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Facilitators in Teacher Professional Development: Predictors of Acceptance and Feasibility of Language Skill Interventions

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ABSTRACT

This study investigates factors affecting facilitators' acceptance and estimated feasibility within teacher professional development as key attitudes relevant to the transfer process of such initiatives. Drawing on survey data from 41 facilitators participating in a multi-project professional development program focused on language skills and literacy across primary and secondary education, the study tested three regression models examining the effects of facilitators' professional background, contextual working conditions, and their evaluation of the qualification program on those key attitudes. The results indicate that both contextual conditions and facilitators' evaluations of the qualification significantly predicted their attitudes toward the intervention. A positive evaluation of the qualification program was associated with higher acceptance and estimated feasibility. In contrast, engagement in parallel formats of teacher professional development activities negatively predicted feasibility, suggesting that workload pressure may hinder the perceived viability of implementing new practices. Additionally, a marginally significant positive relationship between perceived autonomy and feasibility suggests potential benefits of autonomy-supportive training environments. Future research should further explore autonomy's role with larger and more diverse samples. Facilitator characteristics, such as prior experience in language or adult education, did not significantly predict acceptance or feasibility—possibly reflecting the compensatory effects of high-quality training or limited variability within the sample. Overall, these findings underscore the importance of both structural conditions and training quality in shaping facilitators' readiness to implement new practices. They highlight the need to reduce competing demands and to design engaging, high-quality training formats that enhance the success of professional development programs. This study contributes to a clearer understanding of the transfer process and supports the development of more effective and sustainable training interventions in educational contexts.

KEYWORDS

Teacher training, teacher professional development, language skill programs, transfer processes, facilitators

Introduction and Theoretical Framework

Advanced teacher training plays a pivotal role in improving the quality of education in schools. Professional development programs are designed to enhance in-service teachers' skills, knowledge, and instructional strategies beyond their initial qualifications (Desimone, 2009). Over recent decades, research has focused on identifying characteristics that make teacher professional development successful (Lipowsky & Rzejak, 2019; McDowall et al., 2007; Timperley et al., 2007).

A prominent approach in teacher professional development is the multiplier model, which relies on experienced educators to disseminate knowledge and best practices to teachers as peers (Behr et al., 2020; Karsenty et al., 2021). This model has gained popularity due to its scalability and potential to establish sustainable professional learning communities. Educators act as facilitators, supporting teachers in acquiring

and implementing new educational strategies. However, despite extensive research on teacher training effectiveness, the role of facilitators within this process remains relatively understudied (Lipowsky, 2019). Interest in facilitators stems from recognizing their critical role in expanding professional development contexts (Cobb and Jackson 2021; Rösken-Winter et al. 2015; Zehetmeier 2015; Desimone 2009; LeFevre and Richardson 2002;)

The present study aims to address this research gap by examining factors affecting facilitators' evaluations of language skill interventions, in the context of the large-scale project “BiSS-Transfer” (“Bildung durch Sprache und Schrift”/Education through language and writing), commissioned by the German Federal Ministry of Education and Research (BMBF). The project focuses on implementing interventions for language skills and literacy through teacher training and utilizes the multiplier model to ensure wide-reaching and sustainable professional development efforts. The development of language skills and literacy here means repeatedly demanding and supporting language, in order to successively develop language skills. Language skills and literacy are fundamental for academic success, and their development requires continuous instructional support across subjects. The BiSS-Transfer project consists of four subprojects addressing various aspects of language skills in both primary and secondary education.

Similar to how teachers shape students' learning outcomes it can be assumed that facilitator's also affect teachers' engagement and the implementation of training contents (Lipowsky, 2019; Prediger et al., 2017; McDowall, 2007). Yet, there is limited empirical evidence on what affects facilitators' perceptions and attitudes toward professional development initiatives. Lipowsky (2014) developed a comprehensive framework for teacher education, known as the supply-benefit model, which has been refined over time (Lipowsky, 2019; Lipowsky & Rzejak, 2017). This model explains how teachers engage with professional development opportunities and the factors that influence their effectiveness. It emphasizes the interaction between training quality, teachers' motivation and participation, individual prerequisites, and contextual conditions, all of which determine the extent to which training translates into teaching practice. According to the model, facilitators play a crucial role in shaping teachers' perceptions and engagement through their characteristics, as well as their organizational and instructional choices. These characteristics include their expertise, beliefs, ability to convey the relevance of training content, and capacity to motivate participants. To understand what affects facilitators' evaluations, this study examines three key sets of factors: (1) *characteristics of the facilitators*, (2) *contextual conditions*, and (3) *the evaluation of their own qualification*.

