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Dimensions of student participation: participatory action research in a teacher education context

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English summary

Introduction

Central to this dissertation is the notion that young people are entitled to be involved in decision-making processes about issues that affect them, including in their school education, and to be taken seriously in their views and suggestions on these issues. Since this is not a common practice in education, neither in schools nor in the preparation of teachers, this research takes up the need to investigate an approach to prepare pre-service teachers (PSTs) for enabling student participation in decision-making in schools. More and more, teachers are supposed to be involved in research, as informed users or as practitioner researchers, and teacher education (TEd) programs should prepare for those roles. An example is involving school students in conducting an investigation in their practice during the PST internship. In this dissertation, participatory action research (PAR) has been introduced as an approach that pre-eminently prepares PSTs for participatory practices in schools.

The four studies included in this dissertation were conducted in two separate projects: the first one, as an exploratory study, in the context of a master's course for pre-service and in-service teachers in primary and secondary education; the second one, as a series of three consecutive studies, in the context of a post-graduate teacher education program for secondary education.

Through the findings and recommendations, this dissertation seeks to contribute to the high-level goal of social justice and the enhancement of democratic approaches in education. Specifically, as one way to get closer to this goal, the studies consisted of an exploration of student participation in decision-making processes through teacher-learner partnerships in research. The practical aim then is to provide schools and TEd institutes with a way to implement or further develop student participation in decision-making processes, while considering opportunities and intricacies that can be expected to occur.

Teacher research

It has often been observed that the outcomes of educational research do not automatically lead to their implementation in teaching and learning practices. Reasons for this include a so-called gap between theory and practice (e.g. Admiraal et al., 2016; Bendtsen et al., 2021; Korthagen, 2010). This alleged theory-practice gap spurred the idea that research should not only be conducted by academic researchers but ideally should involve education practitioners or should have teachers conduct their own research.

In the last decades, teacher research has become acknowledged as a valuable form of research and as an integral part of the teaching profession, both as a valid way of knowledge construction about education and as a transformative professional development activity for teachers (Zeichner, 2003). In particular action research was promoted as a well-suited research approach (e.g. Moreira, 2009; Ponte et al., 2004; Rönnerman et al., 2008; West, 2011). Action research approaches imply systematically investigating issues within an educator's own practice context, including the perspectives of all stakeholders, and mostly also in collaboration with them.

Teacher education and Participatory Action Research

Most pre-service students enter teacher education with little or no experience in social or educational research, and even less in action research. Therefore, it is a prerequisite to educate and support teachers in conducting such research, either as part of professional development activities, for graduate teachers, or in initial TEd programs, for pre-service teachers. A missing perspective in much educational research is that of the students, while ‘consequential stakeholders’ in teaching and learning issues they should not be overlooked (Groundwater-Smith, 2005). Conducting participatory action research (PAR) would supposedly elicit transformation in teachers’ thinking and acting towards student participation and democratic approaches. In the studies for this dissertation, PAR has been introduced into a TEd program as one of the possible *means* to elicit or enable school students to participate in decision-making processes. PAR is not only seen as a site-based approach to research, but also as a democratic practice in itself. PAR can create a context (a *niche*, in ecological terms) for PSTs that facilitates involving their students in researching their school practices; it enables certain – dialogical and collaborative – practices and constraints – more hierarchical, unilateral, and isolated – others.

Student participation: education, schools, and scope for decision-making

In the last decades, a resurgence of the perspective on student involvement in education and research can be traced towards the awareness, that students should be invited and enabled to express their views and to be taken seriously by adults and be responded to (Cook-Sather, 2006). This perspective finds a legal ground in the rights of the child (UN Convention of the Rights of the Child) (Evans, 2016; OHCHR, 1989). It also aligns with the view that for building and sustaining a democratic society, education should not be just learning about democracy and citizenship, but should enable young people to practice a democratic way of life, also in school (Print et al., 2002).

