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

Smit, B.H.J.

Chapter 4

Principles for school student participation in pre-service teacher action research

A practice architecture's perspective

"So, I did try to do as much as possible with their ideas, which also made them feel like: it makes sense what we're doing here"

Pre-service teacher (Biology, class Year 10)

Abstract

This study focuses on pre-service teachers' views of the conditions that foster their participatory action research practices in secondary schools and on how these conditions can inform the development of a teacher education program for a participatory approach. By using the *Theory of Practice Architectures* as an analytical lens, eight cases of participatory action research projects were studied at two interrelated sites of pre-service teachers' learning: the teacher education institute and the internship school. Findings shed light on the conditions for fostering participatory action research practices in a teacher education context in terms of three kinds of arrangements, i.e.: cultural-discursive, material-economic, and social-political. Based on the findings, a set of 17 principles for supporting participatory research practices is presented that can be used to assess the viability of preservice teachers' participatory action research within a within a teacher education program, and that also supports a well-aligned institute-school collaboration.

This chapter was published in adapted form as:

Smit, B. H. J., Meirink, J. A., Tigelaar, D. E. H., Berry, A. K., & Admiraal, W. F. (2022). Principles for school student participation in pre-service teacher action research: A practice architecture's perspective. *Educational Action Research*. https://doi.org/10.1080/09650792.2022.2121933

Chapter 4 – Principles for school student participation in pre-service teacher action research: A practice architecture's perspective

Introduction

Practitioner research by teachers is valued as an important type of educational research (Crawford-Garrett et al., 2015) and therefore increasingly has become a regular part of the teacher education (TEd) curriculum (BERA-RSA, 2014a, 2014b; Taylor, 2017; Westbroek & Kaal, 2016). Practitioner research can be defined at a general level as: "the intentional and systematic inquiry into one's own practice" (Dinkelman, 2003, p. 8). Participatory action research (PAR) in education can be viewed as a specific case of such practitioner research in which teachers – or pre-service teachers – and school students collaborate in research into their own teaching and learning practice (Call-Cummings, 2018; Galletta & Torre, 2019; MacDonald, 2012; Torre et al., 2015).

School students are consequential stakeholders in educational research. It is observed that generally they are 'objects' of research, and they are scarcely involved in educational research as active participants (Groundwater-Smith, 2005). This is problematic, not only because research misses first-person perspectives and might end up with biased results and unpractical recommendations, but also because it denies young people the opportunity to participate in decision-making with regard to their own learning and school lives. Student participation in teacher research can contribute to improvements in educational practice on a personal, school, and community level, in the best interest of all stakeholders (Black & Mayes, 2020; Bland & Atweh, 2007; Cook-Sather, 2020; Fielding, 2007; Groundwater-Smith & Mockler, 2016; Sandoval & Messiou, 2020). Moreover, by doing so, it can add to developing a participatory school practice by modeling democracy and citizenship through participatory research practices (Biesta & Lawy, 2006; Call-Cummings, 2018; White, 2011). Furthermore, by integrating PAR approaches in the TEd curriculum for PST's research in their internship schools, pre-service teachers (PSTs) can be made acquainted with the concept of student participation. In this study, student participation is defined as the involvement of students in decision-making processes in school matters that affect them. And in the research context for this study, a TEd program, student participation is further specified to school student involvement in the PST PAR assignment.

The aim of the current study is to contribute to knowledge about how to design and integrate student participation in school and teacher education contexts. This is embedded in the broader ambition not only to enable practice-based research on classroom practices, and as a possible consequence, the transformation of those practices, but also to foster the transformation of the teacher-learner relationship towards a practice of partnership characterized by shared responsibility for learning and education (Fielding, 2011, 2018; Rudduck & Flutter, 2000). In this sense, this study joins former work on student voice and student agency, aimed at enabling students to exert influence in their own learning context. Listening to student voices is not enough (Lundy, 2007); student participation can only be taken as influential and agentic when teachers share power with their students and when students 'speak and act alongside credentialed educators as critics and creators of educational practice' (Cook-Sather, 2018, p. 17).

Within the context of this research project, a one-year postgraduate teacher education program in the Netherlands, PAR was introduced as a prescribed approach in the TEd program through pre-service teachers (PSTs) researching their teaching practice at their internship school in collaboration with their school students. Through this study, we aimed to develop insights into the way PSTs perceive this requirement to conduct research, the conditions they perceive as enabling or constraining their PAR projects in collaboration with their school students, and how these insights and conditions can inform further development of the TEd program for a participatory approach in teaching. Therefore, in this study, we focus on PSTs' PAR practices and on the conditions that foster them, based on PSTs' interpretations of those conditions.

Theoretical framework

The involvement of school students in PSTs' research activities, as they unfold in the PAR projects as part of the TEd program, can be understood as PAR practices. Torre et al. (2015, p. 540) describe PAR as "Rooted in principles of justice and democracy, participatory action research is an inclusive, collaborative approach to research defined both by participation and a determination to produce knowledge in the interest of social change". The social phenomena under investigation are viewed as historically located and produced and reproduced by particular social, linguistic, material, political, and cultural conditions (McTaggart, 1998). In this context, the stakeholders participate as subjects and as agents of knowledge. PAR is a social process in which the participants are interested in "whether they understand their practices and the consequences of their practices, and in whether the conditions under which they practice are appropriate" (Kemmis, McTaggart, et al., 2014, p. 6). PAR aims to bring about deliberate, informed, and justified change on the level of the language that is being used in the practice, in the activities, and in the relationships between the people in the practice (McTaggart, 1998).

To explore and explain these practices and the conditions that enable or constrain them, we specifically draw on the *Theory of Practice Architectures* (Kemmis & Grootenboer, 2008; Kemmis, Wilkinson, et al., 2014; Mahon et al., 2017). As a specific instance of the family of practice theories, the *Theory of Practice Architectures* shares "… the idea that a practice is an organized constellation of different people's activities" and that "… important features of human life must be understood as forms of, or rooted in, human activity – not the activity of individuals, but in practices, that is, in the organized activities of multiple people." (Schatzki, 2012, p. 13). Furthermore, while practice theories see practices as embedded in social structures, they also acknowledge individuals as agentic subjects (Buxton et al., 2015). The *Theory of Practice Architectures* builds on the above ideas by conceiving practices as embedded in social structures ('arrangements'), related to language, activities, and social relationships, which aligns well with the aims and characteristics of PAR. Since its first publication in 2018, the theory has been used in multiple domains and for various purposes. For instance, the *Theory of Practice Architectures* has served to study informal learning practices of refugee students (Kaukko & Wilkinson, 2018), to make visible the different kinds of actions and judgments in the everyday work of English teachers (Edwards-Groves & Grootenboer, 2015), to theorize on the concepts of recognition and partnership in education (Edwards-Groves et al., 2016), to understand teacher involvement and student participation in lessons, classrooms and school communities (Niemi & Loukomies, 2021), and even to analyze the collaborative research practice of researchers themselves (Pennanen et al., 2017).

