.ec.europa.eu/opportunities/opportunities-for-individuals/students/traineeships-abroad-for-students [29.11.2025]

Cycle Composition and Participants

The DBR cycles are displayed in Table 3 according to cycle number, length, country, whether or not it was credited, and language of instruction. The MT, TE and ST(s) for each cycle are also indicated. In total, ten STs participated in the SIAs from four sending institutions across Europe.

Cycle		**Sending Institution (University)**					**Receiving Institution (School)**		
No.	Duration	Country	STs	STs	TEs	EC	Country	MT	EN/local language
1	10 days	CO4	ST1	–	TE1	no	CO1	MT1	EN
2	3 wks	CO4	ST2	–	TE2	no	CO1	MT1	EN
3	4 wks	CO5	ST3a	ST3b	TE3	no	CO2	MT2	LL
4	2 wks	CO6	ST4a	ST4b	–	yes	CO3	MT3	LL
5	9 wks	CO7	ST5a	ST5b	TE4	yes	CO1	MT1	EN
6	2 wks	CO6	ST6	–	–	no	CO2	MT2	LL
7	10 wks	CO7	ST7	–	TE4	yes	CO1	MT1	EN

Table 3: Cycles and involved parties, sample overview

Time was a restricting element in this research project as we were bound not only to various school calendars and university semester plans, but also to a fixed project deadline. In a few instances, minor adjustments were made to the design mid-cycle – such as, for example, updating the voice memo or photo journal prompts.

Design Principles

Our initial design principles (DPs) were developed based primarily on theoretical insights from the literature review and empirical findings gained from the pilot survey, as well as professional experience from within the research team. These first DPs (Fig. 1: DP1) then guided the creation of the first design (Fig. 1: Design 1), which we conceptualise as comprising the SIA supported by practical tools, some of which also function as data collection instruments. The initial design and the resulting data set together comprise Cycle 1 (Fig. 1: Design 1 and Data Set 1; each oval indicates one cycle).

Data were collected throughout each cycle (Data Set 1–7) and evaluated upon completion. Where applicable, findings informed refinement to the subsequent design – that is, the SIA supported by accompanying tools – resulting in a series of iterative cycles (Designs 1–7). Because we had several redesigns and some cycles partially overlapped (see Fig. 1: e. g., Cycles 5, 6 and 7), we opted for a numerical labelling system (Designs 1–7) for clarity and a better overview.

During in-person meetings of the research group, which took place before the Cycle 1 and then again after Cycles 2, 5 and 7, we collaboratively reviewed the analysed data and corresponding design modifications; these discussions then informed subsequent iterations of the DPs. Overall, our collaborative and iterative process resulted in smaller, cycle-specific refinements and broader, cross-cycle refinements that contributed to the evolution of the DPs. The structure of Fig. 1 is partly inspired by Fraefel (2014, p. 9).

