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Pre-service teachers evaluations of their cooperating teachers' contribution to their professional training: questionnaire development

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Introduction: This study aimed at creating and validating a questionnaire for pre-service physical education teachers, as a means for evaluating the performance and contribution of their cooperating teachers to these students' practical teacher training process.

Method: The questionnaire, consisting of 25 items – 24 Likert-scale questions and a yes/no question regarding participants' willingness to select the same cooperating teacher for their practical training – was administered to a sample of 406 pre-service teachers. This sample included second- and third-year students, outstanding students, and individuals undergoing academic retraining.

Results: The questionnaire was validated through content validity and exploratory factor analysis, resulting in three main factors: modeling teacher behavior, training and supervision in their field, and support and feedback.

Discussion: Given that schools and cooperating teachers play a crucial role in teacher training, this study offers valuable insights for enhancing teacher education programs and reducing novice teacher attrition by clarifying the role of cooperating teachers and establishing foundational elements for their professional development.

KEYWORDS

teacher training, pre-service teachers, mentorship, evaluation tool, teacher education programs

Introduction

For decades, the practice-based model has been perceived as key to teacher training – one that emphasizes the engagement of pre-service teachers in practical training (Bigelow, 1941; Grossman and McDonald, 2008; Hoffman et al., 2015; Jones, 1940). As such, schools and cooperating teachers play an important role in teacher training (Zeichner, 2015; Zeichner, 2022), so much that Koster et al. (1998) even asks, *Is there anything left for us?* (i.e., pedagogical instructors and other teacher educators).

Due to the global phenomenon of high dropout rates during the first few years in the teaching profession (Brandenburg et al., 2024; Devers et al., 2024; Madigan and Kim, 2021; Rajendran et al., 2020), it is important to examine how pre-service teachers perceive the quality of guidance that they receive from their cooperating teachers at the school where they conduct their practical training, while outlining the characteristics of this perceived guidance. Such information may offer a more coherent definition as to the role of

the cooperating teacher in teacher education programs, and could enhance coordination between pre-service teachers, pedagogical instructors at their academic institution, and cooperating teachers at their training school. Selecting suitable teachers to serve as mentors for pre-service teachers is a challenging yet important task (Dreer-Goethe, 2023; Feiman-Nemser, 1996; Ndebele and Legg-Jack, 2022; Nesje and Lejonberg, 2022). However, despite their important contribution to the pre-service teacher's professional training, cooperating teachers are mostly selected based on their relationships with their regional supervisor (Rajuan et al., 2007).

In their review, Clarke et al. (2014) identified 11 ways in which cooperating teachers participate in teacher education: ". . .as feedback providers, gatekeepers of the profession, modelers of practice, supporters of reflection, gleaners of knowledge, purveyors of context, conveners of relation, agents of socialization, advocates of the practical, abiders of change, and teachers of children" (p. 181). In an additional review, Hoffman et al. (2015) found that the support offered by cooperating teachers to pre-service teachers can be divided into the following four categories: current practices and conditions; innovations in practice; relationships and tensions; and local contexts and teaching practices. The researchers also found that cooperating teachers are mostly unprepared for the mentoring role that they take on, indicating a need for stronger theoretical framing regarding the mentor-mentee work of cooperating teachers, and a need for the teacher education framework to be more proactive in preparing cooperating teachers for this role.

Cornwall and Gaventa (2001) wrote about repositioning participation in social policy, from users and choosers to makers and shapers. Although within a different context, in this paper we adopt the proactive attitude of participation, whereby Clarke et al. (2014) claim that closer attention should be paid to the role of the cooperating teacher in mediating practicum experiences, as a means for altering how pre-service teachers are trained and prepared.

Due to the importance of the role of cooperating teachers in the practical training of pre-service teachers, it is vital to create a tool that enables teaching students to evaluate their cooperating teacher's contribution to their professional development; such a tool could provide researchers, policy makers, and teacher training institutions with insights regarding the functioning of cooperating teachers, as a means for enhancing teacher training programs and decreasing dropout rates of novice teachers. In other words, data achieved from such a tool could assist pedagogical instructors in clarifying the role of the cooperating teachers, while providing cornerstones for professional development programs for these cooperating teachers.

