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# Professionalization Pathways for School Leaders Examined: The Influence of Organizational and Didactic Factors and Their Interplay on Triggering Concrete Actions in School Development

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**Abstract:** It is believed that school leadership contributes to efficiency and equity in school performance. Therefore, it is essential that professionalization initiatives for school leaders foster learning and development processes towards effective leadership. Based on a literature review, several factors appear to facilitate the influence of professionalization programs on learning outcomes of school leaders but empirical research on real effects and on explanatory processes is limited. This research gap forms the basis for this mixed methods study, in which we design and implement a longitudinal professionalization program as the research setting. We distinguish an organizational dimension focusing on structural choices and an intertwined didactic dimension. We examine which specific interaction between both contributes most to concrete learning-driven actions at the school of the participant. The results indicate that by participating in the program with such a design, school leaders prepare action plans for their own school and start up school development. The interaction between actively providing theoretical frameworks, further deepening insights through peer learning in professional learning communities, the conversion of insights into concrete action plans and supporting this with school-specific coaching leads to the strongest results, analyses show.

**Keywords:** school development; school leadership development; school leadership professionalization; outcome professionalization; professionalization effectiveness

## 1. Introduction

Societal evolutions over the past few decades affect the curriculum and the way education and assessment are shaped [1]. Both internationally and nationally, a trend toward a culture of measurability can be observed [2,3]. Discussions about the (declining) quality of education and policy decisions in this context rely on studies such as PISA, PIRLS and TIMMS [4,5]. The responsibility of school leaders for student learning outcomes [6] as well as institutional pressures is increasing [7,8]. Consistent with this, school leadership is a policy focus with an increasing attention to school leader professionalization too [9].

Bush and Glover [10] define school leadership as "a process of influence leading to the achievement of desired goals. Successful leaders develop a vision for their school based on their personal and professional values. They articulate this vision at every opportunity and influence their staff and other stakeholders to share the vision. The school's philosophy, structures and activities are geared towards achieving this shared vision" (p. 8).

A first dimension is linked to vision development and influencing and facilitating processes that lead to the achievement of core educational goals, namely quality teaching by teachers [11,12] and of pupils linked to this teaching [13,14]. The second dimension emphasizes the school leader's task of uniting the team around core values and related strong teaching and learning practice bases [15,16]. A third dimension is propagating this vision [11].

Since the 1980s, much research has been dedicated to the effects of educational leadership. Even though real effects of educational leadership on student achievement prove difficult to measure [17,18] and cannot be unequivocally demonstrated, there is widespread recognition of the importance of school leadership on high-quality education [19,20]. It is therefore essential that professionalization initiatives (PI) for school leaders address aspects of effective leadership [13], both with regard to educational leadership and the many other tasks and responsibilities of the school leader [21], and that these initiatives are also sufficiently adequate [22,23]. Many countries developed competence profiles for selection and evaluation and as a basis for determining the program of PI for school leaders [22].

## 2. Theoretical Framework

### 2.1. Effective Professionalization: Four Levels

Kirkpatrick and Kirkpatrick [24] define effective professionalization as "well-received training that provides relevant knowledge and skills to the participant and the confidence to apply them on the job". In line with this definition, there is increasing evidence of success conditions in terms of the approach and nature of professional development of school leaders [13] and the importance of tailor-made support during all career phases [25]. However, assessing the impact of a leadership development program is not straightforward, such as due to a lack of research on measurable criteria of effective professional development for school leaders [26] because the followed effect of the training is difficult to isolate and because of the influence of (un)anticipated personal and contextual factors and outcomes [13]. Obtaining a clear picture would benefit the effectiveness of current and future professional development programs [19,24].

Four levels can be distinguished in the extent that PI contribute to the depth and outcomes of professional development (of school leaders) [24]:

- level 1—reaction: the extent to which participants evaluate the training as beneficial, interesting and relevant to their job;
- level 2—learning: the extent to which participants acquire the intended knowledge, skills, attitudes, trust and commitment, based on their participation in the professional development;
- level 3—behavior: the extent to which participants apply what they have learnt during the professional development programs;
- level 4—outcomes: the extent to which targeted results occur as a result of the acquired learning experiences, learning event(s) and their application. Prioritizing these when developing a professionalization initiative contributes to the purposefulness of its content and approach.

From the above research on how contents of PI have converted to practice, we actively concentrate on the fourth level in this gradual structure, focusing on the specific transfer into the uniqueness and complexity of school policy in each school [27]. It is specifically about the extent to which the PI encourages a process [28] of in-depth processing of the acquired insights, both operationalized through critical reflection on what participants learned from application in one's own school context [29], the extent to which the PI stimulates brainstorming on this with other members of the school team and thus facilitates collaborative learning in the workplace [30–32], as well as the PT encouraging to be goal-oriented in order to really start working with the insights (as an intermediate step) and transform them into possible concrete actions and sustainable change [23,27]. This aligns with the shift from knowledge acquisition to knowledge creation and development [33]. The result level (level 4) can be split up into different intermediate levels, e.g., the elaboration of an (preparatory) action plan [32] together with members of the school team, the implementation of these actions, the possible results of these actions on teacher behavior [34] and longer-term follow-up at the pupil level [27,30]. An outcome not included in this and other schemes about the depth of learning is well-being. Participation in a PT may also have this as an outcome as well, possibly strongly mediating with behavioral learning outcomes [35,36].

The PI and goals play a major role: the organization needs to think about the pre-determined learning outcomes [37]. The job context as a mediating factor should not be overlooked, especially at this level 4 with learning on the job, coaching and feedback [22–24]. Antecedents of participants may also influence the results achieved.

### 2.2. Factors of Effective Professionalization for School Leaders: The Dimensions of Organization and Didactics

Ten guidelines have been identified for the development of PI for school leaders [23]: connecting to needs at the individual or school level, a goal-oriented program, a research-based program, sufficient time, being practice-oriented, peer support, taking into account contextual factors, partnering and focusing on impact. This underlines the importance of explicit goals [38] that focus on applicability, moreover, matching with participants' goals and needs [39]. In a coherent program, the curriculum matches and furthermore supports and reinforces the specific job content and context [25].

### 2.3. Knowledge Base

In line with the goals, providing a broad research-based knowledge base linked to professional practice encourages participants to transfer the content of the PI to their own context [23,27]. A coherent curriculum is needed, which combines theoretical input with practical application opportunities [39]. To acquire such bases, an expert training team with both academic expertise and teaching experience is desirable.

### 2.4. Contextual Learning

PI are more successful when they are embedded in authentic school environments and allow for contextualization [21,38]. This enables school leaders to apply the competences and insights learned to their specific school context [25,40]. Starting with an initial situation analysis allows for identifying participants' reflections on their progression and needs, gathering information about their job context [18,27]. The targeted transfer of acquired competences is important for effective leadership and school development [40]. School leaders name this, among other things, as lacking in existing PI [41]. Generating that transfer can be conducted by designing and implementing a time-spread approach focused on cognitive–theoretical ways of learning, cooperative and communicative processes and reflective forms of learning [42], using various sources such as peer learning, online information, book learning and formal training [19]. Frequent reference to how learning content is valuable and creating opportunities for discussions about possible applications contribute to the transfer and relevance [24]. An explicit expectation is needed towards school leaders that by participation in a PI, they engage in activities within their own school as a function of leadership development [43]. If participants know in advance what the purpose and approach of the PI is, this leads to greater engagement and sustained processing of the PI content [24,44].

Competences acquired during PI are applied in the authentic work context and vice versa [45]. School leaders perceive workplace learning as an effective approach to working on adjustment and innovation within their school context [40]. This 'learning on the job' reinforces learning at the individual and organizational level as well as the relationship between the two. A school context with a positive learning climate contributes to informal professional learning of school leaders through support, feedback, reflection and career awareness, and generates social learning [46,47]. In PI, raising awareness of that school context, school culture and person-related aspects [13,29,48], the naming of present (facilitating) factors for professional development facilitates the transfer [33]. Participation in a PI together with a fellow generates positive outcomes for both parties involved, e.g., in terms of the joint propagation of a school-wide culture, support in the implementation of actions, collaboration and a shared language and acquaintance with other perspectives [27,49].

*2.5. Professional Learning Communities and Coaching*

The use of PLC is recommended [13], with a central place for reflection [42] in combination with peer learning and peer feedback [40]. Small groups guided by an experienced process coach [46] are appropriate to ensure psychological safety and high-quality reflection [31,46]. The individual school leader is learning in one's own school environment and professional development is stimulated by exchanging and critically and constructively discussing (success) experiences, informally or not, as a sideline to formal professionalization initiatives [50].

The process coach stimulates the depth of learning processes during individual and group meetings using a theoretical and methodical growth-oriented framework [51]. Focus on achieving profundity only arises when it is explicitly expressed [52]. The role of the process coach is challenging, especially in the context of a group of school leaders with different school contexts. The quality of coaching helps determine the value of the PI [53].

**3. Research Design and Methodology**

*3.1. Concrete Organization of the Professionalization Course*

The literature review shows that several factors can facilitate the influence of PI on learning outcomes among school leaders. These factors are situated both on the goals and content, the organization and the approach. Empirical research on the real (long-term) effects of PI and on underlying explanatory processes is limited [22]. There is also little research on the functioning and added value of more complex and long-term PI [54]. As a result, it is unclear how these different factors specifically influence learning, how this influence may depend on characteristics specific to the school leader or their school context, how these factors reinforce or weaken each other, how the deployment of these different factors is optimally spread within a long-term trajectory and with which iteration. Moreover, few in-depth and large-scale studies are available, with an interaction between quantitative (as a basis for generic statements) and qualitative (as a basis for explaining these statements in depth) data.

This problem statement forms the basis for this study, in which we chose to design a long-term professionalization course (2 years) and implement it as the research setting in which a number of characteristics of powerful professionalization [54,55] were implemented. This makes it possible to examine the impact of organizational and didactical factors as well as their mutual interaction on certain outcome variables (see Figure 1).
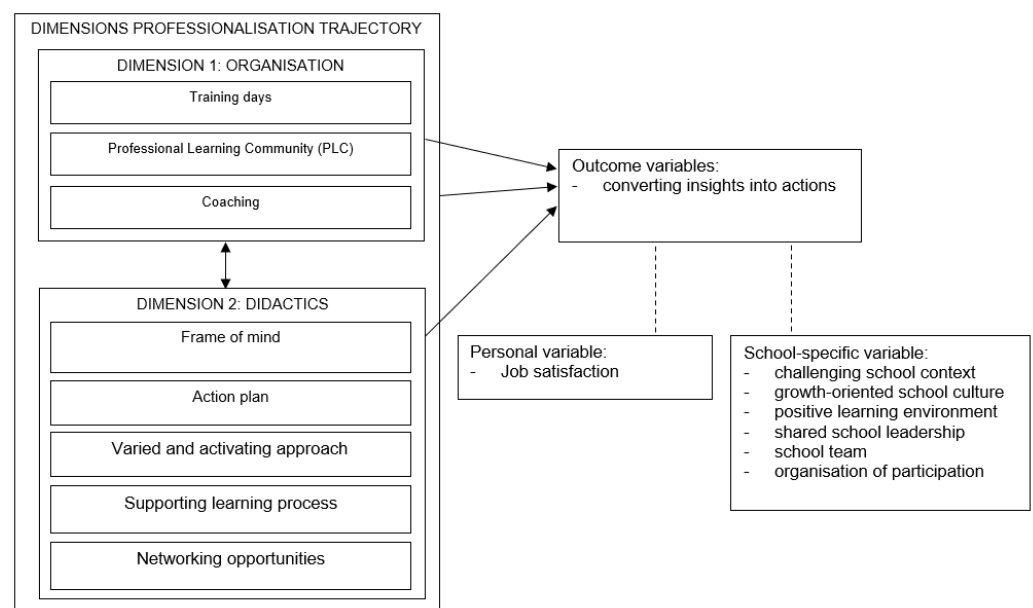


**Figure 1.** Research model.

Given that the didactic dimension runs as a thread through the organizational dimension, the hypothesis was that responding to an interaction between the two leads to an increased influence of the PT on perceived outcomes. Which specific interaction contributes most to this was also the subject of research.