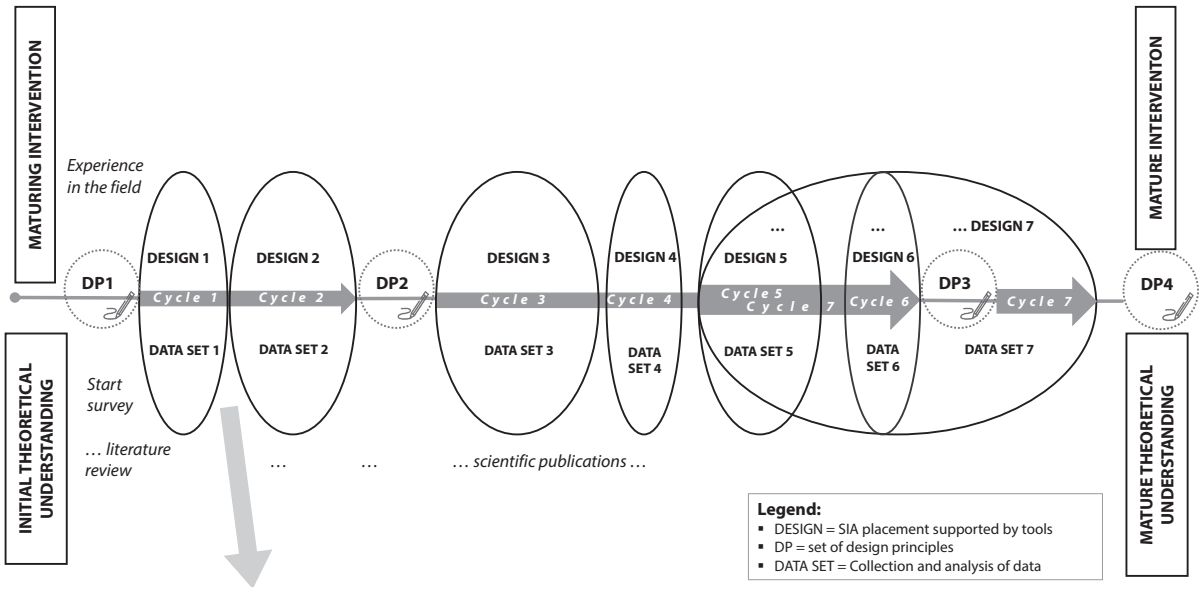


Fig. 1: Seven shorter and longer cycles (each oval being one cycle), three moments of DP revision

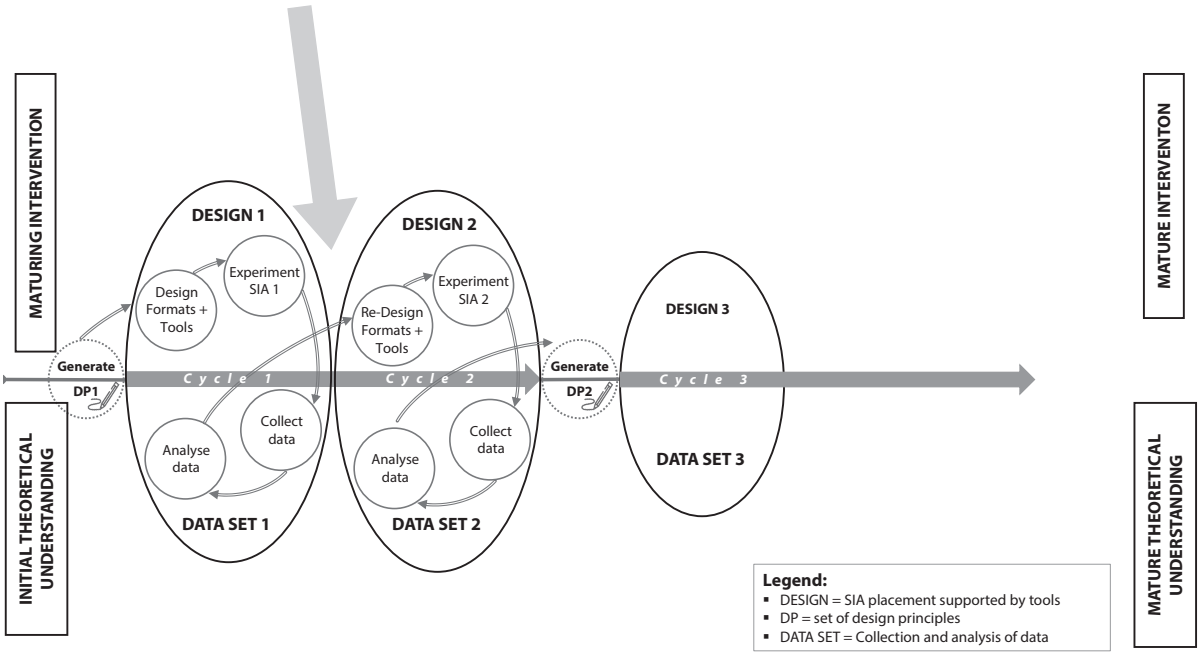


Fig. 2: Zoom into Cycle 1 and Cycle 2

Below we present the development of three DPs as exemplars: the evolution of two DPs is traced from their origins as initial design principles to maturity, and a third demonstrates the development of a DP as it emerged from the data.

