Teaching and Teacher Education 141 (2024) 104460

Contents lists available at ScienceDirect

Teaching and Teacher Education

journal homepage: www.elsevier.com/locate/tate

Research paper

Teacher educators' views on educating pre-service teachers for participatory action research in secondary schools

Ben H.J. Smit [a,*], Dineke E.H. Tigelaar [a], Amanda K. Berry [b], Wilfried F. Admiraal [c]

[a] ICLON, Leiden University Graduate School of Teaching, the Netherlands
[b] School of Education, RMIT University, Melbourne, Australia
[c] Centre for the Study of Professions, Oslo Metropolitan University, Norway

ARTICLE INFO

Keywords:
Pre-service teacher research
Student participation
Participatory action research
Teacher education
Practice theory
Principles

ABSTRACT

Participatory action research can prepare preservice teachers for collaborating with school students in research projects. In the current study, principles for pre-service teachers' participatory action research are examined based on teacher educators' views and actions while they implement participatory action research in a teacher education program. Across three dimensions (cultural-discursive, material-economic, social-political), the findings shed light on how student participation and participatory action research can be implemented in a teacher education program and how preservice teachers can be prepared for and supported in collaborating with their school students.

1. Introduction

For decades, teacher research has been acknowledged as integral for bridging theory and practice (Admiraal et al., 2013) and enhancing teacher development (Leuverink & Aarts, 2021; Ponte et al., 2004). Consequently, preparing teachers for conducting research has been included in current teacher education programs, for pre-service teachers (PSTs[1]) in initial teacher education (TEd), and in-service teachers in continuing professional development and learning communities. This research benefits teachers by improving their classroom skills, and research proficiency, and fostering positive attitudes, self-efficacy, and research interest (Cochran-Smith et al., 2009; Leuverink & Aarts, 2021; Oolbekkink-Marchand et al., 2022). Our conception of teacher research aligns with Cochran-Smith and Lytle's (1999) 'knowledge-of-practice' category, emphasizing the link between knowledge and action, where teachers investigate their classrooms while drawing from existing knowledge and theory. This is distinct from 'knowledge-for-practice,' which is more formal, and 'knowledge-in-practice,' which is more practical.

A related development concerns the position of stakeholders in research, from research *on* people to research *with* people, with an increasing emphasis in education on student voice and student participation in decision-making processes on their learning and learning conditions (Fielding, 2001; Flutter, 2007; Jones and Hall, 2022). Children are no longer seen as incapable adults, but as active participants in their personal growth and as contributors to decisions affecting their lives (Lansdown, 2005; Lundy, 2007; Ponte & Smit, 2013; Quennerstedt, 2010). Efforts to promote student participation in education have taken various forms (see, for example, Bland & Atweh, 2007; Fielding, 2001, 2011; Fielding & Moss, 2011; Groundwater-Smith, 2005; Kane & Chimwayange, 2014) and models of participation have been proposed to describe, develop, and promote student participation (Fielding, 2001, 2011; Hart, 1992; Mitra, 2006; Shier, 2001), including recognition of students as valuable research partners. However, these ideas and principles have been slowly realized or not realized at all, and student participation appears to be a difficult concept to put into practice (Padilla-Petry & Miño Puigcercós, 2022). Moreover, participatory research exists on a continuum, with varying levels of participation (Brown, 2022). Despite challenges, positive outcomes and best practices have been established for student participation (see, for example, the concise overview in Cook-Sather, 2020).

Action research is advocated for introducing pre-service teachers (PSTs) and teachers to teacher research and involving stakeholders like students (Bendtsen et al., 2021; Bergmark & Westman, 2018; Flutter,

* Corresponding author.
E-mail addresses: smit@iclon.leidenuniv.nl (B.H.J. Smit), dtigelaar@iclon.leidenuniv.nl (D.E.H. Tigelaar), amanda.berry@rmit.edu.au (A.K. Berry), wilfried@oslomet.no (W.F. Admiraal).

[1] *Abbreviations*: PAR participatory action research; PST pre-service teacher; TEd teacher education; TEr teacher educator.

https://doi.org/10.1016/j.tate.2023.104460
Received 22 November 2022; Received in revised form 20 December 2023; Accepted 21 December 2023

2007; Ponte, 2012; Ponte et al., 2004; Ulvik, 2014). However, collaborating with school students in research is not a natural or cultured habitus of most teachers and requires preparation. Also, time and space for deep reflection are needed for action research to be an effective tool for PSTs' professional development (Ulvik & Riese, 2016). Participatory action research (PAR), rooted in social justice and democracy, emphasizes collaborative inquiry for social change (Torre et al., 2015). PAR involves everyone related to the situation under study and is particularly pertinent in educational settings where students are key stakeholders (Finefter-Rosenbluh et al., 2023). Integrating students into PAR acknowledges their roles as information sources and research partners (Smit et al., 2020). The design of a PAR approach logically depends also on different types of foci with regard to school student learning; e.g., if empowerment is a purpose, Youth-led PAR involving social workers is more feasible (Owens et al., 2022). Here, the focus is on PSTs' learning and how they can learn to enable their school students to take part in educational decision-making. Hence the role of teacher educators (TErs) becomes important because they are experts in supporting student teacher learning. At the same time, involving school students in PAR research is also new to them. In the one-year academic teacher education (TEd) program that is the context of this study, PSTs often lack prior knowledge of educational research, especially action research and student participation in teacher research, complicating their preparation within the constraints of a typical TEd program. This study aimed to foster a less common mindset and approach in TEd programs, promoting PSTs' active involvement in their students' educational decisions. While TErs are instrumental in this endeavor, their role in such programs has received limited research attention until now.

Therefore, a pilot one-year TEd program for enhancing PSTs' understanding of student participation in research and for facilitating PAR with secondary school students, was set up. Within this pilot postgraduate program, PST PAR projects have been studied (Smit et al., 2020), yielding insight into the nature and level of student participation in various phases of teacher research. Also, a set of principles for conducting and supporting PAR, from a PST perspective was developed (Smit et al., 2022). Recurrently, learner perspectives are often overlooked in education research and design (e.g. Burke, 2007; Cook-Sather, 2014; Groundwater-Smith, 2005; Rudduck & Flutter, 2000). To address this gap, the study drew on the principles derived from PSTs' experiences and practices in the previous study. The extent to which the PST PAR principles are manifest in the current TEd program was anticipated as a marker for the potential of such a program for facilitating and enabling student participation in and through PST PAR projects.

1.1. Collaborative research practices

PAR is a site-based approach to research and a means to create a context (a *niche*, in ecological terms) for PSTs that facilitates involving their school students in researching their educational practices. Forms of collaborative research in schools, such as PAR, can be described as human activities conducted in a specific situation and site, in a social and material environment, and in relation to other people. This description of research activities denotes a 'practice' as defined in current practice theories; theories that examine 'how practices happen, how they are mediated, and their role in the constitution of social life' (Mahon et al., 2017, p. 4). Unraveling the range of conditions that constitute the context for the practice is important for understanding what the practice looks like, and how it 'unfolds' within arrangements of enablers and constraints. These enabling and constraining mechanisms are a substantial part of the *Theory of Practice Architectures* (Kemmis et al., 2014; Kemmis & Grootenboer, 2008; Mahon et al., 2017) in the form of arrangements in three dimensions (cultural-discursive, material-economic, social-political) that in conjunction prefigure and make possible the professional practice. Through this study, we aimed to unpack collaborative practices of (pre-service) teachers and their school students in the specific context of a one-year TEd program. Specifically, in this study, we focused on the way a TEd program can introduce and support PSTs in conducting such a collaborative practice, as a PAR project of pre-service teachers and their school students.

As a framework relevant to studying these TEd program practices, the *Theory of Practice Architectures* (Kemmis et al., 2014; Kemmis & Grootenboer, 2008) was applied. This theory stems from a site-ontological perspective on practices, which are seen as enacted by individuals in a practice in their *sayings*, *doings*, and *relatings*, but which are also intersubjectively shaped and prefigured by conditions, or *arrangements*, in three dimensions: a cultural-discursive dimension; a material-economic dimension; and a social-political dimension (see Table 1; and, Mahon et al., 2017, pp. 9–10). Both action research processes and the *Theory of Practice Architectures* concern educational development and change, as processes of enactment, investigation, and transformation of practices. A distinctive element of the *Theory of Practice Architectures* is that it makes explicit the relational aspect of a practice, and in so doing 'points towards the dimension of solidarity and power that also permeates practices' (Mahon et al., 2017, p. 9). For this reason, the *Theory of Practice Architectures* seemed suited for unpacking and analyzing collaborative (and thus inherently relational) forms of research. In this project, therefore, we drew on the *Theory of Practice Architectures*, and the three dimensions of *arrangements*, as an analytical tool to look at the PST PAR practices and the TEd program. In a former study (Smit et al., 2022), this theory was used for developing a set of principles, along these three dimensions, for TEd programs to enable such PAR practices by PSTs; in the current study, the theory substantiated the analysis of the concrete manifestations of the principles in the characteristics of the program and the views and activities of the TErs. The concretizations allow TErs and program developers to evaluate and use the ideas in educational practice.

