Enhancing university teaching and learning through mentoring: A systematic review of the literature

Gabriela Pleschová Lynn McAlpine

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A systematic review of the literature

Gabriela Pleschová
Centre for Development of PhD Students, Institute of Physics, Slovak Academy of Sciences, Bratislava, Slovakia, and
Lynn McAlpine
Oxford Learning Institute, University of Oxford, Oxford, UK

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Abstract

Purpose – Mentoring has been increasingly used in educational development to facilitate transfer of knowledge from programs for higher education teachers to their pedagogic practice. However, studies are missing which would critically assess the outcomes of mentoring in programs for university teachers. The purpose of this paper is to systematically review existing research on mentoring in the context of educational development in higher education.

Design/methodology/approach – Using a careful search strategy, 17 relevant scholarly sources were selected and analyzed to document the results of mentoring at individual, departmental and institutional levels.

Findings – Among the striking findings was the lack of clarity or definition surrounding mentoring and similar terms, coaching and tutoring and the lack of methodological rigour in many studies. However, those methodologically more advanced studies suggest that mentoring can become a valuable component of educational development programs. As reported by previous research, mentoring can: enhance university teachers' cognitive abilities, beliefs and attitudes; improve the effectiveness of teaching; increase teachers' capability to research teaching and learning; enhance mentoring skills; and improve the overall teaching climate at universities.

Practical implications – Categorization of different types of outcomes of mentoring in educational development can help the practitioners engaged in introducing or re-designing educational development programs with a mentoring element.

Originality/value – This is the first systematic review of the studies discussing the process, value and outcomes of teacher mentoring to improve pedagogical practice at the university level.

Keywords Mentoring, Literature review, Effectiveness, Educational development, Tutoring, Coaching, Higher education, Academic development, Quality teaching

Paper type Literature review

Context

In many parts of the world universities now offer programs for their teachers as part of institutions' broader strategy to enhance quality of student learning. This practice is called "educational development," which denotes various activities that promote teaching and learning in higher education (Kahn and Baume, 2003, 2004; Pleschová and Simon, 2012, p. 14). In order to increase the effectiveness of educational development programs, some institutions have experimented with new mechanisms and practices (Blackwell and Blackmore, 2003; Kahn and Baume, 2004). Mentoring was thus

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introduced as one of these relatively novel elements of courses for higher education teachers (Park, 2004; Barthwal *et al.*, 2011).

Some reports from existing educational development programs indicate that mentoring has been a very promising practice (Harnish and Wild, 1993; Mathias, 2005; Chng and Soong, 2012). However, these studies discussed programs with different formats; moreover their understanding of mentoring and their methodology widely vary. Until now there has been no systematic analysis of the outcomes of mentoring in educational development, so it remains unclear under which conditions mentoring can bring desired results.

The purpose of this review was to systematically identify and analyze relevant scholarly sources that represent existing research on mentoring in educational development, i.e. in relation to practices, processes and effects of mentoring for university teaching. The analysis includes mapping of areas of consensus, and areas of debate about the practice and effects of mentoring, as well as gaps in knowledge (Knopf, 2006) about mentoring in educational development.

This study seeks to enhance knowledge from previous research in four main ways. First, it offers definitions of three overlapping terms, i.e. mentoring, coaching and tutoring, because their use in the literature creates confusion. Second, it suggests a definition of mentoring in the context of educational development, which was previously missing. Third, the study summarizes for the first time existing evidence about the outcomes of mentoring in educational development and it concludes that based on previous research mentoring can become a useful tool for enhancement of teaching in higher education. And finally, this study points at gaps in research that still exist about mentoring in educational development. "Mentoring" is hereafter taken to be inclusive of coaching and tutoring as well.

The case for mentoring in higher education

The modern concept of mentoring in relation to education began to develop in the 1970s (St Clair, 1994). Four theoretical approaches explain the looked-for effects of mentoring on participant teachers. Three of them were summarized by St Clair (1994). An early model is rooted in stage theory (Erikson, 1963) according to which during different stages of development individuals need key relationships. This desired key relationship can develop also between a mentor and his/her mentee. Another approach – motivation theory (Maslow, 1970) – assumes that people naturally seek relationships and once people establish them, they desire competence in their work, in this case in pedagogic practice. Mentoring then helps to form these essential relationships. Different from this, *Social Learning Theory* (Bandura, 1977) presupposes that a less experienced teacher who collaborates with a more skilled colleague becomes more competent through modeling and identification (St Clair, 1994, p. 25).