First, we built a questionnaire for measuring the functions filled by the cooperating teacher – a tool that could provide data regarding both students' evaluations of their cooperating teachers and feedback relating to the teacher preparation process. Next, we examined whether differences can be seen in perceptions between students at the beginning of their teacher education process and those at the end of this process, based on the assumption that the more advanced the students in their training process, the more able they are to adequately assess the quality of guidance that they have received.

Materials and methods

Participants

The study included 406 physical education (PE) student teachers (216 females) from a teacher education college in Israel, aged 20–47 (M = 25.93; SD = 4.02). The participants were recruited from four groups representing all phases and programs of teacher education that include field experience: 2nd or 3rd-year students on their 4 years training program (N = 234 and N = 97, respectively), students from the Regev Program for Outstanding Students (N = 42), and students from the teacher retraining program for academics (N = 33).

Questionnaire creation

The authors of this study created a questionnaire, with the aim of enabling pre-service teachers to assess their cooperating teachers' performance and contribution to their teacher training process. The questionnaire was comprised of 24 items relating to their practical teaching experience, that were to be rated on a Likert-like scale, from 1 (never) to 5 (almost always). Following these 24 items, the participants were also asked to answer a yes/no question, i.e., *If you could choose, would you conduct your practical teaching experience with the same cooperating teacher?*

The following four steps were conducted to validate the questionnaire:

1. Content validity. Following domain identification and item generation, a total of 24 items were generated, to describe the duties and expected behaviors of cooperating teachers. This stage was conducted by two pedagogical instructors, both with 25 years' teaching experience. Clarity was approved by two additional pedagogical instructors, both with 20 years' teaching experience.
2. Exploratory factor analysis. At this stage, three main factors emerged, including *Modeling teacher behavior* (16 items); *Training and supervision in their field of expertise* (four items); and *Involvement in lesson planning and implementation* (four items).
3. Inter-scale correlations. This stage was conducted to assure that all factors are related to the same domain, yet do not overlap with one another.
4. Reliability/internal consistency. This factor was determined using Cronbach's α for each item on the questionnaire (0.79– 0.89) and for each of the three emerging factors: *Modeling teacher behavior* (α = 0.97); *Training and supervision in their field of expertise* (α = 0.77); and *Involvement in lesson planning and implementation* (α = 0.71).

Procedure and ethics

The participants were recruited through targeted social media platforms (Facebook pages and WhatsApp groups). Informed written consent was submitted by the students after receiving

TABLE 1 Item loadings, communalities, and components extraction with oblique rotation for total composite score.

Item	Factor 1	Factor 2	Factor 3	h^2
Referred to socio-emotional aspects in their work	0.80	–	–	0.72
Is a source of inspiration for me	0.79	–	–	0.73
The teacher was involved (active and initiated) in school life	0.77	–	–	0.63
The teacher regularly studied, to enrich their professional world and that of the learners	0.77	–	–	0.70
Contributed to building positive mentor-mentee communications	0.77	–	–	0.79
Expressed a desire to contribute	0.77	–	–	0.77
Encouraged me throughout my practical experience	0.75	–	–	0.78
Contributed to project production	0.75	–	–	0.63
Exhibited openness to discussing relevant issues	0.73	–	–	0.78
Has vast knowledge of the study materials	0.72	–	–	0.59
Explained and demonstrated how the theory can be applied in school	0.71	–	–	0.71
Demonstrated and explained how to vary and adapt teaching methods to suit the learners	0.71	–	–	0.75
Held discussions on professional aspects	0.65	–	–	0.70
Held discussions on moral educational aspects	0.63	–	–	0.65
Reflected my progress through formative assessments throughout the year	0.62	–	–	0.68
Demonstrated and taught actual lessons	0.54	–	–	0.51
Gave me written feedback at the end of the lesson	–	0.65	–	0.58
Gave me verbal feedback at the end of the lesson	–	0.64	–	0.55
Used observational tools for gathering information	–	0.58	–	0.48
Attended all lessons that I taught	–	0.50	–	0.40
Interfered in the lessons that I taught	–	–	0.73	0.54
Checked each lesson plan	–	–	0.64	0.73
Required organized lesson plans	–	–	0.62	0.60
Dictated the teaching curricula	–	–	0.60	0.45

TABLE 2 Inter-scale correlations between questionnaire factors.