The outcome variables of the PT were ordered according to the levels of depth of learning by Kirkpatrick and Kirkpatrick [24]. Specifically, this means that the outcome variables were arranged thematically according to the three highest levels:

- level 2: acquired insights regarding learning support, school policy, school leadership and starting PLC;
- level 3: processing acquired insights through reflection in general, being stimulated to brainstorm with members of the school team and being stimulated to be goal-oriented in terms of the approach at school;
- level 4: converting acquired insights into action plans and concrete actions regarding the vision on learning support, school leadership and starting PLC.

In this research, we examined the outcomes on the fourth level with a focus on converting acquired insights into action plans and concrete actions, which is less examined in other research. However, we hypothesized that this depth of learning with goal-oriented and sustainable actions is not possible without reaching the preceding levels, also consistent with the context and needs of the participating school leaders and their school.

### 3.2. Research Model and Questions

We wanted to examine the influence of applying characteristics of effective professionalization in PT for school leaders in terms of the dimensions (1) organization and (2) didactics of the PT, as well as their mutual interaction and the interaction with possible mediating external factors on the fourth level of learning outcomes. All this leads to the following research model (Figure 1).

The central research questions were the following:

- Q1: What is the perceived added value of participating in the PT in terms of taking actions on school development (level 4)?
- Q2: Which factors of effective professionalization on the dimensions of organization and didactics influence the perceived outcomes of a PT (level 4)?
- Q3: Which interplay between factors of effective professionalization influence the perceived outcomes (level 4) of the PT and the transition to the own school, and for what reason?
- Q4: Which non-PT factors (medially) influence perceived outcomes (level 4) of the PT?

### 3.3. Research Context and Participants

For the period 2021–2023, the PT, commissioned by the Flemish government (Belgium) consisted of training days, PLC meetings and coaching (Figure 2). During each of the five training days of year one, a different content focus was central [56]. Hereby, the organizers foresaw a clear link to the principles of 'leadership for learning' [57], as further transformed into the development model 'Team School. Creating learning communities in education' [58].
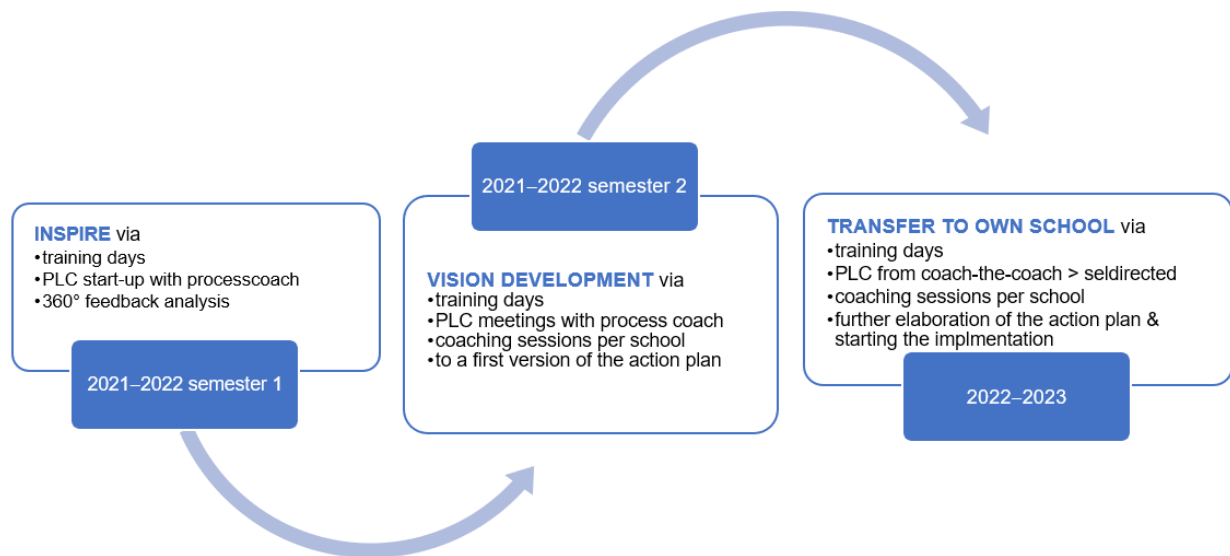
**Figure 2.** Timeline professionalization trajectory.

During the training days for the full group of participants, the focus was on providing actual content aimed at acquiring insights and illustrated with practical examples. The further deepening and concretization of the acquired insights took place in the PLC of school leaders and internal support staff, composed per registered partnership. In the PLG, the focus was on learning from and with each other, with extra social stimulation provided by the smaller group. The PLC met four times in the first year. In addition, coaching was provided for each school and focused on their specific questions. During the first year, two coaching meetings were planned. Four additional training days were organized in May 2022, focusing on the concrete application of PLC process coaching. These days were optional for participants of the PT and other teams could also register, with the aim of facilitating the dissemination and broadening of the base on this topic.

During the 2021–2022 school year, 149 participants from primary education/K-12 (43%), or secondary education (57%), followed the PT. In total, 58% held a management position, 55% of them in secondary education. In total, 42% occupied a (coordinating) middle management position at school linked to learning support, 60% of them in secondary education (Table 1).

**Table 1.** Education level and position in which respondents were employed.

| | | | Management Function | Middle Management Function | |
|---|---|---|---|---|---|
| Level | Primary education | Count | 34 | 22 | 56 |
| | | % | 44.7% | 40.0% | 42.7% |
| | Secondary education | Count | 42 | 33 | 75 |
| | | % | 55.3% | 60.0% | 57.3% |
| | Total | Count | 76 | 55 | 131 |
| | | % | 100.0% | 100.0% | 100.0% |

To generate and facilitate shared school leadership, participants were encouraged to register two colleagues per school. A total of 93% of respondents participated together with a colleague. For primary school principals, this was not always possible given the small school teams.

Each partnership was organized as a PLC. The partnership with 19 schools was split into two separate PLC groups. Each PLC consisted of 7 to 15 participants and was

supervised by a permanent process coach. Each process coach supervised a minimum of one and a maximum of three PLC.

The coaching sessions were supervised by the process coach of the respective PLC of the participating schools. Each school decided whether to participate (not) in the (both) sessions, whether only the school leader participated. A total of 53% (*n* = 129) participated in at least one coaching session.

### 3.4. Data Collection

The research questions were answered by adopting a mixed methods approach because combining quantitative and qualitative data with proportionate weight increases relevance and provides an opportunity to check the relationship between variables.

Prior to the start of the PT, participants completed a written initial situation analysis (ISA) with closed- and open-ended questions. After finishing the first school year in May 2022, a written survey with closed- and open-ended questions was organized, aimed at questioning experiences with the PT and perceived outcomes. These surveys were developed based on literature research and observations during the trajectory. In total, 131 out of 149 participants (88%) completed the final survey. In total, 83% (*n* = 123) of the participants completed both the ISA and the final survey. Everyone who completed the written survey participated in the training days and PLC meetings. To calculate the impact of the coaching sessions (*n* = 66), only quantitative data from those who participated were used.

In June 2022, focus group discussions were organized with PLC groups and in-depth interviews with school leaders (Figure 3) to collect further explanatory qualitative data for the quantitative data and to further question trends in the quantitative data already collected. Participants were invited to participate during the last training day and PLC meeting, and via email. The semi-structured online interviews were conducted using a question protocol drawn up on the basis of the literature review and observations. Focus group interviews lasted up to 90 min and in-depth interviews up to 60 min in June and early July 2022 and were recorded with the knowledge and consent of all participants. Of the 15 PLC, 11 participated in a focus group discussion. A total of 40 school leaders (=53%) distributed across the different PLC groups participated in an in-depth interview.



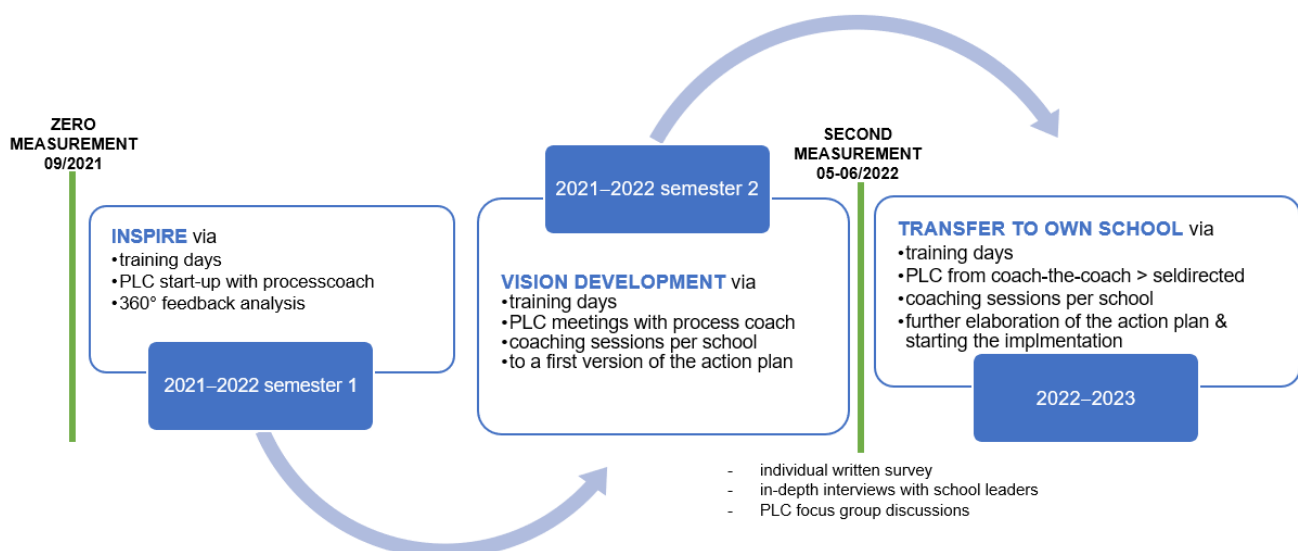**Figure 3.** Timeline data collection.

### 3.5. Data Processing and Analysis

Exploratory factor analyses (using principal axis factoring) were conducted on the quantitative data, processed in SPSS, to arrive at meaningful, distinguishable and reliable

scales. Eight factors were constructed (Tables A1 and A2). Cronbach's alpha as a measure of reliability was above 0.7 for all scales.