2. The current study

Practices involving young people as active agents in decision-making processes are scarce in education and educational research, in particular in the Netherlands. Currently, a comprehensive teacher education program in the Netherlands that focuses on preparing PSTs for incorporating student participation through action research does not yet exist. Research on how to set up a program is limited. Therefore, further development and research into these issues were considered needed to enable and foster student participation in schools. In this study, we were interested in the way PSTs were prepared for research collaboration with school students through conducting PAR projects at their internship schools; and, how the PSTs were supported in this work. TErs play an important role in creating a context for PAR; however, the views and actions of TErs have not been given much attention in the research on PAR up till now. As a starting point for this study, we use the PAR principles for enabling PAR projects that in earlier research were derived from PSTs themselves. The focus of this study is on how the PAR

Table 1
Types of arrangements and applicable aspects, concepts, and terms.

Arrangements	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, and 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

principles, that originate from PSTs' perspectives, are manifested in TErs' views and actions. Ultimately, the findings contribute to an increased understanding of how a context can be created that prepares PSTs to collaborate with their school students in examining and developing their educational practice using a PAR approach, taking into account local conditions.

The following research question guided the study.

- How are principles for pre-service teachers' participatory action research in secondary education manifest in the teacher educators' views and actions?

3. Method

3.1. Participants and sites

For this study, TErs from a one-year postgraduate teacher education program at a university in the Netherlands were involved. More specifically, the study focused on a distinct track of the TEd program, the *World Teacher Program* (WTP). The WTP consists of a one-year TEd program supplemented by an additional component aimed at preparing pre-service teachers for teaching in secondary bilingual and international schools. Based on a selective entry procedure, about 15–25 students enroll every year. For this study, an explicit part of this program was for all PSTs to design and conduct a participatory action research project, aiming to enhance school student participation in decision-making processes related to their education. The PAR projects thus served two broad goals: 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 through actively involving them in the PAR projects.

From the outset of the TEd program, PSTs were introduced to the concepts of teacher research, student voice, and student participation. During their internship, PSTs collaboratively formulated research questions with guidance from university-based TErs. These research inquiries were expected to be tied to PSTs' teaching practices, rather than strictly bound to the subjects they were teaching, and were encouraged to be relevant to their school students. One way to achieve this relevance, as recommended, was to include school students in the process of developing and shaping the research questions. An essential requirement of the projects was that PSTs actively implemented a proposed change in their teaching, aligning with the participatory objective of involving school students in decision-making processes.

Table 2 shows the characteristics of the TEd program, described as arrangements and ordered along the three dimensions of the practice architecture of the program: cultural-discursive arrangements, material-economic arrangements, and social-political arrangements.

Six TErs and one PAR facilitator were involved in the program at the university. The TErs were the course leaders and PSTs' supervisors and were formally responsible for assessing and grading. The facilitator acted as an action research expert and coach, by providing PAR courses and advising on PAR plans, and as an assessor of the PAR reports. The first author was involved as an 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 and TEd practices, but not as an educator, facilitator, or supervisor. The other authors, all education researchers, were neither actively involved in the TEd program, nor the data collection. The second author performed checks on data analysis and interpretation.

3.2. Data collection

Data for this study were collected from two academic years, 2015–2016 and 2016–2017, which comprise two iterations of the one-year *World Teacher Program*. At three times within this period (at the start of the period and both ends of the consecutive study years), semi-structured individual interviews were held with the TErs; no data was shared with other interviewees. The interviews comprised two main topics: 1) TEr's general views on student participation and PAR; 2) TEr's specific views of the *World Teacher Program*, and the concept of student participation and their role, in particular. All interviews were conducted by the first author. The interview duration was between 45 and 75 min; the interviews were audio-recorded and transcribed verbatim.

Besides the facilitator, six different TErs were involved in the program; the facilitator and two TErs for the entire period of the two academic years and four TErs for part of the time (due to staff replacements and re-allocation of staff). Participation was voluntary; all invited persons agreed to participate in the interviews without hesitation. A total sample of seven persons was included in the interviews, which added up to twelve interviews with these seven people; four at the beginning of period 1 of this study, five at the end thereof, and three after two years.

Table 2
Generic characteristics of the World Teacher Program; along with three kinds of arrangements.

TEd 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 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: TEd 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 TEd program
– International internship: obligatory part of the TEd program; duration abroad: 3–4 weeks, to be planned within a pre-scheduled 6-week period in Semester 2.
Social-political arrangements
Usual ways of relating to each other:
– TErs as program designers, teaching experts, guides, and assessors (authority; TErs in charge)
– TErs 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 critical friends (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).

WTP = World Teacher Program.

3.3. Data analysis

The interview transcripts were the focal data sources for this study. Qualitative data analysis was aimed at determining if and how the PST PAR principles were manifest in the teacher education program that affected the unfolding of the PST PAR projects and the incorporation of a participatory approach in the TEd program. The PST PAR principles that were used as the framework for analyzing the TErs' views and the characteristics of the TEd program, were developed from the PSTs in an earlier study (Smit et al., 2022). So, the TEd program and TErs' views are in focus, but by applying these principles to the data, the perspectives of the PSTs guided the analysis.

Data analysis consisted of the following analytical steps.

1. In the first round of reading, relevant fragments (paragraphs or sentences) in the TEr interviews were marked and then coded with PST PAR principles (see Table 3), based on the three dimensions of practice architectures. The qualitative data analysis software package *ATLAS.ti 9 Windows* (2021) as used for the coding and analysis process. As a coding rule, unless missing out on a crucial aspect of a fragment, no more than one principle/code per dimension was applied to a single fragment. Since the *Theory of Practice Architectures* assumes interwovenness of the three dimensions, when needed, coding a fragment with principles from more than one dimension was allowed as well.
2. In the second round of reading, short descriptions of the reasoning for applying the specific codes were added to the coded fragments. These reasonings helped to identify common aspects in the TEr interviews related to the principles.
3. A co-occurrence table of codes (principles) was generated in *ATLAS.ti*, showing the frequencies of the separate codes for the three dimensions and the frequencies of fragments that were coded with principles from two different dimensions (see Table 4).

Table 3
Descriptions of PST PAR principles (Smit et al., 2022).

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 student participation and PAR and clearly defined and communicated.
unity	the different program parts (courses and learning activities) stem 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	an ongoing process of participation, not a one-off activity; uninterrupted teacher-class relationship (at least for the entire duration of the PAR project).
coherence	a logically consistent program, linking theory and practice of student participation and PAR within an effective set of learning activities.
practicality	(perceived) ease of incorporating the PAR approach and PAR activities into the curriculum and the 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, school students, colleagues, and 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 little 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 seriously 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. student participation is not just for the sake of the PST graduation but aims to benefit all participants.
proximity	sense of relatedness to the PAR project and the research topic, and to the other participants; a personal connection to student participation and PAR.

The above data analysis procedure was performed by the first author. In a few cases, feedback on coding by a second researcher who had not been involved in the original data analysis resulted in reducing the used codes to the most essential one(s) for the fragment or splitting some fragments into separate ones that captured different aspects. The quality of the steps taken was checked through an audit procedure. The second researcher traced the results of each analytical step to the underlying data and assessed the analysis on traceability, applicability, and trustworthiness. The audit confirmed the analytical quality as good.

4. Findings

Coding of the 12 TEr interviews resulted in the identification of 541 fragments that could be related to the PST PAR principles. The left-hand column of Table 4 shows the frequencies of those fragments coded with individual principles and the number of fragments that were coded with principles from two different dimensions.

As can be seen in Table 4, the left-hand column, all 17 principles were found in the data set, although the relative prevalence differed from only a few instances (e.g. continuity, f = 4; availability, f = 10; reciprocity, f = 10) to quite a large number (clarity, f = 85; recognition, f = 85; coherence, f = 62).

The body of Table 4 shows that in many instances fragments were connected to principles from more than one dimension. This was expected, because of the theoretical interwovenness of the three dimensions of practice architectures. As described before, from the viewpoint of the *Theory of Practice Architectures*, a particular practice always unfolds within a particular practice architecture: a constellation of enabling and constraining conditions that prefigure the practice. The conditions form a three-dimensional set of practice arrangements (cultural-discursive, material-economic, and social-political), and these interwoven dimensions are therefore reflected in the results of the data analysis as fragments coded with principles from multiple dimensions.

For each of the three dimensions, Table 4 shows the frequency of fragments that were also coded with a principle of one of the other two dimensions. Focusing on the most frequent principle per dimension (in italics and bold font) and the most frequent combination with a principle from another dimension (frequency 5 or higher; 15 cells), the table shows that the CD principle *clarity* was mostly found in combination with the ME principle *coherence* and the SP principle *recognition*. Furthermore, combinations of *coherence* and *unity* occurred relatively often, as well as combinations of *recognition* with *coherence* and *choice*.