The concept of reflection is another, and the most often cited, theoretical foundation of mentoring in educational development. In this perspective, mentoring offers teachers partnerships with more experienced colleagues who can encourage reflection and thereby a deeper understanding of their actions as well as of the relationship between practice and its outcomes (Truijen and Van Woerkom, 2008, p. 318). The concept of reflection is attributed to Dewey (1910) for whom reflection was provoked by an experience that resulted in doubt, puzzlement or hesitation, and made the individual seek possible reasons for this perception as well as possible solutions. However,

in order to engage in such a reflective process people often need the help of others (Truijen and Van Woerkom, 2008, p. 318). This is another reason why mentors are frequently engaged as facilitators of teachers' reflection.

The process of selecting sources

This review of literature about mentoring in educational development was completed in three phases, and the search for appropriate sources of information utilized a strategy that was as broad and comprehensive as possible. A search log was kept to document the entire process of searching. During the first phase, which took place between late November 2011 and early January 2012, a preliminary review was written based on articles from the *International Journal for Academic Development* (*IJAD*), the leading academic journal where educational developers exchange ideas about their practice. Every single issue published in this journal from 1996 (when the journal was established) until 2012 was screened for contributions discussing mentoring as part of educational development. The terms "mentoring," "coaching" and "tutoring" were all used as search terms because sometimes they are used for denoting similar activities and because their meanings overlap. Academic papers cited as references to those papers published in *IJAD* were subsequently screened, as were five books on educational development – all that have been published by respected academic publishers (Eggins and McDonald, 2003; Blackwell and Blackmore, 2003; Kahn and Baume, 2003, 2004; Simon and Pleschová, 2012). As a result of this phase, a total of 12 scholarly papers were identified as connected to the topic.

During the second phase, which took place in late March and early April 2012, a systematic search was done using the ERIC database among all scholarly articles published in English since 1980. The decision to search for articles in English was made because the field of educational development is most advanced in Anglo-Saxon countries, and also because scholars from other countries typically publish the results of their research in English. The decision to search for articles published since 1980 was made because many educational development programs were developed after this point. The search was narrowed further by looking specifically for studies published in the area of higher education, of post-secondary education, of adult education and of college education.

Each of the three terms was used in combination with the following additional terms: "development," "teacher training," "higher education," "universit*," "doctoral," "PhD," "faculty," "academic," "assistant," "college" and "tertiary education." In the case that a search revealed more than 300 hits, a third term was included; for example when the term "academic" was used together with the terms "mentor*" or "tutor*," the terms "teach*" and "course" were also added. Similarly, when the term "development" was used together with either "mentor*" or "tutor*," the term "development" was specified as "educational development" and "instructional development." Before downloading a given identified article, the search system often offered references to three-related articles; when this happened, the titles of these articles were also scanned. This search process led to the identification of 27 studies for consideration in the second stage of the literature research.

In the third phase, this electronic search in the ERIC database was supplemented with a systematic search of the two journals *Mentoring and Tutoring: Partnership in Learning* (1993-2014, Issue 1) and *International Journal of Mentoring and Coaching in Education* (2012-2014, Issues 1-2). Surprisingly, only three articles were identified as a result of this search, as most studies published in these journals discussed mentoring

for groups of professionals other than higher education teachers or they did not focus on pedagogic roles of university teachers.

Following the selection of articles through the ERIC database and from specialized journals, 42 studies (12+27+3) were read, either in whole or in the majority or repeatedly, and their relevance to the topic at hand was determined.

A study was excluded, if it did not:

- include an empirical study or a review of mentoring for educational development, e.g., was an author's general reflections about mentoring;
- concern teachers in higher education;
- discuss the impact of mentoring on teachers' abilities to teach, and instead discussed the effect on their IT skills or on their career progression, for example;
- discuss a program aiming at improving teachers' knowledge of pedagogy, to impact their attitudes and/or to change their teaching practice; and
- include an evaluation of mentoring.

In total, 17 studies were identified as relevant as a result of all phases and the application of all criteria. This literature search revealed that searching in journals specializing on educational development, mentoring and coaching combined with screening the references in the articles from these journals was the most effective way of how to find the studies of interest. While the literature search through ERIC had identified 27 potentially useful studies (plus some more we already knew from searching the journals), only six of them turned relevant to the research topic. One study was found reading the books and all the rest by going through individual journals (six) and by reading the list of literature in relevant articles (four).

The process of searching for literature on the use of mentoring for educational development was unexpectedly challenging. Oftentimes, the title of a study or its abstract did not indicate whether it related to higher education teachers or to teachers at a lower level of education. Also, while some studies mentioned in their abstracts or introductions that they would discuss mentoring in relation to the development of university teachers, they often only touched upon this in less than a paragraph. Other studies were very detailed in describing educational development programs, but they did not report any evidence about the actual effects of mentoring. Typically, after reading entire studies, we learnt very little about the effects of mentoring or if some effects were reported they were not adequately supported by evidence. This was true even for the studies that included mentoring as a key element in an educational development program, for example Barthwal *et al.* (2011) and McHenry *et al.* (2009).

