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Emerging Teacher Resilience in Practicum Pedagogies: A Reflective Practice Perspective

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Introduction

Currently, teacher resilience is a significant and developing field of inquiry that has important implications for teacher education (Hascher et al., 2021), including acute crisis situations (e.g., both "pandemic" and "post-pandemic" scenarios). Nonetheless, the concept remains somewhat obscure, especially from the perspective of practicum pedagogies. In this chapter, our aim is to fill this gap by constructing a practical framework for emerging teacher resilience. We combine conceptual and empirical modes of inquiry (cf. Richardson & Fenstermacher, 2001) and suggest that defining "the what" of resilience is a significant part of "the how" in practicum pedagogies that enables teacher resilience. First, we conceptualize teacher resilience from a reflective practice perspective. Subsequently, we describe how we started to promote emerging teacher resilience through reflective portfolio writing tasks during the practicum. We also demonstrate how an analysis of student teachers' practicum portfolios illustrates emerging teacher resilience. The chapter puts forward a "reading guide" that can be used as a tool to evaluate resilience, both in practice and in the future scholarship of teacher education.

Conceptualizing Emerging Teacher Resilience

Teacher Resilience

The roots of human resilience research lie in psychopathology among vulnerable youth (Masten, 2019). This original research concerned why some individuals in these vulnerable situations could thrive in their later lives despite adverse childhood experiences

(Masten, 2019). To date, "resilience science" has spread to wide-ranging areas of the social sciences, teaching, and teacher education.

The literal meaning of the term *resilience* originates from Latin and conveys "bouncing back" (*re*: back, *salire*: to leap or jump; Den Hartigh & Hill, 2022, p. 1). In the social sciences and psychology, *resilience* is often defined as positive adaptation despite adverse experiences (Masten & Motti-Stefanidi, 2020). Furthermore, many resilience theorists emphasize that "adversity" according to this definition denotes a-typical, significantly distressing events and conditions such as disasters and traumatic experiences (Masten & Motti-Stefanidi, 2020; Ungar, 2021). This specification distinguishes the resilience concept, especially because it describes system-wide endurance in the face of disasters such as the COVID-19 chaos in recent years (Masten & Motti-Stefanidi, 2020).

This more exclusive stance (limited to a-typical adversities) can be complemented with a broader view of resilience. Here, the various, probably more ordinary, and everyday challenges are also perceived as relevant to resilience (Seery & Quinton, 2016). Why? Adverse experiences are largely subjective, as are the consequential needs for support. On the one hand, it is possible to list objective conditions (e.g., pandemics, violence) that likely contribute to adverse experiences. On the other hand, people can experience exhaustion and even burnout in their daily work or study environments, for example. These experiences obviously threaten their well-being. Consider the following example: Childhood trauma is not necessarily what happened to a child. It might also concern what the child lacked in the early years, such as unconditional nurturing, attunement, and encouragement. These experiences of neglect can then contribute to difficulties in daily functioning in adult life, including learning and working.

What, then, is the common denominator for the various experiences—both mundane and exceptional—that are relevant to resilience? One promising suggestion is stress because, fundamentally, resilience can be understood as the ability to cope with stressors (Seery & Quinton, 2016). Drawing on analogies from physics, Den Hartigh and Hill (2022) suggest that psychological resilience is best understood as bouncing back from stressors. This means a process of returning to an original state following a stressful event (Den Hartigh & Hill, 2022). In fact, it is these daily stressors in demanding interaction environments that can contribute to teacher burnout (Pietarinen et al., 2013) and threaten well-being (Chan et al., 2023). Developing teacher resilience requires intensive preservice training in interaction

skills, such as proactive strategies (Heikonen et al., 2017; Pietarinen et al., 2013) and emotional support (Chan et al., 2023; Salo et al., 2022).

In their theoretical review, Hascher et al. (2021) compared relationships between teacher resilience and a more established concept of teacher well-being. In the integrative AWaRE model (Aligning *Wellbeing and Resilience in Education*), *teacher resilience* is defined as a process of "maintaining, restoring, and developing teacher wellbeing" (Hascher et al., 2021, p. 416). This definition highlights the dynamic and action-oriented nature of resilience: While well-being might be more static and passive, a kind of state of being, resilience is about doing something with that state to improve it. This kind of action-oriented process view is useful, as our aim is to "practicalize" the notion of teacher resilience: What is its potential in practicum pedagogies?

Nevertheless, we have not yet arrived at a fully practical notion of teacher resilience. Such a conceptualization would benefit from a closer alignment of resilience with teachers' practical knowledge landscapes (Clandinin & Husu, 2019; Rosiek & Gleason, 2017). In this way, resilience becomes embedded in core practices unique to teaching (Grossman, 2018; see also Kennedy, 2016). Ultimately, teacher resilience belongs to a more comprehensive interactive classroom resilience that sustains teachers, students, and broader school communities collaborating around broad-ranging curricular content (Tiilikainen et al., 2023). Teacher resilience constitutes teachers' part in a relational action system that aims to enhance pupils' learning and wellbeing (cf. Salo et al., 2022; Vauras et al., 2013).