Six-point Likert scales were used (completely disagree—disagree—rather disagree—rather agree—agree—completely agree). To create meaningful descriptors of the data, these scales were made numeric (completely disagree (1)—etc.—completely agree (6)). Thereafter, all Likert scales were standardized to enable analyses.

The strength of the perceived relationship between the eight factors of effective professionalization and the outcome variables was examined through a single regression analysis (SRA) and multiple regression analysis (MRA). All assumptions of the regression analysis were met in each case. A statistical approach based on a stepwise linear regression analysis (SLRA) was used for each outcome variable to determine the factor(s) with the greatest statistical predictive value. For naming the extent to which the variance in the dependent variables is explained by the explanatory independent variables ($R^2$), the following division was used: <10% weak, 10–25% moderately strong, 25–50% strong, 50% very strong and 100% perfect relationship.

The qualitative data were supplemented with and underscored by (quantified) qualitative data and quotes from open-ended questions of the written survey (S), the focus group discussions (F) and the in-depth interviews (D). The qualitative data were processed in NVIVO and organized in line with the research questions, with an initial subdivision consisting of the PT, external factors and outcome variables (Figure A1).

## 4. Results

### 4.1. Experiences with the Professionalization Trajectory

The descriptive analysis (Table 2; Table A1) shows that the perceived quality of the three factors of the organizational dimension of this PT is positive with $M > 4.80$.

**Table 2.** Independent variable organizational dimension.

| Label | Factors | N | Six-Point Scale | M | SD |
|---|---|---|---|---|---|
| Training days | Assessment of the quality of training days | 131 | | 4.95 | 0.63 |
| PLC | Assessment of the quality of professional learning communities | 130 | Completely disagree (1)–completely agree (6) | 4.85 | 0.67 |
| Coaching sessions | Assessment of the quality of coaching sessions | 66 | | 4.83 | 0.79 |

Participants perceived the quality of the factors of the didactic dimension of the PT to be positive, with $M > 4.70$ (Table 3; Table A2).

### 4.2. Experienced Outcomes of the Professionalization Trajectory (PT)

The descriptive analysis shows that all outcomes about acquiring insights and processing acquired insights (Table 4) are perceived as above average ($M > 4.00$). This is important because we expect these learning processes to underlie and support the purposeful and sustainable conversion of acquired insights into action plans and concrete actions. This shows that school leaders experience participation in the PT as an added value in these areas as well. For their general experience of success and well-being, school leaders also describe participation in the PT as valuable.

**Table 3.** Independent variable didactical dimension.

| Label | Factors | N | Six-Point Scale | M | SD |
|---|---|---|---|---|---|
| Theoretical framework | Assessment of the quality of providing practice-based theoretical frameworks | 122 | | 4.76 | 0.82 |
| Action plan | Assessing of the quality of targeting with an action plan | 131 | | 4.92 | 0.62 |
| Approach | Assessment of the quality of a varied and activating approach | 131 | Completely disagree (1)–completely agree (6) | 4.90 | 0.56 |
| Support | Assessment of the quality of differentiated support for the learning process | 131 | | 4.83 | 0.82 |
| Networking | Assessment of the quality of possibilities for networking | 131 | | 4.91 | 0.61 |

**Table 4.** Outcome Variable Acquiring Insights, Processing Acquiring Insights and Well-Being.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| *Acquiring Insights* | | | | |
| Acquiring insights about learning support | | | 4.46 | 0.95 |
| Acquiring insights about school policy | 122 | | 4.30 | 0.79 |
| Acquiring insights about leadership | | Completely disagree (1)–completely agree (6) | 4.35 | 0.72 |
| Acquiring insights about professional learning communities | | | 4.16 | 0.79 |
| *Processing Acquired Insights* | | | | |
| General critical reflection | 122 | | 4.99 | 0.79 |
| Brainstorming with members of the school team | 122 | Completely disagree (1)–completely agree (6) | 4.73 | 0.96 |
| Being stimulated to be goal-oriented in terms of approach at school | 122 | | 4.51 | 0.90 |
| *General Outcomes* | | | | |
| General experience of success | 122 | Completely disagree (1)–completely agree (6) | 4.27 | 0.89 |
| Enhancing professional well-being | 122 | | 4.45 | 1.29 |

For converting insights into action (Table 5, Table A3), the mean is relatively high for both learning support and leadership. For starting a PLC, the spread is wider and the mean (*M* = 3.90) is slightly lower but still above average.

**Table 5.** Outcome variable acquired insights to actions.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| *Converting Acquired Insights to Action* | | | | |
| Develop vision and action on learning support | 122 | | 4.33 | 0.99 |
| Actions about leadership | 122 | Completely disagree (1)–completely agree (6) | 4.16 | 1.05 |
| Actions about launching professional learning community | 122 | | 3.90 | 1.30 |

The qualitative data show that schools develop actions depending on the following school year and implement them at a later stage. In terms of management on learning support, the quantified qualitative data (Table A4) highlight actions on implementing effective guiding principles and school-wide lines (10), as well as concretely updating the pedagogical vision and/or policy on learning support (8) and implementing the elaborated learning support continuum (8): "Immediately, applications at school are about implementing vision and fit within our policy priorities (without this PT we would also have had to invest time and energy into optimization and it might have been less systematic)" (D-R67). Several times, this goes hand-in-hand with re-drawing the supporting roles (8) to maximally pursue that 'every teacher is a supportive teacher'. Several school leaders (14) are implementing actions to optimize working groups according to the principles of a PLC or to start new ones (14). This also includes training process coaches (9) to perpetuate effectiveness and sustainability. Overall, actions are taken to elaborate the vision and policy on professionalization, and they give peer learning a structural place (10). Visualizing the vision and approach in the school and the team organogram (5) is also a concrete action that leads to clarity. School leaders mainly implement concrete actions to create time for meetings with staff (6), which is not structurally provided for in their job. School leaders also mention working with an action plan as a basic document to guarantee implementation and follow-up (8). Some school leaders indicate that they are already experiencing more support in the team (5) and that it is important to keep investing time, during this trajectory, to facilitate and thoroughly build on the progress (5): "I now realize that the process of achieving impact takes time to bring everyone into it. I now don't mind slowing down the process if it's necessary for the team". (S-R111).

Summary: Experienced Outcomes of the Professionalization Trajectory

The data analyses show that participants perceive that by participating in the PT, they prepare or implement concrete actions in accordance with the expressed goals [39]. This corresponds to the depth and effects of professional development up to the fourth level [24]. Participants are more aware of the importance of a thorough initial situation analysis and mapping the perception and mindset about learning support among the team, which forms a good starting point for school and professional development [18,43]. The extent to which and focus chosen relate to prior knowledge present as well as priorities of the school approach and/or the school leader [53]. During this year, according to participants, the PT really triggered short-term actions, mainly in the area of policy on support learning as well as in the area of (shared) school leadership. Regarding actions in terms of starting PLC or optimizing existing meeting structures, the outcomes mainly focus on the preparatory phase leading up to the next school year. School leaders state that they experience more support in their schools and that they want to continue to focus on facilitating progress and support rather than implementing actions 'for the sake of action', which ties in with the objectives of the PT.

### 4.3. Experienced Interaction between Approach of the PT and Perceived Outcomes
### 4.3.1. Converting Acquired Insights into Action

Participants' satisfaction (Table 6) with the school-internal actions already achieved appears high, although there is a spread in responses.

**Table 6.** Satisfaction with school-internal actions.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| Overall satisfaction with school-internal actions already achieved so far | 122 | Completely disagree (1)–completely agree (6) | 4.12 | 1.10 |

Develop Vision and Action on Learning Support

Training days ($R^2 = 0.08$) appear to have little relevance based on SRA, while participation in PLC ($R^2 = 0.12$) and coaching ($R^2 = 0.14$) has a moderately strong relationship with vision and action development in learning support. For the didactic dimension, only for working with an action plan ($R^2 = 0.12$) is there a moderately strong relationship (Table A5; Figures 4 and 5). SLRA demonstrates the statistical relevance of participating in PLC as part of a PT for school leaders in developing vision and action regarding learning support ($F(1, 62) = 11.99$, $p < 0.001$, $R^2 = 0.16$).
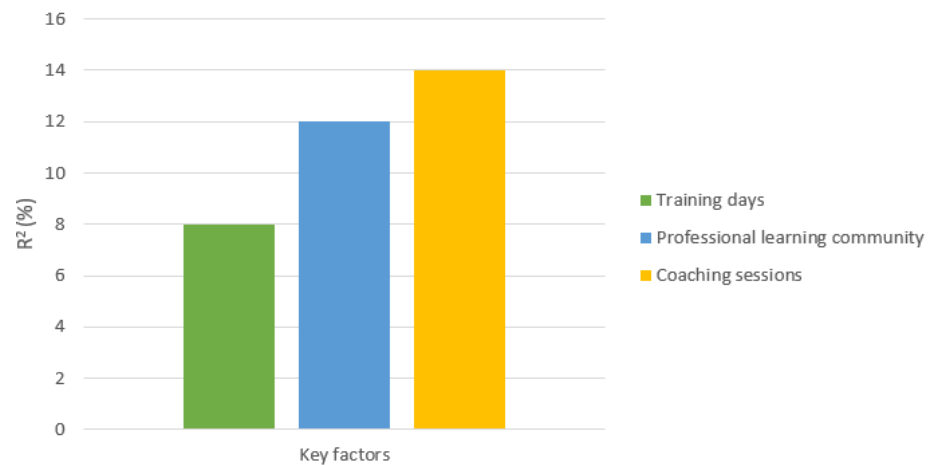


**Figure 4.** Proportion of explained variance of three organizational key factors on being encouraged to focus on developing vision and action on learning support.
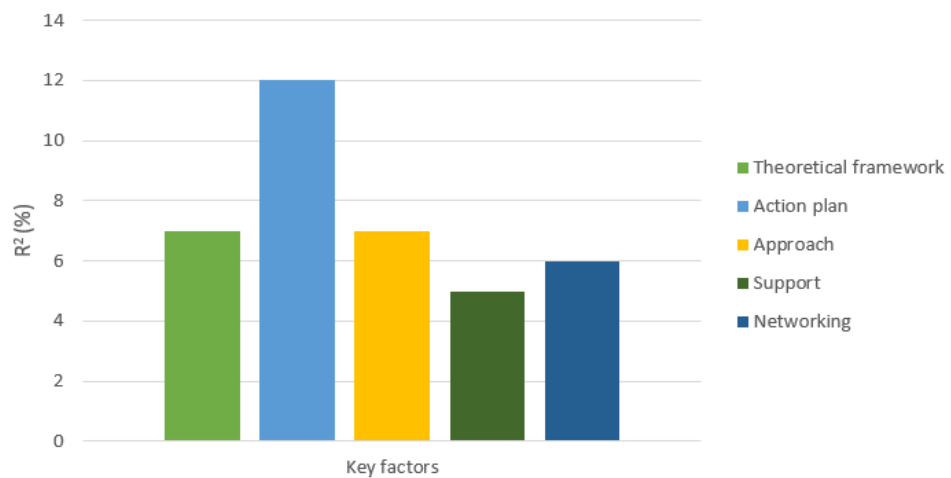


**Figure 5.** Proportion of explained variance of five didactic key factors on being encouraged to focus on developing vision and action on learning support.

