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EDITED BY
Cheryl J. Craig,
Texas A&M University, United States

REVIEWED BY
Patrice Buzzanell,
University of South Florida,
United States
Hanin Vanessa,
Université Catholique de Louvain, Belgium

*CORRESPONDENCE
Marie Bocquillon
✉ marie.bocquillon@umons.ac.be

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# Initial teacher training: Validation of a competence reference framework for the training of mentor teachers/ cooperating teachers

Christophe Baco, Antoine Derobertmasure, Marie Bocquillon* and Marc Demeuse

Methodology and Training Unit, Faculty of Psychology and Educational Sciences, University of Mons, Mons, Belgium

Throughout the world, cooperating teachers are crucial for initial teacher training. This article proposes a double validation of a competence reference framework for the training of cooperating teachers. This validation is based on the one hand, on international literature and, on the other hand, on the analysis of the answers of 854 French-speaking Belgian cooperating teachers to a questionnaire on the ideal level of proficiency in the tasks inherent to their function. The results indicate a strong convergence between the proposed competence reference framework, the literature review and the opinion of the 854 cooperating teachers. This strong convergence shows the relevance of the proposed competence reference framework for the training of cooperating teachers in French-speaking Belgium and elsewhere.

KEYWORDS

**mentoring, cooperating teacher, competence reference framework, internship, preservice teacher education**

## 1. Introduction

Regardless of the education system considered, a significant part of teachers' initial training takes place in the field during their internships (Crasborn et al., 2011; Ambrosetti, 2015; Helgevold et al., 2015). These are one of the three main components of their training together with 'academic knowledge of the subject' and 'methodological approaches' (European Commission/EACEA/ Eurydice, 2015, p: 31) and provide a link between theory and practice (e.g., Desbiens et al., 2013; Allen and Wright, 2014; Ambrosetti et al., 2014).

During an internship, three types of stakeholders are involved: the pre-service teacher (PST), the cooperating teacher[1] (CT) and the supervisor (Nguyen, 2009; Campbell and Lott, 2010; Dionne et al., 2021). A CT is a teacher who hosts a future teacher in his or her classroom during an internship. The scientific literature recognises the importance of the CT in the supervision of PSTs (e.g., Koerner et al., 2002; Glenn, 2006; Portelance, 2009; Ambrosetti, 2014; Clarke et al., 2014). The CT performs complex tasks (e.g., Wexler, 2019; Pellerin et al., 2021), which are multifaceted (Ambrosetti and Dekkers, 2010) and different from those he/she performs as a teacher (e.g., Boudreau, 2009; Vandercleyen, 2012). Also, it is recognised that a 'good' teacher does not necessarily make a 'good' CT (e.g., Ambrosetti et al., 2014; Gareis and Grant, 2014; Parker et al., 2021). However, their training varies greatly from country to country (Becker et al., 2019). Some education systems offer little or no training for CTs (e.g., Hamilton, 2010; Van Nieuwenhoven and Colognesi, 2013; Ambrosetti, 2014; Hoffman et al., 2015; Lafferty, 2018; Wexler, 2019; Clarke and Mena, 2020; Baco

1 In this article, the terms "cooperating teacher" and "mentor teacher" are used as synonyms.

et al., 2022a), while in other education systems this training has been in place for a long time. For example, in Quebec, the Quebec Ministry of Education has asked universities to implement training for CTs in partnership with the school community since 1994 (Portelance et al., 2008). Furthermore, some training programmes have demonstrated their effectiveness (e.g., Ambrosetti et al., 2014; Gareis and Grant, 2014; Becker et al., 2019).

Currently in French-speaking Belgium, the reform of initial teacher training[2] proposes to strengthen the status of CTs by setting up a certification programme (Derobertmasure et al., 2020). The objectives of this training are to train CTs to 'interact with a PST and observe, analyse and evaluate elements of professional teaching practice with a view to advising and helping to readjust these practices' (Fédération Wallonie-Bruxelles (FWB), 2019a, p: 35). In French-speaking Belgium, CTs say they are ready to train as CTs. The conditions mostly invoked by CTs for following this training are either that their students are taken care of during the training or either that their students are taken care of during the training and that they will be financially rewarded (Baco et al., 2021b). However, this training will not be compulsory to mentor PSTs and no more precise framework is proposed to guide the operators in charge of implementing this training.

At the same time, a large number of publications testify to the wealth of research aimed at conceptualising the activity of CTs (Hamel and Jaasko-Fisher, 2011; Colognesi et al., 2019b), as well as providing competence reference frameworks for their training (e.g., Portelance et al., 2008; Derobertmasure et al., 2011). Ideally, it should be possible to evaluate the training of CTs by taking into account the added value for the final beneficiaries, i.e., the PSTs and the students who will be entrusted to them later, as proposed by Guskey (2000, 2002) for professional development programmes. However, before implementing this type of evaluation, it is necessary to propose curricula and training frameworks that also benefit from scientific validation, as proposed by Smith and Simpson (1995) and Tigelaar et al. (2004), who validated a framework of teaching competences for teachers in higher education. These authors used a rigorous methodology (Delphi) in order to achieve a consensus among experts, relying in particular on confirmatory factor analysis. These validation procedures and triangulation are necessary because, for example, arbitrary and potentially irrelevant choices can be made on the basis of the personal interests and prejudices of the writers (Lenoir, 2010). Furthermore, it is important to have an objective reference framework that is relevant to all CTs, regardless of their professional background, personal characteristics and professional context.

With a view to collaborative work between the main stakeholders in the internship, a reference framework can be developed on the basis of the scientific literature, but also on the basis of the opinion of the CTs and PSTs, and then be subjected to empirical validation with regard to its effectiveness. It is to this end that this paper is devoted: to propose a double validation of a competence reference framework for the training of CTs (available in French and English; Baco et al., 2021a, 2022b; hereinafter referred to as RECOMS) developed from the French and English literature.

In order to achieve this double validation, two studies are conducted. Firstly (study 1), a theoretical validation is carried out by comparing the RECOMS with the vision of experts. To do this, the content and structure of the RECOMS were compared to the seven domains identified by Ellis et al. (2020) in their review of the recent literature to identify what a good pre-service teacher mentor is.

Secondly (study 2), an empirical validation is carried out by comparing the content of the RECOMS to the results of a large-scale survey (N = 854). This large-scale survey aims at identifying the ideal level of proficiency in various tasks inherent in mentoring PSTs, according to the CTs themselves. In order to find out whether the representations of CTs are rather common despite different characteristics (e.g., CTs who have received training *VS* CTs who have not received training), the differences in representations between the participants according to their characteristics are examined.

In order to carry out the double validation of the competence reference framework for the training of CTs (Baco et al., 2022a,b), this article addresses three research questions:

Q1 (study 1): Does the content of the RECOMS correspond to the seven domains characteristic of a good mentor according to the literature review by Ellis et al. (2020)?

Q2 (study 2): Do the dimensions that emerged from the responses of the CTs to the questionnaire on the ideal level of proficiency in the competences of a CT correspond to the competences of the RECOMS?

Q3 (study 2): Does the representation of the ideal CT vary according to certain characteristics of the CTs (e.g., whether or not they have received training)?

## 2. Study 1: First validation: Comparison of a proposed competence reference framework for CT training and a literature review

### 2.1. Materials and methods

The literature review by Ellis et al. (2020) and the RECOMS were written almost simultaneously and independently by two university teams physically on opposite sides of the world (Australia and Belgium, respectively). The team that wrote the most recent document, the RECOMS (Baco et al., 2022b), was not influenced by the literature review by Ellis and his colleagues when it wrote the RECOMS. Indeed, this team claims to have become aware of the literature review by Ellis et al. (2020) after the publication of its own competence reference framework.

In order to theoretically validate the content of the RECOMS, a confrontation (triangulation) of its content with Ellis and colleagues' seven domains was carried out. The triangulation of sources (Patton, 1999) ensures the validity of qualitative research through the convergence of information from different sources (Carter et al., 2014).