Practice and the theory of practice architectures

The *Theory of Practice Architectures* (Kemmis & Grootenboer, 2008) understands a practice as "a socially established cooperative human activity involving utterances and forms of understanding (sayings), modes of action (doings), and ways in which people relate to one another and the world (relatings) that 'hang together' in characteristic ways in a distinctive 'project'." (Mahon et al., 2017, pp. 7-8). These bundles of sayings, doings, and relatings at the side of the practitioner are in constant interplay with the conditions under which the practice unfolds: the arrangements that make the practice possible (the practice architecture of the site) (Mahon et al., 2017, p. 13), but that can also, in a reciprocal process, be transformed by the people that enact the practice.

Furthermore,

> [b]eing social and situated, practices are not just shaped by the experience, intentions, dispositions, habitus, and actions of individuals (…). They are also shaped and prefigured intersubjectively by arrangements that exist in, or are brought to, particular sites of practice.
>
> That is to say that a practice extends beyond what the individual enacting brings to the site as a person (e.g., beliefs, physical attributes, and abilities); it also encompasses arrangements found in or brought to the site, arrangements with which the individual interacts, and without which the practice could not be realised. (Mahon et al., 2017, p. 9)

As explained by Edwards-Groves and Kemmis (2016), these arrangements that can either enable or constrain the practice, appear in three forms that are parallel to the sayings, doings, and relatings of the practitioner in the practice:

> (1) *cultural-discursive* arrangements that exist in the dimension of semantic space, and that enable and constrain how we can express ourselves in the social medium of language (and symbols) – for example, a shared language like English or Swedish, or shared specialist discourses such as knowledge of a discipline like physics or a profession like education;
>
> (2) *material-economic* arrangements that exist in the dimension of physical space-time and that enable and constrain how we can do things in the medium of work and activity – for example, a billiard table, a room, a home, a workplace, a town or a local region; and
>
> (3) *social-political* arrangements that exist in the dimension of social space, and that enable and constrain how we can connect and contest with one another in the social medium of power and solidarity – for example, the relationships between people in a family, a sports team, a work organization or a political entity like a municipality or nation, or between people and other living and non-living things in an ecosystem or a factory or a digitally-mediated social network. (o.c. p. 87)

The practice landscape as laid out in cultural-discursive, material-economic, and social-political arrangements, which together are defined as 'practice architecture', does not actually determine a practice, but shapes (prefigures) what is possible in the specific practice, and reciprocally, is being shaped by the practitioners enacting the practice. The impact of those practice arrangements on, for instance, the teaching and learning practice at school is not fixed but depends as well on the reception, understanding, and uptake by the practitioner. New ways of saying, doing, and relating can be introduced to a practice, and thus can lead to changes in the practice architecture of the site, or vice versa. Mahon et al. (2017, p. 12) state that: "Such a notion has implications for those wishing to change practices since it signals the role and importance of human *agency* in the transformation of practice conditions.". The *Theory of Practice Architectures* allows for investigating and understanding practices

at three different dimensions of human interaction, and identifying conditions of practice contexts (or *sites*), the way they 'hang together', and the way they are interpreted and acted upon by the practitioners, (in this study, the PSTs). 'Hanging together' is an important aspect of this theory as it represents the interdependence of the three dimensions of a specific practice, both with respect to the practitioner's activities and the arrangements that enable and constrain them (Kemmis, Wilkinson, et al., 2014).

The current study

In most initial teacher education programs, PSTs undertake learning tasks within two related contexts: the TEd institute and the internship school. This constitutes a dual learning environment for the PST. Ideally, the institute and school form a teacher-learning partnership in which both sites are attuned to each other and jointly comprise the full TEd curriculum that leads to qualification as a beginning teacher. However, this attunement cannot be taken for granted; the specific constellation of arrangements at both sites could support or strengthen the learning practice, but could also undermine or weaken it. Presumably, this would depend as well on the way PSTs experience and perceive the conditions they encounter.

In this study, applying and distinguishing three forms of arrangements aimed to better understand the PAR projects as sites of the interplay of the school context in which the PSTs conduct their research and the TEd environment.

The following main research questions guided the study:

- What do pre-service teachers perceive as enabling or constraining *conditions* for involving school students in their participatory action research?
- What *principles* for supporting preservice teachers' participatory action research can be derived based on these conditions?

Method

The present study used a multiple case study approach (Yin, 2003) to identify and describe conditions for school student participation in PSTs' research in schools from a PST's viewpoint, and to capture their variation across sites. The study consists of eight cases, which are the separate PST PAR projects, conducted at different schools. The study describes the perceived conditions in terms of arrangements of the two interrelated sites in which the PAR projects were designed and conducted. These two sites are, on the one hand, the TEd institute and program (Site A), which is the same across the cases, and on the other hand, the school and teaching practice (Site B), which is different for the separate cases (Figure 4). See Table 5 for an overview of generic arrangements (Site A).

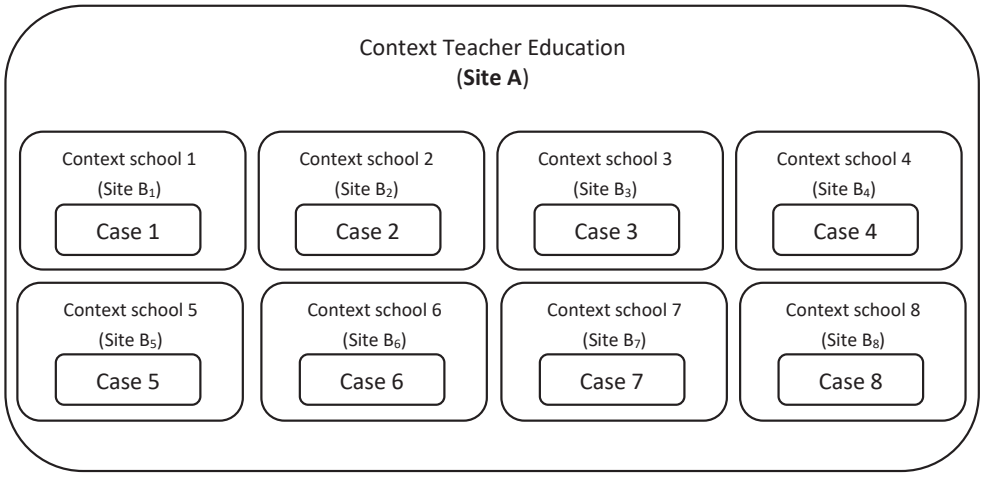

Figure 4. Multiple case study design with 8 cases

Subsequently, insights and conditions from PSTs were taken as the basis for deriving principles for supporting participatory research practices by PSTs.