Initial Design principle: *Clarify expectations and framings to establish appropriate matching of mentee and mentor/school.*

Clarification proved to be a central element in planning and implementing SIAs. While our initial concern focused on ensuring sensible partnerships, the issue of clarity extended much further, which is unsurprising, given the diversity of language, educational systems and institutional requirements involved.

For example, a vague learning agreement and insufficient communication led in one instance to confusion as to what the ST actually needed to complete during her SIA. Because this particular ST was near the end of her studies and had already completed her internship requirements, she was free to design her SIA in alignment with her professional interests. However, this information was not communicated to the MT, who reported feeling stressed about whether all requirements were being fulfilled. In another example, STs completing a credited SIA had very specific requirements, which led to a greater workload for the MT than originally anticipated. This was ultimately unproblematic, but greater clarity beforehand would have allowed for better planning.

Other issues concerning administrative and organisational aspects (e.g., Who are the partners? Who is responsible for what? How and when will communication take place? What form will feedback take?) also arose throughout the cycles. Because SIAs are less standardised than other mobility programmes, and because intercultural and linguistic dimensions add layers of complexity, clarifications are particularly critical. Therefore, the element of clarity from the initial DP proved to be correct but was too narrow in scope, and the respective DP was refined to reflect this. Clarity is key to a smooth and successful SIA not only in the planning phases, but throughout the internship abroad.

Final Design Principle: *Clarity is key: expectations, framing, and requirements for SIAs should be explicitly and formally communicated to all participants.*

Initial Design Principle: *Engage in a high level of cultural self-reflection*

Although frequently described in the literature as one of the most important learning areas of international internships (e.g., Pence & McGillivray, 2008; Cheng & Huang, 2023), data collection throughout the research project indicated that intercultural learning is not automatic, but must be supported essentially by self-reflection (Malmberg et al., 2025). We understand the term intercultural as referring to interaction, negotiation and/or exchange across two or more cultures (Deardorff, 2006; Byram, 2020), and define intercultural learning as an ongoing process which supports the development of skills for effective and appropriate intercultural interaction, such as intercultural teacher competences as conceived by Di Pietro (2022): cultural awareness, cultural sensitivity and cultural appreciation alongside adaptability, flexibility and open-mindedness.

While STs often downplayed intercultural aspects in their internships, describing cultural differences as unimportant or insignificant, data revealed that they did indeed notice them, although they did not necessarily identify these differences as being cultural in nature (Steinmetz & Chrysostomou, 2026, in this volume). Evolving data collection instruments – such as voice memo prompts, photo journal prompts, and debrief interview guides – sought to help STs engage in deeper self-reflection, thereby enhancing intercultural learning. Therefore, the imperative shifted over the cycles from engaging in reflection to providing tools for reflection. This led to refinements, particularly to the voice memo prompts and the debrief interview guide, which were developed as OERs to support SIAs.

It also became apparent from interviews with both student and mentor teachers that the MT's reflection practice was also significant; the MTs not only encouraged and facilitated self-reflection in their STs but modelled this practice themselves. Our data analysis yielded many codes related to teaching philosophies, and it was meaningful for the STs to hear from their MTs about the why behind their teaching approaches. Ultimately, the initial DP proved to be both too general and too small and became:

Final design principle: *(Self-) reflection for transformation: Provide students with opportunities and tools for intercultural self-reflection.*