#### 2.1.1. Scientific basis of the corpus

These two documents (literature review by Ellis et al., 2020 and the RECOMS), which are based on "70 studies" (Ellis et al., 2020, p: 4) and 76 references (Baco et al., 2022b) respectively, share only a few sources. The literature referenced by Ellis et al. (2020) is solely in English, and comes from peer-reviewed articles listed in two databases (Proquest Education and Australian Index Education Plus). The RECOMS, on the other hand, references both French (e.g., Portelance, 2009) and English (e.g., Eck and Ramsey, 2019) scientific literature, as well as existing

2 To date, the implementation of this decree adopted in 2019 has been postponed to the start of the 2023–2024 academic year (instead of the start of the 2020–2021 academic year).

reference frameworks for the training of CTs (e.g., Portelance et al., 2008; Derobertmasure et al., 2011).

### 2.1.2. Structure of the corpus

As shown in Table 1, the literature review by Ellis et al. (2020) identified seven domains characteristic of a good "pre-service teacher mentor." To identify these, the three researchers first independently analysed the literature using grounded theory (an inductive method of data analysis). The three researchers regularly discussed the categories (indicators) and topics (dimensions) that emerged from their analysis, until they reached 'theoretical saturation'. In addition, the authors validated their approach through an inter-rater analysis. This methodology enabled them to identify seven domains, each of which is specified by indicators. In addition, a follow-up text explains all the domains.

The RECOMS, like the text by Ellis et al., was drafted on the basis of a literature review carried out to the point of information saturation (Glaser and Strauss, 1967; Guillemette, 2006). In addition to the scientific literature on the training needs of CTs and the tasks they perform when supervising PSTs, the authors used existing reference frameworks for this function (e.g., Rey et al., 2001; Portelance et al., 2008) and training programmes for this function (e.g., Childre and Van Rie, 2015). The authors then synthesised this literature review into a reference framework with a competency-based approach (Demeuse and Strauven, 2013). The RECOMS is composed of six competences (Table 1) which are specified by a set of knowledge, know-how and interpersonal skills called "resources" in reference to the legal texts governing initial teacher training in French-speaking Belgium (e.g., Fédération Wallonie-Bruxelles, 2013, 2019a). According to the legislator (Fédération Wallonie-Bruxelles, 2013), a competence is an "assessable faculty for an individual to mobilise, combine, transpose and implement individual or collective resources in a particular context and at a given time; resources means in particular knowledge, know-how, experience, aptitudes, interpersonal skills and attitudes" (p: 12).

### 2.1.3. The seven domains of the considered literature review

According to the literature review by Ellis and colleagues, seven domains structure the work of a CT. According to this synthesis (Ellis et al., 2020), a CT should work together with a representative of the training institution (domain 1). He/she should be enthusiastic and preferably have undergone training for the CT function. Similarly, he/she should have a good understanding of his/her role (domain 2). The CT should also develop a trusting, reciprocal and positive relationship with the PST (domain 3). The CT should also engage in a dialogical relationship with the PST. Together they should share their reflective practice. The CT should also provide continuous feedback to the PST (domain 4). A CT must also model effective practice and be knowledgeable about theories of teaching and learning to link theory and practice (domain 5). A CT must also provide direction and support. This support is emotional as well as practical and pedagogical (domain 6). A CT must also keep an open mind to new ideas about teaching practices. He/she should also enable the PST to develop his/her own professional identity (domain 7).

### 2.1.4. The six competences of the RECOMS

As will be developed later, according to the competence reference framework, a CT should be able to interact with the PST (competence 1). This competence is considered necessary for the implementation of all other competences. It concerns communication (Portelance et al., 2008) and the (inter)personal relationship with the PST (Desbiens et al., 2012). The CT must also adopt the dual identity of a CT (teacher and teacher trainer) and organise his or her continuing education (competence 2). Indeed, according to Rey et al. (2001), it is not easy for CTs to ensure the joint development of the PST and the students. Some CTs may have shifted the focus from the students' learning objectives to those of the PST and vice versa. As a teacher trainer, he/she has to use teaching strategies adapted to an adult audience, potentially different from those used with his/her own students. In addition, they must take on different roles such as "critical friend" or "co-researcher" (Boudreau, 2001). The CT must also model professional practices (competence 3) and develop the trainee's reflective practice (competence 4). They must also guide the PST: observe, evaluate/ give feedback, support (competence 5). This competence highlights the fact that evaluation should be based on objective observation, for example by using tools such as observation grids (Bocquillon, 2020). In order to implement these different competences, it is necessary that the CT co-supervises the PST (competence 6), i.e., collaborates with the supervisor of the training institution (Pellerin et al., 2021).

## 2.2. Results: Comparative analysis of the texts in the corpus

The following section aims to show, through the study of the "domains" proposed by Ellis et al. (2020) and the "competences" of the RECOMS (Baco et al., 2022b), the strong theoretical coherence that can be identified between these two proposals. The content of each of the domains proposed by Ellis and colleagues was analysed by the research

TABLE 1 The seven domains (Ellis et al., 2020) and the six competences of the RECOMS (Baco et al., 2022b).

| The seven domains (Ellis et al., 2020) | The six competences of the RECOMS (Baco et al., 2022b) |
|---|---|
| Domain 1: collaborating with the university | Competence 1: Interacting with the PST |
| Domain 2: developing a disposition & professional knowledge in mentoring | Competence 2: Adopting the dual identity of a CT (teacher and teacher trainer) and organising his or her ongoing training |
| Domain 3: establishing an effective relationship with PSTs | Competence 3: Training the PST in teaching practices (modelling "good practices") |
| Domain 4: facilitating PST's learning | Competence 4: Developing the PST's reflective practice |
| Domain 5: modelling effective teaching & making connections between theory & practice | Competence 5: Guiding the PST: observing, evaluating / giving feedback, scaffolding |
| Domain 6: providing direction & support | Competence 6: Co-mentoring the PST |
| Domain 7: using a progressive mindset & supporting PSTs to nurture a teacher-identity | |

team. Then the similarity with the content of the RECOMS was analysed. For the contents of the domains proposed by Ellis and colleagues that matched the content of the RECOMS, a more detailed analysis was carried out. For example, as shown in the following section, the content of the domain "collaborating with the university" (Ellis et al., 2020) was identified as corresponding to elements of the RECOMS, but more specific points of divergence/attention were also identified in either text. For example, in the area of "collaborating with the university," it was identified that the RECOMS, in contrast to the text by Ellis and his colleagues, highlights the reasons why harmonisation between the CT and supervisors of the training institution may be difficult.

### 2.2.1. Collaboration between CT and supervisor

The domain 'collaborating with the university' (Ellis et al., 2020) can be linked to the RECOMS competences 'Co-mentoring the PST' and 'Adopting the dual identity of a CT...'. Ellis et al. (2020) propose that the CT should "Develop a collaborative relationship with the university" (p: 5), as do Baco et al. (2022b). Similarly, Ellis et al. (2020) propose that the CT should "develop a shared vision of good teaching with academics" (p: 5) and the RECOMS, for its part, states that the CT and the university supervisor should harmonise their practices and discourses. Unlike Ellis et al. (2020), who do not specify why harmonisation of views might be difficult between supervisors and CTs, the RECOMS indicates that difficulties in harmonisation might be due to differences in culture between the university and school environments (Portelance et al., 2019). Furthermore, Ellis et al. (2020) state that a good CT must "develop a shared vision of the responsibilities of the mentor role with the university" (p: 5), as Baco et al. (2022b) state that a good CT needs to be able to "explain the difference between the function of a CT and that of the supervisor within the initial training programme" (p: 7).

### 2.2.2. Professionalism of the CT

The domain "developing a disposition & professional knowledge in mentoring" (Ellis et al., 2020) is largely reflected in the RECOMS competence "Adopting the dual identity of a CT...". Both research teams agree that an experienced teacher does not necessarily make a good CT. Respectively, the authors rely, for example, on Wexler (2019) and Gareis and Grant (2014). Similarly, both texts expect a CT to be trained and/or engaged in a professional development process as a CT. Analogously, the authors of both teams agree that a CT should be able to take on different roles such as, according to the RECOMS, that of 'mentor' (Glenn, 2006), 'coach' (Matsko et al., 2020), 'co-researcher' (Boudreau, 2001). On the other hand, the fact that a good mentor should be "intrinsically motivated to take the role of mentor" and that he/she should "demonstrate an enthusiasm & passion for the mentoring role" (Ellis et al., 2020, p: 6) is relatively implicit in the RECOMS.