Participants and sites

The context for this study is a one-year postgraduate teacher education program at a research university in the Netherlands (Site A in the current study; see also Table 5).

The PAR projects that are central here were conducted by PSTs from a special track of the TEd program, the *World Teacher Program*, that aimed to prepare them for teaching in secondary bilingual and international schools. An explicit part of this program was for all PSTs to design and conduct a PAR project, with the higher aim of enhancing school student participation in decision-making processes related to their education. The PAR projects thus served two broad goals in relation to the two sites: a) to introduce the PST into a teacher-researcher role, which includes developing the required knowledge, skills, attitude, and experience; and also, to develop a disposition to continue and expand these qualities in the PST's future teaching practice; and b) to enable and foster school student participation in decision-making processes in general, and specifically in and through actively involving them in the PAR projects.

From the start of the TEd program, PSTs were introduced to the idea of teacher research and student voice and student participation. PSTs developed research questions for their projects during their internship and in consultation with university-based teacher educators. Their research questions needed to be related to their own teaching practice, but not necessarily to the subject they taught, and should be relevant for their school students as well. This could be achieved by, as recommended, involving the school students in the process of developing and formulating the research questions. A requirement of the project was that PSTs actually trialed a proposed change in their teaching aligned with the participatory aim of the project to involve school students in decision-making processes.

At the university, five teacher educators were involved in the program. The teacher educators were the course leaders and PSTs' supervisors, and they were formally responsible for assessing and grading. In addition to the existing staff of the TEd program, an action research expert and coach was included

in the *World Teacher Program* staff; she provided PAR courses and advised on PAR plans of the PSTs, and acted as an assessor of the PAR reports. The first author was involved as the instigator of the PAR approach, as an informant on PAR as an approach in classroom practice, and as a researcher of the PSTs' PAR projects, but not as an educator, facilitator, or supervisor.

The PSTs conducted their PAR projects at their respective internship schools, belonging to an established set of bilingual or international secondary schools in the western part of the Netherlands (Site B in the current study; Figure 4). At all schools, the PSTs were guided by a supervising teacher (from the same school subject) and a school mentor; however, their supervision mostly concerned classroom teaching practice, and guidance of the research was not a requirement.

Table 5. Site A (TE/Program) - Generic arrangements (apply to all PSTs)

Site A (TE program/institute)
Cultural-discursive arrangements
Usual ways of talking, thinking, and exchanging through language:
– Teacher as a researcher, as one of the six roles that define the teacher's profession/practice
– Student-centered approach ('Focus on the learner') as the central theme for the program
– Decentering the teacher, as a way to change the power balance in the classroom
– Participatory Action Research, as a suitable and preferred research approach for investigating and developing your own teaching practice and for involving school students
– Student voice, as a desirable educational principle for democratic education
Material-economic arrangements
Usual ways of doing and organizing things:
– WTP: TE program aimed at teaching at bilingual/international secondary schools
– Seminars (general and PAR-specific): additional study hours for WTP, dedicated to WTP issues and PAR concepts and skills
– PAR assignment: obligatory part of the TE program
– International internship: obligatory part of the TE program; duration abroad: 3-4 weeks, to be planned within a pre-scheduled 6 weeks period in Semester 2.
Social-political arrangements
Usual ways of relating to each other:
– TEs as program designers, teaching experts, guides, and assessors (authority; TEs in charge)
– TEs as models, for learner-centeredness and student voice
– Facilitator, as action research (AR) expert, coach on AR assignment, assessor of PAR project report (mixed relationship with PSTs)
– Peers as CF's (student colleagues as advisors, fellow students; equal standing)
– Staff & PSTs Evaluation & Development Meeting/Participatory Program Design Session: PSTs as participants (partners to staff) in evaluating and re-designing WTP (both as experienced participants in the WTP; recognized equal 'experts' and mutual learners)

The present study focused on a subset of PSTs from two consecutive study years who conducted a PAR project. The PSTs were invited to participate in this study as cases in a multiple case study design, which 10 out of 32 of them consented to do (6 female, 4 male). This resulted in 8 cases for this study (Figure 4), because 2 research projects were conducted in pairs (see Table 6).

Table 6. Case descriptors

Case number	Cohort	School type	Subject	PAR project topic
1	2015-2016	Bilingual	Economics	Classroom displays as language scaffolding
2	2015-2016	International / Bilingual	English	English literature and motivation in IB and TTO classrooms: A comparative study
3	2015-2016	International	Biology	Code-switching in bilingual education: coding for success?
4	2015-2016	Bilingual	Economics	Giving up the monopoly: involving students in creating lesson plans
5	2015-2016	International	Spanish	"Miss…., Why?" Increasing meaningful learning in secondary education
6	2015-2016	Bilingual	History	History and the learner's identity
7	2016-2017	Bilingual	Biology	Relation between lesson approaches and student motivation and behavior
8	2016-2017	Bilingual	English	Student motivation / Imagining My Future English Self

Data collection

Data for this study were collected from the academic years 2015-2016 and 2016-2017, which comprise two iterations of the one-year TEd program. At the end of each study year, semi-structured interviews (see topics below, and Appendix 6) were held with all PSTs who took part in the case study. All interviews were conducted by the first author. The working language was either Dutch, being the native language of most of the PSTs and of the interviewer, or English if preferred by the PST. The interview duration was between 45-75 minutes; they were audio-recorded and transcribed verbatim. Since the study aimed to capture the PST's perspectives, the interviews had an open character in which only the general topics were formulated as initial questions and thereafter mainly followed the interviewee on views and issues the PST opened up herself/himself. Probing questions were at hand to keep track of aspects of PAR and student participation that were not mentioned spontaneously (Robson and McCartan 2016). The study covered two main topics, aligned with Site A and Site B, both with specific attention to school student participation (see Appendix 6):

1) Experiences with the PAR assignment and its unfolding at school (site B); that included, PSTs' current views on research, specifically on teacher research and participatory action research. Probing questions concerned interesting and challenging aspects of the PAR assignment; involvement of school students; perceived enablers and constraints for PAR and student participation; research competence and support; perceived value of PAR and student participation.
2) PSTs' current views on and evaluation of the content and set-up of the TEd program (site A). Probing questions concerned PSTs' voice in the TEd program; perceived enablers and constraints for PAR and student participation; support in learning to 'focus on the learner'; relation between the TEd program and school practice.