A parallel development in educational research in previous decades is the shift from research *on* students to research *with* students (Cook-Sather, 2002; Fielding, 2004; Fine et al., 2007; Groundwater-Smith et al., 2015; Mitra, 2006). It repositions teachers and students into partnerships in educational research and reform (Cook-Sather, 2014, 2018). The actual form this can take is dependent on the age, capacities, and preferences of the young people, and might range from inclusive and participatory approaches to a revision of roles, structures, and processes in research.

It can be a complex and challenging process to actually involve students in classroom decision-making at the school. It requires a shift in the traditional teacher-centered approach to education and the implementation of new pedagogical methods that prioritize student engagement and agency. This can be challenging for teachers trained in traditional teaching methods who do not have the skills or resources to incorporate student participation into their lessons or are not immediately inclined to do so.

There is currently no TEd program in the Netherlands that has an explicit focus on the promotion of student participation. Research on how to set up such a program is limited, and ultimately, the program would need to be tailored to local conditions.

Central to this dissertation is the question of how participatory educational research by PSTs can be understood and facilitated in the context of a teacher education program so that prospective teachers feel equipped and motivated to engage in student participation in their own schools as well.

Chapter 2 – The exploratory study

The research project ‘Students and Teachers as Co-researchers’, reported in **Chapter 2**, included teams of primary or secondary school students, teachers, and external educators who conducted collaborative research on student learning in an external educational setting (museum or library). An external setting as the site under investigation was deliberately chosen to create a more equal starting position for school students and teachers and to maximize school student participation in the investigation.

First, Chapter 2 further explores the concept of student participation and relates it to teacher professional development. Second, the characteristics and the intensity of student participation are described along six dimensions of participation. Next, the implications for the learning and professional development of teachers who participated in the Dutch project are explored.

The study findings showed that school students in this context worked at a relatively high participation level. In terms of Fielding’s models, school students acted as co-researchers or researchers (Fielding, 2001), or as co-enquirers, knowledge creators, or joint authors (Fielding, 2011, 2018). They did this at all research stages, from formulating research questions to reporting findings. In general, the school students experienced a feeling of responsibility for the research. As intended, the projects involved a variety of school students (and teachers), not only the ones conducting the data collection, but also their peers in class (and school or museum/library). Those who were not members of the research teams were still explicitly part of the process as consulting peers. The setup of the projects can be labeled as a formal approach because they were designed to enable school students’ influence on decisions, on conducting the research, and on shaping the external learning context. They were, however, also informal, because of the shown engagement of school students and teachers in joint activities and dialogues, during the research stages and in school. This can be understood as two-way teaching, from teacher to school student and the other way around.

Importantly, the PAR projects led to genuine changes in the external setting, due to perspectives and recommendations of the school students – sometimes unexpected by the teachers and educators. Furthermore, the teachers were struck by how capable and motivated their school students appeared to be in designing and conducting the research activities, and how that boosted their self-confidence. This transformed their idea about the mutual roles of teacher and student in class; the collaboration changed the teacher-student relationship based on increased trust in the involvement of school students in the development of lessons and resulting in a more friend-like way of working with and for their students.

The project yielded useful and positive experiences concerning the involvement of the students, collaboration in research with their teachers and other stakeholders, and professional learning of the teachers. For reasons of practicality, equality in positions of students and teachers, and reduction of complexity for teachers, the project was conducted in external settings (museum and library). This left

the question of how student participation in research, as a democratic approach to education, could be realized *within* schools and how prospective teachers could be prepared for such a participatory approach and practice, in a context of a relatively short, one-year, postgraduate program.

Chapter 3 – Occurrence and nature of student participation

The three studies in Chapters 3-5 relate to the consecutive project that was carried out within the framework of this thesis in the context of a post-graduate TEd program. The project was aimed at PSTs involving school students in their PAR projects during their internship. It was not prescribed what form the participation of school students should take, although it was suggested and supported to strive for an intense form.