Factor	MTB	TSP	ILP&I
MTB	1	0.705***	0.469***
TSP	0.705***	1	0.548***
ILP&I	0.469***	0.548***	1

***$p < 0.001$; MTB, modeling teacher behavior; TSP, training and supervision in their field of expertise; ILP&I, involvement in lesson planning and implementation.

information about the nature and aims of the study. The study was approved by the authors' Institutional Review Board (approval No. 244/20). Participants were ensured complete confidentiality, and were informed that they could stop participation at any stage, with no consequences.

Data analysis

The data collected in this study were analyzed using SPSS v.25. Descriptive statistics were applied, with means (M) and standard deviations (SD) being presented for the participants' age and for the answers to the yes/no question presented in the questionnaire.

One-way analysis of variance (ANOVA) was conducted to examine differences between the four groups of participants. In addition, reliability analysis (Cronbach's α) was conducted for each factor, and correlation analysis was conducted for between factors.

Results

The first aim of this study was to create a tool for examining pre-service teachers' evaluations of their cooperating teachers. Following confirmation of content clarity, a principal-components analysis was applied, followed by a Varimax rotation with Kaiser Normalization, to determine the optimal solution (Table 1).

We then examined a range of aspects, including item value loading, cross-loading, and inter-scale correlations. The three factors with eigenvalues > 1 explained 64.38% of the total variance. Factors were labeled according to the behaviors that they represented. The three factors that emerged include: (1) *Modeling teacher behavior* (items 2, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, and 24); (2) *Training and supervision in their field of expertise* (items 1, 7, 18, and 19); and (3) *Involvement in lesson planning and implementation* (items 3, 4, 5, and 20).

TABLE 3 Distribution of the Questionnaire items scores in percent, according to student affiliations.

Questionnaire items	Regev Program for outstanding students			2nd-year			3rd-year			Retraining for academics		
	1 + 2	3	4 + 5	1 + 2	3	4 + 5	1 + 2	3	4 + 5	1 + 2	3	4 + 5
1. Attended all lessons that I taught	2.4	21.4	76.2	6.4	7.7	85.9	2.1	5.2	92.8	6.1	12.1	81.8
2. Demonstrated and taught actual lessons	23.8	14.3	61.9	14.5	18.4	67.1	15.5	11.3	73.2	12.1	21.2	66.7
3. Dictated the teaching curricula	57.1	9.5	33.3	28.2	21.4	50.4	27.8	19.6	52.6	33.3	30.3	36.4
4. Required organized lesson plans	16.7	21.4	61.9	10.7	15.4	73.9	17.5	14.4	68.0	3.0	6.1	90.9
5. Interfered in the lessons that I taught	59.5	21.4	19.0	45.3	26.9	27.8	66.0	12.4	21.6	33.3	39.4	27.3
6. Encouraged me throughout my practical experience	4.8	14.3	81.0	8.5	7.7	83.8	6.2	5.2	88.7	18.2	0.0	81.8
7. Used observational tools for gathering information	16.7	21.4	61.9	12.8	16.2	70.9	9.3	16.5	74.2	18.2	9.1	72.7
8. Contributed to building positive mentor-mentee communications	4.8	7.1	88.1	7.7	12.8	79.5	5.2	8.2	86.6	12.1	9.1	78.8
9. Exhibited openness to discussing relevant issues	2.4	9.5	88.1	9.8	9.8	80.3	7.2	4.1	88.7	9.1	9.1	81.8
10. Expressed a desire to contribute	0.0	4.8	95.2	5.6	7.7	86.8	5.2	6.2	88.7	9.1	6.1	84.8
11. Has vast knowledge of the study materials	0.0	2.4	97.6	3.8	5.1	91.0	3.1	4.1	92.8	3.0	15.2	81.8
12. Explained and demonstrated how the theory can be applied in school	4.8	11.9	83.3	9.8	11.1	79.1	9.3	8.2	82.5	9.1	15.2	75.8
13. Referred to socio-emotional aspects in their work	9.5	4.8	85.7	6.8	9.0	84.2	7.2	6.2	86.6	15.2	15.2	69.7
14. Demonstrated and explained how to vary and adapt teaching methods to suit the learners	7.1	14.3	78.6	9.4	8.1	82.5	5.2	8.2	86.6	9.1	15.2	75.8
15. The teacher was involved (active and initiated) in school life	4.8	2.4	92.9	4.3	5.1	90.6	2.1	8.2	89.7	6.1	15.2	78.8
16. The teacher regularly studied, to enrich their professional world and that of the learners	2.4	16.7	81.0	8.1	17.1	74.8	2.1	12.4	85.6	9.1	15.2	75.8
17. Is a source of inspiration for me	9.5	14.3	76.2	15.8	15.4	68.8	10.3	7.2	82.5	15.2	9.1	75.8
18. Gave me written feedback at the end of the lesson	11.9	16.7	71.4	21.4	14.5	64.1	20.6	8.2	71.1	18.2	12.1	69.7
19. Gave me verbal feedback at the end of the lesson	0.0	4.8	95.2	9.0	9.4	81.6	2.1	2.1	95.9	3.0	3.0	93.9
20. Checked each lesson plan	26.2	19.0	54.8	25.2	29.1	45.7	23.7	18.6	57.7	6.1	21.2	72.7
21. Reflected my progress through formative assessments throughout the year	14.3	16.7	69.0	13.7	9.0	77.4	8.2	7.2	84.5	15.2	9.1	75.8
22. Held discussions on moral educational aspects	4.8	21.4	73.8	12.0	14.1	73.9	6.2	13.4	80.4	15.2	15.2	69.7
23. Held discussions on professional aspects	2.4	7.1	90.5	9.4	15.0	75.6	5.2	11.3	83.5	9.1	6.1	84.8
24. Contributed to project production	11.9	14.3	73.8	12.4	16.7	70.9	9.3	12.4	78.4	18.2	15.2	66.7