Data analysis

Qualitative data analysis was aimed at determining conditions that affect the unfolding of the PST PAR project, according to the PSTs themselves, in particular with respect to the level and nature of school student participation in this project. The interview transcripts were the main data sources for this study.

The data analysis consisted of the following within-case analytical steps (1-3), and a cross-case analytical step (4):

1) In the interview transcript, all instances of perceived conditions for either the PAR assignment and/or specifically school student participation were identified and marked with keywords or short descriptions, such as 'tight schedule at school'; 'difficult project planning'; 'less research done than intended'; 'period of interrupted class contact'; 'freedom in choice of research topic'.
2) The case descriptions and all identified conditions were paraphrased and transferred into a case matrix of conditions (for an example, see the text in small fonts in Appendix 9). All identified conditions were categorized as referring to Site A (institute) or Site B (school); also, they were assigned to one of the three arrangements (dimensions of practice architectures): cultural-discursive, material-economic, social-political (for a description of the category coding, see Table 7).

Table 7. Types of arrangements and applicable aspects, concepts, and terms

Arrangements[15]	Description	Aspects, concepts, terms
cultural-discursive	Semantic/conceptual aspects: Usual ways of talking, thinking, and exchanging through language	language, dialogue concepts, ideas, goals/aims beliefs, perspectives
material-economic	Spatial, temporal aspects: Usual ways of doing and organizing things	objects, spatial arrangements time and resources, program organization materials, study guides
social-political	Relational aspects: Usual ways of relating to each other; aspects of power and solidarity	roles and tasks agency, influence, recognition, rights status, position, hierarchy

For instance, the interview quotation that was indicated with 'PAR sessions very helpful for student participation' and 'student voice essential' was paraphrased as (originally in Dutch; translation authors): 'PAR sessions were enormously helpful for involving students: it was clear that student voice *had to be* included'; and categorized under *cultural-discursive arrangements* at Site A (TEd program, institute). The interview quotation labeled as 'tight schedule at school' was paraphrased as: "The IB curriculum at this school so fully packed that it leaves hardly any space or time for research", and, "No opportunity to discuss the questionnaire results with the

[15] The term 'arrangements' is part of the Theory of Practice Architectures (Edwards-Groves & Grootenboer 2015; Kemmis et al. 2014b).

students."; and categorized under *material-economic arrangements* at Site B (practicum, class, school). And, as a next example, the paraphrase "Communication with supervisors was super; feedback clear. Matches with own attitude/habit to ask for help when necessary" was categorized under *social-political arrangements* at Site A (TEd program, institute).

3) Next, and in order to facilitate cross-case analysis, the paraphrased, listed conditions were grouped into similar or related conditions and were reformulated on a more generic level. At this step, also all paraphrased conditions taken from interviews in Dutch were translated into English. Furthermore, the grouped conditions were labeled as either being an enabler (+) or a constraint (-) for realizing the PST PAR project (for a description of the category coding, see Table 8). For traceability reasons, two versions of the tables were generated: one with quotes in the original language, written beneath the generic reformulations (for an example, see Appendix 9); and another one, with those generic conditions only. The latter tables from all eight cases formed the result of the within-case analysis.

Table 8. Types of conditions

Condition type	Description / definition	Coding criterion
enabler (+)	resource, state, or circumstance that makes possible, stimulates, encourages, or enhances the realization of PST's PAR project	Anything that makes PAR **more likely** to happen, or to a **larger extent**, or with SP at a **more intensive level**
constraint (-)	resource, state, or circumstance that prevents, hinders, discourages, or lessens the realization of PST's PAR project	Anything that makes PAR **less likely** to happen, or to a **lesser extent**, or with SP at **a less intensive level**

For instance, the conditions 'Research in school not viewed as important' and 'School is very academic, but not so with regard to research; no-one talks about research projects' were combined into the more generic condition for Site B 'Research in school not viewed as important'. And in a similar way, the condition 'Combination of teaching practice and an international internship is very much; too little taken into account what is going on at the same time in the program', was reformulated as 'Packed curriculum; overlap of activities', which in this specific case relates to Site A.

4) Analytical Step 4 concerned aggregating the resulting eight case-specific tables of enabling and constraining conditions for PAR, as perceived by the PSTs, into an overall table of perceived conditions on both sites, Site A and Site B (Figure 4). For instance, the cultural-discursive enabler 'school student's enthusiasm for PAR/student participation' was aggregated into 'engagement; enthusiasm; willingness (PST, school students, school staff)'. In this process, all constraints were translated into (reformulated as) PAR-supporting terms, that is as resources, states, or circumstances that positively impact school student participation in PST PAR. The rationale for this translation into supporting terms is the purpose of this study, to identify and provide guidelines or instructions for better realizing student participation in PST research in schools. For instance, the material-economic constraint 'packed curriculum; little time and

space for research and student participation' was reformulated as the supporting condition 'good planning (schedules, alignment)'. By this, we used the distinction in dimensions of arrangements to (interpretatively) group the enabling and constraining conditions that PST mentioned as impacting their PAR practices into (productive) principles for enhancing PAR projects in a TEd context, on the same 3 dimensions as in the *Theory of Practice Architectures*.

We acknowledge the interwovenness of the arrangements in each practice, which implies that aspects can be viewed from various dimensions and then have different foci. We tried to place aspects where they were most prominent related to conducting PAR or in line with the main reason for being mentioned by PSTs.

The above data analysis procedure was performed by the first author. The quality of the steps taken was checked by means of an audit procedure. A second researcher who had not been involved in the data analysis traced back the results of each analytical step to the underlying data and assessed the analysis on criteria of traceability, applicability, and trustworthiness. The audit confirmed the analytical quality as good. Only minor changes were applied in the list of principles; for instance, the social-cultural principle *permissiveness/leniency* was deleted, because it overlapped with some of the other principles, such as *safety* and *equality*.