The study of **Chapter 3** aimed to gain insight into the extent and nature of school student participation in the action research projects of the PSTs in the internship schools. The research reports submitted by the PSTs as part of the TEd program were analyzed using the *SPinSTAR matrix*, developed in this study, in which four levels of student participation were distinguished: *Inform*, *Consult*, *Participate*, and *Collaborate*, at various stages of research.

This study showed that, in the TEd context under investigation, student participation occurred much more at the two less intensive levels (*Inform* and *Consult*) than at the two more intensive levels (*Participate*, *Collaborate*). Less intensive levels appeared, for instance, in the form of the PST using test scores, grades, or student work, taking surveys or having chats, or leading classroom brainstorming or discussions. The more intensive levels, *Participate* and *Collaborate*, were observed only in a few cases. The typical forms of collaboration that were identified at these levels included student research groups that supported PSTs in the PAR process and student research teams that worked together to create research instruments and collect data. Furthermore, these teams engaged in collaborative discussions about the results within the PST and school student research group. Activities at these more intensive levels were found more in the preparatory stages rather than later stages of the projects. Furthermore, regardless of the level, student participation was scarcely found in the stages of *Research design*, *Analysis of results*, and *Making public*. However, as expected, the level of student participation was found to vary over the research stages.

PSTs felt pressured by the time frames for the assignment and for being graded, which made many of them more reluctant to add activities perceived as complicating and time-consuming, particularly involving school students. Still, the goal to realize student participation in the PAR projects was achieved, albeit not always on a level that may be regarded as active involvement in decision-making. Many of the PSTs in this stage of preparing for a teaching career found it too difficult to engage school students as genuine partners with them.

Chapter 4 – Principles for school student participation in pre-service teacher research

The next study (**Chapter 4**) focused on PSTs' views of the conditions that foster their PAR practices in secondary schools and on how these conditions can inform the development of TEd programs.

By using the *Theory of Practice Architectures* (Kemmis, Wilkinson, et al., 2014)²⁴ as an analytical lens, eight cases of PAR projects were studied at two interrelated sites of PSTs' learning: the TEd institute and the internship school. We expected that the findings would shed more light on possible conditions for fostering PAR practices in a TEd context in terms of three kinds of arrangements, namely: cultural-discursive, material-economic, and social-political (see *Table 21*). Practices are organized activities of multiple people but still, individuals are acknowledged as agentic subjects in practices and therefore can have a role in the transformation of practice conditions (the arrangements). The objective here is to gain an understanding of how PSTs view the research requirement and the factors that facilitate or hinder their PAR projects with their students. The study specifically examines PSTs' PAR practices and the conditions that encourage them, as perceived by the PSTs themselves. From these perceived conditions, the study derives a set of 17 principles to support PSTs in their participatory action research.

Table 21. Types of arrangements and applicable aspects, concepts, and terms

Arrangements	Description	Aspects, concepts, terms
<i>cultural-discursive</i>	Semantic/conceptual aspects: Usual ways of talking, thinking, and exchanging through language	language, dialogue concepts, ideas, goals/aims beliefs, perspectives
<i>material-economic</i>	Spatial, and temporal aspects: Usual ways of doing and organizing things	objects, spatial arrangements time and resources, program organization materials, study guides
<i>social-political</i>	Relational aspects: Usual ways of relating to each other; aspects of power and solidarity	roles and tasks agency, influence, recognition, rights status, position, hierarchy

The findings of this study indicate that PSTs value being provided with a clear view of teacher research and *clarity*²⁵ in the use of terms and the meaning of concepts used in the TEd program, such as 'student participation' and 'focus on the learner'. They felt that experiencing this clarity in both the institute and the school setting assists in developing a comprehensive understanding of how to engage students in research activities and serves as a constant reminder throughout their entire internship period. Furthermore, the PSTs stressed the importance of good planning, and *coherence* in the program and activities between the institute and the school, and to pursue *continuity* in curriculum and lesson planning and in the allocation of classes. The derived principle of *contingency* links to the view that student participation should result in real, observable impact, which recognizes school students as capable and valuable partners. Since PSTs can feel uncomfortable sharing power with their school students, they need ample time to build a climate of trust and *safety* for school students and themselves.