### 2.2.3. Dialoguing with and supporting the PST

The domain "establishing an effective relationship with PSTs" is mainly related to the competence "Interacting with the PST" as well as to the competence "Developing the PST's reflective practice" of the RECOMS. Based on Paul (2009) definition of the concept of mentoring / accompaniment: 'being with and going towards, based on a symbolic value, that of sharing' (p: 95) and mobilising Colognesi et al. (2019a) model of mentoring, the RECOMS argues that the relationship between the CT and the PST should be reciprocal. This view is shared by Ellis et al. (2020) who identified that a good mentor must 'develop a relationship based on reciprocity' (p: 6). Similarly, Ellis et al. (2020) state that a good mentor must "incorporate respectful, responsive, reciprocal & reflective elements into the mentoring relationship" (Ellis et al., 2020, p: 5), as Baco et al. propose that a good CT must "demonstrate interpersonal skills such as authenticity, respect, empathy, availability, consistency and objectivity" (p: 6).

### 2.2.4. Supporting the PST's learning and developing their reflective practice

The domain of 'facilitating PST's learning' (Ellis et al., 2020) is reflected in two RECOMS competences: "Developing the PST's reflective practice" and "guiding the PST...". Ellis et al. (2020), particularly drawing on Grimmett et al. (2018), propose that the CT 'engage in a dialogic interaction with the PST in a shared experience of meaning construction' (p: 7). With regard to reflective practice, Baco et al. (2022b) draw on Derobertmasure (2012) and Bocquillon et al. (2019) model. The latter model updates the transprofessional model of Dubois et al. (2019) who, based on a set of models (Van Manen, 1977; Schön, 1983; Kolb, 1984; Sparks-Langer et al., 1990; Fenstermacher and Richardson, 1994; Hatton and Smith, 1995), operationalized reflective practice. According to the model of Bocquillon et al. (2019), a teacher can mobilise different reflective processes (e.g., describing his or her practice, evaluating it and proposing alternatives) about different teaching practices (e.g., his or her management of student participation and interventions to check student understanding) and from different sources of information (his or her perceptions, the opinions of his or her colleagues, his or her students, the scientific literature, etc.). Based on this model, it is proposed in the RECOMS that the CT analyses their own practices and develops the PST's reflective practice, which is different. Also, both teams agree on the need for a form of co-construction of the image of practice and on the need to propose tools and methods to engage the PST in his or her reflective practice. Similarly, according to both research teams, PSTs and CTs have equal legitimacy in their sharing of meaning-making from context. Baco et al. (2022b) seem to refine the reflective practice statement by expressing that different sources can be mobilised and that such sources are not necessarily equivalent.

Furthermore, both research teams argue that the CT must provide effective feedback. To do so, Baco et al. build on the work of Bocquillon (2020) who operationalised six types of feedback from Crahay (2007), De Landsheere and Bayer (1974) and Hattie and Timperley (2007) presented below. Stereotypical feedback (type 1) is simply telling the learner whether their production is good or bad, and does not allow them to understand the reasons for their success or failure, nor to improve. Specific feedback (type 2), on the other hand, tells the learner why their production is correct/incorrect, which allows them to know the reasons for their success/failure and to improve. The feedback asking for correction/improvement/development of the production (type 3) does not break the interaction episode between the learner and the person giving feedback. It consists of asking the learner to correct/improve/develop his/her production. Control feedback (type 4) aims to ask the learner to evaluate his/her own production, thus developing his/her self-regulation skills, as does feedback involving mutual evaluation between learners (type 5), which consists of asking a learner to evaluate the production of another learner. Finally, feedback on the self (type 6) makes a judgement on the learner as a person and not on his/her production and should be avoided.

In addition, according to both research teams, a good CT should be able to help a PST, suggest ideas and guide him/her. However, the RECOMS states that a good CT should be able to objectively observe a PST's behaviours and written preparations, whereas this is implicit in the text of Ellis et al. (2020).

### 2.2.5. Demonstrating and explaining professional practice to the PST

The 5th domain "modelling effective teaching & making connections between theory & practice" (Ellis et al., 2020) covers the RECOMS competence "Training the PST in teaching practices (modelling "good practices")." Based on a large body of literature (e.g., Glenn, 2006; Childre and Van Rie, 2015; Lafferty, 2018; Mc Gee, 2019), both teams recognise that a good CT is able to demonstrate effective practices to the PST. In both papers, the aim of demonstrating practices is not to get the PST to mechanically reproduce procedures, but to increase their behavioural repertoire so that they can mobilise certain relevant actions depending on the situation. Similarly, both research teams agree that it is necessary for the PSTs to take a reflective look at the practices they are shown.

### 2.2.6. Supporting the PST

The domain "providing direction & support" (Ellis et al., 2020) is related to the RECOMS competences 'Interacting with the PST' and "Guiding the PST...". Ellis et al. (2020) propose that support should be of different kinds (e.g., psychological, emotional, technical, etc.) and the RECOMS specifies that the CT should support the practice of the PST and show empathy, respect, etc. Less developed than in Ellis et al.'s proposal, the need for the CT to offer emotional support to the PST is present in the RECOMS. Both research teams agree that a good CT should be able to guide the PST and give feedback. According to Eck and Ramsey (2019), quoted in the RECOMS, "Effective feedback that aligns with the learning objectives of pre-service coursework connects the concepts, values, and ideals from the pre-service coursework with real experiences found only in the classroom" (Eck and Ramsey, 2019, p: 98).

### 2.2.7. Developing the professional identity of the PST

Although the domain "using a progressive mindset & supporting PSTs to nurture a teacher-identity" (Ellis et al., 2020) is related to the RECOMS competences "Adopting the dual identity..."and "Co-mentoring the PST...", the links between this and the RECOMS are weaker than for the other domains, for which a very high degree of overlap has been identified. Both teams agree that a good CT must be adaptable, as well as open-minded, but these are only two of the RECOMS 'interpersonal skills'. Secondly, with regard to the importance of a CT developing the professional identity of the PST, this is not a separate RECOMS competence, but it is presented as one of the major objectives of CT training: "The aim of high-quality training for cooperating teachers is to enable them to contribute to the training of teachers with professional skills and a strong professional identity [..]" (Baco et al., 2022b, p: 3).

## 2.3. Summary of theoretical validation

This section has shown that two documents aimed at highlighting the qualities of a good CT and written almost simultaneously by two separate research teams have a very large number of common points, and this, for all the dimensions carried by each of the proposals. This theoretical validation reinforces the work of the two research teams, since the respective summarizing works (Ellis et al., 2020; Baco et al., 2022b) reach the same conclusions from different and complementary theoretical sources. In order to carry out a double validation of the RECOMS, after this theoretical validation, the rest of the text presents an empirical validation of the RECOMS based on the answers of a large sample of CTs to a questionnaire (study 2).

# 3. Study 2: Second validation: The CTs' opinion

## 3.1. Materials and methods

### 3.1.1. Sample and representativeness

Failing a database on CTs in French-speaking Belgium, we cannot fully assess the representativeness of the sample (Berthier, 2016). The sample is a large convenience sample (N = 854). However, we were able to show the closeness of the sample to teachers in French-speaking Belgium on a number of variables (age distribution, gender, geographical distribution, etc.; Baco et al., 2021b, 2022a). Table 2 describes the sample.