The following DP first emerged after Cycle 6. During the portion of the debrief interview in which the students shared photos they had taken that were meaningful to them, they often brought photos of places or experiences outside of school. In conversations about these photos and experiences, it became clear that these activities were also impactful during the SIA. Visiting museums or historical sites, attending concerts, spending time in nature, taking day trips, or going on daily long walks were just some of the examples STs gave of activities beyond the school that were meaningful to them and that appeared to enhance their intercultural learning. From the beginning, we had included DPs about being involved in broader school life and specified that the SIA should encompass aspects of being a teacher beyond direct classroom teaching, such as participating in meetings, attending various school events, and involvement in intraschool structures and communication. This remains a DP, but it became evident that the STs benefit from engagement with the host environment beyond the school itself. Unlike a domestic school internship, an SIA removes students from their daily lives and typical responsibilities and activities once the school day ends. This time is a valuable element of their SIA, and the way that they spend it is not irrelevant to their experience, but integral and meaningful. Consequently, we refined the photo journal prompts (Appendix E) to also encourage reflection on experiences outside of the school and refined the design principles to include:

Emergent design principle: *Holistic engagement beyond the school: Enhancing learning during the SIA.*

Practice Tools – Focusing on Voice Memo Prompts

The current section illustrates the maturing interventions and the development of SIA tools through the DBR approach. It does so by focusing on one of the data collection instruments, thereby highlighting one segment of the DBR process, including the data collection and analysis from two to three cycles and the relevant DPs that were developed on this basis. The intention here is to present a focused snapshot of tool development, revealing the intricate processes involved and highlighting the inclusion of the aforementioned practical and diverse experience contributed through the *WP5* team's collaboration.

Keeping a reflective journal is a common practice during domestic internships and is often one part of student portfolios that are submitted for evaluation upon completion of the internship (Lindroth, 2014). During the initial design stage, we explored various tools encouraging STs to reflect in real time on their SIA experiences. One such tool, introduced in Cycle 1, was a set of prompts for brief – initially 90 seconds in the first two cycles, then

3–5 minutes from Cycle 3 onward – student-recorded voice memos (VM) that could be swiftly collected by the *WP5* team and that informed the ongoing DBR procedure. As mentioned earlier, the voice memos (VM) aimed to present an authentic picture of students' experiences on a near-daily and at least weekly basis. The initial set of prompts, compiled through relevant literature and *TEAM WP5* expertise, was refined throughout the cycles through continuous revision of tools, DPs, and collaborative reflection on the content and quality of the collected data. In Table 4 below, data excerpts from Cycles 1 and 2 are presented in response to the initial three VM prompts designed in May 2024 and a fourth prompt added in July 2024.

Prompts	Voice memo data
May 2024	
How did I feel today/ How did I feel like it went today?	*I got the chance to not play one of the traditional instruments, but to copy the movements on a regular drum. (.) Initially, I was unsure how well the teaching assistants would go today, but with excellent material and support, I was really really glad to always have someone to talk to and to just exchange some experience. I had a great time and found the experience very enjoyable. (Cycle 1)*
What were the most memorable impressions?	*Today's experiences emphasise the importance of clear communication, structure support and adaptability in teaching. Each class presented unique challenges from handling technical issues to ensuring all students are engaged and supported. Today reinforced the need for thorough preparation and flexibility in both teaching and administrative tasks. (C1)*
What concerns me, or what is occupying my mind the most?	*I started off the day with an observation of a grade seven theatre class and they were very vivid and wild and very loud. (…) And it was kind of hard to, like, to stay in the class because they were like, was really, really loud and really annoying. (C2)*
July 2024	
What would I like to try out tomorrow/ the next days?	*I'm very excited to (..) see what's coming up the next days. (…) I'm also gonna be, like, watching and probably maybe participating in, like, the band rehearsals and the choir rehearsals. (..) Which are gonna come up tomorrow, I think. And also tomorrow there's gonna be, like, a teacher meeting which I can participate in (C2)*

Table 4: Cycle 1 & 2 Voice Memo prompts & data (May–July 2024)

As is evident from the data collected through the VMs in Cycles 1 and 2, the students focused mostly on describing their daily school experiences rather than using the VMs to reflect more deeply on them. The ways the prompts are used may depend on the framing of the SIA, for example its length. As shown in Fig. 1, the initial cycles were shorter than subsequent cycles, some of which extended across 8–10 weeks (Cycles 5 and 7).