Below, for each of the three dimensions, we describe how the principles were found to be manifest in the TEr views and TEd program. Manifestations of all 17 principles are summarized in Table 5. A subset of these principles is described in more detail. The selection is based on the principles most frequently combined with principles from another dimension; preventing overlapping information across the dimensions; and providing more variety and contrast with other dimensions, in terms of adding something to what has already been handled.

4.1. The cultural-discursive dimension (CD)

The cultural-discursive dimension (see Table 4) concerns the usual ways of talking, thinking, and exchanging through language. This includes the central concepts of the TEd program, the terms and ideas that are commonly used among staff and students, and within current educational policies at a national or local level. The set of 17 PST PAR principles comprises 4 CD principles, in order of most to less frequently manifest in the data: clarity (85 in total; 43 combined with another dimension), centrality (56; 37), unity (53; 25), and consistency (45; 26).

The interview data related to the CD dimension show that the TErs acknowledged the importance of the terms and concepts that were used

Table 4
Co-occurrences of principles across three dimensions; number of fragments

Principles/dimensions	CD-centrality	CD-clarity	CD-consistency	CD-unity	ME-availability	ME-choice	ME-coherence	ME-continuity	ME-dedication	ME-practicality	SP-contingency	SP-equality	SP-proximity	SP-reciprocity	SP-recognition	SP-safety	SP-solidarity
CD-centrality f=56; #comb=37					0	2	9	1	2	2	1	5	1	3	10	0	1
CD-clarity f=85; #comb=43					0	1	11	0	3	5	4	0	1	0	13	4	2
CD-consistency f=45; #comb=26					1	2	5	0	0	4	1	2	2	2	7	0	0
CD-unity f=53; #comb=25					1	0	7	0	0	5	0	1	3	0	6	1	2
ME-availability f=10; #comb=5	0	0	1	1							0	2	1	0	0	0	0
ME-choice f=18; #comb=23	2	1	2	0							0	3	1	0	9	5	0
ME-coherence f=62; #comb=48	9	11	5	7							1	1	3	0	9	2	1
ME-continuity f=4; #comb=1	1	0	0	0							0	0	0	0	0	0	0
ME-dedication f=17; #comb=17	2	3	0	0							0	0	4	0	5	1	2
ME-practicality f=43; #comb=28	2	5	4	5							1	2	1	0	7	1	1
SP-contingency f=11; #comb=8	1	4	1	0	0	0	1	0	0	1							
SP-equality f=20; #comb=16	5	0	2	1	2	3	1	0	0	2							
SP-proximity f=21; #comb=17	1	1	2	3	1	1	3	0	4	1							
SP-reciprocity f=10; #comb=5	3	0	2	0	0	0	0	0	0	0							
SP-recognition f=87; #comb=66	10	13	7	6	0	9	9	0	5	7							
SP-safety f=22; #comb=14	0	4	0	1	0	5	2	0	1	1							
SP-solidarity f=17; #comb=9	1	2	0	2	0	0	1	0	2	1							

CD: cultural-discursive; ME: material-economic; SP: social-political

f: the overall number of fragments coded with this code/principle; #comb: the total number of fragments coded in combination with another dimension

Grey-shaded cells: the most frequent principle within a dimension.

and conveyed to the PSTs. TErs are dedicated to establishing student participation and PAR principles as core components of the program [CD-centrality]. They acknowledge that PSTs may be unfamiliar with this approach, highlighting the necessity of integrating activities aimed at providing PSTs with a clear understanding of the program's concepts and procedures [CD-clarity]. The TErs underscore the program's focus on the learner as vital, emphasizing the need for consistency in empowering PSTs to promote student participation in their PAR projects [CD-consistency].

Below, we focus in more detail on the principles of *clarity*, *centrality*, and *consistency*.

4.1.1. Clarity

On the cultural-discursive dimension, the TErs' interviews related frequently to one of the four principles, but most often to the *clarity* of the concepts of student participation and PAR and the approach and research steps of action research in schools. Being clear about what student participation entails, and what it does not, was seen as important by TErs, because PSTs are mostly unfamiliar with participatory practices and are unlikely to be able to draw on their own experiences in education to picture what this could look like or anticipate the benefits of collaborating with their school students, either for the school students or themselves as teachers. To introduce PSTs to the idea of student participation, even with very young people, for instance, PSTs were provided with two articles about a decentered position of the teacher and participatory research with school children, and genuine and non-genuine forms of PAR were discussed.

The principle *clarity* pertains as well to the observation by TErs that many PSTs regard action research – and social science research in general – not as real, robust research. Most PSTs enter the postgraduate program with limited knowledge of educational research, compared to the kinds of research and research domains they are familiar with from their master's studies, and even more so of action research. Therefore, TErs in the *World Teacher Program* talked about it being important to be clear throughout the program about the notion that action research is a serious and rigorous form of research (combined principles of CD-*clarity* and ME-*coherence*).

4.1.2. Centrality

The principle of *centrality* indicates that 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 promoted by all educators. In the TEd program, TErs mentioned regularly explaining what (P)AR is about and what scientific methods are being used; thus tackling possible misconceptions or lack of knowledge of the PSTs. However, besides enhancing clarity as much as possible, the *centrality* of the concepts of PAR and student participation, and the explicit theme for the program, 'Focus on the learner', were foregrounded clearly to the PSTs. One reason for this was because TErs observed that, especially at the beginning of the program, PSTs tend to act as consumers, following the

Table 5
Characteristic manifestations of PST PAR principles, across three dimensions.

Cultural-discursive principles	
centrality	- Guiding principles in the program are: constant and mutual learning of students and teachers, in school and TEd program; being an active learner, and taking responsibility for your learning. - Creating curiosity in PSTs about how people learn compared to a theory-driven curriculum. Make them see their students as rich sources of learning. - TErs as stakeholders in learning, besides being experts. - Keep reminding yourself about the implications of your learning experiences for your learners. - The research part of the program might turn thinking to the learner instead of the roles of the teacher; treat the project as a thread through the year.
consistency	- Use as many as possible opportunities for PSTs' rich experiences to challenge views on student participation. - Let PSTs ask questions about theory in various parts of the program: subject didactics, supervision, lectures; and subjects: classroom management, … - Link program to practice experiences in every week's meetings. - Build up the program to challenge a mental switch to think from a learner's perspective; make it a natural attitude. - Stimulate thinking about the teacher's role as a professional in putting the learner in a central position. - Densely packed curriculum and practical issues hinder the opportunity for reflection or playing with ideas. - Show PSTs the TEr's journal as a window on student participation, and keep up doing that. - Include PSTs' decision processes in the content and setup of the curriculum throughout the year.
clarity	- Setting up learning experiences and opportunities within the classroom that cause students to think about people's learning and change PSTs' perspectives on school students. - Providing and discussing articles on a decentered position of the teacher and participatory research with school children; providing examples of (P)AR. - Introducing the theme 'Focus on the learner' and modeling this in your own classroom. - Being clear (and consistent) about the notion that action research is a serious and rigorous form of research. - Making explicit for PSTs what is exemplary for a participatory approach in TEr' (research) experiences, actions, methods, and materials; modeling AR steps, including reporting. - Having conversations with PSTs about their expectations and suggestions for the program. - Stimulating insight into teachers' professional identity by making PSTs – partly - responsible for lessons. - Explain to school coaches the concepts and goals of the TEd program concerning student participation and PAR.
unity	- Include PSTs' suggestions for a learner perspective in various parts of the TEd curriculum. - A shared feeling and understanding of the meaning and importance of student participation among staff, students, and school coaches; and in line with the school vision. - Discuss curriculum goals and methods concerning the participatory approach within the whole group of TEd staff; in particular in case of staff changes. - Organizing TEd staff meetings to think in similar ways about student participation, PAR, and the learner perspective. - Central goal for PST: developing a teacher identity that includes seeing yourself as a learner: this would then permeate the whole curriculum and the thinking of TErs and school coaches. - Combination of program and internship requires having organized a curriculum in advance. - Running the PAR project during the whole study year and involving an advocate/instigator for the approach stimulates the structuring of the PAR approach in the program.
Material-economic principles	
continuity	- Introduction of planning and content of research, and expected tasks for PSTs at the start of the curriculum: PAR comprises the whole program year. - Alternating 3-week periods at school and university, so PSTs just have time to think and process what's going on. - Internship abroad in the second semester is a break in the stream of the curriculum. It hinders finishing the assignments but also is motivating for PSTs and enhances their self-confidence.
coherence	- Explicitly connecting TEd participatory practices (teaching behavior) to PST experiences, both planned and unplanned (noticing opportunities). Asking PSTs to what extent they feel having a voice, and at which level of participation. Making them aware of parallels between TEd participatory behavior and their acting with school students. - Noticing activities to invoke looking from a learner's perspective, not only in hindsight (reflection) but also in preparing and conducting teaching in practice. - CLIL elements in the TEd program force PSTs to look differently at teaching in general, which facilitates focusing on the learner as well. - Showing PSTs frameworks about learning when they need it and are receptive to it. - Let PSTs design tasks that are useful for themselves, only based on a given purpose or aim. - Having conversations with the PSTs about sensible assignments in class, instead of referring to given tasks in study guides. - Discuss with TErs, supervisors, school coaches, and subject coaches, about what is needed for a student participatory approach. - The research part in the TEd curriculum as a mechanism to turn thinking [of TErs and PSTs] towards the learner, forcing them to find out what their learners' questions are, and dictating other activities throughout the program; the roles of the teacher [including researcher] as the guiding framework for the program. The required PAR approach facilitates spending more time on 'focusing on the learner'; steering them to a systematic critical look at the meaning of student behavior. - Treating the PST's research project as a thread through the year, building up over time, will embed it in the program. - Extending the way of thinking about learners as participants to other parts of the program and in the PSTs practice; also, outside the classroom, in the role of a professional in a school organization.
practicality	- Time pressure and daily hassles (such as articles, assignments, and tasks) divert TErs from the emphasis on the learner and dilute their ideals. - actual context felt more disabling than enabling for PAR, especially related to lack of time and high workload, both at the institute and the internship school (many lessons to plan and give; assignments at the institute to finish in time). E.g. it prevents looking at what a school student can do in the learning process, e.g. regarding giving the responsibility of classroom management to school students. - The TEd program and the school curriculum and exams give little space for input in decision-making, co-creation of the curriculum, or collaboration in research and attentive teacher-student interaction more generally. Communicate clearly to schools and coaches what practical affordances are needed for PAR. - Changes in the setup and content of the TEd program and staffing, and the unmatched presence of staff with small part-time appointments hinders the implementation of the participatory approach. - Visibility of applicability in and improvement of your practice for PSTs and school coaches. - hands-on way of working with school students, applying 'ideas' and experiencing the results in practice enables PAR and also enhances the proximity of participants to the approach and the research topic. - PSTs participating in TEr research: difficult because of limited availability of PSTs, mixing up TEr's and own experimental settings, and research locations other than internship schools.
availability	- provide a physical set-up in the classroom for creating a communicative space, e.g. flexible seating, for instance sitting in a circle to facilitate equality in discussions. - TErs observed PSTs sometimes having difficulty in claiming space for conducting their research assignments and for collaborating with their school students, e.g. because of non-aligned working days and times of TErs and non-matched rosters. - Provision of learning theory so that PSTs become aware of how views and beliefs change. - Supervision meetings with PSTs were too few because of roster problems; which led to a suboptimal focus on the learners. - The second semester becomes more open for students to make suggestions. - Advise PSTs to connect to or use for their research an existing school task or discussion group. - Near the end of the school year, a lack of suitable opportunities in class and curriculum for conducting the PAR projects.