TABLE 2 Description of the sample (Baco et al., 2022a, p: 79).

| | | Sample (N=854) | Population of French-speaking Belgian teachers in compulsory education in full-time equivalents (N=84,231; Fédération Wallonie-Bruxelles, 2019b, 2020) |
|---|---|---|---|
| Length of service as a teacher (in years) | 0–9 | 112 (13%) | 29,343 (35%) |
| | 10–19 | 273 (32%) | 26,976 (32%) |
| | 20–29 | 300 (35%) | 18,352 (22%) |
| | 30–39 | 165 (19%) | 9,432 (11%) |
| | 40 and over | 4 (<1%) | 128 (<1%) |
| Experience as a CT (number of PSTs mentored) | 1 to 4 | 212 (25%) | No information available |
| | 5 to 10 | 267 (31%) | |
| | More than 10 | 364 (43%) | |
| | Do not know. | 11 (1%) | |
| Training in PST mentoring | Yes | 93 (11%) | |
| | No | 762 (89%) | |
| Gender | Female | 731 (86%) | Between 64% female in secondary education and 97% female in pre-primary education |
| | Male | 123 (14%) | |
| Average age | | 43.8 years (σ = 9) | Between 41 years (primary) and 43.2 years (secondary) |

### 3.1.2. Data collection: The questionnaire

The RECOMS was operationalised as a two-part questionnaire. Referring to the "concept analysis" of training needs (Lapointe, 1983, 1995; Renard and Derobertmasure, 2019), the aim of this study is to relate the level of proficiency reported (current situation) by the mentors with regard to certain tasks inherent in their function to the level of proficiency that they believe a mentor should have in the ideal situation. In order to do this, the respondents (all CTs) had to position themselves twice with regard to the same objects as presented in Table 3: once by indicating their own level of proficiency and a second time by indicating the level of proficiency that a CT should have in the ideal situation (full questionnaire: Supplementary Table 1). The results on the reported level of proficiency of CTs are published in two articles (Baco et al., 2021b, 2022a).

As described below and in the previous publication (Baco et al., 2022a), the reported level of proficiency of the CTs is structured in four dimensions. According to the first dimension "Co-mentoring and analysis of one's own practices," the CT actively collaborates and analyses his/her own practices in order to discuss them with the supervisor. Also, he/she is able to identify and discuss differences in views between the supervisor and him/herself. According to the second dimension, "Observing and evaluating," the CT observes and evaluates the preparations and performance of the PST. According to the third dimension, "Adapting, supporting and training in teaching practices," the CT is able to interact with the trainee, to present professional actions and to provide support. Finally, according to the fourth dimension "Developing PST's reflective practice," the CT develops the trainee's reflective practice.

The CTs indicated a higher level of proficiency for some items in the questionnaire. For example, the item on the CT's ability to dialogue with the PST and establish a relationship of trust was rated very highly, whereas the item on the CT's ability to develop the trainee's reflective practice from different sources of information was rated lower (Baco et al., 2021b). In addition, it has been identified that the length of service is a poor predictor of the reported level of proficiency of CT (Baco et al., 2022a). Also, this supports the finding that an experienced teacher is not necessarily a better CT. With regard to experience as a CT (number of PSTs supervised), significant differences were observed only "between the group of teachers who supervised "1 to 4 PSTs" and those who supervised "5 to 10 PSTs" ($p < 0.01$) or "10 or more PSTs" ($p < 0.001$) for the first dimension and between the group of teachers who supervised "1 to 4 PSTs" and those who supervised "more than 10" ($p < 0.05$) for the fourth dimension" (Baco et al., 2022a, p: 85).

CTs who had received training in supervising PSTs reported a significantly higher level of proficiency than those who had not for three of the four dimensions (all except dimension 3 "Adapting, supporting and training in teaching practices").

This publication presents the results of the second part of the questionnaire (ideal situation). This allows us to identify the representations of the CTs about the level of proficiency they feel, in the best case, a CT should be able to demonstrate and therefore the relevance of the RECOMS content.

In order to position themselves, for each of the 22 items, the same Likert scale was used in both parts of the questionnaire. This Likert scale has 6 levels: no proficiency / very poor proficiency / poor proficiency / good proficiency / very good proficiency / excellent proficiency.

To answer the questionnaire, the CTs had to be teachers in the French-speaking Belgium and to have already mentored at least one PST internship in the last 5 years. To complete the questionnaire, all 854 participants had to have answered all questions. Therefore, there is no missing data.

### 3.1.3. Data processing

Data processing was carried out by replicating the analysis of Baco et al. (2022a). First, in order to identify the characteristic dimensions of an ideal CT, according to the CTs and their similarity with the RECOMS competences (research question 2), a principal component factor analysis without and with Varimax rotation (De Stercke and Temperman, 2021) was performed.

To answer research questions 3, factor scores (Sylvia and Hutchison, 1985) were calculated with the SPSS® software (regression method (Di

TABLE 3 Operationalisation of the RECOMS resources in a two-part questionnaire.

| Resources of the RECOMS (Baco et al., 2022a, p: 12) | Examples of items from part 1 of the questionnaire=reported level of proficiency of a CT | Examples of items from part 2 of the questionnaire=ideal level of proficiency of a CT |
|---|---|---|
| | **"When mentoring a trainee, what is your level of proficiency in each of the following skills?"** | **"In order to mentor a trainee in the best possible way, in an ideal situation, with what level of proficiency should a CT be able to..."** |
| "Observing the PST's planning as objectively as possible in order to complete an evaluation grid (e.g., a criterion grid) provided by the training institution." | Objectively observing the trainee's written lesson preparations using an observation grid (e.g., checklist). | …objectively observe the trainee's written lesson preparations using an observation grid (e.g., checklist)? |
| | (…) | (…) |
| "Observing as objectively as possible a series of behaviours (indicators) of the PST during classroom performances in order to complete an evaluation grid (e.g., a criterion grid) provided by the training institution." | Objectively observing a series of behaviours of the trainee during classroom performances using an observation grid (e.g., checklist). | …objectively observe a series of behaviours of the trainee during classroom performances using an observation grid (e.g., checklist)? |
| | (…) | (…) |
| "Providing scaffolding and fading according to the trainee's progress (Vierset et al., 2015)." | Providing assistance (e.g., advice, suggestions for improvement, etc.) to the trainee about his/her classroom performance? | …provide assistance (e.g., advice, suggestions for improvement, etc.) to the trainee about his/her classroom performance? |
| | (…) | (…) |

Stefano et al., 2009)) in order to obtain, for each individual and for each dimension, a score taking into account the factor structure. A new variable for each of the dimensions (Di Stefano et al., 2009) is thus formed by these factor scores. These are standardised scores (mean = 0; standard deviation = 1). Analyses of variance (Odum, 2011) between subgroups of CTs are performed on the basis of these scores used instead of the initial variables. Then, linear regressions between the CTs' length of service as a teacher (in years) and the factor scores for each of the dimensions were conducted to determine the strength of the relationship between teachers' length of service and their perceived ideal level of proficiency. One-way analyses of variance (ANOVA; Mills and Gay, 2019) were conducted to identify possible differences in the assessment of ideal profiency between subgroups of respondents. These analyses allow for the identification of possible differences in means between the factor scores (quantitative variable) of respondents divided into different subgroups (e.g., having or not having received training in mentoring PSTs).

## 3.2. Results

### 3.2.1. Internal consistency

The 22 items assessing the ideal level of proficiency for mentoring PSTs in the best way are highly correlated with each other and none of the items assesses a characteristic that is unrelated to what the other items assess (De Stercke and Temperman, 2021), as Cronbach's alpha is strong (e.g., Hartley and MacLean, 2006; Cronbach's alpha = 0.94) and stable when an item is dropped (Supplementary Table 2).

### 3.2.2. Unrotated principal component analysis

In order to identify whether the competences of an ideal CT according to the CTs are structured into six competences as in the RECOMS, a principal component analysis was conducted, as Bartlett's sphericity index is significant and the Kaiser-Mayer-Olkin (KMO) index is greater than 0.60 (0.92; Beaulieu et al., 2021). As shown in Figure 1, the unrotated principal component analysis identifies 4 factors with eigenvalues greater than 1, which explain 64.4% of the total variance. The first factor has a much higher eigenvalue than the other three: it accounts for 45.1% of the total variance. If a common "CT" dimension emerges from the factor analysis, a principal component analysis with orthogonal Varimax rotation should be carried out in order to refine the dimensions of the factor analysis and possibly to get closer to the six RECOMS competences.

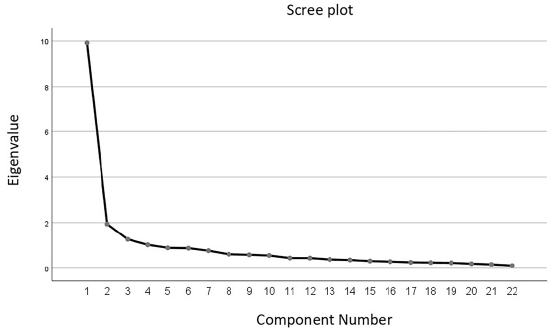


FIGURE 1
Scree plot of eigenvalues.