The above aligns with Hamre et al.'s (2013) notion that teaching mostly works through interactions. These interactions take place at various levels, working as developmental mechanisms in ecological systems that also develop over time (Bronfenbrenner & Morris, 2006). Moreover, the practice of teaching constitutes its own unique interactive ecology characterized by changing individual and social conditions of scaffolding (Vauras et al., 2013) and the teacher decision making required therein (Kansanen et al., 2000). Classroom interactions are bombarded with continuous disruptions, both beneficial and problematic (Kennedy, 2016). It is these disturbances, changes, and challenges that tax teacher resilience because they require constant and successful teacher adaptation (cf. Männikkö & Husu, 2019).

By combining the explanations of resilience above with our action-oriented viewpoint, we can now present a working definition of *teacher resilience*. Teacher resilience *is a process of sustaining productive teaching interactions that includes dealing with*

interactive disruptions and challenges in teaching. Thus, resilience is always needed (e.g., in both pandemic and post-pandemic scenarios). Difficult conditions may provide opportunities to scrutinize the quality of daily interactions. Teaching interactions, after all, are professional tools for teaching students to cope with changing conditions successfully.

We now move on to discuss what emerging teacher resilience might entail.

Emerging Teacher Resilience

Based on the above analysis, we can observe that teacher resilience is something tangible that can be trained. Therefore, we may conceive it as a crucial learning aim in teacher education that is especially relevant to the teaching practicum. To this end, we conceptualize the learning of teacher resilience as *emerging teacher resilience*. Whereas teacher resilience denotes dealing with challenging teaching interactions, emerging teacher resilience entails *learning* to navigate those interactions. The term *emerging* also conveys the idea that teacher resilience gradually emerges from within student teachers' own mentored classroom encounters during practicum experiences.

The distinct quality of emerging teacher resilience is its representability. Teaching interactions must be taken under deliberate scrutiny. Identity work and the *reflection* of success and challenges in teaching have been suggested to foster resilience (Beijaard & Meijer, 2017; Hascher et al., 2021). This insight allows us to devise two aspects of teacher resilience: Whereas teacher resilience per se manifests primarily through teacher actions, emerging teacher resilience develops primarily through reflection. This distinction corroborates teacher cognition research, where teachers' thought processes and observable teaching behaviors are the two major interconnected domains (Clark & Peterson, 1986; Gitomer & Zisk, 2015). The hope is that the processes of reflective adaptation (emerging teacher resilience) ultimately help to adapt to actual interactions in the practice of teaching (teacher resilience).

To construct a framework for emerging teacher resilience, we synthesize perspectives from resilience theories (Ungar, 2021), research on teacher reflection (e.g., Melasalmi & Husu, 2019; Männikkö & Husu, 2019; Toom et al., 2015), learning action-oriented teacher knowledge (Allas et al., 2020; Mena & Clarke, 2015), and transformative learning philosophies (English, 2014). In each of these lines of research, we find grounds for including *transformation* as an aspect of emerging teacher resilience. According to Ungar's (2021) transformative account, resilience in various systems functions through the stages of

recovery, adaptation, and transformation. Transformation has also been used as a category of the analysis of student teachers' reflective patterns (Toom et al., 2015). Especially when learning teacher resilience, transformation is important: Something valuable must be extracted from the events experienced for future practice.

As for the preceding parts of the process of emerging teacher resilience, we suggest *(dis)continuity* and *adaptation*. Discontinuity is a concept that English (2014) uses in her synthesis of Herbartian and Deweyan philosophies of teaching to remark on students' valuable struggles. These struggles, when resolved, facilitate learning. In fact, without these discontinuities, there would not be proper stimuli for transformative learning experiences (English, 2014) and, in our application, for emerging teacher resilience.

Myriad possible discontinuities occur in daily teaching interactions, for example, in communication, activity flow, and emotional expression. Learning to adapt to those discontinuity points—to get the interaction moving again—indicates emerging teacher resilience. In addition, discontinuity helps to consider the temporal nature of interactions, which is relevant both from developmental (Bronfenbrenner & Morris, 2006; Sameroff, 2009) and reflective (Melasalmi & Husu, 2019) viewpoints. Resilience is a temporal process that signifies student teachers' actual performance over time. It is here that its critical value lies compared to other common teacher education constructs (e.g., knowledge, skills, etc.). In reflection, however, these temporal progressions and obstructions should be represented through perceived (dis)continuities.

The last element, adaptation, and its crucial role in resilience were already thoroughly discussed earlier. In the teaching context, we merely add that adaptive expertise has recently been studied through teacher reflection (Männikkö & Husu, 2019). Our three-stage model of emerging teacher resilience is illustrated in Figure 1.