Chapter 5 – Manifestations of PST PAR principles in a teacher education program

To gain further insight into how participatory teaching research by PSTs can be understood and facilitated in a teacher education context, the next study focused on teacher educators. The set of

²⁴ See Chapter 4, pp. 59-61, for a more elaborate description of the *Theory of Practice Architectures*.

²⁵ Italicized terms in this section and the next one refer to the set of 17 PST PAR principles.

principles derived from the experiences and practices of dio's (see Chapter 4, Table 9) was used in this study to identify, through interviews, how teacher educators shape participatory research practices and try to support dio's in doing so.

First, it was found that preparing PSTs for student participation and specifically, for involving school students in their action research projects appeared as challenging for the TEd staff, as it was for the PSTs, albeit for different reasons. However, the participatory approach to doing research was well received by both teacher educators and PSTs.

The interviews revealed that some principles had already been clearly applied in the program by the teacher educators, but other principles manifested themselves more in the form of ideas or intentions. On the social-political dimension, *recognition* of students was the most frequent principle, but it was not a natural habitus of PSTs. Teacher educators expressed a need to *clarify* to PSTs the concept of student participation in PAR and develop a more *consistent* way to implement it. On the cultural-discursive dimension, the teacher educators' focus was on providing *clarity* in the concepts and procedures of the program. The material-economic dimension emphasized the importance of *coherence* between the TEd institute and school staff perspectives and practices. Issues arose due to unaligned or conflicting demands from the TEd institute versus internship schools. Overall, the interviews with teacher educators showed that the TEd program and internship schools did not inherently incorporate social-political principles such as *recognition*, *reciprocity*, and *equality*, which can hinder the degree to which student participation and PAR can be achieved. The findings suggest a need for further development and implementation of these principles in teacher education programs to enhance student involvement in PAR projects.

Chapter 6 – General discussion

Chapter 6 provides a summary of the main findings of the four studies, including their limitations. Additionally, this chapter delves into pertinent issues regarding student participation in schools and the preparation of prospective teachers in teacher education settings. It outlines both the theoretical and practical implications of the research findings and suggests ways to encourage student participation in teacher research, both during pre-service training and beyond.

Three student participation issues

Realization of student participation in school

This dissertation examined the extent to which student participation in decision-making processes can be achieved, including through PAR projects in a TEd program. The study aimed to enable school students to collaborate with their teachers at an intensive level and have a genuine impact on decisions made during the research project and resulting changes in practice. The research showed that some PST projects demonstrated initial stages of development towards achieving this goal, and student participation was possible within restricted time frames and contexts. School students were involved in designing and conducting the research projects, and their views and suggestions contributed to changes in their teaching and learning content or conditions. The study also emphasized the need for a higher level of student participation beyond just having a voice and being able to express views. The ultimate aim was to develop teacher-learner partnerships that could extend beyond the scope of a research project during an internship and be integrated into everyday school practices.

However, building a participatory culture in schools requires broad support from school leaders and teaching staff and goes beyond a single participatory research project. The implementation of the PAR projects aimed to create authentic student participation experiences for PSTs and teachers and to provide insight into the value of democratic and participatory processes in classrooms and schools. The enthusiastic responses of school students to participating in the PAR projects and the positive attitude of most PSTs towards student participation and PAR are hopeful. The research findings suggest that developing and establishing a 'Pattern of Partnership' (Fielding & Moss, 2011) between school staff and students can form a basis for sustained educational change. The findings also provide insight into the effort involved in involving all voices and the influence that the local context can exert to enable active student involvement in decision-making.

Ethical issues of student participation in educational research

Concerning the participation of young people in practitioner/teacher research, criteria for ethical conduct are grounded on the recognition of children as rights-holders and active agents and the responsibility of adults to ensure the conditions through which children can act as social and moral agents with rights (Mayall, 2000; Quennerstedt & Quennerstedt, 2014).