### 3.2.3. Principal component analysis with varimax rotation

The use of the Varimax rotation is justified by the high correlation of the items between them (Beaulieu et al., 2021). As shown in Table 4, four dimensions whose eigenvalue is greater than 1 are identified by principal component analysis with Varimax rotation and Kaiser normalisation (Streiner, 1994). If 4 dimensions are identified with principal component analysis with Varimax rotation as with principal component analysis without Varimax rotation, the eigenvalue of each dimension is more balanced after rotation. Respectively, the dimensions represent 19.8% (dimension 1), 16.6% (dimension 2), 16.2% (dimension 3), 11.8% (dimension 4) of the explained variance.

All items have a saturation of more than 0.40 in one or two dimensions. Following Beaulieu et al. (2021) and a previous paper on the analysis of the reported level of proficiency of CTs (Baco et al., 2022a), all items with a saturation equal to or greater than 0.40 in a single dimension were retained in that dimension. Two items (Adapt_expectations and Support_preparations) have a saturation above 0.40 in two dimensions. For these, an examination of the coherence they could bring to the model and their level of saturation was carried out to choose the dimension in which to assign them.

The dimensions thus obtained were named: "Co-mentoring and analysis of one's own practices" (dimension 1); "Observing and

TABLE 4 Component (dimensions) matrix of the principal component analysis with Varimax rotation.

| | Component (dimensions) | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Modelling_supervisor | 0.442 | | | |
| Justify_context | 0.621 | | | |
| Justify_pedagogical | 0.757 | | | |
| Justify_ethics | 0.764 | | | |
| Argument_choice | 0.727 | | | |
| Identify_differences | 0.648 | | | |
| Analyse_process | 0.536 | | | |
| Analyse_sources | 0.633 | | | |
| Observe_performance | | 0.758 | | |
| Observe_preparations | | 0.839 | | |
| Evaluate_performance | | 0.821 | | |
| Evaluate_preparations | | 0.857 | | |
| Interact | | | 0.671 | |
| Manage_progression | | | 0.610 | |
| Adapt_expectations | 0.401 | | 0.537 | |
| Manage_classroom | | | 0.678 | |
| Manage_learning | | | 0.593 | |
| Support_performance | | | 0.659 | |
| Support_preparations | | 0.489 | 0.531 | |
| Develop_process | | | | 0.782 |
| Develop_sources | | | | 0.810 |
| Develop_despite_emotions | | | | 0.718 |

evaluating" (dimension 2); "Adapting, supporting and training in teaching practices" (dimension 3); "Developing PST's reflective practice" (dimension 4). Although they are not strictly similar to the six competences of the RECOMS[3], these 4 dimensions, which structure the competences of an ideal CT according to the CTs on the basis of the 22 items in the questionnaire, are very relevant to the CT function.

Thus, according to the first dimension "Co-mentoring and analysis of one's own practices," the capacity of a CT to analyse his/her own practices is linked to his/her capacity to co-mentor the PST with the supervisor of the training institution. This dimension brings together the competence "co-mentoring the PST" and the tasks dealing with the capacity of the CT to analyse his/her practices as a teacher.

According to the second dimension "Observing and evaluating," an ideal CT manages to observe objectively the performance and preparations of the PST in order to provide a valid evaluation to the PST on his/her preparations and performance. These tasks are derived from the RECOMS competence "guiding the PST...".

The third dimension "Adapting, supporting and training in teaching practices" concerns the formative/mentoring relationship between the CT and the PST. More specifically, the tasks that make up this dimension concern (a) the interaction between the CT and the PST (b) the adaptation of the CT to the PST (c) the modelling of teaching practices and (d) the support provided to the PST regarding his/her classroom performances and preparations. This dimension thus brings together several competences that were distinct in the RECOMS, as well as the tasks related to helping the PST (tasks of the RECOMS competence "guiding the PST...").

Finally, according to the fourth dimension, "Developing PST's reflective practice," an ideal CT helps the PST to develop his or her reflective practice. To do this, he/she can get the PST to analyse his/her practice in different ways (describe, propose alternatives, etc.); this analysis can be based on different sources (e.g., pedagogical literature) and should be carried out despite the filter of emotions that can change the perceptions of the CT and the PST. These tasks are part of the RECOMS competence "Developing the PST's reflective practice." The "Developing the PST's reflective practice" competence is therefore split into two. The tasks dealing with the capacity of the CT to analyse his/her own practice are found in the dimension "Co-mentoring and analysis of one's own practices" and the tasks dealing with the capacity of the CT to develop reflective practice constitute a separate dimension: "Developing PST's reflective practice."

This section has presented the 4-dimensional factor structure that reflects what an ideal mentor is according to the 854 mentors interviewed. The following section describes, for all the items in each dimension, the level of proficiency that respondents felt a CT should ideally have.

### 3.2.4. Ideal level of proficiency estimated by the CTs

Table 5 presents the distribution of responses (N = 854) across the levels of the Likert scale. In this table, the items are ranked from the item with the most "very good or excellent" responses to the one with the least. The number in front of each item indicates which dimension it is associated with.

The ideal level of proficiency estimated by the CTs is not equivalent for all items. The CTs therefore believe that some competences are more relevant to the CT function than others. Overall, the rate of "very good or excellent proficiency" responses varied from 80% for the modelling of learning management practices by the CT (F3_Manage_learning) to 53% for the ability of a CT to justify his or her practices as a teacher on the basis of ethical arguments (F1_Justify_ethics). The rate of "low proficiency or less" responses varied from 1% for 4 tasks such as[4] modelling classroom management practices (F3_Manage_classroom) to 8% for a CT's ability to argue the choice of his/her practices (F1_Argument_choice) and to justify them on the basis of ethical arguments (F1_Justify_ethics).

The six items evaluated most positively, i.e., those which received the greatest number of "very good or excellent proficiency" responses and few "poor proficiency or less" responses, are part of the dimension "Adapting, supporting and training in teaching practices" (dimension 3), which comprises seven items. According to the CTs, this dimension therefore seems to be the one for which the ideal level of proficiency should be the highest.

Seven of the eight items relating to the dimension "Co-mentoring and analysis of one's own practices" (dimension 1) are around the median item. The eighth item, which concerns the capacity of the CT to justify his/her practices on the basis of ethical arguments (F1_Justify_ethics), is in last place in the ranking. Overall, this dimension seems to be less well evaluated than the previous one.

The other two dimensions, "Developing PST's reflective practice" (dimension 4) and "Observing and evaluating" (dimension 2), were less well evaluated than the previous dimensions. Indeed, two of the three items in the dimension "Developing PST's reflective practice" are ranked between 11th and 18th place, and the item on the capacity of the CT to develop the PST's reflective practice from different sources (F4_Develop_sources) is ranked 21st. The four items related to the dimension "Observing and evaluating" are distributed in the last quarter of the ranking. This dimension therefore seems to be the least well evaluated of the four dimensions.

In order to answer the second research question, this section presented the factor structure of the responses and the evaluation of the items by all CTs. In order to answer the third research question, the following sections aim to identify differences in the evaluation of the ideal level of proficiency of a CT according to the following variables: length of service (section 3.2.5); number of trainees supervised (section 3.2.6); whether or not they have received training in supervising trainees (section 3.2.7).

### 3.2.5. Length of service

Linear regressions and analyses of variance (ANOVA) calculated simultaneously with the SPSS® software (Bryman and Cramer, 2004; Holmes and Rinaman, 2015) between the CTs' teaching experience (in years) and the factor scores for each of the dimensions indicate a low variance explained ($R^2$) by length of service (Huguier and Boëlle, 2013; Mills and Gay, 2019), below 0.10 (Table 6). As a near-zero $R^2$ may indicate that the relationship between the two variables is not linear but of another form, the scatter plots (Supplementary Figure 1) were

3 The unequal number of items for each of the six dimensions may partly explain the different factor structure.

4 The other tasks that also had a proportion of "low proficiency or less" responses equivalent to 1% were: (a) the assistance provided by the CT on the performance of the PST (b) the CT's ability to jointly manage the progress of the PST and his or her students (F3_Manage_progression) and (c) the CT's ability to look at his or her practice in a reflective manner in different ways (describe his or her practices, propose alternatives, etc.; F1_Analyse_process).