(*continued on next page*)

Table 5 (*continued*)

Cultural-discursive principles	
choice	- Provide opportunities for PSTs to make relevant choices for their learning, e.g. in terms of designing their assignments, and peer assessing their work. - Allow PSTs to select a group of school students of their own choice to work with a group they feel comfortable and safe with. - Allow experimenting and accept things going wrong; let PSTs feel free to do so. - Some PSTs like to do what they know they can do already (i.e. traditional research); TErs can explain that PAR is not so different and involves the same thinking steps. Some want to have the option to do 'regular' research instead of PAR. - School coach favors giving students maximal influence in the learning process unless they are not capable of that. However, giving complete freedom to school students is not preferable, because it would lower their grades even further. - [Ask PSTs how they want to keep in contact with each other and let them choose the right way for their group].
dedication	- PSTs' eagerness to know what their school students' questions are; TErs wonder if this is always the case. - PSTs' interest and ambition to be part of such a participatory TEd program; the desire to be part of negotiation about curriculum; and TErs providing space for that. - PSTs have to put effort into using the provided curriculum to focus on the learner in the classroom, making theory work in practice. Feeling responsible for having your voice heard and contributing; being an active participant. - PSTs are eager to do something in practice. Strong relation with practice. This fits doing PAR well. - Familiarity with PAR-like research. Some PSTs find it difficult to accept it as real research. - Contrast with former TEd practice in which the PSTs were involved in questions, but not really investigated them. - A TEr as a respected model for conducting AR and for pursuing SP. - PAR/research differs from a mere reflection in making a plan, developing it properly, trying it out in practice, and improving further based on reflections on the outcomes. - Both the mind and heart need to be involved. Attention and focus are needed to create a good teaching environment. - School dedicated to the rationale and approach of the TEd program and of PAR and SP. This is not aligned with giving them jobs with too much responsibility or lesson hours. PSTs working as employees instead of interns can make them hesitant to approach and collaborate with school students in a participatory way that might not be supported by the school or might jeopardize the school's curriculum.
Social-political principles	
recognition	- TErs intrigued by the idea of changing school students from an object of research to a subject (involvement in teacher research). Also searching for how to see PSTs as partners in designing the TEd program. - TErs seeing themselves as stakeholders in a learning process, not so much as the 'experts'; being responsible for opening up the space for negotiating. - Providing opportunities for bringing in personal experiences and challenging each other's views; valuing different perspectives and expertise. Comparing having responsibility, choices, and influence yourself, as a PST/teacher, to what you will do with your class/ school students. - Collaboratively unpack what teaching is, as equal partners, bringing in theoretical frames, experiences, and feelings. Being responsive to PSTs (and school students), starting co-creation of the curriculum from little, concrete examples and experiences as they occur, and noticing opportunities for this. - Seeing yourself and all participants (PSTs, school students, TErs) as rich sources of learning. Start with thinking about what people bring into the situation and what they can offer. - Importance of having a collaborative approach. - Not teach from the book (passive/receptive), but have a conversation about a subject (active). - PSTs working with school students as subjects also learn about their pedagogical role and their interaction with school students. - PSTs in this group are very good in their subject and have more experience, which might allow them more to give space to school students.

Table 5 (*continued*)

Cultural-discursive principles	
	- Using several ways of involving students in your lessons; e.g. formative assessments as starting points for negotiations between teacher and students. - Showing PSTs that there are several ways and levels of involving school students and recognizing them as partners; also genuine ones, and tokenistic ones. Provide good examples of SP and let PSTs be amazed about how far they can come with a 'focus on the learner' in their research.
solidarity	- Including in your professional identity the attitude of wanting to give other people something they can build on, they can go forward with. - Strongly shared feelings of relatedness to students and willingness to invest in that. - Think of ways to present theory such that everyone can take advantage of that. - A PSTs' group atmosphere of belonging to a group; feeling a bit special in comparison to other TEd programs, and being part of something bigger. - Being committed to a learning community working towards a specific goal; joint responsibility for group learning, both in TEd and in school, with pupils, and between institute and school. - More joint activities, leading to tighter group cohesion and easier group discussions; working together with pupils on applications in practice. - Lack of supervision meetings caused less mutual involvement and cooperation than possible.
reciprocity	- Coming to realize that TErs and PSTs [and PTs and school students} are learning alongside each other, albeit different things. - Mutual connectedness of institute and school is the foundation of TEd. - In educational research, very often the teacher is central but it is important as well what the student does and thinks.
safety	- Some teachers and students show resistance out of fear of letting go of control, which is not the case. - Facilitate PSTs in the 'art of failing' and allow them to make mistakes. - Ensure that PSTs feel comfortable and safe in collaborating with the school student group. - Acknowledging anxiety in teachers in learning to teach, is working with your learners as well. - Some schools feel sensitive about really collaborating with school students and are more protective. - In the case of vulnerable PSTs, TErs should be reticent in making them take risks with certain classes. - At the end of the TEd program year, a remnant fear might be taken up by PSTs to develop later on; others might be relieved to be able to return to something [just teaching or regular research] they feel safe with.
equality	- Not the TEr telling PSTs how to act, but finding ways for that in a partnership. - Important to have a collaborative approach, with responsibility for your own learning. - Being equal partners in unpacking teaching, even having conversations about your own teacher's teaching. This can be weird to them. - Negotiating [about the curriculum] implies a different relationship between teacher and student. This can be expected a bit more from a PST than from a school student. - Physical set-up (circle) can facilitate looking at each other and equal positioning. - TEr co-creating the curriculum with PSTs, but within a more modest framework
contingency	- PAR by PSTs with their school students is appealing because it implies an application and a visible result in practice. - The PAR method and the participatory approach that is propagated by the TEd program should be acted upon, as well as in feedback and assessment of the PSTs' research reports. - Requests by external persons for using research results. - An important element of (P)AR is sharing research results and showing that something interesting has been tried and investigated, in a systematic way, even in the case of non-success. Important as well to convey this message to the PSTs.
proximity	- Some (group) characteristics of the PSTs in the WTP are favorable for PAR and SP: more open to differences because of international experience; more life experience leading to more space for school students' influence.

(*continued on next page*)

Table 5 (*continued*)

Cultural-discursive principles
- PSTs choosing to become teachers are practice-oriented, eager to carry out something, not only working on theory. - Giving a concrete example of an AR project that was recognizable for the PSTs triggered – critical - interest in PAR. - PAR connects with what is pleasant to do for a student in secondary school. Being hands-on, concrete, and clear brings PAR closer to the school student. - Having self-confidence in the ability to do PAR and work with your school students and being responsive, even at the beginning of the teaching career. - Not all TErs have an affinity with research and can support the PSTs in conducting PAR.