Realizing genuine student participation in this ethics sense, therefore, goes beyond informing and consulting students and following the agenda of the teacher. It includes being involved in the role of researchers, as manifested in participating in the identification of the relevant research questions, choice of research methods, and discussions on results and implications (Lansdown, 2005). The question then is to what extent the PAR projects studied exemplify an ethical practice of student participation? Regarding answering these question, a difference occurs between the exploratory first study and the consecutive studies. In the first study, the research was deliberately planned to be conducted within external learning environments, on the assumption that this would reduce existing hierarchical relationship patterns between teacher and student. Moreover, in this exploratory study, a longer period of preparing the participants for research was available, compared to the projects in the consecutive study. In this study, although school students worked with a given topic for their project, the supervision was aimed at formulating their own research questions and collecting data themselves, while the role of the teacher was more that of a follower. Moreover, the class decided on peer students as members for their research, from candidates who applied for it, which did include not only the most vocally skilled students or popular persons, but a fair representation of the class population. The projects described in Chapters 3-5 were tied to an existing TEd program and its requirements as well as to standing practices, curricula, and regulations in the internship schools involved. Consequently, these projects were conducted within a shorter period, and obligatorily linked to the specific teaching practice and the school subject, which put the PST almost automatically in a central, leading role.

Action research, student participation, and PST learning in the context of teacher education

Following up on the complexities of conducting PAR in PST-school student partnerships and the affordances for this in schools, an issue arises concerning the value of integrating PAR into TEd for developing teaching and learning practices in schools that involve school students in decision-making processes. Many times, positive outcomes of action research have been reported for the improvement of educational practices and student learning, also in the context of initial TEd. Action research in TEd

is reported to contribute to PSTs' knowledge construction, gaining practical teaching practices, building confidence in teaching their subjects (Chou, 2010), and providing a deeper understanding of practices through, for instance, unforeseen discrepancies between expectations and observations of classroom events (Ulvik & Riese, 2016). However, for the attainment of such outcomes of action research, having ample time and space for conducting the research and reflecting on the process and outcomes, and finding an open, safe, and supportive research culture in the internship school is deemed conditional. Regularly, these conditions were not met in this project. In a post-master TEd context, as studied in this dissertation, PSTs are bound to a relatively short period in which to conduct their action research projects, which conflicts with the cyclic and developmental aim and character of action research. Moreover, the PSTs' projects were an assessed part of the TEd program and could be taken more as an inevitable assignment than as a serious investigation aimed at the improvement of educational practices (Darwin & Barahona, 2018; Reis-Jorge, 2007). PSTs perform a double role as a student-teacher, working for assessments and towards graduation as a qualified teacher, and as a – temporary and pre-service – teacher, working for student learning and practice development. This dual role adds a substantial level of complexity to the position of PAR in TEd: it can place PSTs in an uncomfortable position in school because PAR can question the existing practices of teachers. Involving school students in research and wider decision-making can be perceived as unsolicited breaches of the school culture by 'outsiders' or as threats to student outcomes when teaching departs from the standard curriculum content and planning.

The findings from the PAR projects in the TEd context show these issues as well. Despite all these problems and complexities of involving school students in PST PAR projects, successful student participation in the research projects did occur at various stages of the projects, and improvements in educational practice were collaboratively examined and implemented. The experiences that PSTs had with planning, conducting, and writing about a PAR project can be considered as valuable and suitable ways to involve their school students and as powerful ways for PSTs to develop an identity as a researcher and as a partner to school students. This requires presenting practitioner inquiry to PSTs "as an ongoing, systematic, and collaborative process" (Rutten, 2021, p. 12). In addition, teacher educators can support PSTs in seeking other kinds of knowledge beyond the domain of concrete action, as they tend to do when left to themselves (Ponte et al., 2004), but to extend this to the ideological and empirical domain, and in collaboration with their school students.