(1) *Characteristics of Facilitators*

Research suggests that facilitators' background knowledge, expertise, and ability to present content in an engaging manner is crucial for the success of teacher training (Hagena, Bruns & Gasteiger, 2022; Jäger & Bodensohn, 2007; Linder, 2011). While facilitators' general professional experience plays a role, their subject-specific expertise and ability to connect training content to practical teaching contexts appear to be even more critical. However, the extent to which these factors influence facilitators' view on the programs contents is not clear.

(2) *Contextual Conditions*

Practical constraints, such as workload, autonomy in learning, and the structure of the training environment, have been linked to engagement with professional development (Timperley, 2007). Facilitators' responsibilities often include managing multiple training roles, balancing administrative duties, and maintaining professional growth. These factors may influence how they perceive the training contents.

(3) *Evaluation of own qualification*

Research indicates that facilitators' perceptions of the qualification they received—such as the organization, clarity, and perceived relevance of the content—can impact their acceptance of the educational interventions they are expected to disseminate (Lipowsky, 2019; McDowall et al., 2007). Positive experiences during the qualification process may enhance their confidence and willingness to advocate for the implementation of training content.

Building on the aforementioned findings and expectations, this study investigates whether contextual conditions, facilitators' characteristics, and the evaluation of their own qualification process predict their

acceptance and *estimated feasibility* of language skills interventions. These dependent variables can be considered as concepts relevant for the transfer process (Meudt et al., 2020). Acceptance reflects the extent to which facilitators perceive an innovation as satisfactory and beneficial, drawing on both theoretical insights and practical experiences (Petermann, 2014). High acceptance is essential for ensuring that facilitators actively engage with and promote language skills programs. Feasibility, on the other hand, refers to the extent to which an innovation can realistically be implemented within existing school structures and conditions (Karsh, 2004). Practical constraints, such as workload, institutional support, and available resources, strongly influence whether facilitators perceive an intervention as viable. Research suggests that feasibility may even be a stronger predictor of the actual transfer of innovations than acceptance alone (Odom et al., 1993). Despite its importance, feasibility has received less attention in empirical studies, highlighting the need for further investigation into its role in professional development programs. Since both acceptance and estimated feasibility remain at the facilitator level, this study serves as a foundational step before examining transfer effects on teachers and students. By integrating these constructs, it contributes to a broader understanding of the multiplier model in professional development and its role in sustaining effective teacher training programs.

Research Question:

Can contextual conditions, characteristics of the facilitators, and their evaluation of the qualification process predict their acceptance and estimated feasibility of language skill interventions as transfer-relevant attitudes?

It is hypothesised that (1) greater experience in language skills, (2) favourable contextual conditions, and (3) a more positive evaluation of the qualification process will be associated with higher acceptance and estimated feasibility of the training content.

Methods

Research context

The present study is part of a larger initiative called *BiSS-Transfer*, which builds upon the previously established *BiSS* project. The program's interventions are primarily evidence-based, having been developed and validated within the original *BiSS* framework. However, in the context of *BiSS-Transfer*, some components were newly added or adapted to address evolving educational needs. *BiSS-Transfer* thus represents both a continuation and an expansion of the original initiative, aiming to scale and implement these interventions more broadly through a blended-learning qualification program for facilitators.

The project consists of four subprojects which focus on different aspects of the development of language skills and literacy; they take place in primary as well as secondary education (Lese-, Schreib-, Fach- and VERA-BiSS). Each sub-project follows a similar framework, addressing areas in reading and writing. Teacher trainings ranged from 4 to 18 months, with the duration varying based on whether the 6- to 12-month tutoring phase was integrated or conducted subsequently. Lese-BiSS consists of a classic training intervention in primary schools, which is predefined and requires rather high adherence to concept and implementation guidelines. Similarly, Schreib-BiSS is a writing training intervention in primary schools which requires high adherence. On the other hand, Fach-BiSS is a program for mathematics teachers in secondary schools, which aims to implement language skills in specific parts of the curriculum, for instance, calculations with percentages. It takes a broader perspective and aims to tap into the approach of incorporating language skills while teaching mathematics more generally. Similarly, VERA-BiSS also focuses on developing classroom activities to enhance reading skills, using results from the mandatory 8th-grade German learning assessment VERA ("VERgleichsArbeiten"/comparative studies). The program trains teachers to effectively use these results to support students' reading development.