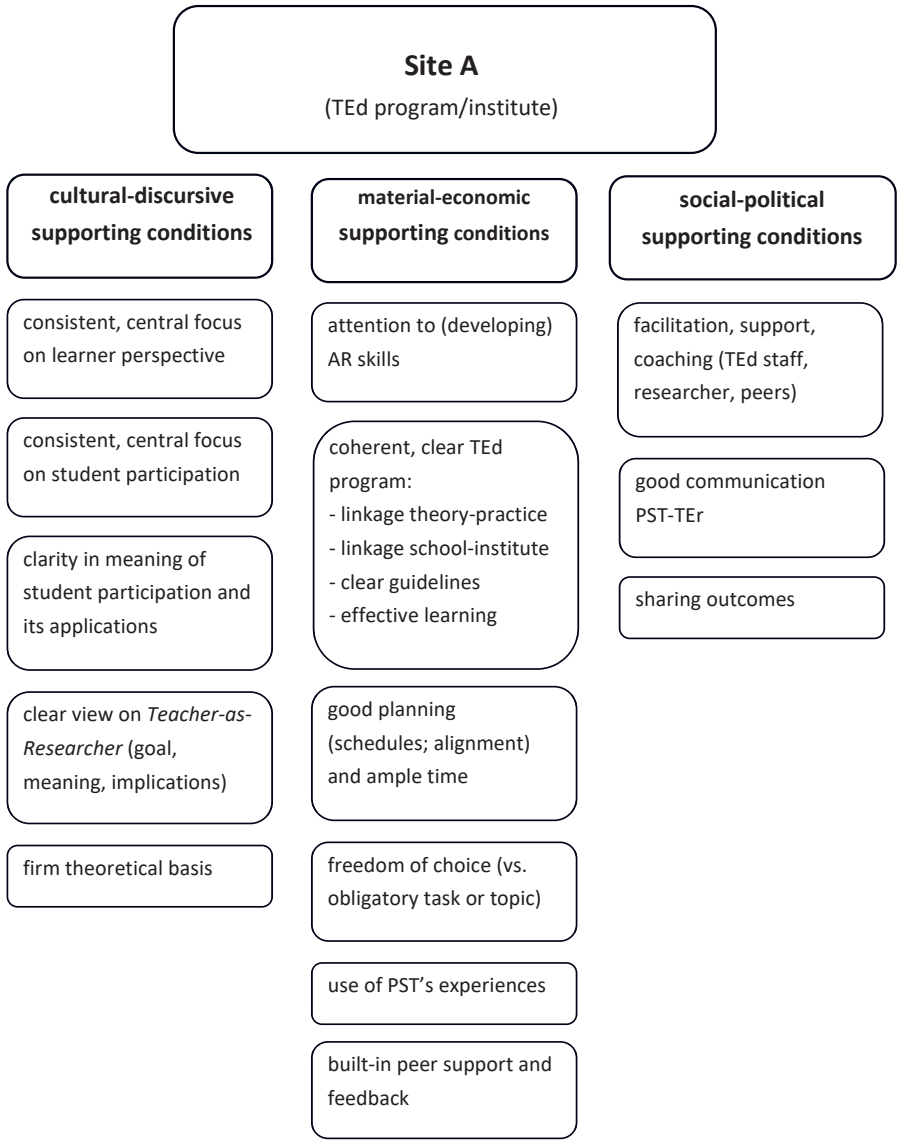

Figure 5. Perceived supporting conditions for PST PAR projects

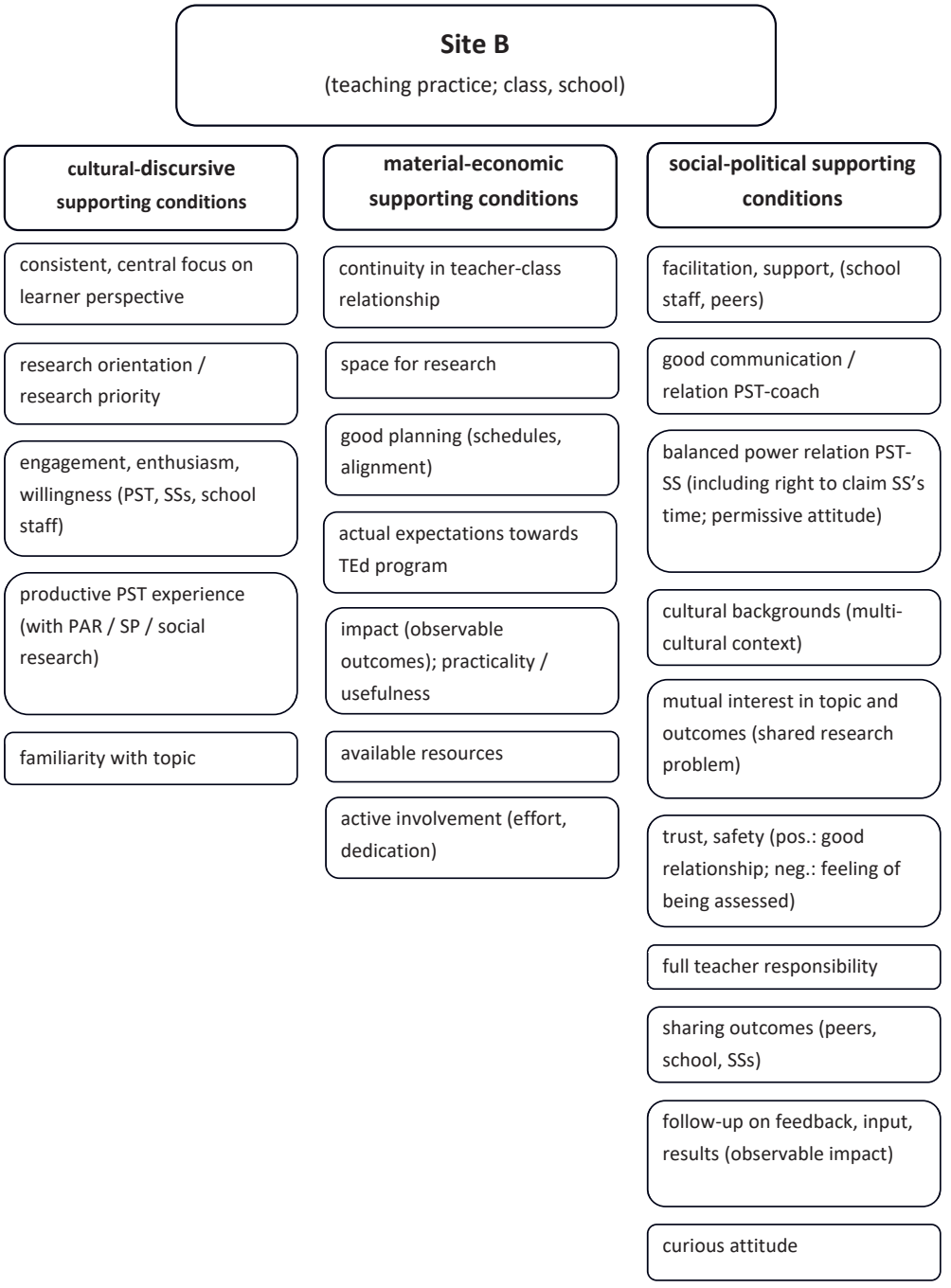

Figure 6. Perceived supporting conditions for PST PAR projects (continued)

Findings

In this study, we looked at arrangements of the sites in which preservice student teachers are prepared for their teaching practice, in particular for their role as teacher-researcher. The concept of arrangements, in its three dimensions, allowed for describing perceived conditions that shaped the PST PAR practice. In the analysis, we distinguished cultural-discursive supporting conditions, material-economic supporting conditions, and social-political supporting conditions, at both learning sites: the teacher education institute (Site A) and the school and teaching practice (Site B). However, the three dimensions are inseparable in practice and together prefigure what can be done by the practitioners.

First, supporting conditions for the PST PAR projects with the school students will be described. This will be followed by a presentation of a set of principles for PST PAR that has been derived from those conditions.

Perceived conditions for PAR

Reported elements of the practice architectures that affected the way the PAR projects were played out, either positively or negatively, covered a range of conditions. Clearly, not all conditions were mentioned by all PSTs, and not all of them were evaluated in the same way or as having the same impact. However, for each of the two sites that apply here (Site A, the TEd program and institute, and eight instances of Site B, the school and PST's teaching practice) an overall set of supporting conditions was determined, for each of the three dimensions of the arrangements (see Figure 5 and Figure 6).

Cultural-discursive supporting conditions

The language and terms that are used, and the thinking, policies, and orientations they are grounded in, form the cultural-discursive arrangements. For both sites, A and B, PSTs broadly and repeatedly expressed as a supporting condition building and communicating a consistent, central focus on the learner's perspective, and transmitting a clear, high-priority orientation on research and on the role of Teacher-as-Researcher. At Site B, this appeared also in the engagement, enthusiasm, and willingness of the PST, the school students, and the school staff for PAR and for an active role of the school students in this activity. While only a few PSTs had former experience with this type of research, or with social research in general, and with student participation, such research experience was regarded as a favorable, although not a required, condition. At Site A, the TEd program, PSTs mentioned clarity in the meaning of student participation and of the way it could be applied in teaching practice, as conditions that had a positive impact on their PAR projects. Also, they perceived teacher educators providing a firm theoretical basis on PAR and student participation as enhancing the quality and depth of the PAR assignment, and making it easier for them to grasp the purpose of the assignment and the way it could be translated to concrete research activities with their school students.

Material-economic supporting conditions

The organization of procedures and activities in school and in the TEd institute, the way the PAR projects are accommodated within their contexts, and the resources and materials that are at the disposal of the PST, form the material-economic arrangements for the range of activities and the actual work that is being done. For the PSTs, good planning of activities and assignments, including ample time for the research, a study and teaching schedule that fits the demands, and above all, a smooth alignment of planning at Site A and B, were reported as major supporting conditions. At Site A, the