Limitations and suggestions for future research

In this section, three limitations of this dissertation will be addressed together with suggestions for further research related to that issue: 1) the target group of the studies; 2) the scope of the research topics in the PAR projects; and, 3) the research data that were collected.

Target group of the studies

The studies focused on the PAR practices of pre-service and in-service teachers in professional development contexts, either as a master course or as a TEd program. Consequently, the studies were limited to the actual period of conducting the PAR project and did not encompass in-service teaching throughout the teacher's career. Further research could focus on the lasting impact of student participation in teacher research under current conditions and/or on the development of the *practice*

architectures towards a participatory approach. Follow-up research on PST PAR projects in more established participatory TEd contexts could corroborate the enabling conditions and principles for PST-school students' collaboration in research found in this dissertation.

Scope of the research topics in the PAR projects

All PAR projects were conducted as group-based activities - with research participants from one class or school student group - and focused research topics of learning and curriculum formulated on group-level. Moreover, the projects did focus primarily on the primary process of teaching and learning and not on schoolwide issues for investigation, such as school policies for curriculum development, time schedules, allocation of budgets, and staff recruitment and development. Our findings on projects conducted in classroom contexts might not be directly transferable to student participation in settings of collaborative research by mixed age groups and on broader or more structural school organization and policy issues. Such research potentially impacts more stakeholders and might face more initial resistance. Further research is suggested on student participation in a wider school context than the classroom research practice of a specific teacher. Also, further research is advised on the relation between student participation in individual teacher's research and school culture in decision-making. Results from such studies could provide guidance for schools to develop incidental activities into a participatory culture.

Research data

Since school student involvement in collaborative processes of decision-making is still rare in the Netherlands, the studies in this dissertation concentrated on aspects of *preparing* PSTs for participatory practices. Therefore, data collection was focused on PSTs' views, roles, and actions and their preparation for participatory practices in a teacher course or professional development program; the studies did not include systematic data collection on school students' PAR experiences. For a comprehensive picture of the interplay between pre-service and in-service teachers and school students in the unfolding of student participation, further research into the school students' perspectives would be needed. This would need more than just a single survey or interview, and would preferably extend over a longer period, which would also yield insight into the sustainability of the participatory practices.

The PSTs' research reports and PSTs' and teacher educators' interviews represent personal perspectives on school student involvement in PST research and their account of that; not their actual practices per se. One potential avenue for further research to address this limitation involves comparing perceived and implemented teaching practices through classroom and school observations. Additionally, it may be beneficial to investigate the perspectives of other stakeholders, such as PST's school students. A related research direction is to examine the dispositions of the key actors involved in the practice, namely the PSTs, school students, and teacher educators, concerning their knowledge, skills, and values related to PAR and school participation in decision-making processes in school.

Implications for practice and research

The findings have implications for practice and research on teaching and teacher learning in different categories:

- methodological implications, pertaining to researching PAR and student participation practices and to using PAR as a research approach for investigating practices.
- substantive or content-related implications, pertaining to teaching in school from a participatory approach;
- developmental or design-oriented implications, pertaining to developing the PAR approach in TED and schools;

Methodological implications

Teacher research must consider school students' perspectives and involve school students as first-person actors in the research process. According to the studies in this dissertation, the use of action research methods that involve school students, as seen in the PAR projects, is an effective approach for student participation and teacher professional development. PAR can help to overcome the divide between theory and practice. PAR has a close connection with actual teaching and learning practice and considers the normative character of education, the stakeholders' perspectives and interpretations, and specific local context characteristics. Moreover, conducting PAR stimulates the understanding and negotiation of mutual needs and concerns, and helps work towards more just and democratic practices.