Procedure and data collection

The data collection took place at two key time points: the beginning and end of the facilitators' qualification program. The research team responsible for this study operated independently from the qualification and project teams, ensuring an external, unbiased perspective. To administer the surveys, a member of the research team attended both the initial and final meetings of the qualification program.

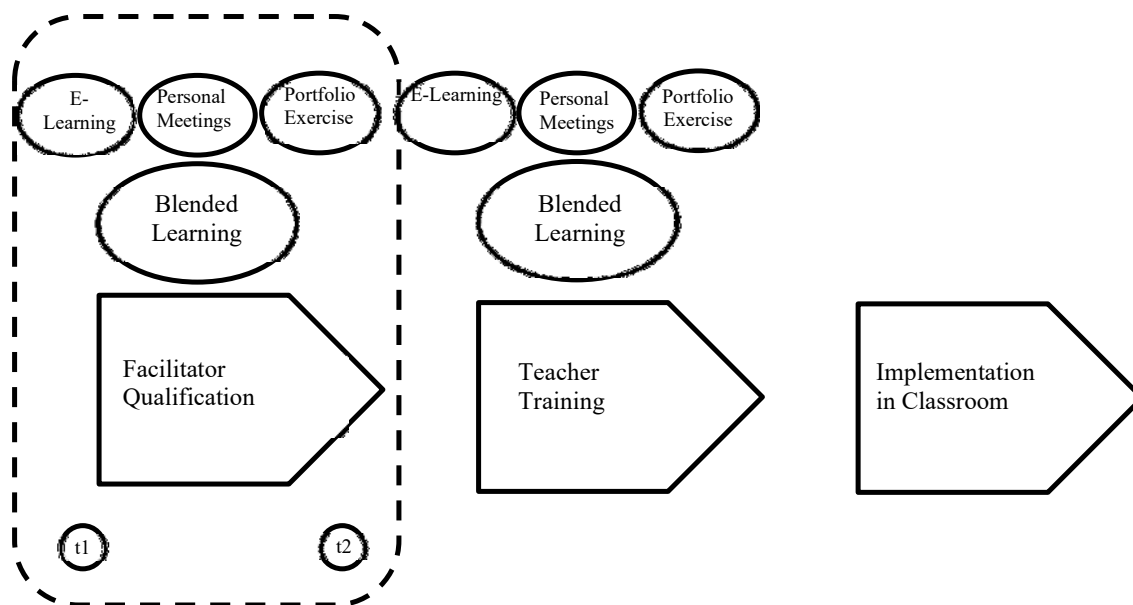
Regardless of whether the sessions took place in person or online, the team member joined approximately 30 minutes before the scheduled break. In each setting, the team member briefly introduced themselves, explained the purpose of the study, and clarified their independent role in the project.

The online survey link was shared in the time slot before the break, allowing participants to complete it immediately. The subsequent break served as a time buffer, reducing time pressure. Overall, this procedure of attending the meetings was meant to encourage high response rates. Participants who were absent (e.g., due to illness) received the survey link via email. If participants did not manage to finish, while still having enough time for the break they were also encouraged to complete the survey at home. The first item in the survey was an informed consent statement explaining the study's purpose, data use, and participants' rights. Participation was entirely voluntary. If a participant chose not to give consent, the survey automatically ended, and no data was recorded from that individual. In total there were 62 facilitators involved in the project. 49 participants provided responses at both measurement time points one and two, which form the dataset for the present study. From these 49 participants, we retained only those who had completed at least 80% of the items on the relevant scales, as participants had the option to choose "no response" for each item. The cutoff was chosen to ensure that composite scores were based on meaningful responses rather than distorted by excessive missing data. (Kuckartz, Rädiker, Ebert & Schehl, 2013). After applying this rule, the final analytic sample consisted of 41 facilitators. The demographic profile of this group was predominantly female (84%), with a mean age of 45.43 years ($SD = 8.01$), and nearly all participants (97%) were employed as teachers. Depending on the variables required for each regression model, the effective N ranged between 34 and 39 participants.