Findings

The 17 studies from the systematic literature search can be divided into two groups. The first group of papers (nine) described various models of mentoring (Chao *et al.*, 1992; Blackwell and McLean, 1996; Villar Angulo and De La Rosa, 2006; Kamvounias *et al.*, 2008; Darwin and Palmer, 2009) or contained definitions of mentoring useful for this study (St Clair, 1994; Woodd, 2001; Ferman, 2002; Regan and Besemer, 2009). While they could offer solid background about mentoring in educational development, they did not focus on mentoring as part of educational development and/or provide empirical insights into the results of mentoring.

The other group (eight) were typically studies into the effects of educational development programs and of their mentorship element at individual institutions. Sometimes, whole programs consisted of mentoring as in Harnish and Wild (1993)[1]. At other times, mentoring was used to help participants to achieve the program outcomes, such as supporting the development of teachers' teaching skills, reflection and knowledge about teaching and learning, as, for example in Chng and Soong (2012) or in Truijen and Van Woerkom (2008). Occasionally mentors observed teachers' teaching and offered feedback on it (Williams, 1991; Mathias, 2005).

Mentoring was more often used for new teachers (Williams, 1991; Boyle and Boice, 1998; Mathias, 2005; Truijen and Van Woerkom, 2008; Chng and Soong, 2012) than for more experienced ones (Harnish and Wild, 1993; Huston and Weaver, 2008; Hubball *et al.*, 2010). While most programs were voluntary, we also found some cases of mandatory programs (Truijen and Van Woerkom, 2008; Chng and Soong, 2012). All but one program (Hubball *et al.*, 2010) were offered for teachers from the institutions that conducted the study. Whereas two of the studies were published in the early 1990s, most studies were conducted and published in 2005 or later.

We analyzed the identified studies on mentoring in educational development in relation to the following aspects: how they defined mentoring; how they described the use of mentoring; what methods they used to assess the process and the outcomes of mentoring; what evidence they presented about the results of mentoring; and where they debated about the use of mentoring and what gaps in research they left about mentoring in educational development. In the presentation of the studies retained in this analysis, the purpose and structure of each program is summarized in order to contextualize each study's findings (see Table I).

(a) Mentoring, coaching and tutoring – definitions

One of the most striking findings in looking across the 17 selected articles was the lack of clarity or definition surrounding the meaning and purpose of the different terms used to refer to the support received by teachers during educational development programs: mentoring, coaching and tutoring.

When we first examined eight empirical studies, we found that six of them used the term mentoring (one of these spoke about peer mentoring), whereas two studies used the term coaching, respectively peer coaching.

Williams (1991) used the term mentoring to describe activities such as class observations and informal meetings where mentors and mentees discussed teaching concerns and strategies as well as exchanged teaching materials. Mentoring, as defined in two case studies by Boyle and Boice (1998) referred to the meetings of experienced teachers with new teachers (either new faculty members or new graduate teaching assistants) where they discussed teaching on a weekly basis.

In the program described by Mathias (2005) mentoring was used to describe the activity of senior teachers who regularly met with their younger colleagues to discuss their teaching, moreover they observed new teachers' pedagogic practice, and acted as their formal evaluators throughout the educational development program. Mathias (2005) also used another term – tutoring, as he called the meetings between mentors and mentees "tutorials."

In Chng and Soong's (2012) study, mentoring denoted cooperation between a senior and a junior teacher, preferably from the same faculty/department, while the more senior colleague offered feedback on younger teachers' teaching practicum project, and

Table I.
Summary of empirical studies on mentoring for educational development

Author(s)	Year of publication	Extent of mentoring in the program	Existence of program for new teachers	Brief description of the program	Brief description of the mentoring roles	Source(s) of data	Study methodology
1. Williams	1991	Part of the program	Yes	A comprehensive program for 27 teaching assistants (TAs) at a research university comprising of a one-week workshop and a sixteen-week theory and pedagogy course. One group also participated in a consultant observation program and were coached	Observe each other's classes at least once during ten-week period, i.e. coach visits teacher's class and vice versa, informally meet once or more to discuss teaching concerns, strategies and to exchange teaching materials	Teaching anxiety scale, student ratings of TAs' teaching effectiveness, self-ratings of TAs' teaching effectiveness, instrument for measuring course and teacher effectiveness	Evaluation of the program results using pre- and post-tests and involving a control group with random assignment of teachers to groups
2. Harnish and Wild	1993	Whole program	Yes: in one case study	Program paired 4 coaches with 6 coachees for one or two semesters in order to improve teaching effectiveness at Niagara County Community College	Support the development of teachers' teaching skills and knowledge and the learning of new skills, knowledge or teaching approaches	Self-assessment questionnaires completed by participants before and after the program and pertaining to program objectives, final report by participants, videotaped interviews with coaches and teachers	Summary of 4 case studies
3. Boyle and Boice	1998	Whole program	Yes	Two case studies: one program includes coaching new teachers for one year (25 pairs); one coaching new graduate	Meet regularly with teachers and discuss teaching experience	Phone calls to coaches and teachers to verify whether they were meeting according to schedule, bonding of data assessing regularity of	Analysis of the use of coaching