Actions on School Leadership

SRA show for participation in PLC ($R^2 = 0.19$) and coaching ($R^2 = 0.18$) a moderately strong relationship with taking actions regarding school leadership (Figure 6; Table A6). For the didactic dimension, there is a moderately strong correlation for working with a theoretical framework ($R^2 = 0.21$) and action plan ($R^2 = 0.14$) (Figure 7). SLRA shifts working with a theoretical framework too for all of the most relevant professionalization actions within a PT for school leaders ($F(1, 62) = 30.39$, $p < 0.001$, $R^2 = 0.33$). In addition, the combination of working with a theoretical framework and participating in coaching is the strongest for taking actions about school leadership ($F(1, 62) = 21.06$, $p < 0.001$, $R^2 = 0.41$).
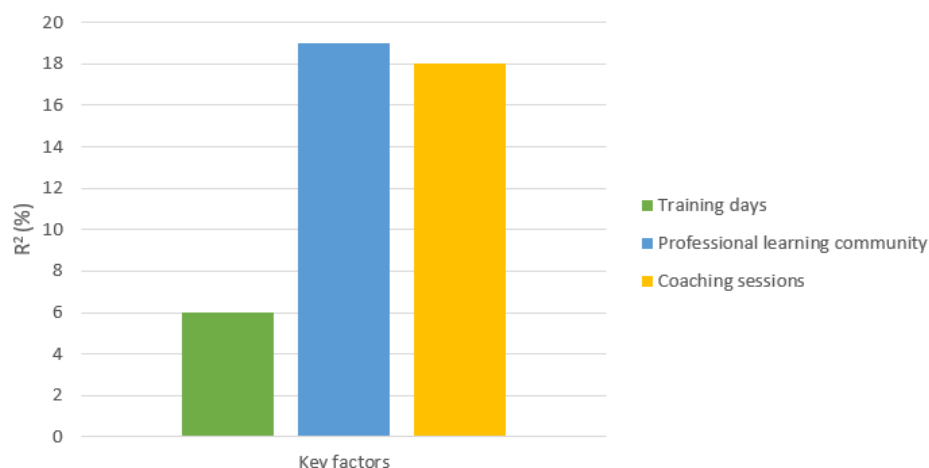
**Figure 6.** Proportion of explained variance of three organizational key factors on being encouraged to focus on leadership.
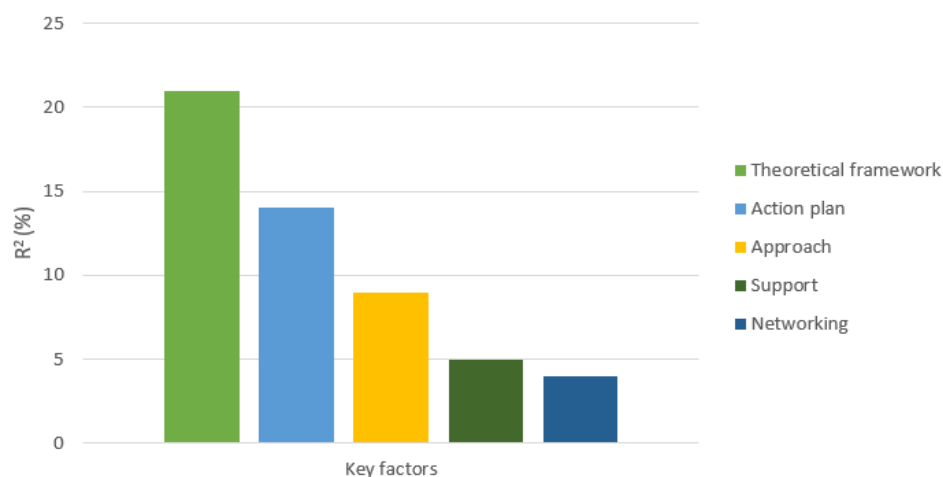


**Figure 7.** Proportion of explained variance of five didactic key factors on being encouraged to focus on leadership.

Initiate Actions on PLC Operation

Of the organizational dimension, based on SRA, a moderately strong correlation between participation in PLC ($R^2$ = 0.13) and actions regarding the start-up of PLC in one's own school appears, and so does coaching ($R^2$ = 0.10). For the factors of the didactic dimension, there are only weak relationships ($R^2$ < 0.8) (Table A7; Figures 8 and 9). Based on SLRA, participation in individual coaching appears to be most important for initiating actions on PLC operation, although there is only a moderately strong correlation here ($F$(1, 62) = 6.70, $p$ = 0.013, $R^2$ = 0.10).

The qualitative data show that the trajectory approach predominantly contributes to the implementation, with factors from the organizational and didactic dimensions that always interact. The facilitation of formal and informal networking opportunities offers an external perspective in addition to inspiration, which contributes positively to concretization to one's school. There are also opportunities for feedback on past experiences: participants strongly appreciate it when process coaches actively return to this. Still, for some of the participants, the time frame of a year of PT turned out to be too short to take real action. Especially as far as actions to start up PLCs are concerned, the program does not yet offer much added value after 1 year, but participants are preparing them for implementation in the following school year.
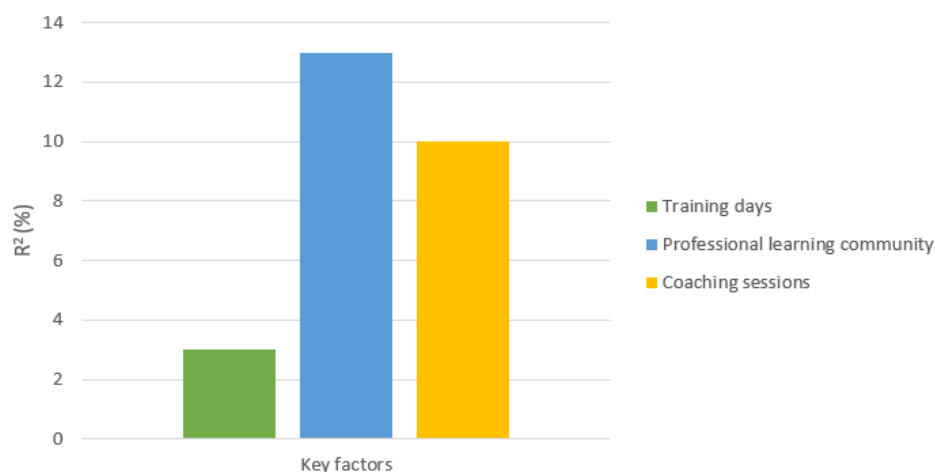
**Figure 8.** Proportion of explained variance of three organizational key factors on initiating actions on PLC operation.
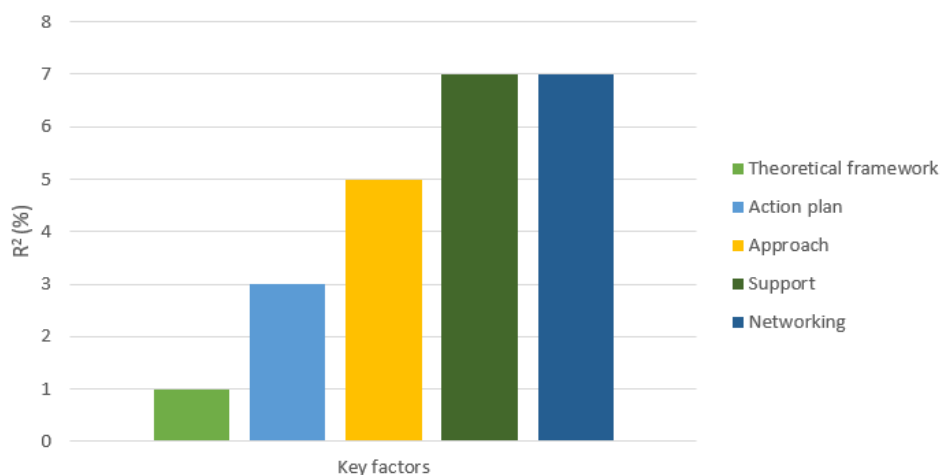


**Figure 9.** Proportion of explained variance of five didactic key factors on initiating actions on PLC operation.

4.3.2. The Influence of Interaction between Factors of the Organizational and Didactic Dimension of the Professionalization Trajectory

Participants explicitly named the coherent curriculum by aligning training days, PLC and coaching in terms of organization, didactic and content as very positive: M = 5.02 (Table 7, Table A8). The MRA shows that the separate interaction of factors from the organizational dimension, the separate interaction of factors from the didactic dimension and a combined interaction between factors from both dimensions significantly affect the explained effects on taking concrete actions (Table A9).

**Table 7.** Interaction between key factors of effective professionalization.

| Items | *N* | Six-Point Scale | *M* | *SD* |
|---|---|---|---|---|
| Added value of combining elements of professionalization in 1 trajectory | 130 | | 5.02 | 0.84 |
| Building on content/insights from training days and professional learning communities during coaching sessions | | Completely disagree (1)–completely agree (6) | 4.42 | 0.97 |
| Interaction between training days, PLC and coaching sessions is reinforcing | 66 | | 5.56 | 0.90 |
| Coaching sessions stimulate conversion | | | 4.79 | 0.95 |

The quantified qualitative data (Table A10) show that all school leaders mentioned the added value of this interaction during the in-depth interviews. In nine focus groups, this was discussed as well, and in the optional fields of the written survey, it was noted eight times. Participants (19) stated that PT usually consist of one of the three organizational forms, but that only training days do not ensure implementation, and that only PLC or coaching do not provide theoretical frameworks. Maintaining this mix, they state, is necessary for learning efficiency and real change (13). "It's about a complete offer: it's a combination of theoretical frameworks linked to practice that can be converted into concrete actions within your own organization. You can also count on individual coaching. This has a real effect! Other training programs often lack one or more parts, resulting in insufficient transfer" (S-R111). Making the link between the three organizational forms contributes to the transfer (8), partly by starting from an initial situation analysis and using reflection as a guiding principle, with the process in particular coming first (4). Frequent reference is made to the structure of the program of, firstly, a theoretical framework and concrete inspiring examples (7) given by lecturers with extensive experience (5), then sharing ideas and feedback with like-minded participants from other contexts, which is experienced as an interesting benchmark, and finally focusing on one's own school, tailoring and filtering the input and converting it into actions, with or without support from the process coach who provides additional support/feedback (2). This structure, which one school leader identifies as an unknown and innovative vision of professionalization, provides broadening, deepening and/or renewal or refreshment (6). Working with an action plan in which schools set priorities tailored to their context (3) guarantees incentives combined with follow-up (11). As a result, schools succeed in reaching their predefined goal(s) and do not postpone them (8), which contributes to the perception of efficiency and effectiveness (5). Participants mention awareness of the importance of a theoretical framework and common language as this provides a foundation for a shared approach (8) and the applicability in their own schools (11). Finally, the PT encourages a transfer by means of concrete suggestions, focusing on application possibilities (22), although the time factor here is an obstacle to take action within 1 year, especially in combination with specific school-related challenges.