TABLE 4   Participants' willingness to be mentored again by the same cooperating teacher.

The teacher…	Yes (%)			No (%)		
	1 + 2	3	4 + 5	1 + 2	3	4 + 5
Attended all lessons that I taught	1.8	7.3	90.9	18.4	15.8	65.8
Demonstrated and taught actual lessons	9.7	14.5	75.8	40.8	25.0	34.2
Dictated the teaching curricula	25.2	22.4	52.4	59.2	11.8	28.9
Required organized lesson plans	10.0	14.2	75.8	22.4	18.4	59.2
Interfered in the lessons that I taught	50.3	26.4	23.3	52.6	13.2	34.2
Encouraged me throughout my practical experience	1.2	3.9	94.8	39.5	21.1	39.5
Used observational tools for gathering information	7.3	14.5	78.2	36.8	23.7	39.5
Contributed to building positive mentor-mentee communications	0.3	6.4	93.3	36.8	30.3	32.9
Exhibited openness to discussing relevant issues	0.6	6.4	93.0	42.1	17.1	40.8
Expressed a desire to contribute	0.0	3.0	97.0	27.6	23.7	48.7
Has vast knowledge of the study materials	0.3	2.7	97.0	15.8	17.1	67.1
Explained and demonstrated how the theory can be applied in school	2.1	8.2	89.7	39.5	22.4	38.2
Referred to socio-emotional aspects in their work	2.1	5.8	92.1	32.9	19.7	47.4
Demonstrated and explained how to vary and adapt teaching methods to suit the learners	1.8	7.6	90.6	35.5	17.1	47.4
The teacher was involved (active and initiated) in school life	1.2	4.2	94.5	15.8	15.8	68.4
The teacher regularly studied, to enrich their professional world and that of the learners	2.4	10.6	87.0	22.4	38.2	39.5
Is a source of inspiration for me	2.7	12.4	84.8	61.8	14.5	23.7
Gave me written feedback at the end of the lesson	16.7	12.1	71.2	34.2	17.1	48.7
Gave me verbal feedback at the end of the lesson	2.4	5.2	92.4	21.1	13.2	65.8
Checked each lesson plan	16.4	26.7	57.0	53.9	17.1	28.9
Reflected my progress through formative assessments throughout the year	3.3	8.2	88.5	52.6	14.5	32.9
Held discussions on moral educational aspects	3.3	11.8	84.8	39.5	27.6	32.9
Held discussions on professional aspects	1.5	9.1	89.4	34.2	27.6	38.2
Contributed to project production	5.8	14.2	80.0	39.5	19.7	40.8

After performing exploratory factor analysis, we conducted inter-scale correlations (Table 2). The findings indicate a significant relationship between the three factors, with the highest correlation being seen between *Modeling teacher behavior* and *Training and supervision in their field of expertise* (r = 0.705); as all correlations were low-to-moderate, this indicates that despite their being related to the same construct, each factor is independent and unique.