TABLE 5 Distribution of responses (N=854) across the levels of the Likert scale. (In this table, the items are ranked from the item with the most "very good or excellent proficiency" responses to the one with the least).

| | No proficiency | Very poor proficiency | Poor proficiency | Good proficiency | Very good proficiency | Excellent proficiency | Total |
|---|---|---|---|---|---|---|---|
| F3_Manage_learning | 0 (0%) | 0 (0%) | 10 (1%) | 161 (19%) | 475 (56%) | 208 (24%) | 854 (100%) |
| F3_Manage_classroom | 0 (0%) | 1 (0%) | 7 (1%) | 181 (21%) | 448 (52%) | 217 (25%) | 854 (100%) |
| F3_Support_performance | 1 (0%) | 1 (0%) | 5 (1%) | 193 (23%) | 387 (45%) | 267 (31%) | 854 (100%) |
| F3_Manage_progression | 0 (0%) | 1 (0%) | 7 (1%) | 202 (24%) | 442 (52%) | 202 (24%) | 854 (100%) |
| F3_Interact | 11 (1%) | 2 (0%) | 4 (0%) | 223 (26%) | 417 (49%) | 197 (23%) | 854 (100%) |
| F3_Support_preparations | 4 (0%) | 1 (0%) | 14 (2%) | 231 (27%) | 381 (45%) | 223 (26%) | 854 (100%) |
| F1_Analyse_process | 0 (0%) | 0 (0%) | 12 (1%) | 248 (29%) | 419 (49%) | 175 (20%) | 854 (100%) |
| F1_Justify_context | 1 (0%) | 1 (0%) | 13 (2%) | 255 (30%) | 424 (50%) | 160 (19%) | 854 (100%) |
| F1_Modelling_supervisor | 8 (1%) | 3 (0%) | 38 (4%) | 253 (30%) | 426 (50%) | 126 (15%) | 854 (100%) |
| F3_Adapt_expectations | 1 (0%) | 2 (0%) | 27 (3%) | 292 (34%) | 394 (46%) | 138 (16%) | 854 (100%) |
| F4_Develop_process | 3 (0%) | 2 (0%) | 19 (2%) | 303 (35%) | 388 (45%) | 139 (16%) | 854 (100%) |
| F1_Identify_differences | 4 (0%) | 5 (1%) | 26 (3%) | 295 (35%) | 374 (44%) | 150 (18%) | 854 (100%) |
| F1_Justify_pedagogical | 2 (0%) | 5 (1%) | 51 (6%) | 280 (33%) | 378 (44%) | 138 (16%) | 854 (100%) |
| F1_Argument_choice | 11 (1%) | 7 (1%) | 49 (6%) | 278 (33%) | 362 (42%) | 147 (17%) | 854 (100%) |
| F2_Evaluate_performance | 5 (1%) | 5 (1%) | 34 (4%) | 307 (36%) | 355 (42%) | 148 (17%) | 854 (100%) |
| F1_Analyse_sources | 2 (0%) | 2 (0%) | 38 (4%) | 314 (37%) | 370 (43%) | 128 (15%) | 854 (100%) |
| F2_Observe_preparations | 7 (1%) | 4 (0%) | 45 (5%) | 304 (36%) | 339 (40%) | 155 (18%) | 854 (100%) |
| F4_Develop_despite_emotions | 4 (0%) | 1 (0%) | 31 (4%) | 332 (39%) | 366 (43%) | 120 (14%) | 854 (100%) |
| F2_Observe_performance | 5 (1%) | 3 (0%) | 39 (5%) | 323 (38%) | 336 (39%) | 148 (17%) | 854 (100%) |
| F2_Evaluate_preparations | 7 (1%) | 5 (1%) | 51 (6%) | 312 (37%) | 335 (39%) | 144 (17%) | 854 (100%) |
| F4_Develop_sources | 5 (1%) | 1 (0%) | 35 (4%) | 347 (41%) | 348 (41%) | 118 (14%) | 854 (100%) |
| F1_Justify_ethics | 8 (1%) | 5 (1%) | 54 (6%) | 326 (38%) | 345 (40%) | 116 (14%) | 854 (100%) |

The number after the letter "F" in the item name indicates to which dimension the item is attached. For example, the item "F3_Manage_learning" is attached to dimension 3. The four dimensions are as follows: 1. "Co-mentoring and analysis of one's own practices." 2. "Observing and evaluating." 3. "Adapting, supporting and training in teaching practices." 4. "Developing PST's reflective practice."

TABLE 6 Linear regressions between teacher length of service (in years) and factor scores.

| Dimensions | $R^2$ | F | ddl | p |
|---|---|---|---|---|
| "Co-mentoring and analysis of one's own practices" | 0.009 | 7,732 | 1 | 0.006 |
| "Observing and evaluating" | 0.002 | 1.971 | 1 | 0.161 |
| "Adapting, supporting and training in teaching practices" | <0.001 | 0.204 | 1 | 0.652 |
| "Developing PST's reflective practice" | <0.001 | 0.019 | 1 | 0.889 |

observed (Bressoux, 2008). These indicate that there is no particular relationship between the two variables. These small differences, tested by means of analyses of variance (ANOVA), are significant ($p < 0.05$) only for the first of the four factors: "Co-mentoring and analysis of one's own practices" ($R^2 = 0.009$; $F = 7.732$; ddl = 1; $p < 0.05$). Length of service as a teacher only marginally predicts the CTs' assessment of the degree of proficiency that an ideal CT should have. These results are supported by the analysis of the residual distributions. The normal probability plots (Q-Q plots; Supplementary Figure 2) tend to reasonably validate the normality assumption (Bressoux, 2008).

### 3.2.6. Number of PSTs mentored

To identify whether the evaluation of the level of proficiency of an ideal CT differs significantly between CTs divided into three subgroups according to the number of PSTs they have mentored, one-way ANOVAs (Table 7) were conducted. For two dimensions ("Co-mentoring and analysis of one's own practices" and "Developing PST's reflective practice"), the average factor scores increased with the number of PSTs mentored. These differences are only significant for the first dimension. In order to determine whether these differences are present between all groups or only between certain subgroups, a Bonferroni test was performed. This test indicates that the differences are significant ($p < 0.05$) only between the group of CTs who mentored "1 to 4 PSTs" and that of CTs who mentored "more than 10 PSTs" ($p < 0.01$) for the first dimension. These results indicate that very little difference is observed in the assessment of the ideal level of proficiency of a CT according to the number of trainees supervised.

### 3.2.7. Training

As Table 8 shows, for each of the dimensions, the ANOVAs indicate that the differences in means between the CTs who had received specific training for the CT function and those who had not are not significantly

TABLE 7 Means, for each factor, of respondents divided into 3 subgroups according to the number of PSTs mentored.

| Number of PSTs mentored | "Co-mentoring and analysis of one's own practices" | "Observing and evaluating" | "Adapting, supporting and training in teaching practices" | "Developing PST's reflective practice" |
|---|---|---|---|---|
| 1 to 4 PSTs mentored (N = 212) | $\bar{x} = -1.44$<br>$\sigma = 1.12$ | $\bar{x} = 0.11$<br>$\sigma = 1.06$ | $\bar{x} = -0.04$<br>$\sigma = 1.06$ | $\bar{x} = -0.06$<br>$\sigma = 1.08$ |
| 5 to 10 PSTs mentored (N = 267) | $\bar{x} = -0.05$<br>$\sigma = 0.96$ | $\bar{x} = -0.05$<br>$\sigma = 1.06$ | $\bar{x} = -0.08$<br>$\sigma = 0.99$ | $\bar{x} = -0.04$<br>$\sigma = 1.02$ |
| 10 PSTs or more (N = 364) | $\bar{x} = 0.12$<br>$\sigma = 0.94$ | $\bar{x} = -0.02$<br>$\sigma = 0.91$ | $\bar{x} = 0.71$<br>$\sigma = 0.96$ | $\bar{x} = 0.06$<br>$\sigma = 0.94$ |
| Sig. | $F = 3.527$; ddl = 3; $p = 0.015$ | $F = 1.115$; ddl = 3; $p = 0.342$ | $F = 1.913$; ddl = 3; $p = 0.126$ | $F = 0.852$; ddl = 3; $p = 0.466$ |