* For a description of the principles: see Table 4.
* Principles in boldface are described in more detail in the Findings section.

lead of TErs instead of taking an active stance in what and how they want to learn.

> That is a partnership. It's not me telling them. Now of course one of the most difficult things is to enact a set of principles. So I can tell you that these things really matter to me, that learners should construct their own professional pathways for learning; that my job as a teacher is to support and extend and provoke their learning and to make them feel uncomfortable, but make them want to continue and just see that teaching is sophisticated knowledge and that it entails something about the growth and development of a human being in your classroom, not just the person whom you pour knowledge into the head of. [TEr 1 – Interview Round 1–20150928]

In the interviews, TErs talked about modeling an active stance and scaffolding this by having PSTs question themselves about what they are learning and how they want to develop. In their opinion, this helps put a 'focus on the learner', although it could be improved upon. The constant emphasis on the requirement of involving school students in the research project, which was evident in the TEr interviews, is one of the clear manifestations of the principle of *centrality*. Typically, the TEd program starts with management and classroom organization, but to enable a participatory disposition paying attention to the learners was mentioned as the most important aspect of the whole program.

A concrete suggestion was to consistently encourage seeing from a learner's perspective; for instance, when dealing with different educational theories and the teacher roles based on these theories, the perspective could be turned around by asking: "What would this look like for a student?".

4.1.3. Consistency

Concerning the principle *consistency*, the interviews revealed TErs' experiences with how they keep paying attention to their students' voices and how they encourage the PSTs to pay attention to their school students' voices. According to the TErs, the consistency in this approach had been greatly enhanced by the introduction of PAR as the standard for the research assignment, and by the presence of a researcher who kept the TErs deliberately thinking about how to build this theme into the curriculum. However, it was acknowledged that this had not always been achieved and that still "… a lot of the activities that we [the TErs] do, focus on the teacher, on the lesson plan, on the management, but actually not on the learner." [TEr 1 – Interview Round 2–20151207]. Moreover, the link between the regular part of the TEd program with the courses that were specifically set up for this group of students was not always clear, and the central theme was not yet naturally included within the whole program, such as in the courses on subject methodology, theories on learning and instruction, or youth psychology.

> Well, I think …, I think it *is* more or less in the regular program as well, but it is …, it could be more explicit. And I think that, when you look at the subject methodology programs, I think we all try to make them more aware […] of who are your learners and what does it mean if you, if you …. you know, differentiate in your class. […] I ask my PSTs 'What are your questions?' and I try to incorporate their questions in our sessions […]. So I think we try, but we could be …, I could even say this more explicitly to them, you know, what I'm doing now, what does asking [PSTs] for questions mean in your practice? I could do that more. And I think that, …I think …, I dare say that in general, most TErs could do that more. [TEr 2 – Interview Round 3–20170711]

4.2. The material-economic dimension (ME)

The material-economic dimension (see Table 4) concerns the facilities, materials, resources, and the schedule and organization of the TEd program, the school, and the PAR assignment. The set of 17 PST PAR principles comprises 6 ME principles, in order of most to less frequently manifest in the data: coherence (62 in total; 48 combined with another dimension), practicality (43; 29), choice (18; 23), dedication (17; 17), availability (10; 5), and continuity (4; 1).

On the material-economic dimension, it became evident that alignment between TEr and school staff perspectives and practices [ME-coherence] is crucial. TErs asserted that the explicit mandate to involve school students in PSTs' research resulted in a well-structured series of activities for PSTs throughout the program. Nonetheless, practical challenges [ME-practicality] arose due to discrepancies or conflicting demands from the TEd institution and the internship schools [ME-coherence].

Below, the ME-principles *coherence* and *choice* are described in more detail. Issues of *practicality* are often related to coherence and will not be discussed separately here. The principle *choice* is highlighted because it connects highly to participatory practices.

4.2.1. Coherence

The ME principle that appeared most frequently connected to fragments in the TEr interviews, was *coherence*; this principle is about the linkage between theory and practice of student participation and PAR in a consistent TEd program. TErs stated for instance that they struggle with demanding circumstances in which PSTs are expected to teach whole classes from the very start of the program, or teach many classes without supervision, an issue that touches upon *practicality* as well.

> I think one of the issues that I struggle with a lot here is that student teachers are expected to teach whole classes from day one, and some of them are teaching many classes without supervision. So it's just hard to get any time to think. Naturally, then they come in wanting answers to questions that they're dealing with tomorrow, and they don't have anybody in school to talk to. So they don't want to hear me say let's think about this together. The pressure to give, for me to give an answer is so strong. It makes that idea of let's have a participatory approach a little more difficult because they're so exhausted all they want to do is just sit. [TEr 1 – Interview Round 1–20150928]

To deal with such problems, TErs saw that alternating periods at the institute and school were helpful for PSTs to reflect on and make sense of their school experiences. Specifically, according to the TErs, the introduction of the participatory aspect in the PSTs' research assignment could invoke the PSTs to focus more on the learner instead of the teacher, and on the role of the teacher in getting to know the issues and questions of their learners, the school students.

Modeling participatory teaching behavior and providing concrete examples of student needs, student experiences, and student questions were mentioned as bridges between theory and practice in PAR [coherence].

> I think it [modeling] is definitely one of the helpful approaches because I think, especially in the beginning, students tend to just

follow your lead without thinking 'What lead am I following?'. They just …, you consume, because that's what you do. You learn …, you're used to being here and listening to somebody tell you 'let's do this, let's do that'. [TEr 2 – Interview Round 3–20170711]

The inclusion of a PAR assignment leads to coherence in the program, as one TEr said, because of the logic of cohesive activities throughout the program that follows out of it, the sustained attention to the approach that it generates, not being a one-off task, and the mentally merging of the participatory ideas (combined ME principle *coherence* and CD principle *unity*) by reporting about the PAR project and the way the school students were involved in that.

4.2.2. Choice

Freedom of decision (*choice*) on several aspects of the PAR project is a third most frequently mentioned ME principle for enabling student participation in PST PAR projects. More than with other principles, this principle was evident in combination with the SP principle *recognition*. TErs felt that involving students in choosing content and tasks is worth striving for, also because thinking about an assignment invokes much learning. However, TErs sometimes felt hesitant about when, and to what extent, that fitted with PSTs' stage of development.

Well, we know the autonomy of the student; it is related to motivation. So I'm always in favor of letting them influence the whole learning process as much as possible. Including yes, a kind of consideration for the possibility that they just aren't capable of that yet. [TEr3 – Interview Round 1–20151112]

PSTs are developing as teachers and are often in a vulnerable position because they have to acquire new skills in front of young people and colleagues. Thinking about options, in the way the PAR project is conducted, and recognizing PSTs' interests and capacities, were identified as instances of the principle of *choice*, in combination with *recognition* (and *safety*).

Is it a smart idea to do with that class? Or should I just not do it? Or maybe, if they have parallel classes or do your research with the other class and do the same intervention but without making yourself too vulnerable. […] If the educators see that a student is very vulnerable, I don't think they should encourage that. [TEr4 – Interview Round 2–20160712]

Safety was mentioned also in connection to *choice*. TErs remarked that, on the one hand, some PSTs feel insecure because of the unfamiliarity with the kind of research they are supposed to do, and, on the other hand, were reassured by the idea that in the end and after a positive experience with PAR they could proceed with their future research projects in their way.

4.3. The social-political dimension (SP)

The social-political dimension (see Table 4) concerns the ways people relate to each other and to the extent they collaborate in changing a situation to benefit all stakeholders. The set of 17 PST PAR principles comprises 7 SP principles, in order of most to least frequently manifest in the data: recognition (87 in total; 66 combined with another dimension), safety (22; 14), proximity (21; 17), equality (20; 16), solidarity (17; 9), reciprocity (10; 5), and contingency (11; 8).

Concerning the PST PAR principles, the data reflect a positive evaluation of the action research approach that has been chosen for the research component in the TEd program [SP-proximity]: not only as a practical way of working [ME-practicality] but also as a means to accommodate the school students' preferences for working methods [SP-recognition]. Moreover, TErs experienced AR as yielding useful results for practice [SP-contingency], for which ideas and suggestions from school students are a valuable contribution [SP-equality; SP-recognition], and for PSTs to realize that their research is actual research and worthwhile to present to the outside world [SP-contingency]. A fruitful insight for PSTs from their collaboration with school students, was, according to the TErs, the experience that such collaboration is not threatening/dangerous [SP-safety] and helps improve classroom practices [SP-contingency].

Below, findings for three frequently manifested SP principles, i.e. recognition, equality, and proximity, are presented in more detail.

4.3.1. Recognition

The principle *recognition* pertains to the way PSTs, school students, colleagues, peers, and TErs are recognized as valuable participants in the teaching, learning, and researching activities and in decision-making processes that are related to the educational context. This implies recognition of the different roles and capacities of the stakeholders involved, as well as different preferences, developmental stages, experiences, expertise and skills, and responsibilities or duties.