Those who participated in coaching sessions ($n$ = 66) stated that the content or knowledge that were covered during training days and PLC were built upon during those conversations ($M$ = 4.42, $SD$ = 0.97). Participants (Table 8) perceived the interaction between the three factors of the organizational dimension as reinforcing ($M$ = 5.56, $SD$ = 0.90) and indicated that coaching sessions stimulate the transfer to one's own practice ($M$ = 4.79, $SD$ = 0.95). The quantified qualitative data (Table A10 also show that the link between the three organizational forms of the PT is present. Participants mention the crucial role of, and the challenge for, the process coach as a central person in establishing links between the training days, PLC and coaching (12) and maintaining the big picture during the PT (8). Participants experience it as positive if the process coach makes that link explicit and provides time for it (5). Especially, participants who had a less positive experience with their process coach mentioned the need for an overview. In general, participants appreciated that the process coach acts as a critical sparring partner who tests the action plan against the theoretical framework and the initial situation analysis (4), which is also a call to put more effort into this if it is lacking (4).

**Table 8.** Person-related factor: job satisfaction.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| Job satisfaction at start of professionalization trajectory | | | 4.94 | 0.66 |
| Job satisfaction after 1 year of professionalization trajectory | 123 | Completely disagree (1)–completely agree (6) | 4.69 | 1.01 |
| Impact of job satisfaction on experience with the professionalization trajectory | | | 4.46 | 1.20 |

Summary: Experienced Interaction between approach of the PT and Perceived Outcomes

- Participants experience the interaction between the factors of both dimensions as reinforcing the following.
- The theoretical, science-based framework is followed [21].
- The above is offered in line with the predetermined goals [37,38].
- A first attempt to apply the insights to the own school context is stimulated by interaction with peers who can additionally inspire here from other contexts [29].
- Discussing the priorities or learning questions distilled for one's own school in a smaller, safe PLC group then provides further depth.
- After the above, further tailor-made support of the learning process can take place through coaching in a closed context [53].
- The above is where the approach and contributed expertise by the process coach plays an important role.

This is congruent with the frequent reference to the ways in which learning content can be used combined with enough possibilities for conversations about possible applications and how this contributes to the transfer and relevance of the content provided [24]. Through varied activating didactics [59] that provoke reflection, the frameworks and practical examples provided are applied to one's own school context [25] and further enriched in interaction with other participants and the experienced lecturers [19,39], both during formal and informal moments [53], in which participants experience acting as a team. This is in line with increased effectiveness of reflection combined with coaching by a process coach or peers [19,29]. The analysis of the qualitative data further shows the intricate interaction between creating action plans as a means to apply knowledge and the need to be inspired by theoretical frameworks and related insights.

4.3.3. Additional Influences Linked to the Organization and Approach of the Professionalization Trajectory

The qualitative data show some indirect factors that participants believed contribute to the perceived positive effect. First of all, the fact that the professionalization trajectory is funded by the Flemish government enhances accessibility. A school leader stated that the school board is willing to pay for this quality but that it still requires a serious budget to register several participants. Participants wished that professionalization for school leaders is always free of charge because they really need this support, and that only long-term quality trajectories can contribute to necessary change related to quality education. Moreover, participation is not without obligation due to the signed declaration of commitment, which additionally encourages targeted action. Because the broader team is involved in the extra process coaching days, where for some school leaders all the pieces of the puzzle fit (5), extra colleagues are involved in the story, which benefits the support and actual transfer, although the number of participants per school remains limited.

The communication prior to the program with an overview of all dates and contents and the intermediate informative e-mails, as well as the follow up of the initial situation analysis and the action plan, ensure a positive experience and welcome pressure. Neverthe-

less, it is also noticeable that some participants were not aware of the contents, dates and locations at the start of the program. A connection can be noticed with school communities where mainly one (coordinating) school leader (initially) initiates the participation and/or with recently started school leaders.

*4.4. (Mediating) Effects of External Factors on Learning Outcomes*

4.4.1. Person-Related Factor: Participants

Job satisfaction (Table 8, Table A11) prior ($M = 4.94$, $SD = 0.66$) and after 1 year remained stable, with more spread ($M = 4.69$, $SD = 1.01$).

MRA demonstrates a mediating effect of job satisfaction after 1 year with the organizational and didactic dimension of the PT on this learning outcome ($F(9, 52) = 2.97$, $p = 0.006$, $R^2 = 0.33$). Finally, participants pointed to the impact of job satisfaction on their experience of the PT ($M = 4.46$; $SD = 1.20$) but this was not apparent from the statistical analyses.

4.4.2. School-Related Factor: School Level

At the start of the PT, participants (Table 9; Table A12) named the challenging school context ($M = 4.44$, $SD = 0.76$), the presence of a constructive and growth-oriented school culture ($M = 4.30$, $SD = 0.76$), an enabling learning climate at the school ($M = 4.34$, $SD = 0.85$) and an individual level ($M = 4.03$, $SD = 0.80$) in their own school.

**Table 9.** School-related factor: school level, before the start of PT.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| Challenging school context | | | 4.44 | 0.76 |
| Growth-oriented school culture | 123 | Completely disagree (1)–completely agree (6) | 4.30 | 0.76 |
| Positive learning climate (school level) | | | 4.34 | 0.85 |
| Teacher-supportive learning climate | | | 4.03 | 0.80 |

Obstructive factors are the many absences due to illness and the teacher shortage. This forces school leaders into crisis management and focusing on solving practical problems. They described a survival mode with no place for the PT, nor for the transfer to their own school: "It is very difficult that we had to cancel many times because of COVID-19 and understaffing at school. As a result, we missed learning opportunities" (S-R116). This is more urgent in primary schools (small teams) and schools in the urban or metropolitan context. A school leader stated that the team was tired because of constant flexibility. A second aspect is falling into the 'delusion of the day' that causes ideas/plans to fade into the background and the context of the schools does not allow for a move, even if the PT is facilitating: "The most difficult thing in this process is providing time: time to inform colleagues, for professionalization, for colleagues to discuss, . . . " (S-R35). This is related to a structural challenge for Dutch-speaking education in Flanders and the Brussels-Capital Region: professionalization time is not a structural part of teachers' and school leaders' jobs. School teams need to choose: "It's an intense trajectory which means you regularly can't do your work at school, and this will remain" (S-R132). "It's an investment of time but my participation provides a clear return on investment" (D-R94).

4.4.3. School-Related Factor: School Team

Prior to the PT, participants experienced shared school leadership ($M = 4.46$, $SD = 0.68$). After year one, participants named the positive mindset among the school team ($M = 4.03$, $SD = 0.83$) (Table 10, Table A13).

**Table 10.** School-related factor: school team.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| Shared school leadership | 123 | Completely disagree (1)–completely agree (6) | 4.46 | 0.68 |
| Constructive mindset of school team in facilitating approach | 122 | | 4.03 | 0.83 |

In one school, shared leadership was (implicitly) evident: "this is not official in our school, but we have a strong policy team with shared responsibility and tasks. Teachers also take responsibility because they are motivated to do so" (S-R104). In another school theory, practice and formality may differ: "With that little word 'shared' they think they can say everything. But when it's time to take on tasks and responsibilities, they refuse" (D-R149). Motivations to engage more in shared leadership vary, e.g., increasing engagement, sharing workload, optimizing operations, etc.

The analyses show differences between school teams in terms of the effect of a perceived constructive mindset and facilitative approach among the team at the end of year one (Table A13) on learning outcomes: "My team adopts a constructively critical and reflective attitude; they have a growth mindset. I am a happy school leader". (D-R120); "It is difficult to create support in this team, which is probably influenced by the culture: autonomy is important" (D-R81).

The mindset and facilitative approach (Table 11) had a moderately strong influence on starting PLC ($R^2 = 0.10$). In addition to a moderately strong correlation for school leadership actions ($R^2 = 0.21$), there is a strong correlation for developing vision and actions on learning support ($R^2 = 0.26$). This shows that the team aspect influences support for and implementation of actions. MRA show for these learning outcomes a positive mediating influence of the perceived mindset and approach among the team with the organizational and didactical approach of the PT.

**Table 11.** Relationship between perceived positive mindset and facilitative approach of school team with outcome variable professionalization trajectory.

| Item | Single Regression Analysis | Multiple Regression Analysis Mindset and Approach + Factors of Organizational and Didactical Dimensions |
|---|---|---|
| Developing vision and actions on learning support | $F(1, 120) = 42.00$, $p < 0.001$, $R^2 = 0.26$, $R = 0.51$ | $F(9, 54) = 4.92$, $p < 0.001$, $R^2 = 0.45$, $R = 0.67$ |
| Actions on school leadership | $F(1, 120) = 31.89$, $p < 0.001$, $R^2 = 0.21$, $R = 0.46$ | $F(9, 54) = 6.80$, $p < 0.001$, $R^2 = 0.53$, $R = 0.73$ |

Participating in the PT ($n = 112$) together with a colleague contributed positively for transforming the content into concrete actions in one's own school, with a high mean of $M = 5.24$ (Table 12; Table A14). A limited number of individual participants ($n = 8$) mentioned the effect of participating alone on the transfer ($M = 3.69$): "I've asked to participate with colleagues, but the school leader didn't found that a good idea regarding the task load. Then I saw that other participants were present with a colleague and could immediately transform ideas concretely and divide tasks . . . " (D-R93).

**Table 12.** School-related factor: organization participation.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| Joint participation | 112 | | 5.24 | 0.81 |
| For the training path to be effective, it is essential to work well together with the other participating colleague | 122 | Completely disagree (1)–completely agree (6) | 5.32 | 0.71 |
| Individual participation | 8 | | 3.69 | 1.10 |
| Participation of school leader | 122 | | 5.27 | 0.89 |

Being able to collaborate professionally with a colleague is a prerequisite for perceived effectiveness (*M* = 5.32). Discussing together and being on each other's sounding board allows for deepening and translating the knowledge into actions in their school. According to participants, it contributes to the use and propagation of a common framework and language, which facilitates the transfer. Participants mentioned the positive effect on the mutual bond with their colleague. The fact that the school leader participates in the PT to bring about change appears to be positive (M = 5.27) but "If only the school leader participate to the PT, the impact is much smaller in the school. It's great that a second participant per school was allowed to participate" (S-R139).

Summary: (Mediating) Effects of External Factors on Learning Outcomes

Among person-related factors, the participants' perceived effects on the added value of participating in the PT are particularly striking, with participants themselves naming a bigger impact of their job satisfaction than statistical analyses show. The qualitative data show that several participants perceived the school context as an obstacle to their learning outcomes but regression analyses show that this correlation is less strong, meaning that quite a few school leaders with a school context perceived as challenging nevertheless engaged with the PT content, and vice versa. Qualitative data illustrate the dichotomy of shared leadership and a perceived constructive mindset and facilitative approach while the quantitative data show this was present in the participating school. Focusing on a growth mindset of the team and sharpening the 'sense of urgency' turns out to be essential for taking concrete actions and embedding them. Participation together with a colleague generates a positive impact.

**5. Discussion**

The central research question was to what extent organizational and didactic features of a PT for school leaders as well as their mutual interaction encourage concrete learning-driven actions on school development, and what are decisive elements in this, respectively. This is an innovative research focus because it examines how school leaders not only acquire insights and have the intention to implement change but are effectively encouraged to prepare and take action [60]. In order to prepare action plans and take concrete actions that are sustainable and tailored to the school, the underlying processes of acquiring insights and processing these insights (together with the team) are equally important to achieve depth.