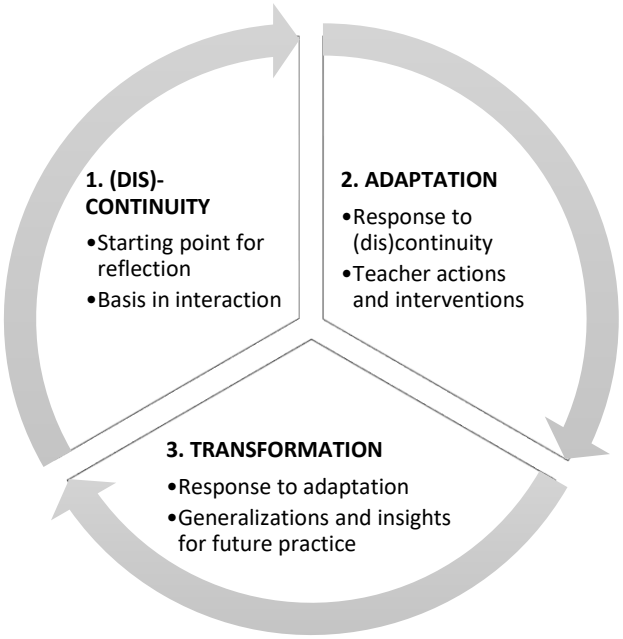

Figure 1. The model of emerging teacher resilience.

As illustrated in Figure 1, emerging teacher resilience is a reflective process that deals with teaching interactions and comprises:

(1) (Dis)continuity: The perceived challenge, a starting point for the process (e.g., the teacher notices that students found the topic of the lesson too difficult and that students are now confused). Notably, the opposite, continuity, is also included here because a) it is the positive state being pursued, and b) when realized, it can empower resilience.

(2) Adaptation: Refers to those actions that the teacher considers and takes to mitigate the perceived discontinuity and restore or improve continuous interactions (e.g., in the following lesson, the teacher does not proceed to the next topic according to the original plan but discusses it with the students and reviews the difficult parts of the previous lesson).

(3) Transformation: Signifies the extraction of wisdom from a present case and its transfer to future cases. We suggest two aspects here. The primary aspect is the transfer, itself, generalization for future cases (cf. inferential teacher knowledge; see, e.g., Mena & Clarke, 2015). The second aspect is insight—an inferential explanation of *why* perceived discontinuities might (have) happen(ed) or why

they were resolved (e.g., the teacher recognizes the most typical difficulties the students had and uses this information when planning a similar unit in the future).

We could also say that adaptation is a response to (dis)continuity, while transformation is a further response to adaptation. When the three stages intertwine and form recurrent and cyclical patterns in reflection, they reveal emerging teacher resilience. We operationalize the model in the case examples in Section 4. Now, we move on to conditions that can trigger the resilience process.

Sparking Emerging Teacher Resilience

Practice-Based Reflection

Integrating theory and practice poses a continuous challenge for teacher education programs, as their contents may often be perceived as too abstract from the viewpoint of actual teaching work (e.g., Säntti et al., 2018). In Finland, a research-based program for teacher education is adopted (Toom et al., 2010). In master's level programs, the teaching profession is approached with an academic orientation. However, the educational idea is not research for its own sake, but rather that student teachers' research skills would eventually transform into pedagogical reasoning capacities (Toom et al., 2010). Whether this ideal is realized, however, is not clear; nor is its superiority compared to other kinds of programs (Säntti et al., 2018).

Meanwhile, there has been a significant shift internationally toward practice-based teacher education (e.g., Grossman, 2018). Behind these approaches is the acknowledgement that the key source of teacher learning is their own immediate experience (Goldhaber et al., 2022). Clinical field placements combined with intensive mentoring (Goldhaber et al., 2022) and representations of practice (Grossman, 2018), for example, lie at the heart of such conduct. In this chapter, we integrate research-based and practice-based principles by employing theoretical organizers as triggers for and representations of reflective processes (cf. Fenstermacher & Richardson, 1993).

Practice can be represented in various ways. In this chapter, we focus on student teachers' first-hand teaching experiences from their own practicums. Other alternatives include, for example, their exploring and reflecting on classroom interactions through videotaped lessons of in-service teachers (see, e.g., Pouta et al.'s chapter in this volume).

Despite the exact focus, the joint idea is not to rely solely on lecturing and general-level discussions, but to include authentic case analyses informed by research-based perspectives.

As proposed in the previous section, emerging teacher resilience is essentially a reflective process. Thus, taking reflection as an integrative unity between research (or rather, inquiry; see Säntti et al., 2018) and practice might be warranted. Reflection enables teachers to learn from their practice by deliberately contemplating their actions (Allas et al., 2020).

Inspiring the reflective resilience process requires an experiential setting in which both actual teaching (inter)actions and interpretations are applied to it. The teaching practicum is the main setting for experiential learning in most teacher education programs. Schön (1987) noted relatively early that the most promising platform for triggering professional learning is the reflective practicum, where mentoring is situated within practical experimentation. The Schönian conceptualization of a reflective practicum is primarily an organizing principle for all practically relevant professional learning and education. Problems that must be dealt with emerge in "swampy zones of practice" and often defy ready-made technical solutions (Schön, 1987, p. 3). In these "swampy lowlands" (Schön, 1987, p. 3), we suggest growing the possibilities for teacher resilience to emerge. Moreover, there should be reflective triggers of resilience.

High-quality reflection in teacher education, however, has proven challenging in terms of depth and nuance (Allas et al., 2020; Mena et al., 2016). Conversely, practical knowledge perspectives yield their own ideals, such as precision in case descriptions and generalizations (cf. Mena & Clarke, 2015). Experience as evidence should not be dismissed too quickly (Fenstermacher & Richardson, 1993). Systematic scaffolds are needed to facilitate the dynamic elaboration of practice (Toom et al., 2015). Self-reflection protocols that start with deliberate stress exposure have also been suggested to strengthen resilience (Crane et al., 2019). The process should lead to the recognition of existing coping capacities (e.g., social support), their current limitations, and considerations of alternative courses of action (Crane et al., 2019).