TABLE 8 Means, for each factor, of respondents divided into two subgroups according to whether or not they had received training.

| | "Co-mentoring and analysis of one's own practices" | "Observing and evaluating" | "Adapting, supporting and training in teaching practices" | "Developing PST's reflective practice" |
|---|---|---|---|---|
| CTs who did not receive training (N = 761) | $\bar{x} = -0.01$<br>$\sigma = 1.00$ | $\bar{x} = -0.01$<br>$\sigma = 1.01$ | $\bar{x} = 0.00$<br>$\sigma = 1.01$ | $\bar{x} = 0.00$<br>$\sigma = 0.99$ |
| CTs who received training (N = 93) | $\bar{x} = 0.13$<br>$\sigma = 1.01$ | $\bar{x} = 0.06$<br>$\sigma = 0.90$ | $\bar{x} = -0.04$<br>$\sigma = 0.94$ | $\bar{x} = 0.03$<br>$\sigma = 1.11$ |
| Sig. | $F = 1.833$; ddl = 1; $p = 0.176$ | $F = 0.392$; ddl = 1; $p = 0.531$ | $F = 0.170$; ddl = 1; $p = 0.680$ | $F = 0.107$; ddl = 1; $p = 0.743$ |

different. CTs, whether or not they had received training, gave a similar level of ideal proficiency for each of the four dimensions of the model. These results indicate a shared view of the ideal level of proficiency of a CT.

This results section presented the competences of an ideal CT, which are structured in four dimensions according to the responses of 854 CTs. Two significant differences were found between the responses of different subgroups of CTs with regard to the level of proficiency in different tasks of ideal CT. Small but significant differences were observed for the dimension "Co-mentoring and analysis of one's own practices," according to the length of service of the CTs as teachers. Significant differences were also observed for the first dimension "Co-mentoring and analysis of one's own practices" between the group of CTs who had supervised 1–4 trainees and those who had supervised more than 10. No other significant differences were observed. The rest of the text discusses the results of study 1 and study 2.

# 4. Discussion of the two studies

## 4.1. Overall relevance of the RECOMS

The results presented tend to support, in general, the relevance of the RECOMS. Indeed, the proximity between the content of the RECOMS and the seven domains qualifying a good CT according to the literature review by Ellis et al. (2020) tends to theoretically validate the RECOMS. Secondly, the overall positive evaluation by 854 CTs of the tasks that make up the RECOMS also supports its relevance. More specifically, the rate of "very good or excellent proficiency" responses to the different tasks varies from 80 to 53% and very few CTs indicated that an ideal CT should have a low level of proficiency in these different tasks. Finally, this empirical validation is also supported by the comparison of the RECOMS, which is structured in six competences, and the 4-dimensional structuring of the CTs' responses. Indeed, this logical structure in four dimensions groups the six initial competences of the RECOMS in a coherent manner.

## 4.2. The 4 dimensions of an ideal CT

As shown in Figure 2, the competences of an ideal CT, according to the CTs, are divided into four dimensions: "Co-mentoring and analysis of one's own practices"; "Adapting, supporting and training in teaching practices"; "Observing and evaluating"; and "Developing PST's reflective practice."

According to the dimension "Adapting, supporting and training in teaching practices," the CT is able to interact with the PST and establish a relationship of trust with him/her; to adapt his/her expectations to the PST's level of development; to introduce teaching practices and provide assistance. This dimension therefore brings together the competences "Interacting with the PST"; "Adopting the dual identity of a CT..."; "Developing the PST's reflective practice ", which were separate in the RECOMS, as well as the tasks related to assisting the PST (tasks of the RECOMS competence "guiding the PST"). The observation and evaluation tasks included in the "guiding the PST" competence form a separate dimension. This set of tasks refers to the capacity of the mentor to support/coach and train the PST. In order to do so, the CT can assume several different postures depending on the needs (e.g., facilitator; Colognesi et al., 2019b). The tasks that make up this dimension are evaluated very positively by the CTs, which indicates that they are aware of the need for the relational and pedagogical aspects of their function to be linked and that these aspects are crucial for supporting trainees. The link between relational and pedagogical aspects is supported in the literature. For example, according to Colognesi et al. (2019b), "the relationship is thus like a 'backdrop', a prerequisite for any coaching [..]"


FIGURE 2
The 4 dimensions of an ideal CT.

(p: 7). According to several studies echoed by Bradbury and Koballa (2008), a good relationship is crucial in a mentoring relationship. This finding supports the relevance of the RECOMS, which proposes that the skill of 'interacting with the PST' is a necessary skill for all other skills (Baco et al., 2021b, 2022a). Mc Gee (2019) even proposes that the CT and the PST co-teach, allowing the CT to be able to perform directive coaching (Ippolito, 2010; Hammond and Moore, 2018) when the PST is experiencing difficulties. As for modelling (explanation and demonstration) teaching practices, this is supported by large amounts of literature (e.g., Bashan and Holsblat, 2012; Christensen, 2021). It can be used as support (Wood et al., 1976). In terms of the learning opportunities and support that the CT can provide to the PST, these can take place at different times. For example, Mok and Staub (2021) indicate that the PST can learn before, during and after the lesson. For example, before the lesson, the CT can help the PST to prepare his/her lesson (Mok and Staub, 2021).

According to the dimension "Co-mentoring and analysis of one's own practices," the ideal CT actively collaborates and analyses his/her own practice in order to discuss it with the supervisor. Similarly, he/she is able to identify and discuss differences in views between the supervisor and him/herself. This dimension gathers the competence "co-mentoring the PST" and the tasks related to the capacity of the CT to analyse his/her practice as a teacher (tasks of the RECOMS competence "developing the PST's reflective practice"). The other tasks of the "developing reflective practice" competence, which do focus on the CT's ability to develop the trainee's reflective practice, form a separate dimension. It is interesting to identify that the CTs value the dimension "Co-mentoring and analysis of one's own practices." Indeed, "Mentoring has been shown internationally to be most effective when strong partnership arrangements between universities and schools are established (Allen et al., 2013, 2017; Darling-Hammond, 2017; Rachamim and Orland-Barak, 2018)" (Allen et al., 2019, p: 323).

Moreover, the fact that CTs link collaboration with the supervisor with the analysis of their practice shows that CTs believe that an ideal CT co-constructs the internship with the supervisor (Colognesi et al., 2018) and that his/her role is not limited to complying with the different points of a contract proposed by the supervisor. Indeed, according to Portelance and Caron (2021), collaboration requires "the autonomy of each individual, which runs counter to hierarchical relationships (Dagenais, 2000) and in opposition to unilateral decision-making" (p: 101). The fact that CTs value the justification of practices based on context more than other forms of justification is not surprising. Indeed, according to Crasborn et al. (2011), "[..] teachers' knowledge and skills are event-structured, context-based, and practice-oriented in nature (e.g., Elbaz, 1983; Kessels and Korthagen, 1996)" (pp: 320–321).

According to the dimension "Developing PST's reflective practice, "the CT should be able to develop the reflective practice of the PST in different ways (by getting the PST to describe his/her practice, to propose alternatives, etc.); on the basis of different sources (by getting the PST to draw on different sources such as pedagogical literature, a colleague's opinion, etc.) and despite the filter of emotions that may distort the perceptions of the CT and the PST. These tasks come from the competence "developing the PST's reflective practice ". Also, the RECOMS competence "developing the PST's reflective practice" was split into two dimensions: "Co-mentoring..." and "Developing the PST's reflective practice." These results indicate that CTs differentiate between their ability to take a reflective look at their own practice and their ability to develop the reflective practice of the PST, which is not the same thing (Vandercleyen, 2012).

The less favourable evaluation of this dimension (compared to the two previous ones) is questionable. Indeed, for decades, the paradigm of the reflective practitioner (Schön, 1983) has been valued in education. However, the "recent literature has shown the low levels of reflective practice student teachers exhibit when doing reflective writing and the lack of a training programme in their initial training to help them" Colognesi et al., 2019a. Also, every missed opportunity to develop reflective practice in the field of practice is detrimental to the learning of the PST because professional knowledge is not limited to a technique but requires decision-making in a context (Le Cornu and Ewing, 2008).