It became clear that reaching the level 2 (acquiring) insights and 3 (processing acquired insights through reflection) of the Kirkpatrick and Kirkpatrick model [24], which was generally the case in this PT, is necessary for reaching level 4 (converting insights into action), but in itself is not sufficient. For instance, creating (and coaching) goal orientation and focused application on school practice is further needed. The other way around, reaching level 4 will also deepen knowledge (level 2) and reflection (level 3).

Participants described the structure of the PT as balanced with a logical cyclical progress and composition over a period of time [42,43]. For them, the training days represented a valid starting point for processing and transforming the theoretical frameworks and content into the school context, supplemented with concrete examples, in connection

with the PLC and coaching, at least for those who participated, where the preparation for one's own priorities is further and even more question-oriented analyzed. Preparing an action plan and using a varied and activating approach with focus on peer learning [19] during formal and informal moments [53] encourages reflection [42]. It also provides structure and rhythm to the transfer into school-specific goals. The PT is distinguished by its structure from common trajectories with usually only training days, PLC or coaching, where either theoretical frameworks or the transfer to one's own school context are missing. According to the participants, that interaction just increases learning efficiency and facilitates really concrete changes in one's own school [25]. Participants experience the active support of this conversion into a school vision and action plan and the follow up of plans made by the experienced lecturers and their own process coach [19,29] as contributing to the goal and action orientation of their approach and as useful pressure to actually take action.

Participants also mentioned the important role of process coaches during the PT and the positive effect and added value they experienced [53]. Quality implementation of process coaching is important both in facilitating and supporting (through feedback) school development processes and in establishing links between the content and approach of the training days, PLC and coaching sessions. The process coach facilitates the depth of learning processes through a theoretical growth-oriented framework [51,55] and by making things explicit [52]. However, a more negative experience with the process coach causes participants to participate little or not at all in the coaching sessions and to perceive the PLC as more superficial and less fruitful. Participants also found the interaction between the three organizational forms of the PT more unclear.

Given the crucial importance of their position and a quality fulfilment of it in combination with a high responsibility [6] and pressure [7,8], school leaders wished that (long-term) professionalization for their profession is free of charge [38], which also implies a form of appreciation [61]. Participants pointed out the importance of being concretely stimulated to take concrete actions on school development [43]: they appreciated the fact that a PT is not non-committal, a dimension only sporadically demonstrated by other research [24,44]. According to participants, the logistical and organizational support, follow-up and communication also adds to the positive perception about the PT. The time provided during the PT for concrete application was appreciated by participants, which is in line with research [53]. Nevertheless, the structural lack of professionalization time within the job remains one of the factors that school leaders perceive as negative because taking time outside the PT to thoroughly reflect and implement policy in collaboration with the team often gets snowed under by 'the delusion of the day' and emergency solutions to guarantee the school's basic role [41,46]. Participants indicated that this resulted in them achieving fewer predefined actions than desired.

When analyzing the quantitative and qualitative data using existing guidelines [21,23], the PT for school leaders appears to largely meet these criteria. An influence of mediated variables on outcomes is possible [37]. Based on the results, we can state that participation in a PT for school leaders can transcend the initial situation, while contextual situations can conquer during participation in the PT and create additional challenges in terms of prioritization [29,43,48]. On a team-oriented level, the growth-oriented mindset of the entire team during participation proves to be especially decisive for support, a shared framework and language, shared leadership and the transfer into concrete actions in one's own school. Participating together with a colleague increases the perceived support and concrete transfer to one's own school context [49]. In such a positive learning climate, school leaders experience more support, which supports them for further engagement [46,47,62].

## 6. Conclusions

This research offers a relevant and unique perspective on how professionalization trajectories for school leaders have a real impact on concrete actions in one's own school. Through mixed methods research, this study outlined an innovative view on factors

perceived by participants as working for effective PT for school leaders. This research will contribute to the evaluation and optimalization of current and future PT for school leaders and the targeted selection of valuable PT to be involved in [24]. This also leads to concrete recommendations for practice and further research.

### 6.1. Recommendations for Practice

Firstly, it is important that school teams have structural space for collaborative work and professionalization. Only in this way do planned actions on school policy lead to commitment by the whole team and sustainable implementation. Both the school leaders and government should facilitate this structural professional development time. It is also necessary that professionalization makes a structural part of the school leaders' job. Implementation of PT happens the best by directly linking this to concrete and goal-oriented school development in one's own school. The government should support long-term professionalization initiatives in which several team members per school can participate, precisely to increase a shared language and focus, and shared leadership.

Secondly, the government should support powerful professionalization initiatives organized by different education-oriented partners, with opportunities to encourage relevant and practice-oriented school development. In doing so, it is important to ensure a thoughtful combination of and interaction between training days with a focus on theoretical frameworks and practical examples, encouraging reflection (including from 360° feedback), a first exchange with peers and inspiration in the function of the own school context, with (as a common thread) the elaboration of a concrete policy/action plan; meetings of professional learning communities with the partnership to convert the frameworks and inspiration provided into the school context and to discuss school-specific priorities/learning questions critically and constructively with peers; support using process coaching, with the aim of further concretizing the school policy and/or action plan; and individual coaching per school to further support the conversion of inspiration, insights and a growing action plan into school-specific implementations and to respond to individual leadership questions. This organizational dimension is best combined with facilitating networking opportunities. In this way, PT can best take advantage of opportunities that arise within school partnerships to stimulate peer learning and peer feedback.

### 6.2. Recommendations for Further Research

At the time of the data collection, the PT was still ongoing. In addition to the learning outcomes examined after 1 year of training, it is relevant to examine how school leaders perceive further sustainability, as well as how further progress and integration can be facilitated, given that embedding learning outcomes takes time [23,43] and is best tailored to each school. How school leaders further implement and use the action plan based on the initial PT is interesting to investigate.

Further research on the approach of the process coach that school leaders experience as facilitating is relevant because this research already indicated that process coaching has an impact on the perceived quality of professionalization trajectories [53]. Because learning is both an individual and social activity, it is interesting to explore what relationship school leaders find valuable within a PT. Starting from existing partnerships is a strength for jointly undertaking a growth process in terms of school development. At the same time, it can be a brake if school leaders are less motivated, or the focus of the PT and the PLC they participate in does not match their needs. Mapping the factors that may (or may not) be facilitating will provide insight into criteria for sustaining the effects of a PT for school leaders or standalone PLC of existing partnerships. Finally, this study focused on the learning outcomes of school leaders, while the research literature shows that there may be secondary outcomes associated, such as professional well-being, isolation and the network [25], with an effect on school development. This is an important goal for further research.

## Appendix A

**Table A1.** Independent variable organizational dimension.

| Label | Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|---|
| | Assessment of the quality of training days | | | | | |
| Training days | How do you experience the PT approach to your learning process? <br> - Getting new inspiration based on knowledge, skills, attitudes and insights during the training days <br> - Being given sources to deepen my understanding of the content covered during the training days <br> - Expertise of lecturers on the training days | 131 | Completely disagree (1)–completely agree (6) | 4.95 | 0.63 | 0.713 |
| | Assessment of the quality of professional learning communities | | | | | |
| PLC | To what extent do you agree with these statements about the PLC you participated in? <br> - Participating in a PLC yourself makes it easier to implement such professionalization approaches in one's own school and assess strengths and challenges <br> - In our school we definitely set up a PLC operation as part of the school-wide development and professionalization policy <br> - Our process coach's approach is inspiring for how to facilitate development processes in a PLC <br> - The PLC meetings ensure in-depth thinking about a vision for the implementation of a policy on learning support <br> - PLC meetings provide for in-depth thinking about priorities <br> - PLC meetings provide new insights <br> - PLC meetings generate new ideas <br> - PLC meetings ensure that concrete possible actions begin to be developed/planned <br> - The PLC meetings (afterwards) provide energy to continue working <br> - The fact that there are both school leaders and internal support staff in our PLC is an added value <br> - Participation in this PLC has strengthened personal ties between participants <br> - The PLC provides an opportunity to step out of one's own educational practice/daily rush for a while <br> - Agenda-wise, the PLC may be inconvenient, but once present, I am satisfied that I participated <br> - Participating in a PLC myself makes me realize the added value of this professionalization approach <br> - As it currently stands: as far as I am concerned, this PLC can certainly continue <br> - If I get the chance to participate in a PLC after the professionalization trajectory, I will definitely take part in it <br> - I feel at home in the current PLC <br> - In the PLC, I feel supported by my colleagues <br> - The contribution of both school leaders and internal support staff is considered equal in our PLC <br> - There is no competition between schools in the PLC | 130 | Completely disagree (1)–completely agree (6) | 4.85 | 0.67 | 0.942 |

**Table A1.** *Cont.*

| Label | Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|---|
| | Assessment of the quality of coaching sessions | | | | | |
| | To what extent do you agree with these statements? | | | | | |
| Coaching sessions | - Coaching sessions allow for in-depth reflection through of a vision for conducting a policy about learning support <br> - Coaching sessions help to think about priorities in depth <br> - Coaching sessions provide new insights <br> - Coaching sessions lead to new ideas <br> - Coaching sessions lead to the start of working out/planning concrete possible actions <br> - Coaching sessions afterwards provide the energy to continue working <br> - (Individual) coaching sessions form an added value in a two-year professionalization process <br> - (Individual) coaching sessions increase the focus on the set priorities <br> - (Individual) coaching sessions support the transfer of priorities into concrete policy actions within the own school <br> - If I get the chance to follow a professionalization trajectory that includes coaching interviews, I would choose it <br> - I find it positive that during the PT there is a strong emphasis on participation in the coaching conversations as an integrated part of the PT | 66 | Completely disagree (1)–completely agree (6) | 4.83 | 0.79 | 0.910 |

**Table A2.** Independent variable didactical dimension.

| Label | Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|---|
| | Assessment of the quality of providing practice-based theoretical frameworks | | | | | |
| | Which approach contributed to competence development? | | | | | |
| Theoretical framework | - Concrete practical examples and tips were provided <br> - A supporting framework for thinking was provided <br> - A new perspective on certain aspects of school policy was provided <br> - Current forms of school policy were critically examined <br> - It was recognizable from the challenges I face | 122 | Completely disagree (1)–completely agree (6) | 4.76 | 0.82 | 0.868 |
| | Assessing of the quality of targeting with an action plan | | | | | |
| Action plan | - An initial situation analysis allows conscious reflection on the current state of affairs <br> - An initial situation analysis reveals the broad context of learning support policy and the various points of attention <br> - An initial situation analysis allows us to assess whether we are on the right track (or not) <br> - An initial situation analysis prompts us to think about concrete actions <br> - An initial situation analysis as a baseline enables a follow-up measurement in the future <br> - Returning to the initial situation analysis (own, school team, parents and/or pupils) during the continuation of the professionalization trajectory increases the added value <br> - An initial situation analysis helps to set targeted priorities <br> - There was a stimulus to actively think about concrete action(s) <br> - Being encouraged in this phase by means of e.g., assignments, questions, ... to actually translate ideas into first (possible) action(s) in my school, based on the insights gained during the training days or PLC | 131 | Completely disagree (1)–completely agree (6) | 4.92 | 0.62 | 0.883 |