Introductory guidelines were subsequently added to the VM instructions, and these appear to be equal in importance to the actual prompts. For example, by Cycle 3 (October 2024), the guidelines read: It is very important that you share with us your true impressions and thoughts – especially your reflections and 'ideas behind your ideas'. You might want to make some notes ahead of recording, or you can just speak freely.

In Table 5, the shifts in prompts are evidenced through more specific foci on memorable impressions, encouraging STs to focus on instances especially significant to them and to include these in their brief – now four minutes in length – VMs. They also aimed to foster forward-thinking about the STs' positioning and developing identity as future teachers. The prompt sheet also included an additional set of sub-prompts to encourage optional further reflection:

- Did something go particularly well – or not so well?
- What do I hope to try out and experience tomorrow/or in the next days?
- What did I learn from the mentor teacher?
- What questions do I have for my mentor teacher, or for my mentor at my university?
- What did I learn that I want to take with me going forward? What do I want to leave behind?
- How is music education at this school different from what I am used to? Or maybe what is different about music education in this region or country?
- What did I learn about classroom management?
- How did I see faculty members working together?
- How have I learned from my peers?

Prompts	Voice memo data
October 2024	
These were my most memorable impressions today …	*'So I, I try to not interfere, to just do observations. But I had to. So I went to the student and gave him my book and pen and just challenged him to draw. So we had a drawing contest, which was very fun. He was very, very good and I'm awful at drawing. So he won. And that was a nice moment. And after I went to him, he started working on his own. So I gave him the attention that the teacher couldn't because she was busy.' (C3)*
These are the reasons why they are memorable (e. g. because they were fascinating/striking/ challenging/occupying my thoughts …) to me	*'Why is it memorable? It's a subject I'm a fan of. I want to have special pedagogy as my second subject, and just seeing a kid being left alone for that long is it makes an impact sitting just on the floor. That's not good. But again, the teacher had no choice.' (C3)*
This is the connection between today's experiences and how I see myself as a (future) teacher	*'I want to have a free class, but with structure. I don't want to, but I want to let them explore the music. Music isn't just a solution. It has a path which everyone needs to explore. If not, then what's the point? Yes.' (C3)*

Table 5: Cycle 3–4 voice memo prompts and data (October 2024)

Across Cycles 1–4 that involved STs completing shorter in length SIAs (1–4 weeks), the prompts focused on heightening self-awareness, drawing out issues of direct concern, yet also encouraging, to the extent possible, future-thinking in terms of teaching practice and teacher identity. As evidenced in the development of the VM tool in Cycles 3–4, ST reflection is now channeled towards specific memorable experiences rather than generic feelings and emotions – which, as the data reveals, are intertwined with reports of these instances (*'that was a nice moment'*).

Thereafter, in Cycles 5 and 7 that involved STs completing more extended SIAs (8–10 weeks) the VM prompts aimed to develop metacognition and deeper reflection on teaching practices and philosophies. In Cycle 5, the SIA was undertaken simultaneously by two STs travelling together from their home university, which added a further layer of prompts to the fourth iteration of the VM guide sheet (Table 6).