For the principle *recognition*, interview data reveal that TErs were aware of the importance of school students being recognized as sources of learning and as participants in the PAR process. Therefore, it was felt that PSTs need to be guided towards such a practice; for instance, by activities in the institute and school that force a focus on the learner and that allow PSTs and school students to express their perspectives and preferences.

TErs also attempted to model such a practice in their TEd practice, by acknowledging the PSTs as rightful participants in the program and learning context. PSTs were encouraged to give their opinions on and suggestions for the content and set-up of the program; and TErs felt that the PSTs sensed they have that right and that PSTs valued that.

And so I can think of a couple of examples recently of how you can begin to co-create the curriculum together, when for example, we then, between me and [another TEr] and [a PST], we started quite a long conversation, over email, about what are your expectations of the program, and then what do you think is reasonable, and how could we do a better job of working on things? And he came up with some suggestions about what could be possible to do. And I think, actually, that is co-creating the curriculum. That is being responsive to students. [TEr 1 – Interview Round 2–20151207]

However, TErs also struggled with the way students can be recognized as participants in the TEd program, either because of uncertainty about the concept of participation or because of practical reasons.

Being aware of differences in roles and responsibilities is another aspect of recognition; for instance, the role of the TEr versus the role of the PST. From a view of learning as a process of self-responsibility, but based on group activities, a TEr concluded that learners should be actively involved in their learning, and teachers and students then negotiate about lessons and activities. Conditional for this is rejecting the idea of a teacher or TEr as the sole expert, or the student as the receiver of knowledge, but seeing both as stakeholders in a teaching-learning context.

4.3.2. Proximity

The principle *proximity* refers to, firstly, a sense of relatedness to student participation and the PAR project and, more specifically, to the research topic, and the other participants; in addition, proximity also includes the aspect of having a personal connection to student participation and PAR.

A salient aspect of conducting PST research in a PAR-like manner is the direct connection to classroom practice and the applicability of the outcomes within the specific context. Problems and questions addressed in the project stem from the PSTs' and school students' own experiences and are near to their interests. Such manifestations of the principle of proximity, especially if combined with a practical solution [contingency], also lead to more dedication on the side of the participants.

> So yes, and I think by developing your own end product, you can increase engagement in the learning process as a result. So that would actually be that it has meaning to you, what's going to come out.
>
> Look, action research is in my opinion a very pleasant and practical way of working, it is something that connects with what is pleasant to do for a student in secondary school. […] the active aspect in it. So working on something that is also so hands-on concrete and clear, instead of being a purely theoretical thing. I think it is very pleasant for a lot of PSTs. There are some who theorize it of course, but I think for a lot of PSTs it's just: you're doing it, you're seeing results, you're applying it, you're watching how it goes, which makes it coming much closer to yourself. [TEr 6 – Interview Round 1–20151112]

Proximity to the teacher was seen as an inherent quality of conducting research on your practice, which supports continuous professional learning and better insight into the intricacies of a teacher's life and work.

TErs indicated that working together as a group [solidarity] was viewed as central for the learning processes of PSTs, and likewise for school students and teachers, even though PSTs bear individual responsibility for their learning. Related to this, affective involvement in the sense of being part of a learning community or feeling connected to the teacher or TEr [proximity], was mentioned as enhancing the learning of PSTs.

4.3.3. Equality

A non-hierarchical pattern of interaction and communication between participants in a PST PAR project constitutes the principle of *equality*. Uneven division of power, status, or position, should not determine the way the stakeholders, that is school students, PSTs, and TErs, are valued and should not prevent them from being taken seriously.

Equality in the TEd program was manifest in TErs' view on learning and on who contributes to learning to teach. For instance, TErs and PSTs can act as equal partners in giving mutual, albeit different, input in defining central concepts such as 'teaching', as can be understood from the words of a TEr:

> Because I think that's when the learning actually happens, not actually the things that you bring in. It's what happens in the moment and how you deal with it. That's what student participation is all about. Suddenly we're equal partners in trying to unpack this thing called teaching. I bring some theoretical frames. They bring experiences and feelings, and how can we together figure out what's going on. [….] [TEr 1 – Interview Round 1–20150928]

However, the principle of equality does not require all stakeholders to have the same responsibility. In a cross-related sense with the principle of recognition, it was acknowledged that personal qualities and stages of development should be considered. For instance, PSTs are potentially more able to negotiate with their TEr than school students with their teacher; however, both groups can be involved in such negotiations, or at least facilitated in learning to do so.

One of the TErs expressed that the ideals for equality and student participation, in general, and for co-creating the curriculum were more ambitious than could be realized in practice within the limited period. So, she adjusted her TEd practice to a less collaborative level, while keeping in mind the ideals she started with.

5. Discussion and conclusions

This study aimed to shed light on the way student participation and PAR were planned and implemented in a TEd program and how PSTs were prepared for and supported in collaborating with their school students. For this, a set of 17 principles for PST PAR (as developed in a former study (Smit et al., 2022)), was used for analyzing TErs' interviews on manifestations of those principles in their views and actions and in the TEd program. In the set of principles and subsequently, in the analysis of this study, the three dimensions of the *Theory of Practice Architectures* (Kemmis et al., 2014), were distinguished: cultural-discursive, material-economic, and social-political.

The findings, presented in the former section and in Table 5, reveal how within the TEd program, as planned or implemented in the two academic years for this study, TErs attempted to address the task of preparing PSTs for student participation and in particular, for involving school students in their action research projects. This appeared to be a challenging task. The principles for enabling student participation in PST PAR and for supporting PSTs in that endeavor were found to be partly manifest in the actual program, that is, already realized to an observable extent. However, they were also partly formulated as ideas and intentions for including or further developing program elements aimed at enabling student participation in education and PAR projects by PSTs. Finally, in some other cases, principles were not put into practice or not to the desired level.

The observation that not all principles were fully realized at the time of investigation, should not be taken as a negative evaluation of the program. It was in a state of development towards including PAR as a central element of the program and student participation as the focus of the curriculum. Moreover, the set of PST principles was not available for the TErs at that time, because it was developed afterwards, in the phase of data analysis. Furthermore, TErs have different concerns, tasks, and obligations than PSTs, so it was expected that not all PST principles would be found equally in TEr data.

On the *cultural-discursive dimension*, this showed in the efforts of TErs to overcome misunderstandings and feelings of discomfort in PSTs by putting forward principles for student participation and PAR as central elements in the program, and by clarifying concepts and procedures to PSTs and among themselves, in accordance with Finefter-Rosenbluh et al.'s (2023) remark that PAR highlights the involvement and active engagement of community members impacted by the research. TErs acknowledged that PSTs were not familiar with participatory approaches in teaching and research, and, therefore, activities to provide PSTs with *clarity* and *coherence* in the concepts of the program were deemed specifically important. However, not only the concept of student participation appeared to be confusing for PSTs, but also the value of and meaning of teacher research in general was not obvious for all of them, and not in the case of action research. Research indicates that PSTs don't particularly see value in doing teacher research as part of their TEd program (van der Linden et al., 2012) nor envision themselves as researchers (Taylor, 2017), but this approach to doing research that is embedded in the program and seeks to support participants as more empowered in their learning seems to have been well received by these TErs as well as the PSTs. In this respect, the project supported developing PSTs in line with Cochran-Smith and Lytle's (1999) third conception of teacher research, 'knowledge-of-practice', which implies seeing your school practice as a site for – collaborative – investigation. TErs indicated that the *centrality* of a 'focus on the learner' in the program, being *consistent* about this theme and the approach, and striving for *unity* in views and practices of TEd staff and school staff, were connected to enabling PSTs to achieve student participation in their PAR projects.

On the *material-economic dimension,* the importance of *coherence* was clear. The TErs conveyed that introducing a specific task for PSTs to engage school students in their research resulted in a coherent set of activities for PSTs throughout the program. On the other hand, it was noted that issues of *practicality* occurred because of unaligned or even conflicting demands from the TEd institute versus internship schools. Aligned with research on teaching practices (e.g. Meister & Melnick, 2003; Rajendran et al., 2020), excessive workload and lack of time were mentioned as problematic. Ulvik and Riese (2016) argue as well that enough time and space for deep reflection is needed for action research to be an effective tool for PSTs' professional development. In this case, it

was connected to constraints for conducting PAR and for collaborating with school students stemming from school curriculum requirements and the reluctance of PSTs to deviate from those. To support PSTs in obtaining or creating more space for their PAR projects and student participation in their classes, TErs saw it as helpful to discuss ideas and concepts of the desired teacher education approach between TErs and school coaches and to organize courses that tackle not only subject-specific topics but specifically focus on enabling PAR and student participation. By connecting practice experiences with theoretical knowledge, coherence in the program could be further enhanced. Particularly the PST is confronted with different roles at different levels, under different conditions; developing conditions that support PSTs is a crucial task for TErs, as for schools (Capobianco & Ní Ríordáin, 2015; Cochran-Smith et al., 2009; Ping et al., 2018).