(*continued*)

Author(s)	Year of publication	Extent of mentoring in the program	Existence of program for new teachers	Brief description of the program	Brief description of the mentoring roles	Source(s) of data	Study methodology
				TAs (9 pairs) for one semester or more		meetings using a "Mentoring Index", quality of interaction and participants' perception of interaction, participants' records of their meetings	
4. Mathias	2005	Part of the program	Yes	A two module, one year, part-time work-based program in a research-intensive university in the UK. It is offered for lecturers to undergo as part of their probation to develop their reflective approach to teaching	Meet regularly with teachers, observe new teachers teaching, act as members of the program team and as formal assessors	End of module participant questionnaires, structured group exercises, interviews, informal observation and discussions with coaches and teachers, teacher assignments, portfolios, etc. Data come from two cohorts of teachers (32) and coaches (31)	Evaluation of the program results
5. Truijen and van Woerkom	2008	Part of the program	Yes	Mandatory coaching program for new teachers in medicine at University Medical Centre in the Netherlands. Coaching lasted two years and included 9 coaching couples	Improve teachers' reflective approach and awareness of their teaching behavior through regular meetings and discussions	Qualitative interviewing of coaches and teachers	Analysis of effects of coaching as part of the teacher development program

(*continued*)

Table I.

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Author(s)	Year of publication	Extent of mentoring in the program	Existence of program for new teachers	Brief description of the program	Brief description of the mentoring roles	Source(s) of data	Study methodology
6. Huston and Weaver	2008	No	No	A 6-month peer coaching project for senior faculty members at Seattle University involving 10 senior faculty members and forming inter-disciplinary pairs	Engage in advanced conversations and reflection about teaching	Unclear	Analysis of a coaching program aimed at improving teaching
7. Hubball *et al.*	2010	Part of the program	No	An 8-month mixed-mode international faculty certificate program on scholarship of teaching and learning (SoTL) leadership at the University of British Columbia, Canada	Improve faculty members' ability to conduct SoTL research	Program documents and syllabi, course evaluations from participant teachers, teachers' work including portfolios, semi-structured interviews (focus group with 12 program board members, teachers and coaches, interviews with 110 teachers and 21 coaches)	Evaluation of ten years of conducting the program
8. Chng and Soong	2012	Part of the program	Yes	Mandatory program for new staff at National University of Singapore who have less than 3 years of university teaching experience. It comprises of a 3-day intensive course, a 16 hour elective course and a teaching practicum	Offer feedback on teacher's proposal for the practicum, comment on teacher's presentation of findings from the implementation period, comment on the final written report	E-mail survey to four cohorts of program participants over the course of two years, including a total of 15 informants (20% of all participating coachees)	Evaluation of the program results

commented on teachers' presentation of findings from the project implementation period, and also on their final written reflection.

Hubball *et al.* (2010) understood mentoring as guidance offered by teachers experienced in researching teaching and student learning. This guidance included encouragement and constructive feedback throughout mentored teachers' research projects, helping faculty members to overcome difficulties associated with scholarship of teaching and learning (SoTL)[2], as well as monitoring the progress of program participants.

For Harnish and Wild (1993) peer mentoring meant improving the practical aspects of teachers' teaching through mutual review of class materials, discussion, modeling, observation and feedback. Whereas mentoring was introduced to help the mentored teacher(s) to overcome some pedagogic difficulty, the mentor was also expected to benefit from cooperation.

When we compared all these definitions, we could synthesize the following definition of mentoring. Mentoring in educational development refers to cooperation between a more advanced and a less advanced colleague (in terms of teaching), which is aimed at enhancing pedagogic knowledge and practice. This is achieved through regular meetings where they review class materials, observe teaching, offer feedback to teaching design or practice and/or discuss about teaching.