The modest sample size and its reduction reflects the realities of conducting applied field research within a transfer intervention project. The largest decrease occurred because only 49 of the 62 facilitators completed both of the relevant measurement times. Some participants were absent during the scheduled group meetings when the data was collected, and while questionnaires were subsequently distributed via email, adherence was naturally lower than in synchronous sessions. Additionally, some drop-out occurred here as well. Beyond this, the further reduction to 41 participants resulted from applying a transparent data quality threshold ($\geq 80\%$ item completion) to ensure that our composite measures were based on reliable responses. We therefore interpret our findings with appropriate caution, prioritizing internal validity and data integrity.

Figure 1

Transfer Process in the Blended Learning Program.



Instruments

Independent variables

1. Characteristics of the facilitators

Experience in teaching language skills as a facilitator reflects facilitators' prior engagement and expertise in teaching language skills as a facilitator, including both theoretical knowledge and practical application. It was assessed at t1 using a newly developed 10-item scale ($\alpha = .852$). Participants indicated the extent to which they had engaged with different areas of language skills instruction in their previous professional development activities, covering the topics diagnostics and support for reading and writing, language-supportive instruction, first and second language acquisition, and translanguaging. Responses were provided on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very intensively*), with higher scores indicating greater experience and engagement ($M = 3.17$, $SD = 0.78$). The overall scale score was calculated as the mean across all items. Example items include: "Experience with diagnostics of reading competencies" and "Experience with language-supportive instruction in classroom practice."

Experience in adult education and professional development represents facilitators' prior experience in delivering adult education and professional development, including the application of pedagogical methods, supporting teacher learning and transfer, and integrating blended learning approaches. It was assessed at t1 using a three-item scale ($\alpha = .798$). Participants rated the extent to which they had incorporated the three different aspects of adult education into their previous training activities on a 5-point Likert scale ranging from 1 ("never") to 5 ("always"), with higher scores indicating more extensive experience. The scale score was computed as the mean across the three items ($M = 2.62$, $SD = 1.15$). Example items include: "Support of teachers in transfer processes as a coach" and "E-Learning or blended learning".

2. Contextual conditions

Parallel professional development activities were assessed in t1 with a single dichotomous item: "Do you conduct other training programs besides BiSS-Transfer?". 66% of respondents indicated that they were involved in additional training activities. This dichotomous variable was coded as 0 = none and 1 = additional training.

Initiative to participate was measured in t2 with a single item: "On whose initiative did you participate in the program?" The answer options were self-initiated or mandated by an official decision, such as one made by their supervisor. 61% of the participants joined the training on their own initiative. This dichotomous variable was coded as 0 = self-initiated and 1 = official decision.

Perceived autonomy in the learning process was assessed in t2 using a single item rated on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*completely*). Participants were asked: "To what extent were you able to self-direct your learning process during the qualification?" ($M = 3.37$, $SD = 0.97$).

3. Evaluation of own qualification

Overall evaluation was assessed in t2 using three items ($\alpha = .787$) that measured participants' likelihood of recommending the blended-learning qualification, their willingness to participate again, and the extent to which the qualification met their expectations ($M = 4.06$, $SD = 0.72$). Responses were rated on a 5-point Likert scale ranging from 1 (disagree) to 5 (agree). An example item is: "I would recommend the BiSS-Multiplier blended-learning qualification."

Perceived practical relevance was measured in t2 using two items ($\alpha = .748$) that assessed how relevant participants found both the didactical content and the language skills content of the qualification for their professional practice as facilitators ($M = 4.50$, $SD = 0.54$). The items are: "How relevant do you consider the didactic content on multiplication in the qualification for your professional practice?" and "How relevant do you consider the contents of the qualification for your professional practice?". Responses were rated on a 5-point Likert scale ranging from 1 (*not relevant*) to 5 (*very relevant*).

Dependent variables

To assess the dependent variables, this study draws on the framework for evaluating the successful transfer of educational interventions into schools from Meudt et al. (2020). Specifically, two of their short

scales—acceptance and feasibility—are employed to measure facilitators’ perceptions of language skills initiatives. To align with the study’s specific focus, the scales have been adapted to assess facilitators’ *acceptance* of the interventions and their estimations of how easily teachers will be able to integrate them into their practice—captured as *estimated feasibility*. The items were rated on a 5-point Likert scale, ranging from 1 (*not true*) to 5 (*true*).