PSTs perceived such aspects in the provision of a coherent TEd program characterized by clear links between theory and school practice; a good mutual connection between the organization and planning of the curriculum and learning activities at the TEd institute with those in the school; clear guidelines for conducting and reporting the PAR project; and effective learning activities to develop as a teacher-researcher and to acquire action research skills. Furthermore, integrating into the TEd program freedom of choice instead of obligatory tasks or topics, and acknowledging and using PST's experiences in planning and content of the program, were mentioned as supporting conditions as well.

Along with these conditions at Site A, several other supporting conditions at Site B emerged from the PST experiences. These conditions include:

- continuity in the teacher-student relationship, which is related to the planning of the classes the PST had to teach;
- active involvement of all stakeholders in the PAR project, visible in putting effort and dedication into it;
- availability of resources at school, such as time, spaces, materials, and some financial budget.

Furthermore, for both sites, support and feedback by peers were viewed as supporting conditions. Finally, having a real impact in terms of outcomes and changes that were observable, primarily for the school students, but also for the PST and other stakeholders at school, emerged as strongly supportive. Enacting the PAR assignment as intended for school student participation, and then having such an observable impact, was enhanced by PSTs viewing the required activities as practical and useful.

Social-political supporting conditions

The roles people perform, and the way people relate to one another, or are expected to, form the social-political arrangements at school and at the TEd institute that also shaped the PAR projects. Three of the many aspects of this dimension that were mentioned were similar for both sites, A and B. These pertain to the facilitation and support that is given by either school staff or PST peers (Site B) or by TEd staff, PST peers, and researcher (Site A); to the quality of communication between PST and school coach (Site B) and between PST and TEd supervisor (Site A); and to the existence of a practice of internal and external sharing of research outcomes (both sites). For Site B, several other conditions were perceived as fostering PAR. Largely, those were related to a more equal position of PST and school students. For instance, having a mutual interest in the research topic and the outcomes, which showed in a research problem shared between PST and school students, is a good indicator of this. PSTs mentioned other supporting conditions such as a climate of trust in each other's capabilities and commitment, and safety in communicating and performing their tasks. Both PSTs and school students need to feel assured that participating in the PAR project, unveiling some 'unwelcome truths', or proposing controversial changes, will not lead to negative consequences in any way, such as lower scores or bad reputations. Participation needs to rely on building and sustaining a good relationship. PSTs reported that taking full teacher responsibility for their class was a better condition than sharing the responsibility with an appointed teacher, as is usually the case with an internship, because of a more profound relationship with the school students and more autonomy in shaping the teaching context for conducting the PAR project.