Moreover, reflective tools should help student teachers and teacher educators to clarify meaningful experiences together (Husu et al., 2008), not primarily satisfy predetermined scholarly standards of best practices (cf. Fenstermacher & Richardson, 1993; Säntti et al., 2018). Research is one resource for improving reflection, especially when teachers, themselves, take the agentic lead in such processes (Fenstermacher & Richardson, 1993). Other sources also contribute to reflection and practice, such as value commitments

and situational awareness, ideally working with the teacher's own attitude of inquiry and researcher collaboration (Fenstermacher & Richardson, 1993).

Reflective Writing

The reflective media in teacher education can broadly be divided according to a) phase (e.g., Clark & Peterson, 1986; Husu et al., 2008), b) mode (e.g., Mena et al., 2016), and c) (social) arrangement (e.g., Allas et al., 2020). *Phase* refers to when reflection takes place: before, during, or after teaching interaction. *Mode* specifies the type of reflective output: oral or written reflection (speaking or writing). The two modes are also used as research techniques to capture teacher reflection (oral: e.g., think-aloud, stimulated recall; written: e.g., journaling; Clark & Peterson, 1986). *Arrangement* describes whether the task is self-reflective or conducted in a mentoring or group setting. In the tasks described in this chapter, we used written self-reflection assignments completed after teaching episodes. These assignments were used to develop guided portfolio-writing tasks in teaching practicums.

Despite being likely a worldwide practicum pedagogy, portfolio writing is somewhat understudied. Like many other types of reflection (cf. Husu et al., 2008), portfolio writing has been documented to often yield disappointing results in terms of the quality of reflection. In their study, Hascher and Hofmann (2014) noted that student teachers' loosely structured learning diaries varied greatly in their quality with regard to, for example, linking theory with field experience. Additionally, writing tends to stay at a low, descriptive level rather than elevating to higher evaluative and reflective levels (Hascher & Hofmann, 2014). This might also concern how high-quality reflection is supported, as some scholars have produced more promising results (Toom et al., 2015). From a practice-based perspective, for example, reflective writing has the potential to be a theoretical activity (Toom et al., 2015).

Reflective writing can be complemented with other modes of reflection, such as mentoring dialogues. We draw on the logic of "hot" and "cool" reflective systems (Husu et al., 2008; Toom et al., 2015). During and soon after teaching interaction (e.g., lesson), teacher reflection is "hot": emotions are intensive, and interpretations, quick. Afterwards, through mentoring dialogues, there is a gradual movement toward "cool" reflection. Here, emotions can be better contained and experiences worked through. In the practicum settings described here, portfolio writing represents prolonged "cool" reflection: it enables the successive returning to meaningful experiences through extended periods of time potentially intertwined with mentoring discussions.

Based on Deweyan and Shulmanian practice-based perspectives in Toom et al. (2015), we summarize the theoretical premises of guided reflective writing as follows:

- represents a form of prolonged reflection
- provides a structure for the sustained documentation of experiences, including emotions
- provides a support tool for articulating tacit intuitions
- makes experiences and interpretations visible and helps to share them
- provides an artefact to craft insightful sequence–consequence storylines

The last point is especially important because resilience, as noted earlier, is a temporal process. Connections and causes between (dis)continuities are essential and should be represented in reflection. Indeed, reflective writing provides a unique opportunity to render them explicit.

The benefits of reflective writing can also be found outside (teacher) educational scholarship, particularly in the psychotherapeutic tradition (Ruini & Mortara, 2022). Whereas the teacher education literature can help us perceive reflective writing as a theoretical activity, therapeutic research can illuminate the role of written reflections as a resilience process. In their review, Ruini and Mortara (2022, pp. 25–26) describe this interplay as follows: "…writing can be also defined as a process of resilience: putting negative feelings into words can spark the search for solutions, with the consequence of having a positive attitude toward life challenges and promoting personal growth." We build on this notion by taking reflective writing as a means for student teachers to articulate their meaningful experiences and promote their professional growth.

In the next section, we describe two portfolio assignments and how resilience processes can be interpreted from them.

Contextualizing Emerging Teacher Resilience

Context-Dependent Triggers

We started to work with student teachers' resilience processes in the first two practicum courses in the primary teacher education programs. In Finland, practicums at primary level are mostly organized in university-based teacher training schools that operate in close contact with teacher education departments. In the present context, there are four main

practicum periods. The first two of these, discussed here, belong to intermediate studies in education (the other two study modules in education are basic studies and advanced studies). Intermediate studies prepare student teachers to conduct educational research, as well as plan, implement, and evaluate teaching and learning processes. The first practicum is scheduled for the first year of study in the curriculum, and the second takes place during the second year (of course, student teachers do not always complete them according to this schedule). In recent years, international study groups have also enrolled in the program, providing them with an opportunity to complete a master's-level teacher education in Finland.

Mentorship in practicums is organized by school-based mentor teachers, university-based subject didactics experts, and faculty members of education. The outline of the two practicums and our portfolio-writing tasks are presented in Table 1.