On the *social-political dimension*, the principle *recognition* was manifest most frequently, and in many instances occurred in combination with a principle from one of the other two dimensions. This principle *recognition* stresses the importance of valuing all participants as having worthwhile and useful capacities, views, and suggestions, and as such forms the basis for genuine student participation as well. As McTaggart (1991) reminds us, authentic participation in research should not be equated with involvement. It "means sharing in the way research is conceptualized, practiced, and brought to bear on the life-world. It means ownership – responsible agency in the production of knowledge and the improvement of practice" (p. 171). Data showed that much effort was put into clarifying what the concept of student participation in PAR entails, and into developing a shared and consistent way of talking and implementing this in practice. This includes the notion that participatory research can change throughout the process from minimally participatory to fully egalitarian and, also, that "participatory research is not and should not be the complete cession of control or power" (Brown, 2022, p. 208). TErs felt this to be needed because recognition of students as useful sources and as participants in a research process and in teaching and learning is not a natural habitus or first concern of PSTs. Furthermore, issues of *safety* of PSTs in conducting teacher research and in collaborating with their school students emerged from TErs' experiences, for instance, feelings of loss of control in class and of fear of failing to achieve curriculum demands. Positive PAR experiences might help PSTs overcome distress, but this will need careful scaffolding by TErs. Combinations of the principle recognition with principles from the ME dimension, such as *coherence*, *choice*, *dedication*, and *practicality* show that ambitions and circumstances can sometimes collide and hamper the extent to which student participation and PAR can be realized. For instance, differences in demands and expectations of PST's relation with school students between the TEd institute and schools (lack of coherence) invoke dilemmas for PSTs in how much and for what they can or should involve their students. Fixed lesson schemes (lack of practicality) can prevent PSTs from responding to school students' suggestions for participatory changes in class. Furthermore, data indicated that social-political principles such as *recognition*, *reciprocity*, and *equality* are neither naturally embedded in the TEd program, nor in the internship schools. A practice based on these principles would consistently and seriously involve PSTs (in teacher education) and school students (in schools) in matters of learning conditions and would actively seek input from all stakeholders as a shared basis for the improvement of the educational practice. That seemed not to be realized yet.

From the findings, it can be inferred that the multiple layers in a teacher education program aimed at enabling PSTs to conduct participatory research in schools add to the complexity of realizing school students' participation. Simultaneously, the usual doubleness of teaching and learning in a TEd program and teaching and learning in an internship school must be addressed, as well as the doubleness of partnerships between TEr and PST, and between PST and school students. One of the most difficult aspects will be connecting with teachers and coaches in schools - for consistency of messages, coherence of the program, and provision of opportunities for PST research and participation of school students. The design of the *World Teacher Program* as an intensive course with a large portion of teaching and researching in schools has both positive and negative implications. PSTs spend a great deal of time in practice so they are better able to connect with their students and understand issues relevant to student voice, but they are also so busy with practical requirements that this task may seem like just another 'burden'.

6. Implications for TEd practice and further research

The central idea of this study is to introduce or strengthen a democratic approach in education by preparing PSTs to collaborate with their school students in their participatory action research projects. It is an ambitious effort to include PAR into a one-year TEd program, for TErs and PSTs, but even in such a short period, PSTs can at least *begin* to experience how school students can be seen as partners in research and how this experience can benefit teaching and learning. This study provides insight into the complexity and multi-dimensionality of student participation in education and teacher research, but also into what can and needs to be paid attention to if such an approach is to be considered or implemented. The findings, as evident in the three dimensions of arrangements, invoke deep thinking through the TEd programs for inclusion of student participation/PAR and for scaffolding and supporting PSTs in understanding student participation and in conducting PAR. Subsequently, this supports building an approach for individual and collective development and a context for enabling school students to engage in decision-making in class and school issues.

A participatory practice has many more aspects than could be handled in this study. Further research could focus on several topics. First, because this study looked at *pre-service* teacher education only, research on the sustainability of the approach after graduation would be advisable. This could be done by conducting follow-up studies in various types of school settings, to gain more insight into how PAR programs can and do develop in different local contexts. To increase understanding of the potential impact of PAR approaches, follow-up studies on PAR programs could involve more teachers - also those who did not actively participate in the earlier stages of PAR projects, to find out if, and how 'later adopters' use the results from those projects in their teaching, or become more involved when the PAR projects continue to develop within school settings. Possibly, depending on the purpose, other actors could be involved, such as social workers, for PAR projects with a focus on social and emotional learning and wellbeing (Owens et al., 2022). Furthermore, a closer investigation of the alignment of the program, the school practice, and the PAR project seems worthwhile because coherence was identified as a problematic principle. The way TEd programs and TErs can support PSTs effectively in coping with the double-layer practices of institute and school, and teacher and student, concerning issues of participation in research also needs further investigation. This could be done by, for instance, trajectories of program codesign with TErs, PSTs, and school coaches. Collaboratively, they can identify difficulties in bridging TEd and school practices, develop and try out possible alternatives, and evaluate their impact on PSTs' learning for participatory practices. Finally, the PST practices could be studied from a school student's perspective, by looking at the micro-politics of PAR in class: school students' views and practices, and the inclusion or exclusion of specific school students' voices or perspectives, and by including the aspect of contingency (follow-up) of school students' input and suggestions. Data collection for such purposes could include participatory observations in class and school, weekly logs by students, and interviews.

This study suggests evaluating existing TEd programs that aim to support democratic approaches and develop new programs based on all three dimensions: the terms and language that are being used around student participation and PAR; the materials that are needed and the organization that supports PSTs; and the issues of relations and power

that will come up and might be challenging for PSTs and their school students. The set of principles can be helpful to determine aspects that are found to need attention. Even though the dimensions cannot be separated in actual practice, in the development of a PAR-dedicated program some principles can be considered before others. Attempting to address all 17 principles and all 3 dimensions at once, will probably prove too complex.

Guidelines for developing and using PAR in TEd.

- Start with – collaboratively – discussing and developing a program dedicated to this purpose, which includes conducting a participatory research project, however small and limited in scope, and which invokes imagining school students as partners in the educational context.
- Start with a small and non-stressful task for PSTs to collaborate with their school students, such as observing or teaching a couple of students or a very small group of them and then interviewing them on their experiences.
- Gradually build up both the level of participation in the tasks and the number of school students participating.
- Create a logical set of cohesive activities for PSTs throughout the program and for a sustained period by incorporating an explicit assignment to involve school students in PSTs' research.
- Provide and discuss successful examples of PAR from literature and challenge the central role of the teacher in classroom practices.
- Continuously engage with the supervisors, teachers, and school students in internship schools about their methods, practices, and experiences related to PAR to gradually develop a more shared language and shared understanding of PAR.

Since TErs and PSTs show enthusiasm for the approach after having had a first-hand glance at the opportunities and benefits, one can be ambitious in the setting of goals, but also be prepared for small steps and long-term development. If consistently explicitly and implicitly advocated and modeled by those involved in the program, the approach will get momentum for TErs, PSTs, and school staff, and can become a sustained participatory practice for teachers and their school students.

Research ethics

The study received ethical approval from Leiden University, Graduate School of Teaching. Registration number: IREC_ICLON 2015–05.

CRediT authorship contribution statement

Ben H.J. Smit: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. **Dineke E.H. Tigelaar:** Supervision, Writing – original draft, Writing – review & editing. **Amanda K. Berry:** Supervision, Writing – original draft, Writing – review & editing. **Wilfried F. Admiraal:** Supervision, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

Acknowledgments

The authors wish to thank the student teachers, school students, and teacher educators for voluntarily participating in this study.

References

Admiraal, W., Smit, B. H. J., & Zwart, R. (2013). *Academisch docentschap in het basis- en voortgezet onderwijs: Aard en betekenis. van onderzoek van docenten naar hun onderwijspraktijk [Academic teaching in elementary and secondary education: Nature and significance of teachers' research on their teaching practice]* [review study] https://www.nro.nl/sites/nro/files/migrate/Academisch-docentschap-in-het-basis-en-voortgezet-onderwijs-Wilfried-Admiraal-ea.pdf.

ATLAS.ti Scientific Software Development GmbH. (2021). *ATLAS.ti Windows (version 9) [Qualitative data analysis software]*. https://atlasti.com.

Bendtsen, M., Eklund, G., Forsman, L., & Pörn, M. (2021). Student teachers' experiences of action research-based projects: Two cases within pre-service teacher education in Finland. *Educational Action Research, 29*(5), 707–721. https://doi.org/10.1080/09650792.2019.1684969

Bergmark, U., & Westman, S. (2018). Student participation within teacher education: Emphasising democratic values, engagement and learning for a future profession. *Higher Education Research and Development, 37*(7), 1352–1365. https://doi.org/10.1080/07294360.2018.1484708

Bland, D., & Atweh, B. (2007). Students as researchers: Engaging students' voices in PAR. *Educational Action Research, 15*(3), 337–349. https://doi.org/10.1080/09650790701514259

Brown, N. (2022). Scope and continuum of participatory research. *International Journal of Research and Method in Education, 45*(2), 200–211. https://doi.org/10.1080/1743727x.2021.1902980

Burke, C. (2007). The View of the Child: Releasing "visual voices" in the design of learning environments. *Discourse: Studies in the Cultural Politics of Education, 28*(3), 359–372. https://doi.org/10.1080/01596300701458947

Capobianco, B. M., & Ní Ríordáin, M. (2015). Navigating layers of teacher uncertainty among preservice science and mathematics teachers engaged in action research. *Educational Action Research, 23*(4), 581–598. https://doi.org/10.1080/09650792.2015.1045537

Cochran-Smith, M., Barnatt, J., Friedman, A., & Pine, G. (2009). Inquiry on inquiry: Practitioner research and student learning. *Action in Teacher Education, 31*(2), 17–32. https://doi.org/10.1080/01626620.2009.10463515

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education, 24*, 249–305. https://www.jstor.org/stable/1167272.