Substantive or content-related implications

Incorporating new educational insights through active implementation and reflecting on the results is crucial for teachers' ongoing professional development. It is necessary to establish an environment where teachers and students can collaborate as partners, such as through action research. Enacting a participatory approach through conducting a PAR project in collaboration with school students has shown to be a suitable approach to support PSTs in developing a positive disposition toward student participation. A content-related implication from the studies is to use the *SPinSTAR matrix* from Chapter 3 (see *Table 22*). The *SPinSTAR matrix* could serve teacher educators in (a) introducing PAR to PSTs and enhancing the uptake of student participation in PST research; (b) offering PSTs a scaffolding tool for the PAR process; (c) equipping them such that they can keep on doing PAR on their own, can find a suitable context for such research in schools, and can speak out for PAR practice before colleagues and school.

Table 22. Matrix SPinSTAR (Student participation in student teacher’s action research)

Action research stage	Level of school student involvement				
	None (no SP)	Inform (data source)	Consult (active respondent)	Participate (co-researcher; knowledge creator)	Collaborate (researcher/joint author; shared decisions)
a. Problem definition (RQs)					
b. Intervention design					
c. Research design					
d. Conduct intervention ²⁶					
e. Data collection					
f. Analysis of results					
g. Formulation of suggestions / recommendations					
h. Making public					

(adapted from Bovill, 2017; Fielding, 2001, 2011, 2018)

Developmental or design-oriented implications

Facilitating the development of collaboration between PSTs and school students should be made simple and appealing. Therefore, it is best to begin with a small and low-pressure task that fosters teacher-student interaction. From there, the collaboration can gradually progress towards a PAR project that benefits all stakeholders involved. To initiate student participation in the PAR projects, PSTs need to get a good grasp of the participatory approach. Therefore, the set of principles for student participation in PAR (Chapter 4) can serve as the central element in the TEd program. Presenting successful examples of PAR from the literature and challenging the central role of the teacher in classroom practices provides PSTs with clarity and coherence in the concepts of the program. Furthermore, PSTs need sufficient space for conducting their PAR projects in the internship schools and support from their school mentors in involving school students. Purposeful discussion of ideas, concepts, and goals on participatory topics between teacher educators and school coaches and courses can create more coherence for PSTs, informed support, and availability of resources for conducting PAR in schools.

The results from Chapters 3-5 indicate that conducting PAR in a constrained context such as a research assignment in a one-year TEd program does not naturally evoke student participation at all research stages, which shows most obviously in the absence of school students in the presentation of findings. It is recommended to require PSTs to have their school students included as co-writers for at least parts of the research report, and as reviewers of the conclusions and recommendations. The *SPinSTAR matrix*, again, can help make PSTs aware of such gaps in planning and mapping student participation in their research. During the PST project, it is advisable for teacher educators and PSTs to plan for

²⁶ Although conducting the intervention in class is part of the action research process, in the context of this study it is not related to school student involvement in decision-making processes concerning the action research project. Therefore, this row is not used for coding the level of student involvement.

moments of reflection and to use the set of PAR principles (Chapters 4 and 5) for monitoring the unfolding of the PST PAR projects against the extent to which the principles are met.

Another design-oriented implication is to introduce PAR as a permanent part of the curriculum in TEd. The developed set of PST PAR principles can be used to determine the nature of the arrangements and categorize and analyze observed or reported classroom and school practices. This can yield a more detailed insight, along the three dimensions of practice architectures, into the participatory qualities of the practices and the intertwined mechanisms affecting student participation. For supporting PSTs and teachers in conducting PAR, the *SPinSTAR matrix* can be useful, as already indicated above. It can help them identify different options for involving their school students in various research phases and become aware of possibly missed opportunities for such participation.

New ways of working (and thinking) for teachers need careful introduction and support. It is suggested to develop a TEd program based on a central and consistent participatory approach and explicitly supported at the partner school. Ideally, adherence to this approach should not be aimed only at the PSTs, but at teacher educators and schools as well. One possible strategy could be to initiate a collaborative process where participants discuss and create a TEd program aimed at involving school students as partners in their education. Incorporating a small-scale participatory research project into a TEd program challenges PSTs - and their teacher educators and school coaches – what it is like to involve school students as partners in the educational context.