Estimated feasibility was assessed at t2 using a 7-item scale ($\alpha = .844$) that evaluated the perceived effort required for implementation. The mean score was 3.59 ($SD = 0.76$). Items included statements such as “Teachers can generally allocate the necessary classroom time required to implement the intervention” and “I am convinced that the intervention can be well integrated into the teaching routine”.

Acceptance was measured in t2 using a 10-item scale ($\alpha = .892$) assessing participants’ approval of the conceptual approach ($M = 4.06$, $SD = 0.72$). The scale captured facilitators’ perceptions of the interventions in terms of their usefulness, ease of integration into teaching, and overall satisfaction with it. Example items include: “Most students benefit from the use of the intervention in the classroom” and “Teachers should continue using the intervention regularly in the classroom”.

Analyses

To examine the predictors of *acceptance* and *estimated feasibility* of language skills measures, three sets of independent variables were considered: *facilitator characteristics*, *contextual conditions*, and *training program evaluations*. Each category was operationalized using two to three variables or scales, as outlined above. Given the limited sample size, three separate regression models were conducted per dependent variable—one for each set of variables—rather than a single combined model. This approach was the most feasible under the sample constraints, ensuring a sufficient case-to-predictor ratio, reducing the risk of overfitting, and allowing for meaningful interpretation of each conceptual domain (Austin, 2015).

For each model, multiple regression assumptions were tested. Linearity was assessed using scatterplots and residual plots. Outliers were examined through standardized residuals, leverage, and Cook’s distance. Residual independence was confirmed with the Durbin-Watson test. Multicollinearity was ruled out based on Variance Inflation Factors (VIF) and Pearson correlation. Homoscedasticity was evaluated using residual plots, and normality of residuals was checked through histograms and Q-Q plots. All assumptions were met, ensuring the validity of the regression analyses.

Results

Model 1

Characteristics of the facilitators

No significant predictions were found for the facilitator characteristics variables — *experience in teaching language skills as a facilitator* and *experience in adult education and professional development* — on either of the two dependent variables, *estimated feasibility* and *acceptance* (see table 1, model 1 and table 3, model 1).

Model 2

Contextual conditions

A regression model including the contextual conditions variables as predictors explained 21.7% of the variance in *estimated feasibility* ($p = .009$) (see table 1, model 2). Among the predictors, *conducting parallel professional development activities* emerged as a significant negative predictor ($\beta = -0.389$, $p = .012$), indicating that participants leading additional training sessions estimated the feasibility of implementing language skills interventions as lower (see table 2, model 2). Neither the *initiative to participate* ($\beta = -0.070$, $p = .656$) nor *perceived autonomy in the learning process* ($\beta = 0.285$, $p = .059$) significantly predicted *estimated feasibility* (see table 2, model 2). No significant predictions were found for the second dependent variable, *acceptance* (see table 3, model 2).

Model 3

Evaluation of own qualification

A regression model including evaluation variables as predictors explained 22.4% of the variance in acceptance ($p = .004$) (see table 3, model 3). The overall *evaluation of own qualification* was the significant predictor ($\beta = 0.511$, $p = .010$), while *perceived practical relevance* did not significantly predict *acceptance* ($\beta = 0.007$, $p = .964$) (see table 4, model 3). This suggests that participants who rated the training more positively were more likely to accept the proposed language skills measures. No significant predictions were found for the second dependent variable *estimated feasibility*.