Prompts	Voice memo data
What were my most memorable impressions since my last voice memo?	*'It had to do with Papua New Guinea and everyone had a role that had to do with that society. It was like a normal debate, let's say, that you see on television where they discuss with each other and important issues that have to do with the country. And it was also very interesting that we saw the position of the children and the questions they asked and the answers they gave. They were very mature (.).' (C5)*
What was particularly interesting about them?	*'(.) I don't know, I think it's very important that things like this happen in schools. Because this is really part of the future. Once again, I was speechless in a good way. And I'm glad that at least somewhere in the world some things are happening right when it comes to education.' (C5)*
What have I learnt for myself as a music teacher?	*'(.) we see things from a completely different perspective now. Because it's one thing to be a student and prepare a piece, to play, and another to be a teacher, who at the same time helps the students with all this, and is part of the rehearsals, to help and give feedback, and at the same time organises all this, the running is double (.) at the same time it's what we have to think about what the other people who help organise are going through.' (C5)*
Further questions were provided based on the data from the longer length of Cycle 5: • Are my initial SIA expectations being met? If so/if not, in what ways? • Are there similarities/differences between what I know already about being a teacher and my SIA experience? (In thinking about this question, you may also reflect on your developing teacher identity) • Are there similarities/differences between music teaching and learning in my own context and in the SIA experience? (In thinking about this question, you may also reflect on your developing teaching philosophy) • What knowledge and skills am I bringing into the SIA from my own context (subject-specific knowledge/musicking skills, personal wisdom, technical expertise)? • What did I learn from my student teachers as peers and what did they learn from me? How does having student teachers-as-peers support me during my internship? (where applicable)	
Data from Cycle 5 on student teachers-as-peers	*'Today we said we would start with [peer student teacher] to give some lessons to the children about Greek music. And we started with the 11th grade and we realised how much there is and that at least I don't know, marginally in some things I watch [peer student teacher] who gives lessons and I learn at the same time and I want to learn other things about my tradition to teach the children.' (C5)*

For longer term SIAs, a further set of prompts were offered: • What has changed/shifted for me, during my internship? In what ways has this changed? Specify the reasons this has changed. How has the knowledge and skills that I brought into the SIA from my own context (subject-specific knowledge, personal wisdom, technical expertise) changed as I applied it in the new context? • What knowledge, skills, impressions, values will I take back with me to my home institution? In what ways will they be useful back home? • Looking back at the start of my student teaching experience, what specific areas have I grown the most in, and how can I continue to improve in these areas? • As the SIA reaches its end, what are the key lessons from your SIA regarding becoming a music teacher that you will take with you? • What did you contribute to your SIA that you are you particularly proud of?	
Data from Cycle 7 on developing a teaching philosophy and a professional teacher identity	*'As we are reaching the end of the school year, a lot of exciting things are happening every day. We finished with the middle school's musical showcase, the kids did great, all the hard work really paid off! All the lessons keep running as normal, getting each day closer to the final exams, with that having a bit of an impact on the students' psychology, as they're more stressed than they were when I first came to school. But all the teachers – me included – we're trying our best to boost them and make them feel more confident for when that day arrives.' (C7)* *'For now, I feel more grateful than ever, because I feel this journey has shaped me as a person, as an educator, and more broadly, as a whole human being. Being alone in a foreign country was a completely new experience for me – it was the best opportunity to become more familiar with myself and my emotions, as I experienced everything in the most intense way.' (C7)*

Table 6: Cycle 5–7 voice memo prompts and data (February–June 2025)

The VM prompts that give rise to the data in Cycles 5 and 7 seem to indicate deeper reflection on STs' developing professional identities and practices. The development of the VM tool indicates that a range of prompts need to be available for STs; for those in short-term SIAs, prompts should focus on reflection and analysis of same-day experiences, promoting self-awareness and creating links with STs' own experiences and contexts. For longer SIAs, VM prompts may gradually shift from the here-and-now to future-thinking, changing perspectives and professional identity development.

A final consideration concerns the language used in the voice memos and its potential impact on ST self-reflection. From Cycle 2 onward, STs whose primary language was also spoken by a member of the research team were given the option to record their voice memos in that language. This appeared to facilitate deeper reflection, though it is interesting to note that some STs chose to speak in English toward the end of their placements even when they could have recorded the memos in their primary language.

Discussion

This section reflects on the practice-based knowledge arising from our project, including both the research format and the design implementation, as well as its longer-term sustainability.