Reflections on the findings: principles for PST PAR

It was found that PSTs valued a clear view of teacher research and clarity in the use of terms and the meaning of concepts, such as *student participation* and *focus on the learner*, as strong supporting conditions for their PAR projects, on both sites. For them, experiencing this in both the institute and the school helps to build a clear image of ways to involve school students in their research practice, and also to consistently keep this in mind during the whole internship period. On the material-economic dimension this should go along with good planning and coherence in the program and activities between the institute and the school; they should be strongly aligned. Furthermore, it was perceived as supportive to pursue continuity in curriculum and lesson planning and in the allocation of classes. This aspect is related to the social-political dimension of the arrangements because it has a positive impact on the relationship between teacher and school students if there is ample time to build a climate of trust and safety for school students. Being new for them as well, the PAR practice and the invitation to collaborate with the teacher might raise tensions and evoke reluctant behavior by school students. Therefore, it is even more important that student participation results in real, observable impact, which recognizes school students as capable and valuable partners; a supporting condition that is mentioned by the PSTs as well. Power is an important aspect of the social-political arrangement, and PSTs can feel uncomfortable sharing power with their school students. However, more equality in decision-making power could build a fruitful environment for student participation and, in the longer term, a culture of participation (Bahou, 2012; Fielding, 2011; Kirby et al., 2003).

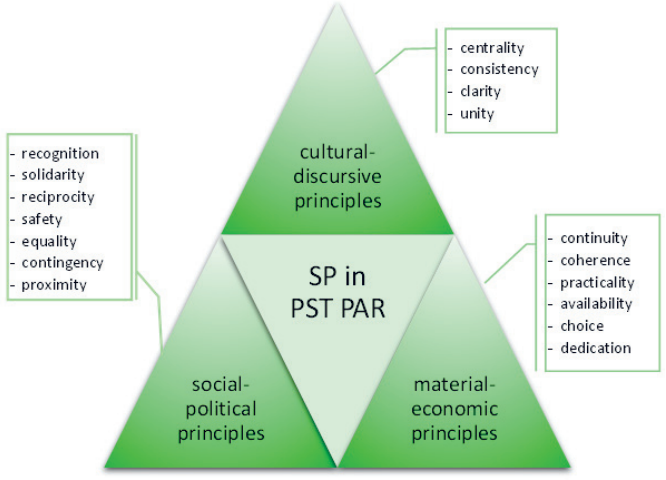

Figure 7. Principles for student participation in PST PAR

Table 9. Descriptions of PST PAR principles

Cultural-discursive principles	
- *centrality*	the participatory approach, in the form of student participation and focusing on the learner, is at the core of the program and is supported and propagated by all educators.
- *consistency*	the participatory approach is implemented and practiced throughout the curriculum and during the whole school year.
- *clarity*	the concepts, procedures, possibilities, and implications of SP and PAR and clearly defined and communicated.
- *unity*	the different program parts (courses and learning activities) are stemming from the same participatory ideas and approach, and are experienced as such; educators and coaches represent the same participatory goals in their teaching and support.
Material-economic principles	
- *continuity*	ongoing process of participation, not a one-off activity; uninterrupted teacher-class relationship (at least for the entire duration of the PAR project).
- *coherence*	logically consistent program, linking theory and practice of SP and PAR within an effective set of learning activities.
- *practicality*	(perceived) ease of incorporating PAR approach and PAR activities into the curriculum and extent to which educational goals can be reached without excessive effort or resources.
- *availability*	provision of resources and availability of needed research options for conducting the PAR project.
- *choice*	freedom of decision on several aspects of the PAR project: e.g., research topic, form and intensity of (non-)participation.
- *dedication*	investment of energy and effort in the PAR process; loyalty to conducting the PAR project and to its outcomes; enthusiasm of participants.
Social-political principles	
- *recognition*	all stakeholders (PSTs, SSs, colleagues, peers) are recognized as valuable participants in the teaching, learning, and researching activities and in decision-making processes that are related to the educational context.
- *solidarity*	awareness of shared interest and group responsibility for conducting the PAR project and for the fairness of the outcomes, recommendations and implementation.
- *reciprocity*	awareness that one's actions evoke and ask for equivalent actions by others, and vice versa.
- *safety*	atmosphere and feeling of mutual trust; openness to express oneself (or not) and to give opinions and ideas on teaching and learning issues (or not) without fear of being criticized or ridiculed, even if the ideas are unwelcome.
- *equality*	non-hierarchical interaction and communication of participants, as less as possible based on power, position or status; input of each stakeholder is explicitly sought/invited and equally valued.
- *contingency*	confidence that participation in PAR will be taken serious in its consequences, e.g. that input from stakeholders as well as research outcomes will be followed up as much as possible, and if not, that actions are satisfactorily justified. Participation must be based on reliability, fairness, and justice. SP is not just for the sake of the PST graduation, but aims at benefitting all participants.
- *proximity*	sense of relatedness to the PAR project and the research topic, and to the other participants; personal connection to SP and PAR.

On the basis of the perceived supporting conditions for PST PAR (Figure 5 and Figure 6), general principles for student participation in preservice teacher action research can be derived (Figure 7), again along the three dimensions of the practice arrangements. Partly, these principles apply to both sites. They are descriptive in the sense that they allow for determining the nature of the arrangements of both sites. In a normative sense, they can serve as criteria or guidelines for enabling and enhancing

PAR in teacher education settings. From the supporting conditions 'consistent, central focus on learner perspective' (Site A) and 'consistent, central focus on student participation' (Site B), for example, the general principles of *centrality* and *consistency* were derived. If the principle of centrality of the participatory focus and approach is consistently met at one site, but not at the other, then clearly there is a mismatch between the two sites which renders it difficult for the PST to set up a participatory form of research, which would also be visible as not complying with the principle of *coherence*. Likewise, the supporting condition 'follow-up on feedback/input/results' led to the principle of *contingency*. It should be stressed again that the principles, like the arrangements, are interconnected in practice and always work together in making possible and shaping the actual practice. Together they form the *practice architecture*, or - in terms of Clandinin and Connelly (1998) - the *professional knowledge landscape* in which (pre-service) teachers and teacher educators unfold their practice and relate to the people, places, and things around them. See Table 9 for short descriptions of the PST PAR principles.