During the practicum periods in spring and fall 2022, the COVID-19 measures at the school, such as school closures, were either being lifted or largely over. Nonetheless, in the spring (Didactic Teaching Practice course), while student teachers had already taught face to face in their own classrooms, on-location observations in other classrooms were restricted. In addition, some supervision still took place via video conferencing. The first author also gave an introductory lecture on portfolio writing through video conferencing. During Fall (Orientation to Teaching Practice course), the introductory lecture was given on location. Some guided observations were arranged via video conferencing, and flexible applications of distance supervision ("hybrid") can still occur today.

The portfolio assignments were designed to fit both on-location and distance teaching situations. During the spring, this was explicitly stated in the portfolio instructions. One point of reflective writing, after all, is that it is not bound to specific instructional arrangements or locations. Guidance can be provided in careful written instructions, and the reflection, itself, can be conducted anywhere.

Table 1. Curricula and reflective portfolio writing instructions for the two practicums

Practicum	**Study degree, module, and recommended timing**	**ECTS**	**Focus**	**Reflective procedure in portfolio writing**	**Research-based interactive organizer in portfolio writing**	**Examples of guiding questions in portfolio writing**
Orientation to Teaching Practice in Basic Education	Bachelor's Degree, Intermediate Studies in Education, Fall/First Year	4	Observing school as an interactive working and learning environment	Semi-structured written instructions	Interactive classroom support (Hamre et al., 2013), enriched with peer interaction (Heinimäki et al., 2021) and teaching approaches (Tiilikainen et al., 2019)	*"How did classroom organization (behavior management and productivity) appear during your practicum period? How did it impact students' studying and learning?"*
Didactic Teaching Practice in Basic Education	Bachelor's Degree, Intermediate Studies in Education, Spring/Second-year	8	Planning and delivering teaching units based on curriculum	Step-by-step written instructions extended from the guided reflection procedure (e.g., Toom et al., 2015)	The instructional core: interactions between teachers, students, and curricular content (e.g., Allas et al., 2020)	*"What kind of interaction takes place between the teacher and the students? Who is talking? Who is remaining silent?"* (self-reflection template) *How are students' behavior and actions impacted by a teacher's actions? How are your behavior and actions impacted by*

	students' actions? (later steps)

The joint idea in the tasks is to guide student teachers to systematically analyze their experiences from classroom interaction. In the written instructions for both portfolio assignments, major conceptual organizers of teaching interactions are used. Both, as stated earlier, are utilized to trigger student teachers' reflective processes, not so much repeat the terms and concepts introduced in the models. Both tasks are described below.

Orientation to Teaching Practice

The course Orientation to Teaching Practice in Basic Education aims to familiarize student teachers with the school environment and teachers' daily work. Skills to observe teaching are developed, and the amount of student teachers' own teaching is not very high. Co-teaching in teams is emphasized. School-based mentor teachers organize mentoring. In addition, university-based researchers and teachers organize guided observation sessions of the themes that, during our data collection, resembled the portfolio themes.

As the goal was to acquaint student teachers with the school as an interactive environment, we used a model of interactive classroom support (Hamre et al., 2013) to guide reflective writing. The model comprises three major forms of classroom support that enhance pupils' learning: classroom organization, emotional support, and instructional support (Hamre et al., 2013). We also included two underlying interactive mechanisms in the task: pupils' peer interaction (Heinimäki et al., 2021) and teachers' teaching approaches (Tiilikainen et al., 2019).

The portfolio task focused on questions about each interactive domain and, eventually, their relationships. The student teachers could reflect on their personal experiences and observations of other teachers' lessons. It was emphasized that reflective remarks could concern not only lesson episodes but also planning, evaluation, and the broader school environment. General writing principles were also outlined (e.g., proceeding from general descriptions to details).

Didactic Teaching Practice

In the Didactic Teaching Practice in Basic Education course, student teachers plan and teach lessons and modules based on the curriculum. In addition to school-based mentoring, subject didactic experts guide student teachers in their practicums. The amount of teaching is greater, and the role of the curricular substance is emphasized as a part of

classroom interaction. In addition, the time allocated to portfolio writing was greater than in the first practicum.

In the portfolio assignment, the guided reflection procedure (Husu et al., 2008; see also Allas et al., 2020; Toom et al., 2015) and instructional core (Allas et al., 2020) were applied. The guided reflection procedure was based on critical teaching incidents selected by student teachers. Here, we applied and extended the procedure exclusively to portfolio writing (cf. Toom et al., 2015). The guiding questions revolved around the observed teacher and student behavior and the causal connections between them (Toom et al., 2015).

We created step-by-step instructions for portfolio writing that started with a self-reflection template based on an instructional core (e.g., Allas et al., 2020; Tiilikainen et al., 2019). The instructional core is a framework of teaching interaction comprising teachers, students, and curricular content and the relationships between them. These relationships are content relation (teacher–substance), pedagogical (teacher–student), and didactical (teacher–learning).

After completing the template based on the selected critical incidents, the student teachers continued with the step-by-step guiding questions and eventually finalized a proper reflective report.

Context-Independent Interpretations

To interpret and demonstrate emerging teacher resilience, we present case examples of written portfolios. We used propositional unitizing and coding based on the emerging teacher resilience framework. The same resilience process interpretation was applied to all case examples, even though the writing assignments differed between the two practicums.