However, when we looked at how other two studies defined coaching in educational development, this definition turned to be unsatisfactory. The purpose of coaching as presented by Truijen and Van Woerkom (2008) was to help beginner teachers to become more reflective about their teaching and to improve their teaching performance. Coaching in this program was done through regular meetings and discussions between more and less experienced teachers. In the study by Huston and Weaver (2008) peer coaching was defined as a collegial process whereby two faculty members voluntarily worked together to improve or expand their approaches to teaching. Each faculty member selected an area of focus for consultation and worked with a coaching partner to bring about the desired improvement allowing each participant to personalize the process. Each member of the team served as a coach and was, in turn, coached.

These definitions suggested that mentoring and coaching mean the same. Still, it was not entirely clear why some studies used the terms peer coaching/mentoring, and why one study spoke also about tutoring. When we further reviewed the non-empirical works about mentoring, coaching and tutoring in educational development, we could see that also some of their authors did not differentiate enough between these terms (Villar Angulo and De La Rosa, 2006; Regan and Besemer 2009). What is more, when referring to cooperation of teachers with educational developers one of the non-empirical studies did not use either of three terms; rather, it used "mentoring" to denote a separate development activity of higher education teachers (Ferman, 2002). Because we knew mentoring from other disciplines and also because some studies suggested that there was indeed a difference between mentoring, coaching and tutoring (Truijen and Van Woerkom, 2008), these findings indicated to us that we should also look at the definitions from other fields of study.

(b) Mentoring as used in educational development

We learnt from the reviewed studies that mentoring can be used in educational development in five different ways. Typically, mentoring becomes a part of an educational development program in order to facilitate for the program participants

the implementation of pedagogic knowledge and skills gained throughout the program (Williams, 1991; Mathias, 2005; Truijen and Van Woerkom, 2008; Chng and Soong, 2012). Nevertheless, mentoring can also be integrated into efforts for university teachers to engage in the SoTL (Hubball *et al.*, 2010), and with action learning (Regan and Besemer, 2009)[3], in which the mentors guide teachers through the process. Mentoring can moreover be combined with and was reported to strengthen peer learning, for example when mentors facilitated activities at group meetings between peer teachers (Regan and Besemer, 2009). However, in that case, other people than teachers participating in group meetings need to be engaged as mentors. In a different format, described by Harnish and Wild (1993), mentoring can be used as a one-off solution for a teacher to improve upon certain difficulties in his/her practice, instead of being only a part of a formal program. Aside from this, mentoring can be introduced to meet the demand from teachers to engage in conversations and reflection about teaching (Huston and Weaver, 2008).

These different purposes of mentoring imply who typically seeks out mentorship. Usually, beginner teachers become mentored by their senior colleagues or by educational developers. However, more senior teachers can also be mentored (Harnish and Wild, 1993; Ferman 2002; Huston and Weaver, 2008).

Whereas most of the reviewed studies described face-to-face mentoring, one study discussed an e-mentoring program which used e-mail to develop mentoring relationships (Villar Angulo and De La Rosa, 2006). Also, though certain programs offered financial honoraria to mentors and/or mentees as a compensation for their time and efforts (Boyle and Boice, 1998; Huston and Weaver, 2008; Kamvounias *et al.*, 2008), other programs did not offer any monetary incentives. In some instances, time allowances and recognition were viewed as an alternative to direct payments (Clemson, 1987 in St Clair, 1994). This recognition can for example take the form of certificates or nominations for awards.

Some literature differentiated between formal and informal mentoring. While formal mentoring refers to the organized pairing of academics through a program (Darwin and Palmer, 2009, p. 125), informal mentoring occurs spontaneously and is not managed, structured or formally recognized or sanctioned by any institution (Chao *et al.*, 1992, p. 620).

In the literature on mentoring we moreover encountered a recommendation that mentors be carefully trained (Woodd, 2001, p. 341). Nevertheless, previous studies of mentoring in educational development typically did not describe preparation of mentors for their roles. Only three of the studies from a total of 17 discussed criteria for the training of mentors. Mentors from these studies usually attended one or more short briefing sessions detailing the program objectives, mentor's roles, methods of mentoring, the use of educational language, evaluation of progress of the mentees, etc. (Mathias, 2005; Huston and Weaver, 2008; Truijen and Van Woerkom, 2008). Alternately, mentors received written instructions on this (Villar Angulo and De La Rosa, 2006).

(c) Methods used to evaluate the process and the results of mentoring

While existing empirical studies used a wide range of data, including self-assessment questionnaires, individual and group interviews, program evaluations by program participants, statistical data about the conduct of mentoring, program documents, observations, teachers' works and student ratings of teachers' teaching effectiveness, six out of eight studies primarily derived from participants' self-reports. Those two studies, which were based on different data, were conducted by Williams (1991) who drew on student ratings and by Hubball *et al.* (2010) who drew from the documents

produced by course participants (for more see Table I). In other studies, where program products were used (like portfolios and other examples of teachers' work), the analysis was still based on mentors' and mentees' opinions, as for example in Mathias (2005).