According to the dimension "Observing and evaluating," the ideal CT should be able to observe and evaluate the performance of the PST and his/her preparations. These tasks are derived from the RECOMS competence "Guiding the PST..." The other tasks of the "Guiding..." competence are gathered in the dimension "Adapting, supporting and training in teaching practices." This supports the tension between the roles of trainer and assessor (Copland, 2010) that trainee mentors (CTs and supervisors) have to master (Maes et al., 2020). The fact that this dimension was less well evaluated than the dimension "Adapting..." reinforces this finding and indicates that the CTs feel more like trainers than evaluators. This may be due to their experience. Indeed, the evaluation of the CT is taken into account in different ways from one training institution to another, some using the CT's report for co-assessment with the student (Maes et al., 2020), others waiting for a numerical evaluation which is part of the final grade or is taken into account for information by the supervisors.

On the other hand, it is interesting that CTs link observation and evaluation, as it is necessary to conduct an objective observation to evaluate a trainee (Portelance et al., 2008). Moreover, according to Mok and Staub (2021), "recent research suggested that more structured observation based on observation tools can be helpful to provide more systematic feedback on PSTs' teaching practices (Tas et al., 2018)" (p: 4). For example, Bainville and Rikard (2001) presented a set of grids with which the supervisor or CT indicates each type of feedback given by the PST. This type of grid can also be inserted into observation software (Bocquillon et al., 2022a,b).

This structuring of the competences of an ideal mentor by the CTs is strictly identical to that derived from the self-evaluation by the same CTs of their own level of proficiency (Baco et al., 2022a). The perfect similarity of the factor structures of the responses of the CTs regarding their own declared level of proficiency and their idea of the ideal CT supports the high consistency of their responses.

### 4.3. Shared vision between the different subgroups of CTs

The evaluation of the level of proficiency in the tasks of an ideal CT is shared by the different subgroups of CTs interviewed. Indeed, very few significant differences were identified according to the experience of the CTs as teachers, the number of PSTs they had mentored or whether or not they had received specific training for this function.

The high degree of consistency in the opinions of the different subgroups of CTs supports the fact that the 4-dimensional view is shared by the CTs and is stable despite the different characteristics of the CTs. However, this lack of distinction could also be caused by a faulty measurement tool, which does not allow distinctions to be revealed even though they are present. This is not the case, as significant differences were identified in a previous study of self-assessment of the level of proficiency of the same CTs with respect to the same tasks (Baco et al., 2021b, 2022a). Moreover, Baco et al. (2022a), identified that, for 3 of the 4 dimensions, trained CTs felt more competent than untrained CTs and in the present study, we can state that trained and untrained CTs have a common vision of the ideal CT.

With regard to experience as a teacher, the differences in the level of proficiency declared as a CT are small but significant for 3[5] of the 4 dimensions. In terms of assessing the level of proficiency of an ideal CT, this minimal difference is significant only for the dimension "Co-mentoring and analysis of one's own practices."

With regard to experience as a CT, except for one subgroup and for one dimension only, the CTs did not evaluate the different aspects of the function of an ideal CT in a significantly different way. On the other hand, when they self-assess, significant differences are observed for several subgroups in two dimensions. The more experienced CTs give a better assessment of their level of proficiency on different dimensions. However, experienced and novice CTs share a common vision of what a good CT.

## 5. Limitations and futures directions

Professionals' views on an ideal CT's level of proficiency in the tasks are important for a variety of reasons, but they may reflect something other than what a 'good' or effective CT actually is. In our study, the closeness of the RECOMS to the opinions of the CTs shows that there is an affinity between what the literature proposes and what the CTs propose, which tends to reduce this limitation. However, observation of effective mentoring practices (Ben-Peretz and Rumney, 1991; Bressoux et al., 1999; Aeby and De Pietro, 2003; Waxman et al., 2004; Good and Brophy, 2008; Bocquillon, 2020) could complete this study. However, this observation of real internship supervision situations, in a real context, is complex and risks modifying this dyadic relationship through the addition of an observer or a recording device (Hamel and Jaasko-Fisher, 2011). To minimise this risk, it is preferable to use low-intrusive recording equipment (e.g., a smartphone) and to suggest that participants record themselves. This avoids the presence of the observer and therefore reduces the observer effect. On the other hand, in order to better understand the contextual, individual and institutional characteristics, qualitative studies could be used to deepen this research. These could, for example, be carried out through focus groups involving CTs, supervisors and PSTs. In addition, it would be possible to conduct semi-structured interviews with CTs.

## 6. Conclusion

CTs are internationally recognised as important stakeholders in the training of PSTs (e.g., Koerner et al., 2002; Clarke et al., 2014; Pellerin et al., 2021). When mentoring a PST, they carry out different (and unnatural) tasks from those they carry out as teachers (Portelance et al., 2008; Vandercleyen, 2012; Wexler, 2019; Pellerin et al., 2021). Faced with the lack of prescribed and recognised training in French-speaking Belgium as in other educational systems, Baco et al. (2022b) have drawn

5 The dimensions: "Observing and evaluating"; "Adapting, supporting and training in teaching practices"; "Developing PST's reflective practice ".

up a competence reference framework for the training of CTs called the RECOMS, which is based on the English and French-language scientific literature.

Based on the RECOMS, a questionnaire based on the conceptual analysis of training needs (Lapointe, 1983, 1995; Renard and Derobertmasure, 2019) was administered to 854 CTs in order to evaluate their declared level of proficiency in a set of tasks inherent to their function, as well as the level of proficiency with which a CT should ideally carry out such tasks.

Two papers have presented the results of the self-assessment of the level of proficiency of CTs (Baco et al., 2021b, 2022a). The present study validated the RECOMS theoretically and empirically. Firstly, a great proximity could be shown between the content of the RECOMS and the literature review presented by Ellis et al. (2020). In addition to the theoretical validation, an empirical validation was performed by replicating the analysis of Baco et al. (2022a). The analysis of the CTs' responses made it possible to identify that the competences of an ideal CT, according to the CTs themselves, fall into four dimensions: "Co-mentoring and analysis of one's own practices"; "Observing and evaluating"; "Adapting, supporting and training in teaching practices"; and "Developing PST's reflective practice." On the one hand, although these four dimensions do not correspond exactly to the six RECOMS competences, their interlocking tends to validate them. On the other hand, this 4-dimensional structure corresponds exactly to the structure of the declared level of proficiency of the same CTs (Baco et al., 2022a), which supports the consistency of the participants' statements.

Furthermore, the evaluation of the different tasks is very positive. Also, the CTs highlight the relevance of the tasks contained in the RECOMS for the mentoring of PSTs. Furthermore, although a number of significant differences were found between the self-assessment of the level of proficiency declared by the CTs divided into different sub-groups (in particular, CTs who had undergone training and those who had not), very few significant differences were identified between the assessments of what an ideal CT is according to the same sub-groups of CTs. Also, a common agreement of the CTs emerges from the results concerning the ideal CT, although they do not all feel equally competent to perform the CT function. In other words, while CTs have different levels of proficiency depending on whether or not they have received training, they agree on the level they should ideally have. This supports the need for training for CTs. The vision of the ideal CT shared by the CTs is very close to that of the RECOMS and therefore to that presented in the literature review by Ellis et al. (2020). This threefold correspondence provides food for thought for the training of cooperating teachers and can be used as a basis for international comparisons. In French-speaking Belgium, as training for CTs is being currently put in place, this work could support the development of systems in which the opinion of the stakeholders has been taken into account. Similarly, it could be used to reinforce the status of training for CTs by providing a solid framework (e.g., the RECOMS). The use of a reference framework would also contribute to the recognition of the function of CT and the professional competences needed to carry it out (Desbiens et al., 2012), and this would benefit the quality of the training of future teachers.

## Data availability statement

The datasets presented in this article are not readily available because it contains private information. Requests to access the datasets should be directed to MB, marie.bocquillon@umons.ac.be.

## Ethics statement

Ethical review and approval were not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

## Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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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.

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## Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2022.1010831/full#supplementary-material

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