Table 1

Results from the Regression Models, Dependent Variable: Estimated Feasibility, Fignificant Results are Presented in Bold

	R	R²	Corrected R²	SE	F (df1, df2)	p
Model 1	0.351	0.123	0.067	0.787	2.176 (2, 31)	.130
Model 2	0.528	0.279	0.217	0.685	4.513 (3, 35)	.009
Model 3	0.374	0.140	0.091	0.712	2.847 (2, 35)	.072

Table 2

Results from the Regression Models, Predictor Level. Dependent Variable: Estimated Feasibility, Significant Results are Presented in Bold

		Non-standardized coefficient		95% CI		β	p
		Beta	SE	LL	UL		
Model 1							
	Experience facilitator	-0.076	0.148	-0.378	0.227	-0.105	.227
	Experience language skills	-0.287	0.210	-0.716	0.142	-.280	.182
Model 2							
	Parallel PD activities	-0.644	0.242	-1.136	-0.152	-0.389	.012
	Initiative for participation	-0.109	0.226	-0.569	0.350	-0.070	.633
	Perceived autonomy	0.229	0.117	-0.009	0.467	0.285	.059
Model 3							
	Overall evaluation	0.467	0.196	0.068	0.865	.456	.023
	Practical relevance	-0.318	0.263	-0.852	0.215	-0.232	.234

Table 3

Results from the Regression Models, Dependent Variable: Acceptance, Significant Results are Presented in Bold

	R	R²	Corrected R²	SE	F (df1, df2)	p
Model 1	0.334	0.112	0.055	0.581	1.952 (2,31)	.159
Model 2	0.377	0.142	0.068	0.549	1.928 (3, 35)	.143
Model 3	0.516	0.266	0.224	0.502	6.347 (2, 35)	.004

Table 4

Results from the Regression Models, Predictor Level. Dependent Variable: Acceptance, Significant Results are Presented in Bold

		Non-standardized coefficient		95% CI		β	p
		Beta	SE	LL	UL		
Model 1	Experience facilitator	-0.215	0.109	-0.437	0.008	-0.404	.058
	Experience language skills	0.195	0.157	-0.125	0.516	0.255	.223
Model 2	Parallel PD activities	-0.285	0.188	-0.618	0.107	-0.224	.162
	Initiative for participation	-0.256	0.179	-0.618	0.107	-0.224	.162
	Perceived autonomy	0.086	0.091	-0.099	0.271	0.149	.353
Model 3	Overall evaluation	0.411	0.151	0.105	0.717	0.511	.010
	Practical relevance	0.008	0.196	-0.391	0.406	0.007	.406

Discussion

This study underscores the importance of contextual conditions and facilitators' evaluation of their own qualification in shaping their acceptance and estimated feasibility of language skills interventions in professional development programs. While the hypotheses were partially supported, not all independent variables showed significant effects. Notably, facilitators' assessments of their own qualification and certain contextual factors were influential, whereas prior experience in language skills did not predict acceptance or estimated feasibility of the interventions.

In regression model 2 *contextual conditions* were significant, explaining 21.7% of the variance in *estimated feasibility* (adjusted $R^2 = 0.217$, $p = .009$). Among its predictors, engagement in *parallel professional development activities* was a significant negative predictor of *estimated feasibility* ($\beta = -0.389$, $p = .012$). This suggests that facilitators with additional training responsibilities find estimate the feasibility of interventions

more negatively, likely due to increased workload and competing demands. These findings align with prior research emphasizing time constraints as a major barrier to professional learning (McDowall, 2007). Overburdened facilitators may struggle to allocate sufficient time and cognitive resources to adopt new pedagogical practices. Future interventions could explore ways to reduce workload pressures or provide more structured support for facilitators managing multiple responsibilities.

Although *perceived autonomy in the learning process* was not a significant predictor, its marginal significance regarding *estimated feasibility* ($\beta=0.285$, $p=.059$) suggests a potential trend that might become significant in a larger sample: facilitators with greater autonomy may perceive implementation as more feasible. This would align with motivation theories such as Self-Determination Theory (Deci & Ryan, 1985), which posits that autonomy fosters engagement and persistence in professional learning contexts. Furthermore, this finding is consistent with qualitative research in the broader study context, which highlighted that ownership—understood as integrating an intervention into one's operational standards—played a key role in implementation, leading to greater acceptance and a stronger sense of feasibility among multipliers and teachers (Lawida et al., 2025). Future research should explore whether autonomy-enhancing interventions could improve facilitators' perceptions of feasibility.