Aside from this, an exploration of the effects of mentoring beyond the level of individual teachers was often missing; also, pre-tests were rarely used. Moreover, some studies did not include enough details on their methodology. For example the one from Huston and Weaver (2008) did not discuss their research instrument, and the one by Hubball *et al.* (2010) did not detail how many program graduates offered their works for analysis. Similarly, we found that many studies were not consistent in describing the program aims, learning activities, assessment and evaluation strategies. Studies with relatively large samples and with reasonably high participant response rates were not standard. Half of the studies were informed by only ten to 20 people (Harnish and Wild, 1993; Truijen and Van Woerkom, 2008; Huston and Weaver, 2008; Chng and Soong, 2012) and one quantitative study suffered from low response rate: the survey by Chng and Soong (2012) was only informed by one-fifth of the teachers who went through their program (for more see Table I).

(d) Evidence supporting the use of mentoring

There is some evidence in the literature that mentoring can contribute to achieving the objectives of educational development programs. Past studies described effects of mentoring both at individual levels (on teachers being mentored and on mentors themselves), and at a broader level (in university departments and beyond).

At the individual level, five desired outcomes of mentoring were reported: first, improvement of participant teachers' knowledge and cognitive skills, second, development of teachers' critical thinking about teaching and learning, third, enhancement of teachers' pedagogic beliefs and attitudes, fourth, increase in teachers' pedagogic effectiveness, fifth, facilitation of teachers' research into student learning and sixth, improvement of mentors' skills. Moreover, mentoring was found to have positive influence in the departments and at the university level: it has enhanced their overall teaching climate. The summary of these results is presented in the Table II.

(e) Areas of debate and gaps in research about mentoring in educational development

Interestingly, there were only two aspects of mentoring in educational development where we could notice any debate. The first debated issue was whether formal programs bring about more positive results than informal programs. The studies of mentoring in educational development could not confirm the findings from previous studies of mentoring in other contexts, which found informal mentoring more effective. Blackwell and McLean (1996, p. 84) argued that rigorous and targeted monitoring is needed so that mentoring could work well. In their comparative study, Boyle and Boice (1998) found that 19 out of 25 naturally formed mentoring pairs ended their cooperation quite early whereas 25 out of 26 mentoring pairs in the formal program continued their relationship for a minimum of one year. Moreover, those six who had continued their informal mentoring relationship rated mutual cooperation lower than those pairs which formed as part of a formal program.

The second program feature where there is still debate is whether mentors should be chosen by their mentees, or assigned by program coordinators. Clemson (1987 in St Clair, 1994, p. 30) and Woodd (2001, p. 339) recommended allowing mentees to choose their mentors for the mentoring relationship to bring about desired results.

Type of beneficiary	Type of result	Explanation of result
Results on an individual level: teachers being mentored	Cognitive	Creation of a more informed conceptual base for teachers' teaching (Mathias, 2005)
		Stimulation of an increasingly critical and reflective attitude toward teachers' own teaching practice (Mathias, 2005; Chng and Soong, 2012), even when it comes to embarrassing experiences (Boyle and Boice, 1998)
	Beliefs and attitudes	Increase in confidence and willingness to try new approaches to teaching (Mathias, 2005; Harnish and Wild, 1993), reduction in anxiety when teaching (Williams, 1991)
		Stimulation of teachers' passion for teaching (Chng and Soong, 2012)
		Encouragement of a sense of belonging to an institution that teachers did not previously experience in their departments (Boyle and Boice, 1998)
	Effectiveness in teaching	Improvement in teaching practice, as judged by coaches (Mathias, 2005)
		Enhancement in teaching effectiveness as measured with ratings from students (Williams, 1991)
		Increase in attention spent catering to students' needs and improvement in ability to solve learning-related problems of students, as judged by teachers themselves (Harnish and Wild, 1993)
	Capability to research teaching and learning	Facilitation of SoTL research and networking for program participants (Hubball *et al.*, 2010)
Results on an individual level: mentors	Mentoring skills	Awareness and trial of alternative styles of mentoring (Boyle and Boice, 1998)
Results in university departments and beyond	Teaching climate	Improvement in teaching/curriculum development (Hubball *et al.*, 2010; Huston and Weaver, 2008)
		Positive influence on the opinions of department colleagues otherwise opposed to educational development programs (Mathias, 2005)
		Development of scholarly communities, promotion of a culture of enquiry (Mathias, 2005), creation of culture of teaching and learning (Chng and Soong, 2012)
		Renewal of interest in teaching, increased dialogue among teachers and improved collegiality and support for young teachers (Harnish and Wild, 1993)

Table II.
Reported results of mentoring in educational development

Study by Harnish and Wild (1993), on the other hand, found that pairs formed in this way performed no better than pairs formed through assignment by coordinators (see also Boice, 1992).