The second aim of this study was to examine whether the practical experience of pre-service teachers in schools is reflected in their assessments. When examining the descriptive statistics for the questionnaire items, significant differences were seen by group (Table 3).

The findings show that 3rd-year students rated their cooperating teacher significantly different than their 2nd-year counterparts. A significant main effect was seen for Factor [$F_{(2,6)}$ = 187.316, p < 0.001, η^2 = 0.318], and a significant interaction of Factor X Year [$F_{(6,804)}$ = 4.718, p = 0.001, η^2 = 0.034], indicating that the study year of the participants' had a differential

effect on the perceived performance and contribution of their cooperating teachers. Regarding the yes/no question, *If you could choose, would you conduct your practical teaching experience with the same cooperating teacher?* most participants who answered *yes* also rated most of the items as scores 4 or 5, while those who answered *no* tended to rate very few items as four or five (Table 4).

Discussion

The main purpose of the current study was achieved, i.e., to create a reliable and valid measurement tool for enabling pre-service teachers to evaluate their cooperating teachers' contribution to their practical teacher training. The questionnaire demonstrates sound psychometrics properties through all four stages that were employed. At the onset, items were generated and content validity was achieved, as recommended in the literature (Taherdoost, 2016). Next, to establish those factors that constitute the functioning of

cooperating teachers, we followed the instructions of Clark and Watson (2019) and conducted EFA. The three factors that emerged (*Modeling teacher behavior*; *Training and supervision in their field of expertise*; and *Involvement in lesson planning and implementation*) support an earlier study on a similar topic (Clarke et al., 2014), whereby 11 themes emerged, describing cooperating teachers' roles, behaviors, duties, that were then grouped into the same three factors as found in the current study.

In this study, most pre-service teachers rated their cooperating teachers high on the questionnaire scale (4–5) and for most items. Such positive results offer satisfying feedback regarding the students' practical teaching experience (as part of their teacher preparation training). Yet about 20% of the participants rated their cooperating teachers with low scores, testifying that they would not have chosen the same cooperating teacher, were they given the choice. Future studies could benefit from examining who these participants are, including their levels of ability to provide constructive criticism, and what they would expect from a cooperating teacher.

In addition, our results present differences between 2nd-year and 3rd-year students, whereby greater self-efficacy was seen in the latter's ability reflect on their professional development journey during their teacher training, as seen in previous studies (Sciuchetti and Yssel, 2019; Zach et al., 2012).

The developed questionnaire presented in this study has a range of practical applications. Indeed, this tool could be used to assess the role of cooperating teachers, by both pedagogical instructors and pre-service teachers, to ensure that only highly suitable teachers are chosen for this position (Feiman-Nemser, 1996). Moreover, teacher education leaders can use this tool to evaluate the actual contribution of cooperating teachers, with an emphasis on gaps between expectations and conduct, as a means for improving the quality and efficacy of the practical guidance and training of future teachers. In addition, the questionnaire can assist in planning and improving professional development programs for cooperating teachers, to enhance and develop their mentoring skills and accountability.

Finally, as about one-fifth of the participants were not satisfied with their cooperating teacher, this should sound a warning bell, perhaps even leading to a certain degree of reorganization of teacher education programs – specially to prevent teacher dropout that is so common around the world, especially during their first 5 years of teaching. By identifying those student teachers who are critical of the training process in general, and of their cooperating teacher in particular, we may be able to improve their teaching experience and increase teacher retention.

Conclusion

In conclusion, cooperating teachers play a significant and important role in teacher training. Their selection should therefore be conducted carefully and intentionally. Although the questionnaire was developed with current cooperating teachers in mind, it can be used in the future for training new cooperating teachers, for screening physical education teachers when hiring for mentoring positions, or as a tool for creating professional development programs for cooperating teachers.

Data availability statement

The original contributions presented in this study are included in this article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by the Levinsky-Wingate Academic College, Israel. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

SZ: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review and editing. MS: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review and editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The authors declare that no Generative AI was used in the creation of this manuscript.

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