Conclusions

In this study, arrangements with respect to conducting PAR were explored, from the PST's perspective, at two related practice sites: the teacher education institute and the internship school. The study focused on what PSTs perceive as enabling and constraining conditions for involving school students in PST action research, and from this, a set of principles for supporting PAR by PSTs was derived. Following the *Theory of Practice Architectures* (Kemmis & Grootenboer, 2008 and later works), the principles were distinguished along three dimensions: cultural-discursive, material-economic, and social-political. As such, the application of this theory facilitated looking at practice contexts in a detailed way by pointing to the characteristics of different types of arrangements and by appreciating the interconnectedness of conditions in the three dimensions of the arrangements. In line with the *Theory of Practice Architectures*, we acknowledge that descriptively the practice architecture of a specific project and site, and principles derived from that, can be differentiated into three dimensions, but that in real life (the teaching practice) they are inseparable and always occur and work together. For instance, in order to inhabit, find or create a viable *niche* for PAR in a TEd and school context, it would not suffice to develop a TEd program with a central and consistent participatory approach, if at the same time such an approach would not be supported at the internship school, or if program activities and curriculum planning would not add up to a situation that is seen as practical by the PSTs. Also, with regard to the principles, for instance, the principle of *dedication* – investment, effort, and loyalty – appears to be closely interconnected to the principle of *contingency* – taking the PAR outcomes seriously by carefully considering conclusions and following up on suggestions, insofar as possible and feasible. For instance, participants who feel that their input is sought and given due weight, their ideas and suggestions are welcomed and lead to an actual and visible change in the classroom or school practices (contingency), will put more energy into the partnership (dedication); and conversely, more dedication and enthusiasm from the participants, teachers and school students, enhance taking the results seriously and implementing suggested changes from the PAR projects. This way, the presented set of principles for PAR in a TEd context could be helpful not only to judge the extent to which PSTs' PAR can be successful but also to help develop a TEd program for PAR, based on or leading to a well-aligned institute-school collaboration.

What is possible to do in a practice, as stated in the *Theory of Practice Architectures*, is shaped by arrangements, and becomes visible in the *sayings*, *doings,* and *relatings* of the participants, but a practice consists of more than that. A practice also comprises dispositions of individuals in the practice, which include knowledge, skills, and values (Kemmis, Wilkinson, et al., 2014). This study, however, focused on the site of the practice, and only indirectly on the characteristics of the main practitioners in the practice, the PSTs, school students, and teacher educators. Obviously, their dispositions also interact with the arrangements and impact the way a PAR practice can unfold. Furthermore, the study was limited to PST research projects that were actually implemented within the time frame of a one-year TEd program, which did not allow research into the long-term impact of student participation in teacher research under current conditions or on the development of the practice architectures towards a participatory approach. This would be a desirable continuation of the present study. Also, the study's interest was in PSTs' viewpoints, and therefore data were collected from PSTs, and not from school students. This study aimed at gaining more insight into possibilities to prepare PSTs for a participatory approach by conducting PAR projects with school students and to find recommendations or instructions for developers of TEd programs with this participatory aim. Investigating PSTs' views on conditions that would enable them to enact or develop such a practice, was considered helpful for providing prospective teachers with options to genuinely collaborate with their school students. Further research into the perspectives of the school students would be needed to get a more comprehensive picture of the PAR practices during and after the TEd program. This would need more than just a single survey or interview, and would preferably extend over a longer period of time.

The TEd context of the study has been kept unchanged as much as possible, besides the specific intervention of a PAR assignment and the introduction of a learner-focused approach in the TEd program. Unmistakably, however, by implication of this intervention, both the added facilitator and the researcher have had an influence on the actual practice of the PSTs. Their presence by itself, although kept low-key mostly, reminded PSTs - and teacher educators - regularly of opting for collaboration with their students. Therefore, some of the conditions they perceived as enabling or constraining might be more relevant within these specific circumstances. Follow-up research on PST PAR projects in an established participatory TEd context could corroborate the conditions and principles found in this study.

In this study, we started from the idea that PSTs should be enabled to experience how student participation could become part of their educational practice, and how a participatory action research approach could create a TEd context for achieving this; a *practice landscape* (Mahon et al., 2017), or a *professional knowledge landscape* (Clandinin & Connelly, 1998) in which they would try out new behaviors, develop a professional identity, and create new stories for, and about, themselves and their colleagues in school. To us, the way the PSTs experience this context, in its various dimensions, seemed crucial for understanding their practice and for building a TEd program supportive of a participatory disposition.

The set of PST PAR principles that was derived from this study might be of practical use for multiple educational and research purposes, at various phases, including:

- Development, planning, and evaluation of a TEd program and a teaching practice that fosters PST PAR. This could start with discussing the PST PAR principles with stakeholders and determining which ones are the most important: first of all, for the school students; and furthermore, for a teacher's or teacher educator's own practice; for the PST's PAR project; for the TEd program and the teacher educators; for the internship school. From this, a preliminary version of the project could be developed and the intended setup of research/collaboration could be checked against the PST PAR principles to determine which are (easily) met and which are not much, or not at all. That would allow identifying what arrangements are needed to maximize the extent to which the PST PAR principles can be realized in practice but are not yet in place.

  All this could be done individually, but preferably - and so doing adhering to the spirit of PAR - as a collaboration of the various participants, for instance as a joint session of teacher educators and PSTs to evaluate the implemented program and as a co-design workshop for developing the program towards integration of the PST PAR-principles.

- During the project, moments of reflection should be planned for monitoring - by teacher educators as well as by PSTs themselves and by staff at the internship school - the unfolding of the PST PAR projects against the extent to which the principles are met, covering the cultural-discursive, material-economic, and social-political dimension; and if not deemed sufficient, considering which aspects should receive specific attention. PAR (and student participation included) can thrive under various circumstances but are more likely to thrive if principles are met at both sites of the PST's practices, as a student and as a teacher. This would increase the chances that PSTs become positive towards participatory practices and encouraged to sustain them after graduation.
- In a research context, teachers and educational researchers could make use of the principles to describe and analyze teaching practices in terms of participatory qualities in three dimensions; and possibly relate them as well to the experiences of students and teachers, as well as to several aspects of the PAR projects, the contexts (arrangements) and the level and nature of student participation.

In summary, this paper has aimed to illuminate conditions that foster participatory action research practices of PSTs and their school students in secondary schools, in a context of a TEd program. The unfolding of PAR in such PST practices can be enhanced if, in the development of a TEd program, PST PAR principles in all three dimensions are integrated into the vision of teaching and learning and in the curriculum.