The interprofessional composition of our research team reflected the blend of academic and practitioner perspectives made possible by DBR. Our research team was composed of music educators with specialties ranging from instrumental pedagogy to general music education. Some research team members are regularly involved in music education research and music teacher education and early career mentoring, and most have been or are currently classroom music teachers. For the purposes of this project, the majority served as researchers, with one also fulfilling the role of mentor. Against this backdrop, some contributed primarily to academic research while others brought insights grounded in professional practice – an arrangement consistent with Easterday et al. (2018) description of DBR as involving both academics and practitioners.

Differences in research backgrounds and practices within the research team require additional coordination. The international composition of the research team extended beyond professional background, including German, Austrian, and Greek researchers, as well as U. S. researchers long based in Germany and Luxembourg. Additionally, all members have been shaped by their differing international professional and educational experiences. The diversity of professional and cultural backgrounds fostered an international, multilingual and cross-institutional team dynamic, contributing to a broader spectrum of perspectives in intervention design, data analysis and intercoder discussions. While occasionally complicating the data analysis process, it also helped reduce the risk of interpretive blind spots and supported the development of theoretical understanding and maturing interventions that may be applicable across varied institutional and educational contexts.

It remains difficult to find a balance in data collection and analysis between a shared research language and the primary languages of individual actors. The range of languages available in our multilingual research team often enabled us to collect data in the participants' primary languages. Where possible, a linguistically competent researcher conducted the debrief interview; otherwise, English was used. For us, this meant that some researchers developed a deeper familiarity than others with certain subsets of the data. This proved to be a practical and methodologically appropriate way of working with a large data corpus, but it did necessitate ongoing coordination and communication to support collaborative analysis and interpretation within the research team.

Large-scale DBR projects like ours make it more difficult to adhere to research plans. While not presented with significant obstacles, our research team was confronted with the need to negotiate between an ideal research plan and what is actually feasible in a real-world research setting as frequently discussed in the literature (e. g., McKenney

and Reeves, 2019, p. 107; Anderson & Shattuck, 2012; Aigner & Malmberg, 2022). Most of the challenges pertained to time: determining when students could apply for institutional funding, when they could be physically absent from their universities, how school holiday periods from one country aligned with university semesters in another, and when examination periods in schools made placements impractical, as well as when data collection for the project should conclude given its timeline. The combination of all these factors sometimes caused an overlap in cycles (see Fig. 1), meaning that it was not always possible to completely finish data collection and analysis from each cycle before beginning the next, which occasionally led to smaller design adjustments mid-cycle. The possibility offered by DBR to combine cycles of varying scope (Fig. 1) highlights the flexible, iterative nature of the approach and its suitability for complex, authentic settings. Still, the research team had originally intended to revise the DPs more frequently, ideally after each cycle. This was not possible due to the time constraints during data collection, which necessitated both cycles occurring in quick succession and cycles occasionally overlapping.

The international and cross-institutional nature of projects like ours does create organisational challenges generally. As indicated in the DP Clarity is Key, the amount of communication necessary to organise and execute SIAs effectively is considerable – likely greater than what is typically necessary for a domestic school internship. Coordination between universities and schools operating within different educational systems necessitates significant clarification around regulations, requirements, roles and goals. The level of involvement desired from the university also varied greatly. In some instances, the STs designed their SIA according to their own interests and in consultation with the MTs; the TEs were only minimally involved and had no contact with the receiving school or MT, and also little to no contact with the ST during their placement. In other instances, the TEs were involved in the planning of the SIA, participated in the introductory conversations, and maintained close contact with the STs during their time abroad with the goal of supporting them during what might be understood as a challenging experience. While this variability is in itself not necessarily problematic, the potential for mismatched expectations between institutions is significant and can lead to frustration. Important to note here is that in each of the SIAs in our study, a researcher actively coordinated the organisation and communication. Although she sought to minimise her role, particularly as the project progressed, STs, MTs, TEs, university international officers and school administrators often called on her for assistance with the inter-institutional collaboration. It is our hope that the tools we have created will fulfil the need for organisational guidance, thereby supporting the sustainability of SIAs and facilitating their uncomplicated planning and implementation even without external coordination.