Propositional unitizing is a procedure in qualitative content analysis that refers to the segmentation of data to be coded. The roots of this procedure are in educational psychology, reading comprehension research (Kintsch, 1998), and the philosophy of language (cf. Morris, 2015). We loosely followed the procedure presented by Mena and Clarke (2015), who applied it to research on teachers' action-oriented knowledge generation in, for example, mentoring discussions.

A proposition is a semantic, socio-cognitive unit that conveys a single meaning through a single predicate (Mena & Clarke, 2015). Propositions come close to sentences that can be recognized via the syntax of a text (in written text, e.g., commas, full periods; cf. Krippendorff, 2004), although they are not exactly the same. The idea is that a proposition is

the smallest individual unit that communicates a proper idea or thought. As philosophers say, propositions bear truth values (cf. Mena & Clarke, 2015). Individual words carry meanings; however, they do not communicate thoughts or ideas. Propositions differ from utterances and are larger units than words but smaller than a paragraph, topic, or incident (Mena & Clarke, 2015).

The benefit of using propositional unitizing in discourse analysis is its unambiguity, as this kind of segmentation is comparatively easy to replicate. Even more importantly, it enabled us to tease out and illustrate how adaptive reflection processes unfold since propositional analysis helps to unveil in detail the fine-grained nuances in a reflection.

After unitizing the data extracts, we applied theory-driven coding. We categorized the identified propositional units according to the three-partite resilience schema (see Figure 1). Categorizing was mutually exclusive and exhaustive (Krippendorff, 2004), meaning that only one of the three codes was assigned to a single meaning unit (a proposition).

Demonstrating Emerging Teacher Resilience

We used four extensive case extracts from portfolio writing to demonstrate resilience processes in reflection. The extracts were from two student teachers, one from a Finnish-speaking group and one from an international study group. One participated in the Orientation to Teaching Practice. We will call him "James." The other participated in Didactic Teaching Practice. We will call her "Lisa." (Both names are pseudonyms.)

This section is divided into two sub-sections based on the explicitness of emotional expression in the reflective episodes. Resilience is an interactive process that includes emotions. In the definitions of resilience reviewed earlier in this chapter, the role of emotions is pinpointed slightly differently. Adaptation, for example, is emotionally a more neutral conceptualization than well-being. Well-being consists of emotions (cf. Hascher et al., 2021). Coping with stressors implies emotions. In our view, resilience is defined emotionally according to the neutral terms of dealing with interactive discontinuities in teaching. While this includes dealing with emotional aspects, interaction is covered more comprehensively. Nonetheless, a meaningful divide can be made: In some reflective episodes, emotions and wellbeing remain implicit. In others, reflection is more directly focused on emotional and wellbeing aspects.

In all four case examples below, the original reflective portfolio text is placed on the left. The text in the examples is continuous, and we have segmented it into rows. Each row

represents a single propositional unit. The interpretation (coding) of the resilience process is shown on the right. The titles of the examples are the original ones used by James and Lisa. We have numbered the propositions and referred to specific propositions with the abbreviation "p" in the main text.

Implicit Emotion

Case Example 1 concerns James's engagement in a small-group dialogue with pupils. He reflected on an initial difficulty in communication with the pupils that they could overcome.

Case Example 1. James: "Instructional support is a matter of skill"

PROPOSITIONAL UNITIZING OF REFLECTIVE EPISODE (15 propositions)	**RESILIENCE PROCESS**
1. In the lesson where pupils planned to organize a flea market,	Continuity
2. the pupils had to consider the "drawbacks" of flea markets.	Continuity
3. Our word choice was a bit cumbersome,	Discontinuity
4. and several small groups had difficulties in devising these in writing.	Discontinuity
5. I initiated a dialogic micro-episode with one small group by asking: "Could I find a PS5 (PlayStation 5) in a flea market?"	Adaptation
6. This caused a group reaction in boys: "Absolutely not! Maybe a PS3 or something," as PlayStation 5 is legendarily hard to get due to a lack of components.	Continuity
7. "Why can you find a PS3 but not a PS5 there?" I continued,	Continuity
8. and eventually the discussion ended with the idea that flea market offerings are usually somewhat older though in good condition.	Continuity
9. Through effective verbalization that activates pupils' situational interest and desire for discussion,	Transformation
10. it is possible to inspire the pupil to consider the topic in a new or broader way.	Transformation
11. This, however, requires the teacher's knowledge of the pupils	Transformation
12. and their interests	Transformation
13. as well as their manners of interacting:	Transformation
14. some pupils are eager to challenge teacher's points,	Continuity

15. whereas others need to be encouraged to communicate.	Discontinuity

After the initial descriptive remarks depicting continuity (p1–2), a discontinuity can also be spotted. The word choice in the instructions given by teachers is perceived as ineffective (p3–4), leading to difficulties in pupils' progress. To adapt to the situation, James engages in the dialogue more intensively by elicitating, as he rather eloquently puts it, a "dialogic micro-episode" with the small group (p5). James uses a more familiar example of video gaming in his questioning, which results in immediate interactive progress (p6).