Existing literature suggested relatively many areas where further research into mentoring in educational development would be valuable. Past studies reported that research was particularly lacking with regards to mentoring programs for new faculty

members (Woodd, 2001), for teaching assistants (Boyle and Boice, 1998) and for experienced teachers (Huston and Weaver, 2008; Villar Angulo and De La Rosa, 2006). More recently, the literature also pointed to the lack of study into the long-term effects of mentoring in SoTL programs (Hubball *et al.*, 2010).

Also lacking is an understanding of the effects of mentoring on student ratings of teaching and on teachers' ratings of their own effectiveness (St Clair, 1994). Mathias (2005) found that much less literature on mentoring existed in the UK than in the USA, perhaps because as reported by Knight and Trowler (1999, p. 33), mentoring practice is much less advanced in the English system of higher education than in that of North America. One published study called for a clearer definition of mentoring (Woodd, 2001) and one study mentioned need for studies to focus on the difficulties or challenges related to the use of mentoring (St Clair, 1994).

Discussion

This section compares and contrasts findings from the literature review (including empirical and non-empirical studies about mentoring in educational development) with findings from other disciplines. This way mentoring in educational development is put into the broader context of mentoring in education and other disciplines. The section again uses the framework of five key questions that relate to the effects of mentoring.

(a) Mentoring, coaching and tutoring – deficient and overlapping definitions

The review of literature about mentoring in educational development revealed that making a sound definition of mentoring is challenging for educational development scholars. However, this is not true for one discipline alone: Ng (2012) and Brondyk and Searby (2013) who had examined mentoring in the broader field of education, criticized many of the previous definitions of mentoring as confusing. Therefore, when developing contrastive definitions of mentoring, coaching and tutoring, we found it useful to derive some also from literature from other fields, in particular from psychology and management literature. These studies suggested that mentoring, coaching and tutoring are interrelated, but are different concepts.

Mentoring. Mentoring exists for one to help another to learn (Woodd, 2001, p. 341) and it should be offered to those for whom few similar resources exist at their respective place of work (St Clair, 1994, p. 24). Generally, mentoring describes a process whereby an experienced person, or "mentor," provides a less experienced colleague, a "mentee," a "protégée" or a "mentoree," with support, encouragement and knowledge. In return, the mentor can grow and develop professionally (St Clair, 1994, p. 24). Elaborations of this definition include different responsibilities for the mentor, for example those of providing guidance and advocacy to a mentee or on behalf of a mentee (Galbraith and Cohen, 1995 in Ferman, 2002, p. 147). The mentor takes on one or more of the following roles: role model, sponsor, guide, teacher, advisor, source of information, coach or confidant (Harnish and Wild, 1993, p. 271). Lastly, mentorship can be realized in various contexts, for example, business, adult development and academia (St Clair, 1994, p. 24).

While the original understanding of mentoring relationships implies that they involve a hierarchy, some argue that mentoring should involve peer relationships between two people who are at a similar level in their organization (Woodd, 2001, p. 341). This type of mentoring relationship is referred to as "peer mentoring" (Williams, 1991, p. 587; Villar Angulo and De La Rosa, 2006); or "mentoring cycles"

(Darwin and Palmer, 2009, p. 127). Using the term mentoring together with the idea of a relationship between peers can be quite misleading however, because it mixes two qualitatively different types of relationships. What one can learn from a person with a similar level of knowledge, experience and skill can be quite different from what one can learn from a more experienced and knowledgeable colleague. Therefore we suggest calling this "peer collaboration" instead. This is not to say that the relationship between a mentor and a mentee should be hierarchical or paternalistic, however.

Coaching. This term, while related to mentoring, is different from it. Most literature presumes that coaches are the experienced colleagues of their coachees (Truijen and Van Woerkom, 2008, p. 317). The term is typically used in the sports sciences, but it has also been used in the domains of personnel management and in education. Coaches provide guidance and feedback and take on multiple roles such as those of a teacher, motivator, strategist, organizer and character builder (Feltz *et al.*, 1999, p. 765). In coaching, the focus is either on personal development or on raising performance and supporting effective action (Gray *et al.*, 2011, p. 864; Feltz *et al.*, 1999, p. 765). Coaches in non-sporting environments typically provide support, help and encouragement to less experienced practitioners (Truijen and Van Woerkom, 2008, p. 317). Executive coaching, for example, rather than provide advice in relation to problems, aims to foster learning and change, through the use of such tools as summarising, paraphrasing, providing feedback, interpreting and relating (de Haan *et al.*, 2011, p. 25).