Regression model 3 on the facilitators' *evaluation of their own qualification* was significant, explaining 22.4% of the variance in *acceptance* ($adjusted R^2=0.224$, $p=.004$). The significant predictor here was overall evaluation of the qualification, which significantly and positively predicted *acceptance* ($\beta=0.511$, $p=.010$). This finding underscores the role of high-quality training experiences in fostering facilitators' willingness to implement language skills measures. Positive evaluations appear to foster greater willingness to endorse initiatives. Interestingly, however, the *perceived practical relevance* of the training did not significantly predict *acceptance* ($\beta=0.007$, $p=.964$). This may be because facilitators differentiate between the general value of training content and its perceived usefulness for their own personal work. As the perceived practical relevance entailed items such as "How relevant do you consider the contents of the qualification for your professional practice?"

Within regression model 3 on the facilitators' *evaluation of their own qualification*, the variable overall evaluation of the qualification was a significant predictor for *estimated feasibility* ($\beta=.456$, $p=.023$), even though the overall model was not significant ($adjusted R^2=0.091$, $p=.072$). This suggests that while the model as a whole did not explain a substantial amount of variance, this specific variable still played an influential role. Thus, while broader contextual conditions may introduce variability, facilitators' subjective assessments of training quality remain an important factor in shaping *estimated feasibility*.

Contrary to expectations, regression model 1 on *facilitator characteristics*, which included *prior experience in language education* and *adult professional development*, did not significantly predict either *acceptance* or *estimated feasibility*. One possible explanation is that the training program effectively provided facilitators with the necessary competencies, thereby reducing the influence of prior experience. Alternatively, the non-significant findings could be due to a relatively homogeneous sample in terms of professional background, limiting variability in experience-related predictors.

Following practical implications for professional development programs can be drawn based on these results. The significant negative effect of parallel professional development activities on feasibility suggests that workload constraints need to be carefully managed to support successful implementation. Professional development providers might consider reducing competing demands by integrating new initiatives within existing programs or offering greater flexibility in training schedules. Furthermore, the marginal significance of autonomy highlights the potential of autonomy-supportive training approaches, such as self-directed learning modules or peer collaboration opportunities, to enhance engagement and estimated feasibility.

Additionally, the significant effect of facilitators' *overall evaluation of their own qualification* on *acceptance* suggests that improving training quality should be a central focus of professional development programs. Specifically, ensuring that facilitators perceive their qualification as high-value and well-structured can enhance their willingness to implement training content. Training designers should consider incorporating active learning methods, personalized feedback, and opportunities for reflection to strengthen facilitators' perceptions of training quality. Moreover, providing clear connections between training content and real-world applications may further support facilitators' sense of competence and confidence in applying their knowledge.

Strengths, Limitations and Recommendations

A key strength of this study lies in the novelty and scope of its dataset, which provides valuable insights into facilitators' perceptions within a large-scale professional development initiative. The extensive data collection efforts ensured a comprehensive examination of factors influencing acceptance and estimated feasibility, incorporating responses from facilitators across multiple subprojects. This broad coverage enhances the relative generalizability of the findings, as it reflects diverse contexts and contributes to a more nuanced understanding of transfer processes in professional development. Furthermore, the study's specific focus on facilitators—a group often overlooked in research on teacher training—adds an important dimension and underscores the need for targeted support strategies to optimize the effectiveness of professional learning initiatives.

At the same time, several limitations should be acknowledged. The relatively small sample size means that findings must be regarded as tentative and preliminary, with limited generalizability. The relatively small sample size reduced statistical power, increasing the risk of Type II errors, which could explain why some results approached but did not reach conventional levels of significance. Certain relationships may therefore have been underestimated or remained undetected.

Another limitation concerns the analytic approach. A comprehensive model including all predictors would have allowed for direct assessment of relative importance and potential interactions. However, given the modest sample size, estimating a single model with seven predictors would have been unfeasible, as it would be underpowered, unstable, and prone to overfitting (Austin, 2025). Organizing predictors into three theoretically coherent groups and conducting separate regression analyses for each set was therefore the most reliable approach. This strategy ensured a reasonable case-to-predictor ratio, reduced the risk of spurious findings, and allowed for meaningful interpretation within distinct conceptual domains, thereby providing valuable insights while maintaining the integrity and interpretability of the results in a field-based study.

In terms of sample characteristics, the final analytic sample consisted predominantly of female facilitators (84%) with a mean age of 45.4 years ($SD = 8.0$), nearly all of whom (97%) were employed as teachers. Facilitators were drawn from multiple subprojects within a large-scale professional development initiative, reflecting a range of organizational contexts. Despite this diversity, the sample was relatively homogeneous in terms of gender, age, and professional role, which may limit the applicability of the findings to groups with different demographic characteristics. Future research should therefore examine whether these patterns hold in more heterogeneous samples to better understand the broader relevance of the results.