**Table A2.** *Cont.*

| Label | Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|---|
| | Assessment of the quality of a varied and activating approach | | | | | |
| Approach | How do you experience the approach of the professionalization trajectory for your learning process?<br><br>- Alternation between training days, PLC meetings, coaching<br>- Alternation between training days for teachers<br>- Variety in theoretical input and exercises with application to own school<br>- Variety in working methods (discussions, games, brainstorming, …)<br>- Variety of methods of exchange with other participants (own colleague, PLC, other colleagues) and coaching | 131 | Very negative (1)–very positive (6) | 4.90 | 0.56 | 0.832 |
| | Assessment of the quality of differentiated support for the learning process | | | | | |
| Support learning process | How do you experience the approach of the professionalization trajectory for your learning process?<br><br>- For specific questions that I can call on coaching/coaching when turning ideas into first (possible) action(s) in my school<br>- Permanent PLC process coach and coaching interviews<br>- Expertise process coach own PLC and coaching interviews<br>- Choices (determine own priorities, choice sessions, possibility to use questioning of school team, pupils, parents)<br>- Opportunity to experience the functioning of a PLC in order to learn from it for your own school | 131 | Completely disagree (1)–completely agree (6) | 4.83 | 0.82 | 0.858 |
| | Assessment of the quality of possibilities for networking | | | | | |
| Networking | How do you experience the approach of the professionalization trajectory for your learning process?<br><br>- Cooperating/exchanging with another school community/school group/another partnership during the training days.<br>- Being able to participate in a professional learning group (PLC) of directors/internal support staff from your own school community/school group/another partnership<br>- Formal networking and exchange opportunities (e.g., during exercises, PLC, etc.)<br>- Informal networking opportunities (e.g., during breaks) | 131 | Completely disagree (1)–completely agree (6) | 4.91 | 0.61 | 0.790 |
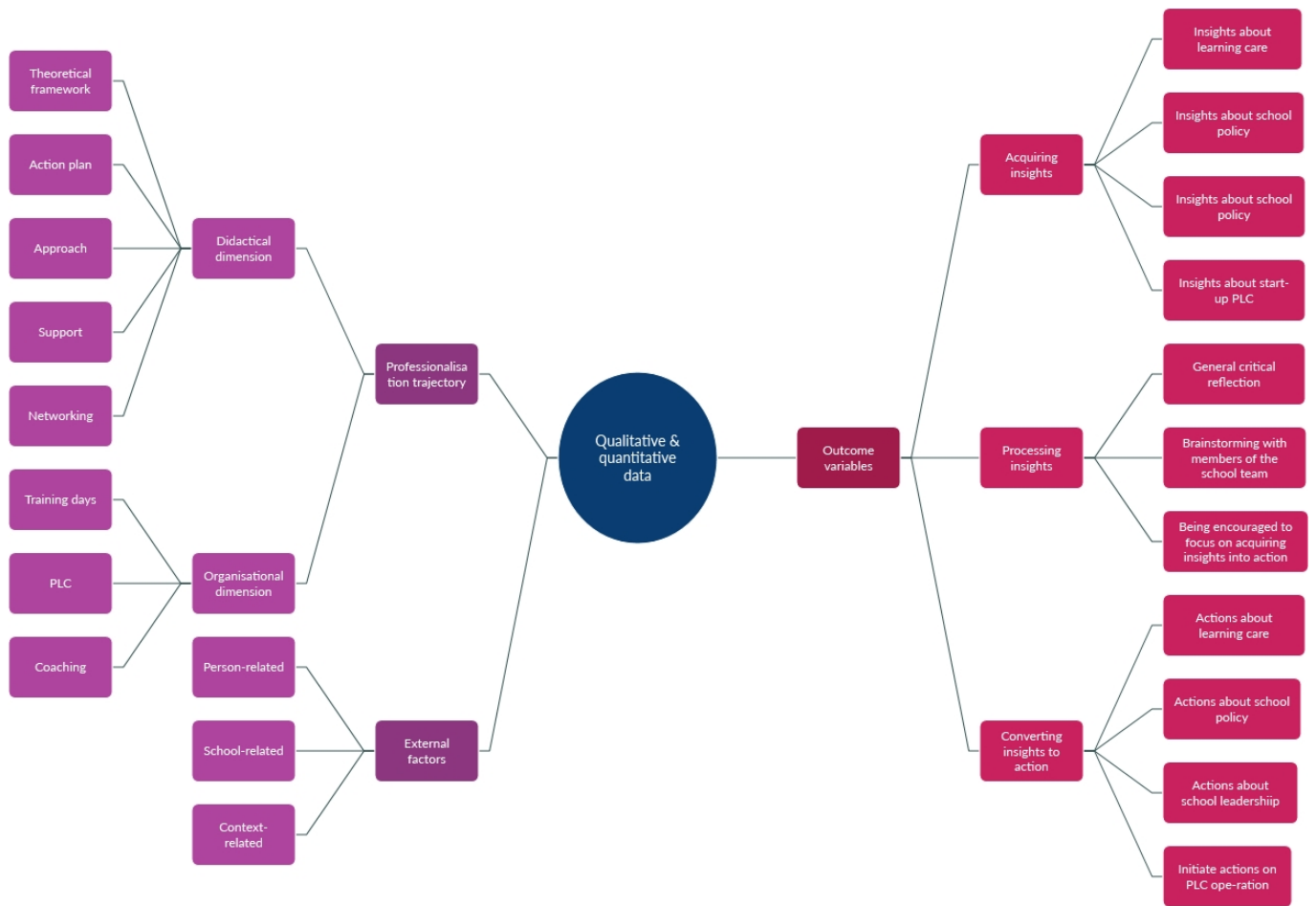
**Figure A1.** Visual representation processing qualitative data in NVIVO.

**Table A3.** Outcome variable acquiring insights to actions.

| Items | N | Six-Point Scale | M | SD |
|---|---|---|---|---|
| **Develop vision and action on learning support** | | | | |
| - Expand vision (broad school vision and/or vision on learning support)<br>- Adjust vision (broad school vision and/or vision on learning support<br>- Develop action plan based on learning support<br>- Concrete actions based on broad basic support and increased learning support to the classroom floor | 122 | | 4.33 | 0.99 |
| **Actions about leadership** | | Completely disagree (1)–completely agree (6) | | |
| - Take concrete actions based on personal educational leadership<br>- Take concrete actions based on shared educational leadership | 122 | | 4.16 | 1.05 |
| **Actions about launching professional learning community** | | | | |
| - Launch professional learning community | 122 | | 3.90 | 1.30 |

**Table A4.** Quantified qualitative data learning outcome professionalization trajectory.

| **Quantified Qualitative Data Learning Outcome Professionalization Trajectory** | | |
|---|---|---|
| Converting insights to action (or start) | learning support | - implement effective guiding principles/school-wide principles: 10<br>- (updating) pedagogical vision/policy on learning support: 8<br>- implementation of detailed supportive continuum for pupils' learning: 8<br>- classic designation and interpretation of supportive roles (abolish/distribute): 6<br>- visualizing approach and/or organization chart: 5<br>- towards 'every teacher is a supportive teacher': 5<br>- self-regulated learning: 3<br>- importance of being explicit to all involved: 3<br>- optimize approach of class councils: 2<br>- developing supportive plans: 1<br>- structuring the approach: 1 |
| | school leadership | - creating meeting time for staff: 6<br>- making things explicit: 2<br>- shared leadership: implementing actions: 2<br>- optimize participation structures: 1<br>- practice approach: 1<br>- team building activities during pedagogical study days: 1 |
| | initiate actions on PLC operation | - start (cross-school) PLCs/learning groups/optimizing current teams: 14<br>- train team members as process coaches: 9<br>- schedule (consultation) time: 3<br>- pedagogical study day on this theme: 2<br>- share agenda in advance: 1<br>- introducing preparation: 1<br>- handle time control: 1<br>- integrate coach-the-coach principle: 1 |
| Overall | | - develop professionalization policy and vision on lifelong learning with time for peer learning: 10<br>- (multi-year) action plan as a basic document for the entire team and facilitate implementation (where to, why and how): 8<br>- experiencing more support, sense of urgency: 5<br>- taking time: 5<br>- incorporate cyclical repetition/refreshment: 4<br>- incorporate cyclical evaluation (to do—doing—done): 3<br>- use an integrated approach: 2<br>- celebrate successes (and failures are also allowed): 1 |

**Table A5.** Simple regression analysis proportion of explained variance factor organizational and didactical dimensions in initiating actions on acquiring insights into action on learning support.

| Item | Simple Regression Analysis (SRA) |
|---|---|
| Proportion of explained variance of three organizational factors on initiating actions on learning support | |
| Training days | $F(1, 120) = 10.24$, $p = 0.002$, $R^2 = 0.08$, $R = 0.28$ |
| Professional learning community (PLC) | $F(1, 120) = 16.43$, $p < 0.001$, $R^2 = 0.12$, $R = 0.35$ |
| Coaching sessions | $F(1, 62) = 10.11$, $p = 0.002$, $R^2 = 0.14$, $R = 0.37$ |
| Proportion of explained variance of five didactical factors on initiating actions on learning support | |
| Theoretical framework | $F(1, 120) = 8.92$, $p = 0.003$, $R^2 = 0.07$, $R = 0.26$ |
| Action plan | $F(1, 120) = 16.49$, $p < 0.001$, $R^2 = 0.12$, $R = 0.35$ |
| Approach | $F(1, 120) = 8.50$, $p = 0.004$, $R^2 = 0.07$, $R = 0.26$ |
| Support | $F(1, 120) = 6.24$, $p = 0.014$, $R^2 = 0.05$, $R = 0.22$ |
| Networking | $F(1, 120) = 7.09$, $p = 0.009$, $R^2 = 0.06$, $R = 0.24$ |

**Table A6.** Simple regression analysis proportion of explained variance factor organizational and didactical dimensions in initiating actions on school leadership.

| Item | Simple Regression Analysis (SRA) |
|---|---|
| Proportion of explained variance of three organizational factors on initiating actions on school leadership | |
| Training days | $F(1, 120) = 7.60$, $p = 0.007$, $R^2 = 0.06$, $R = 0.24$ |
| Professional learning community (PLC) | $F(1, 120) = 27.86$, $p < 0.001$, $R^2 = 0.19$, $R = 0.43$ |
| Coaching sessions | $F(1, 62) = 13.77$, $p < 0.001$, $R^2 = 0.18$, $R = 0.43$ |
| Proportion of explained variance of five didactical factors on initiating actions on school leadership | |
| Theoretical framework | $F(1, 120) = 32.67$, $p < 0.001$, $R^2 = 0.21$, $R = 0.46$ |
| Action plan | $F(1, 120) = 18.99$, $p < 0.001$, $R^2 = 0.14$, $R = 0.37$ |
| Approach | $F(1, 120) = 11.51$, $p < 0.001$, $R^2 = 0.09$, $R = 0.30$ |
| Support | $F(1, 120) = 6.11$, $p = 0.015$, $R^2 = 0.05$, $R = 0.22$ |
| Networking | $F(1, 120) = 4.35$, $p = 0.039$, $R^2 = 0.04$, $R = 0.19$ |

**Table A7.** Simple regression analysis proportion of explained variance factor organizational and didactical dimensions in initiating actions on PLC operation.