The interaction continued through paced follow-ups and responses. Transformative accounts (p9–13) are produced; James perceives the triggering of pupils' situation-specific interest as the critical learning mechanism. The latter transformative remarks remain at a more general level, touching on teachers' knowledge of the pupils. The last stage of reflection (from p9 onwards) represents a more generalized practical theorizing (see Tiilikainen et al., 2019). The theoretical conceptualizations expressed in adaptation and transformation are rather advanced. Although emotions are surely present, for example, in pupils' eager responses, they remain largely implicit in James's reflection. His focus is the instructional moves he makes to improve pupils' learning progress. Interactive resilience becomes manifest in James's steps, which actively deal with the original communication problem.

Case Example 2 regards a compositional activity in Lisa's music lesson. Pupils practice rap and compose rap lyrics.

Case Example 2. Lisa: "Music—scaffolding and providing boundaries that enable productive work"

PROPOSITIONAL UNITIZING OF REFLECTIVE EPISODE (20 propositions)	**RESILIENCE PROCESS**
1. The things that went well were the lessons where we introduced rap,	Continuity
2. did some rhythm practice,	Continuity
3. and had them use software to create their own beats.	Continuity
4. Things that didn't go as well as we had hoped were related to writing rap lyrics in a foreign language.	Discontinuity
5. Some were able to do it,	Continuity
6. and some were not.	Discontinuity

7. We tried to adjust by providing scaffolding,	Adaptation
8. but our focus was perhaps too much on letting them write the lyrics from scratch.	Transformation
9. Everyone was engaged during the lesson, which was good,	Continuity
10. but not all the students were able to produce lyrics in the time we had.	Discontinuity
11. In hindsight, we needed to place more boundaries and constraints	Transformation
12. and let them have freedom within those boundaries.	Transformation
13. We did this by providing a worksheet with the basic lyric structure,	Adaptation
14. and they inserted words based on their interests,	Adaptation
15. instead of creating the whole sentence.	Transformation
16. This allowed us to focus more on music during the music lesson.	Continuity
17. We also had space for those who could create their own lyrics	Adaptation
18. so in that way it allowed more advanced students to be challenged as well.	Continuity
19. After correcting our approach, I think it went much better,	Transformation
20. and it was much easier to achieve the goals we set for the group.	Transformation

Discontinuity emerges when some pupils cannot produce song lyrics in a foreign language (p4, p6). Lisa explains their first attempt at adaptation (p7), which did not lead to the desired results (p10). The second attempt works: A combination of direct and open-ended instruction is provided (p13–14). The reflective episode is highly situation specific and intensive. As with James, Lisa's focus here is also instructional adaptations and outcomes without explicitly expressed emotions. The number and density of propositions are high. Although mainly expressed in a common language with some theoretical conceptualizations, the reflection is considerably nuanced and precise. Perceptions of continuities and discontinuities in interaction intertwine with adaptive and transformative functions, some of which provide counterfactual backing (p15). Lisa's reflection manifests rehearsed adjustments to improve instruction, thus demonstrating resilience.

Explicit Emotion

James's reflective episode in Case Example 3 represents a rather generalized form of reflection now concerning emotional support and pupils' well-being in class. The context is drama teaching and how teachers can promote a positive classroom climate through it.

Case Example 3. James: "You have to create the classroom climate constantly"

PROPOSITIONAL UNITIZING OF REFLECTIVE EPISODE (10 propositions)	**RESILIENCE PROCESS**
1. In addition, the group composition and the quality of human relationships in the class are under constant change.	Discontinuity
2. Some pupils are moving away,	Discontinuity
3. and new ones are arriving,	Discontinuity
4. or there will arise conflicts between pupils.	Discontinuity
5. Although the latter cases are always dealt with individually,	Adaptation
6. the drama exercise lessons try to prevent the worsening of the classroom climate caused by occasional life changes.	Adaptation
7. The newcomers will be involved immediately,	Adaptation
8. so no one would be left alone.	Continuity
9. Our team delivered several drama lessons during the practicum,	Continuity
10. and we learnt first and foremost how easily the teacher can "break the ice" between oneself and pupils by throwing oneself into activity.	Transformation

The episode deals with disruptions in classroom climate in broad terms not limited to classroom interactions during lessons. James considers pupils' general life changes, such as pupils' migration (p2–4), that change the group's composition. This creates a potential discontinuity. James perceives drama exercises as a means to proactively adapt to these discontinuity stages without detrimental effects (p6): New pupils' involvement in the activities is ensured (p7). A more teacher-centered transformative generalization is expressed by James at the end (p10). He highlighted the teachers' own spontaneous role in participating in the activities. Of all four examples, this case extract represents the most generalized

reflection: practical theorizing. Resilience is promoted proactively at the classroom–community level.

The last Case Example 4 is an extensive, 45-proposition-long episode. The extract concerns an accident experienced by Lisa and her dealing with it with her co-teacher in math, as is evident in the text.