Cook-Sather, A. (2014). The trajectory of student voice in educational research. *New Zealand Journal of Educational Studies, 49*(2), 131–148. http://search.informit.com.au/documentSummary;dn=842480978608459;res=IELHSS.

Cook-Sather, A. (2020). Student voice across contexts: Fostering student agency in today's schools. *Theory Into Practice*, 182–191. https://doi.org/10.1080/00405841.2019.1705091

Fielding, M. (2001). Students as radical agents of change. *Journal of Educational Change, 2*(2), 123–141. https://doi.org/10.1023/A:1017949213447

Fielding, M. (2011). Patterns of partnership: Student voice, intergenerational learning and democratic fellowship. In N. Mockler, & J. Sachs (Eds.), *Rethinking educational practice through reflexive inquiry: Essays in honour of susan groundwater-smith* (pp. 61–75). Springer. https://doi.org/10.1007/978-94-007-0805-1_5.

Fielding, M., & Moss, P. (2011). *Radical education and the common school: A democratic alternative*. Routledge.

Finefter-Rosenbluh, I., Berry, A., & Ryan, T. (2023). Acting upon student voice-based teaching assessment initiatives: An account of participatory action research for teacher professional learning. *Journal of Teacher Education*. https://doi.org/10.1177/00224871231200278

Flutter, J. (2007). Teacher development and pupil voice. *Curriculum Journal, 18*(3), 343–354. https://doi.org/10.1080/09585170701589983

Groundwater-Smith, S. (2005). *Learning by listening: Student voice in practitioner research international practitioner research & collaborative action research network*. Utrecht, the Netherlands: CARN) Conference, 4-6 November.

Hart, R. A. (1992). *Children's participation: From tokenism to citizenship*. Issue: Innocenti Essay.

Jones, M.-A., & Hall, V. (2022). Redefining student voice: Applying the lens of critical pragmatism. *Oxford Review of Education, 48*(5), 570–586. https://doi.org/10.1080/03054985.2021.2003190

Kane, R. G., & Chimwayange, C. (2014). Teacher action research and student voice: Making sense of learning in secondary school. *Action Research, 12*(1), 52–77. https://doi.org/10.1177/1476750313515282

Kemmis, S., & Grootenboer, P. (2008). Situating praxis in practice. In S. Kemmis, & T. J. Smith (Eds.), *Enabling praxis: Challenges for education* (3 ed., pp. 37–62). Sense Publishers.

Kemmis, S., Wilkinson, J., Edwards-Groves, C., Hardy, I., Grootenboer, P., & Bristol, L. (2014). Praxis, practice and practice architectures. In S. Kemmis, J. Wilkinson, C. Edwards-Groves, I. Hardy, P. Grootenboer, & L. Bristol (Eds.), *Changing practices, changing education* (pp. 25–41). Springer.

Lansdown, G. (2005). Can you hear me? The right of young children to participate in decisions affecting them. In *Working paper 36)*. The Netherlands: Bernard van Leer Foundation.

Leuverink, K. R., & Aarts, A. M. L. (2021). Changes in teachers' professional behavior through conducting teacher research. *Journal of Educational Change, 23*(1), 61–84. https://doi.org/10.1007/s10833-020-09409-9

van der Linden, W., Bakx, A., Ros, A., Beijaard, D., & Vermeulen, M. (2012). Student teachers' development of a positive attitude towards research and research

knowledge and skills. *European Journal of Teacher Education, 35*(4), 401–419. https://doi.org/10.1080/02619768.2011.643401

Lundy, L. (2007). 'Voice' is not enough: Conceptualising article 12 of the united nations convention on the rights of the child. *British Educational Research Journal, 33*(6), 927–942. https://doi.org/10.1080/01411920701657033

Mahon, K., Francisco, S., & Kemmis, S. (Eds.). (2017). *Exploring education and professional practice: Through the lens of practice architectures*. Springer. https://doi.org/10.1007/978-981-10-2219-7.

McTaggart, R. (1991). Principles for participatory action research. *Adult Education Quarterly, 41*(3), 168–187. https://doi-org.ezproxy.leidenuniv.nl/10.1177/0001848191041003003.

Meister, D. G., & Melnick, S. A. (2003). National new teacher study: Beginning teachers' concerns. *Action in Teacher Education, 24*(4), 87–94. https://doi.org/10.1080/01626620.2003.10463283

Mitra, D. L. (2006). Student voice from the inside and outside: The positioning of challengers. *International Journal of Leadership in Education, 9*(4), 315–328. https://doi.org/10.1080/13603120600895379

Oolbekkink-Marchand, H., Oosterheert, I., Scholte Lubberink, L., & Denessen, E. (2022). The position of student teacher practitioner research in teacher education: Teacher educators' perspectives. *Educational Action Research, 30*(3), 445–461. https://doi.org/10.1080/09650792.2020.1857811

Owens, C. L., Johnson, A. H., & Thornton, A. (2022). Addressing equity in schools: Youth participatory action research and transformative social and emotional learning during COVID-19. *Children and Schools, 44*(1), 48–54. https://doi.org/10.1093/cs/cdab029

Padilla-Petry, P., & Miño Puigcercós, R. (2022). Engaging young people in a research project: The complexities and contributions of using participatory methods with young people in schools. *Sage Open, 12*(1). https://doi.org/10.1177/21582440211068457

Ping, C., Schellings, G., & Beijaard, D. (2018). Teacher educators' professional learning: A literature review. *Teaching and Teacher Education, 75*, 93–104. https://doi.org/10.1016/j.tate.2018.06.003

Ponte, P. (2012). Onderwijs en onderzoek van eigen makelij; Onderzoek met en door leraren. *Boom Lemma uitgevers* [Education and research of your own making: Research with and by teachers] (4th changed ed.) https://www.boomhogeronderwijs.nl/kernproduct/277/Onderwijs-en-onderzoek-van-eigen-makelij-vierde-druk?h=13771.

Ponte, P., Ax, J., Beijaard, D., & Wubbels, T. (2004). Teachers' development of professional knowledge through action research and the facilitation of this by teacher educators. *Teaching and Teacher Education, 20*(6), 571–588. https://doi.org/10.1016/j.tate.2004.06.003

Ponte, P., & Smit, B. H. J. (2013). Education for all as praxis: Consequences for the profession. *Professional Development in Education, 39*(4), 455–469. https://doi.org/10.1080/19415257.2013.796296

Quennerstedt, A. (2010). Children, but not really humans? Critical reflections on the hampering effect of the "3 p's". *The International Journal of Children's Rights, 18*(4), 619–635. https://doi.org/10.1163/157181810x490384

Rajendran, N., Watt, H. M. G., & Richardson, P. W. (2020). Teacher burnout and turnover intent. *Australian Educational Researcher, 47*(3), 477–500. https://doi.org/10.1007/s13384-019-00371-x

Rudduck, J., & Flutter, J. (2000). Pupil participation and pupil perspective: 'carving a new order of experience'. *Cambridge Journal of Education, 30*(1), 75–89. https://doi.org/10.1080/03057640050005780

Shier, H. (2001). Pathways to participation: Openings, opportunities and obligations. *Children & Society, 15*(2), 107–117. https://doi.org/10.1002/chi.617

Smit, B. H. J., Meirink, J. A., Berry, A. K., & Admiraal, W. F. (2020). Source, respondent, or partner? Involvement of secondary school students in participatory action research. *International Journal of Educational Research, 100*, 1–12. https://doi.org/10.1016/j.ijer.2020.101544

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

Taylor, L. A. (2017). How teachers become teacher researchers: Narrative as a tool for teacher identity construction. *Teaching and Teacher Education, 61*, 16–25. https://doi.org/10.1016/j.tate.2016.09.008

Torre, M. E., Cahill, C., & Fox, M. (2015). Participatory action research in social research. In J. D. Wright (Ed.), *International encyclopedia of the social & behavioral sciences* (2nd ed., pp. 540–544). Elsevier. https://doi.org/10.1016/b978-0-08-097086-8.10554-9.

Ulvik, M. (2014). Student-teachers doing action research in their practicum: Why and how? *Educational Action Research, 22*(4), 518–533. https://doi.org/10.1080/09650792.2014.918901

Ulvik, M., & Riese, H. (2016). Action research in pre-service teacher education – a never-ending story promoting professional development. *Professional Development in Education, 42*(3), 441–457. https://doi.org/10.1080/19415257.2014.1003089