| Item | Simple Regression Analysis (SRA) |
|---|---|
| Proportion of explained variance of three organizational factors on initiating actions on PLC operation | |
| Training days | $F(1, 120) = 3.37$, $p = 0.069$, $R^2 = 0.03$, $R = 0.17$ |
| Professional learning community (PLC) | $F(1, 120) = 17.70$, $p < 0.001$, $R^2 = 0.13$, $R = 0.36$ |
| Coaching sessions | $F(1, 62) = 6.60$, $p = 0.013$, $R^2 = 0.10$, $R = 0.31$ |
| Proportion of explained variance of five didactical factors on initiating actions on PLC operation | |
| Theoretical framework | $F(1, 120) = 1.39$, $p = 0.241$, $R^2 = 0.01$, $R = 0.11$ |
| Action plan | $F(1, 120) = 3.34$, $p = 0.070$, $R^2 = 0.03$, $R = 0.16$ |
| Approach | $F(1, 120) = 6.32$, $p = 0.003$, $R^2 = 0.05$, $R = 0.22$ |
| Support | $F(1, 120) = 8.75$, $p = 0.004$, $R^2 = 0.07$, $R = 0.26$ |
| Networking | $F(1, 120) = 9.08$, $p = 0.003$, $R^2 = 0.07$, $R = 0.27$ |

**Table A8.** Perceived added value of interacting professionalization actions on learning outcomes.

| Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|
| Added value of combining elements of professionalization in 1 trajectory | | | | | |
| - That different elements of professionalization (training days, PLG, coaching, baseline analysis) are combined in one trajectory increases the added value | 130 | | 5.02 | 0.84 | / |
| Building on content/insights from training days and professional learning communities during coaching sessions | | | | | |
| To what extent do you agree with these statements? | | | | | |
| - During the coaching sessions, there was further building on contents/insights from the training days <br> - During the coaching sessions, there was a clear interaction with what was covered during the PLC | | Completely disagree (1)–completely agree (6) | 4.42 | 0.97 | 0.749 |
| Interaction between training days, PLC and coaching sessions is reinforcing | | | | | |
| To what extent do you agree with these statements? | 66 | | | | |
| - The interaction between the training days and the coaching works reinforcing <br> - The interaction between the PLC and coaching is reinforcing | | | 5.56 | 0.90 | 0.895 |
| Coaching sessions stimulate conversion | | | | | |
| To what extent do you agree with these statements? | | | | | |
| - The coaching sessions encouraged a conversion of the content into the school context and practice | | | 4.79 | 0.95 | / |

**Table A9.** Multiple regression analysis proportion of explained variance of interacting organizational and didactical dimensions in learning outcomes.

| | Interaction of 3 Factors in Organizational Dimension | Interaction of 5 Factors in Didactical Dimension | Interaction of 8 Factors in Organizational and Didactical Dimensions |
|---|---|---|---|
| Developing vision and action on learning support | $F(3, 60) = 5.02$, $p = 0.004$, $R^2 = 0.20$, $R = 0.45$ | $F(5, 116) = 3.66$, $p = 0.004$, $R^2 = 0.14$, $R = 0.37$ | $F(8, 55) = 2.23$, $p = 0.039$, $R^2 = 0.25$, $R = 0.50$ |
| Actions on school leadership | $F(3, 60) = 7.92$, $p < 0.001$, $R^2 = 0.28$, $R = 0.53$ | $F(5, 116) = 7.14$, $p = 0.001$, $R^2 = 0.24$, $R = 0.49$ | $F(8, 55) = 6.57$, $p < 0.001$, $R^2 = 0.49$, $R = 0.70$ |
| Initiate actions on PLC operation | $F(3, 60) = 2.61$, $p = 0.060$, $R^2 = 0.12$, $R = 0.34$ | $F(5, 116) = 2.34$, $p = 0.046$, $R^2 = 0.09$, $R = 0.30$ | $F(8, 55) = 1.08$, $p = 0.389$, $R^2 = 0.14$, $R = 0.37$ |

**Table A10.** Qualitative data of interaction organizational dimension professionalization process.

| Qualitative Data of Interaction Organizational Dimension Professionalization Process |
|---|
| Experiences with interaction organizational dimension: |
| - good mix and balance, combination definitely maintained: only training days do not ensure transfer, only PLC does not ensure frameworks: 19 |
| - achieves the goal, great contribution to effectiveness/return on investment, increases efficiency and application, otherwise it may remain somewhere, cannot 'disappear' in PLC: 13 |
| - action plan: obligatory action and transfer, follow-up: 11 |
| - link between training days, PLC and coaching: strong PT, conscious attention to this and making links contributes to transformation: 8 |
| - enriching, inspiring examples: 7 |
| - broadens and deepens and/or renews/refreshes: 6 |
| - lecturers: experience and expertise, interesting and inspiring: 5 |
| - stimulating reflection as common thread instead of result, opportunity to reflect and think things through, starting situation analysis as starting point: 4 |
| - process coach: attention and time for transfer (5) + critical sparring partner: 4 |
| - approach that responds to the diverse group (differentiation): own priorities/learning questions, coaching + self-management of learning process: 3 |
| - process coach: presence support, feedback: 3 |
| - view of the big picture, coherence: 3 |
| - meets the need for individual coaching among school leaders, although this is still a relatively unknown approach in education: 2 |
| - thinking process is central, not the result as such: 1 |
| - ensures necessary repetition: 1 |
| - presence recognition and acknowledgement: 1 |
| - strong cohesive team who thinks more broadly than what education should be: 1 |
| - first training days closer together is good: 1 |
| - different vision of professionalization: not separate pieces, but integrated process, getting used to: 1 |
| Actions: |
| - generate transfer, generate concrete actions, applicable: 22 |
| - starting from a common framework and language, awareness of importance of framework and foundation: 8 |
| - approach is applicable in own school operation (structure and content of program), participating in PLC yourself is training in approach, practice what you preach: 11 |
| - unconscious learning: 2 |
| - critical reflection on purpose, 'why do we do what we do?': 10 |
| - setting priorities for own school: 3 |
| Challenges: |
| - process coach: central person organizational forms in terms of transfer (12) and view of overall picture: 8 |
| - process coach as critical sparring partner in connection with testing action plan against framework and initial situation: 4 |
| - the theoretical framework recurs visually during the trajectory: 1 |

**Table A11.** Person-Related Factor: Job Satisfaction.

| Items | *N* | Six-Point Scale | *M* | *SD* | Cronbach's *α* |
|---|---|---|---|---|---|
| Job satisfaction at start of professionalization trajectory | | | | | |
| I am satisfied with my job | | | | | |
| I feel good at work | | | 4.94 | 0.66 | 0.872 |
| I am satisfied with what I achieve at work | | | | | |
| Job satisfaction after 1 year of professionalization trajectory | 123 | Completely disagree (1)–completely agree (6) | | | |
| I am currently satisfied with my job | | | 4.69 | 1.01 | / |
| Impact of job satisfaction on experience with the professionalization trajectory | | | | | |
| My job satisfaction has an impact on my experience of the professionalization trajectory | | | 4.46 | 1.20 | / |

**Table A12.** School-related factor: school level, before the start of PT (initial situation analysis).

| Items | *N* | Six-Point Scale | *M* | *SD* | Cronbach's *α* |
|---|---|---|---|---|---|
| Challenging school context | | | | | |
| Our school context is challenging in terms of:<br>- learning difficulties and learning disabilities<br>- problems with behavior<br>- staff policy, in particular to fill vacancies<br>- HR policy, in particular to get all noses in the same direction and to ensure that every member of the school team wants to implement the predefined policy<br>- resulting in a high workload for the school team<br>- which involves a high workload for me as a principal/internal sub-assistant<br>- but I can delegate my work as principal/the director to other people in the school team | 123 | Completely disagree (1)–completely agree (6) | 4.44 | 0.76 | 0.741 |
| Growth-oriented school culture | | | | | |
| Culture in which . . .<br>- teachers are usually willing to try out new ideas<br>- teachers are constantly learning and developing new ideas<br>- teachers are doers who know how to get things done<br>- teachers are willing to take risks that take the school to the next level<br>- teachers are encouraged to go to the maximum of their abilities | 123 | Completely disagree (1)–completely agree (6) | 4.30 | 0.76 | 0.869 |
| Positive learning climate (school level) | | | | | |
| Learning climate at school that:<br>- ensuring attractive training facilities<br>- provides both sufficient financial, material resources and time for teachers to develop their professional skills<br>- ensures that each team member receives the training he needs; rewards team members who develop professionally.<br>- team members who make an effort to learn new things are respected and valued for this. | 123 | Completely disagree (1)–completely agree (6) | 4.34 | 0.85 | 0.802 |

**Table A12.** *Cont.*

| Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|
| Teacher-supportive learning climate | | | | | |
| Learning climate at school where:<br>- individual team members are not afraid to admit mistakes<br>- individual team members dare to discuss mistakes with each other, individual team members are not afraid to discuss work problems openly<br>- teachers help each other in learning<br>- teachers give each other open and honest feedback | 123 | Completely disagree (1)–completely agree (6) | 4.03 | 0.80 | 0.866 |

**Table A13.** School-related factor: school team.

| Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|
| Shared school leadership (at the start of the professionalization trajectory) | | | | | |
| In our school, there is leadership in which:<br>- leadership is broadly distributed across the staff corps<br>- there is a distribution of roles essential to the achievement of school objectives<br>- staff members are involved in making decisions<br>- there is an effective consultation structure for taking decisions<br>- that actively supports and promotes good and effective communication between staff members<br>- there is an appropriate degree of autonomy and freedom in decision-making | 123 | Completely disagree (1)–completely agree (6) | 4.46 | 0.68 | 0.856 |
| Constructive mindset of school team in facilitating approach (end of year 1) | | | | | |
| - Our school team is currently positive about rolling out a policy on learning support and action plan<br>- Our school team currently wants to actively help implement the roll-out of a policy on learning support and action plan<br>- There is sufficient time and space within my responsibilities to develop and roll out the policy on learning support and action plan<br>- Our school currently has a strong substantive policy team, which increases the effectiveness of the professionalization process<br>- In our school, there is currently shared leadership (more shoulders make less work) | 122 | Completely disagree (1)–completely agree (6) | 4.03 | 0.83 | 0.778 |

**Table A14.** School-related factor: organization participation.

| Items | N | Six-Point Scale | M | SD | Cronbach's α |
|---|---|---|---|---|---|
| Joint participation | | | | | |
| - Participating with a colleague has an effect on applying the contents to one's own school context <br> - Participating with a colleague has an effect on starting to translate the contents into concrete actions in one's own school | 112 | | 5.24 | 0.81 | 0.990 |
| - For the training path to be effective, it is essential to work well together with the other participating colleague | 122 | Completely disagree (1)–completely agree (6) | 5.32 | 0.71 | / |
| Individual participation | | | | | |
| - Participating alone has an effect on applying the contents to one's own school context <br> - Participating alone has an effect on starting to convert to concrete actions in one's own school | 8 | | 3.69 | 1.10 | 0.999 |
| Participation of school leader | | | | | |
| - To bring about real change, it is essential for a school leader to participate in this pathway | 122 | | 5.27 | 0.89 | / |

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