Smaller methodological considerations should also be noted. Although all constructs were measured using a 5-point Likert scale, the wording of response options varied across measures. For example, perceived autonomy was rated from *not at all* (1) to *completely* (5), whereas evaluation of own qualification used *disagree* (1) to *agree* (5), and perceived practical relevance ranged from *not relevant* (1) to *very relevant* (5). These variations were chosen to align with the conceptual meaning of each construct and enhance response accuracy, but differences in wording may have influenced how participants interpreted the scale points. Future studies may benefit from greater standardization to enhance comparability, especially in research that integrates multiple constructs into a single analytical model. Nonetheless, the consistency of scale length and numerical values supports the validity of the analyses conducted here.

A further limitation stems from the cross-sectional design and the simultaneous assessment of independent and dependent variables, which raises concerns about potential common method bias (Wißhak, 2021). Although precautions were taken—such as varying scale wording, ensuring anonymity, and emphasizing that there were no right or wrong answers—method-related variance cannot be fully ruled out. Future research could address this limitation more directly by employing longitudinal designs, collecting data from multiple sources, or integrating objective measures where possible.

Taken together, these limitations suggest several directions for future research. Larger and more diverse samples would strengthen statistical power and allow for more precise effect estimates, while longitudinal designs could enable examination of changes over time and help establish causal links between facilitator characteristics, perceptions, and the transfer of professional development outcomes. Such

approaches would enhance the robustness, generalizability, and practical relevance of findings. Despite its constraints, however, this study offers valuable initial insights into facilitators' perspectives—insights that are essential for understanding early responses to professional learning initiatives and for informing the design of more effective support strategies moving forward.

Conclusion

This study provides valuable insights into the factors influencing facilitators' acceptance and perceived feasibility of language skills programs, which are crucial attitudes in the transfer process of teacher professional development initiatives. Two key factors emerged as significant: facilitators' evaluation of their own qualifications and the contextual conditions under which they work. Facilitators who feel satisfied with the quality of their training and do not have parallel responsibilities in teacher professional development are more likely to endorse language skills programs, as reflected in their higher acceptance and feasibility ratings. These results underscore the necessity of delivering high-quality training experiences and carefully managing facilitators' workload to support successful implementation. Contrary to expectations, prior professional experience did not predict acceptance or feasibility, which may be due either to the training's ability to level out prior differences in experience or to limited variance in the sample. While perceived autonomy did not significantly predict feasibility, its marginal effect suggests a potential trend: autonomy-supportive training designs may positively influence implementation attitudes and warrant further empirical attention.

Due to the relatively small sample size, these findings should be considered tentative and preliminary, with limited generalizability. Future research should explore the impact of autonomy in professional development more systematically, particularly through larger and more diverse samples, to determine whether its effects become more robust under different conditions. Additionally, longitudinal studies could help disentangle the dynamics between facilitators' initial perceptions and their actual implementation behavior. Further investigation into which elements of training design contribute most to positive evaluations—such as instructional approach, personalization, or perceived relevance—would also enhance understanding of effective facilitator preparation. Moreover, integrating facilitators' subjective responses with objective indicators, such as implementation fidelity or learner outcomes, could add to a comprehensive perspective on the mechanisms that drive successful transfer. Despite these limitations and directions for future research, the current study offers several important strengths. A key asset lies in its novel dataset, which spans multiple subprojects and diverse implementation contexts, enhancing the generalizability of the findings. The extensive data collection efforts offer a comprehensive view of facilitators' perceptions, contributing to a more nuanced understanding of the transfer processes in professional development. In practical terms, the results emphasize that both the structural conditions of implementation and the subjective training experience must be addressed in the design of future professional development initiatives. These insights can inform the creation of more effective and sustainable training programs, thereby improving the transfer and impact of educational interventions in schools.

Declarations

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Competing interests

Antonia Schmidt and Sonja Sieger declare that they have no competing interests.

Ethical Standards

Participants provided informed consent before taking part in this study, ensuring their anonymity. The purpose of the study, the intended use of the data for research purposes, and the procedures for data handling were explained.

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