Case Example 4. Lisa: "Math lesson—adapting to the situation"

PROPOSITIONAL UNITIZING OF REFLECTIVE EPISODE (45 propositions)	**RESILIENCE PROCESS**
1. During the practice, I broke my tailbone at school	Discontinuity
2. and injured my knee	Discontinuity
3. when I slipped on an icy metal grate.	Discontinuity
4. This changed our teaching practice	Discontinuity
5. because my co-teacher and I had planned to do the lessons together.	Continuity
6. The first math lesson we had planned to work together	Continuity
7. with my partner doing the calculation,	Continuity
8. and then I would show the same thing with manipulatives	Continuity
9. to make the concept of carrying clearer.	Continuity
10. Since I wasn't there	Discontinuity
11. and couldn't sit or stand	Discontinuity
12. (only lie on my side in bed following the lesson),	Discontinuity
13. we changed the plan a bit.	Adaptation
14. In theory, I could have shown the manipulatives via Zoom,	Adaptation
15. but it was very difficult for me to use the computer in a sideways position.	Discontinuity
16. My partner did a great job, though,	Continuity
17. and we tried to think about how I could possibly participate in the following lesson via Zoom	Adaptation
18. if my condition had improved.	Continuity
19. In the next lesson, I was able to teach how to use some math software	Continuity
20. to help students practice what we learned	Continuity

21. so I felt that I could contribute	Transformation
22. and that it went well.	Continuity
23. It was positive to be able to come up with a way that I could participate.	Transformation
24. In general, I felt bad about the accident	Discontinuity
25. and that my teaching partner had to do the lessons mostly by himself,	Discontinuity
26. even though he is an experienced teacher	Continuity
27. and did an excellent job.	Continuity
28. Being able contribute in some way helped me to deal with the difficult situation I was in.	Transformation
29. I also tried to do more on the planning side,	Adaptation
30. help as much as I could in other ways	Adaptation
31. by doing prep work at home	Adaptation
32. (my co-teacher came and picked up what I worked on)	Continuity
33. and followed all the lessons I missed remotely	Adaptation
34. even though I had to make up all the lessons anyway during my second teaching period.	Discontinuity
35. It was very stressful	Discontinuity
36. because it meant that I had significantly less time for planning those courses	Discontinuity
37. that I am less confident in—music, PE, and crafts—	Discontinuity
38. and would have needed the time.	Adaptation
39. The good things were that we found a way to make it work despite the challenges,	Transformation
40. and I think that the planning in the second period worked out fine.	Continuity
41. My co-teacher was away during the last teaching week,	Discontinuity
42. so I used that time to plan as much as I could,	Adaptation
43. and then we just went through it together	Continuity
44. when he got back.	Continuity
45. Things didn't go as we had planned,	Discontinuity
46. but it worked out anyway.	Continuity

Lisa's reflection comprises detailed descriptions of the unfortunate situation. The case description is thorough, including sequential perceptions of continuities and discontinuities (p1–12). Lisa then considered a potential adaptation they considered, that is, delivering her part of the instruction via the Zoom application (p14). They abandoned this option at this stage (p15), but later returned to it (p17). The described continuities emphasize the positive role of Lisa's co-student teacher (e.g., p26–27). Emotional expressions are most explicit on p24 and p35, where Lisa writes about stressful experiences due to the accident. Transformative remarks in this extract represent a special case. Resilience is portrayed in the "anyways" of the case: Lisa reflects their adaptation to discontinuity in that they managed to teach the unit together despite her accident (e.g., p23, p39).

Continuing with Emerging Teacher Resilience

In this chapter, we reflected on fresh practicum pedagogies through the lens of teacher resilience. Resilience is at the leading edge of current developments in teacher education research and practice. Until now, however, the conceptual clarity of the construct has left something to be desired, hindering its practical applicability. Our emerging resilience conceptualization—constructed through conceptual and empirical inquiry—is meant to function as an intact practical framework for implementing resilience both as a means and an end in future practicum pedagogies.

We suggest that a practical, action-oriented notion of teacher resilience should relate to critical teaching interactions. Emerging teacher resilience entails learning to deal with continuities and discontinuities in relational encounters in everyday teaching. Guided reflection is a fundamental part of the development of resilience.

We suggest the usefulness of practice-based written reflection to make sense of emerging teacher resilience. Ultimately, resilience manifests in teacher actions, and tools to trace its development on that more objective level could be developed in the future. In teacher education, however, resilience must be learned through reflective encounters. In other words, experiences must be verbalized. Reflective writing can be a flexible tool when other modes of mentoring are difficult to implement, such as in crisis scenarios. Ideally, however, it probably benefits from combining it with mentoring dialogues with mentor teachers—and the writing, itself, could be conducted more collaboratively, as student teachers often co-teach in teams. The reflective writing approach merits further development, as it might have unique benefits for resilience strengthening generally and in changing post-pandemic contexts.

Finally, the propositional analysis of resilience processes enabled a fine-grained analysis of reflective episodes. It can reveal nuances in seemingly mundane everyday teacher discourse. From a practical knowledge perspective, this is a highly relevant, but often overlooked, type of knowledge in teaching. It seems that resilience is best triggered by personal experiences and critical teaching incidents. However, more student teacher cases and holistic units of analysis should also be examined in the future. For example, more comprehensive critical incidents or even portfolios could reveal additional insights into emerging teacher resilience. Nonetheless, the tripartite schema of resilience, comprising (dis)continuity, adaptation, and transformation, provides a simple "reading guide" to evaluate emerging teacher resilience both in the research and practice of reflection-focused practicum pedagogies.

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