It is difficult to achieve the recognition of courses across national borders in a project like this. All SIAs in our study were voluntary. At one institution, the TE was able to negotiate within their institution to allow one of the mandatory domestic internships to

be replaced by the SIA. The other institutions did not offer this option. At the time of this writing, the format does not allow students to earn ECTS at the vast majority of institutions, and during this project we did not have the opportunity to integrate SIAs into any institutional curricula. There are challenges specific to music education as well: none of the STs in our study had the opportunity to continue with individual instrumental or vocal lessons during their SIAs, which would put them at a disadvantage, as this type of tuition is typically ongoing through most music teacher education programmes. Furthermore, SIA formats in this study were only tested in schools of general education. In some European music teacher education programmes, students are required to complete additional internships in music and art schools (e. g., *Musikschulen, Kulturskolan*): developing formats for internships abroad in these types of educational settings would also be worthy of researchers' attention, providing for an even more holistic experience of music pedagogy in the host context. A meaningful next step in establishing SIAs as part of European music teacher education would there be to pursue broader institutional integration while documenting the challenges that arise at various levels. This will require increased institutional acceptance of SIA formats, including the bureaucratic flexibility to make necessary compromises for international, cross-institutional collaboration. This institutional acceptance also includes cooperation from all instructors, who would be advised to offer flexible attendance and exam formats to students who are participating in a SIA, ensuring that these students are not penalised for being abroad during their studies.

Limitations

Despite the project's breadth of scope, there were foundational limitations, many of which concerned the sample. We did not find many interested students, which contributed to our relatively small sample size. In contrast to study abroad programmes, SIAs are not very common and there are few well-established practices for how to implement them. Few students choose to participate, or are aware that the opportunity is likely available to them. Furthermore, in several cases in our study, there was no funding allocated for internships in the institutions' *Erasmus* budgets, which prevented their students from participating in a SIA either completely or until a much later date. Given the project's temporal constraints and the amount of time required to organise and implement a SIA, it would in any case have been difficult to include more students.

Our sample also included a relatively small number of schools and MTs. This was mainly due to organisational challenges, but also because of the close and time-consuming collaboration of MT and research team throughout the process. Our SIAs took place only in secondary schools. The project was also limited to Europe, and the geographical spread within Europe was relatively modest, with only seven countries represented in the sample.

In some instances, language was a limiting factor. Although data collection in the earliest cycles indicated that voice memos and interviews conducted in the participants'

primary languages likely generated deeper and more substantive data, this was not always possible. All researchers in our team spoke English either as native speakers or at a high level of proficiency, and every researcher also spoke either German or Greek. This did not cover all participants' primary languages, and it also meant that not all researchers had identical access to each data subset. The continued development and improvement of GDPR-compliant translation and transcription software sensitive to meaning beyond mere literal translation will likely further reduce complications of this kind in international research settings.

Outlook: Opportunities for Further Research and Practice

At the conclusion of this research project, the research team sees many possibilities for further research. An exploration of SIAs beyond Europe would present the opportunity to consider the challenges and benefits of an even broader setting. Also of interest would be a study on the implementation of our design principles and tools in novel contexts in order to evaluate the impact of knowledge transfer into other educational settings. These novel contexts could include greater geographic diversity (e. g. beyond Europe), but could also include domestic school settings with highly diverse populations where intercultural competence and language sensitivity are called for. Apart from this, institutions other than schools of general education, such as music and art schools, and subject areas beyond music are also worth considering.

To prevent a loss of momentum after the project's conclusion, we are currently examining the integration of our network of schools and universities into a longer-term system. We call this network *TEAM-IN* (see Malmberg et al., 2026, in this volume, https://teacher-academy-music.eu/student-mobility/school-internships-abroad/team-in-network), which, accompanied by the tools developed throughout this project, will facilitate the organisation and implementation of SIAs like the ones experienced by the ten young people who participated with us, even after the *TEAM* project has ended.

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