In relation to mentoring, coaching is usually understood as part of the role of a mentor (Harnish and Wild, 1993, p. 271). Other differences exist to demarcate mentoring from coaching. For example, while mentoring denotes a long-term relationship that fosters broad-based professional development, coaching generally refers to a short-term relationship that is centered around the development of specific practices in coachees (Truijen and Van Woerkom, 2008, p. 317; Ng, 2012, p. 2). Moreover, whereas teaching mentors seek to improve mentees' practices by sharing their own pedagogic knowledge and experience, coaches do not primarily offer advice to coachees but seek to stimulate coachees' reflection with regards to their own practice. The aims of coaching are achieved when both the coach and the coachee actively contribute, listen to each other, collaboratively analyze the effects of teaching on students' learning and seek to find better solutions to coachee's teaching difficulties (Truijen and Van Woerkom, 2008, pp. 317-318).

In pedagogic coaching, the term "peer coaching" also exists to denote the collegial process whereby teachers voluntarily cooperate to improve each other's teaching, as discussed in Huston and Weaver (2008, p. 5). This usage parallels the term "peer mentoring," mentioned above, and we recommend not using it.

Tutoring. Another term related to mentoring is tutoring. In a pedagogic context, Lane *et al.* (2011) define tutoring as an instructional practice that allows tutors to learn or improve their pedagogical skills while allowing the tutored to learn and advance certain key abilities. In practice, tutoring is typically carried out between peers, of which the tutor is somewhat more advanced than the tutored and thus capable of providing the tutored with supplemental instruction (Lane *et al.*, 2011, p. 201). Seen in this way, students from senior classes can tutor their junior colleagues.

The term tutoring can also be taken to have another meaning. Oftentimes, "tutor" is used in reference to a teacher in higher education (e.g. Bell and Mladenovic, 2008, p. 740). Tutoring can also be used in referring to a pedagogic method, especially at the undergraduate level. For example the famous Oxford and Cambridge system of

tutorials requires students to be involved in a period of intensive study and to complete an assignment, after which they meet with a tutor – a more experienced and knowledgeable person – to discuss this assignment (Ashwin, 2005). This understanding of tutoring partly resembles that of "coaching" in the aspect of guiding a less experienced colleague through a task.

Because the term tutoring has so many different meanings, its employment can lead to misunderstanding. Mentoring and coaching, on the other hand, are clearer when used to denote the relationship between two or more persons of differing levels of knowledge, skills and/or experience. Even if part of their meanings overlap, both of these terms refer to different things: while coaching is focussed on specific performance, decision-making, action and reflection, mentoring is focussed on long-term cooperation aimed at overall improvement of a mentee's professional practice. Mentoring is achieved through guidance, advocacy, role modeling, sponsoring and coaching.

Defining mentoring in educational development. When we go back to the empirical studies we discussed in our literature review, we can say that most of them spoke about mentoring but in fact meant coaching, as cooperation between mentors and mentees only took a short time (one or two semesters) and referred to the enhancement of specific performance (teaching, sometimes only certain teaching responsibilities). This was the case of the studies by Williams (1991), Boyle and Boice (1998), Mathias (2005), Chng and Soong (2012), Hubball *et al.* (2010) and partly Harnish and Wild (1993). On the other hand, Truijen and Van Woerkom (2008) and Huston and Weaver (2008) were correct in using a more appropriate term (coaching), as they evaluated a short-term program introduced to enhance teachers' reflection about teaching and thereby their teaching practice.

Deriving also from other disciplines, we suggest defining mentoring in educational development as a long-term cooperation between a teacher and his/her colleague who has more teaching experience and expertise. This cooperation should result in an enhancement of teacher's pedagogic practice. Coaching in educational development can be defined as a short-term support aimed at improving some aspects of teacher's teaching and his/her insight into teaching and learning. Also in coaching it is assumed that the coach is more advanced than the teacher in those aspects that need improvement. The major role of the coach is to encourage coachees' reflection on his/her pedagogic practice. When referring to support roles in educational development we advise using these two terms – mentoring and coaching – rather than tutoring.

(b) Mentoring as used in educational development

While we found the definitions of mentoring in educational development literature incomplete or confusing, the reviewed studies provided us with a much more satisfying picture of how differently mentoring can be included into educational development and which different formats it can take. Another important point raised in this regard was training for mentors. Even if only a minority of studies discussed this aspect it seemed quite rational for us that mentoring programs should include some training for mentors. Literature from other fields confirms this assumption, as for example de Haan *et al.* (2011, p. 28) describe that a large majority of coaches in their program went through a highly rigorous process where their practice was assessed through tape recording, case studies and live coaching. Their research moreover revealed the

importance of educating coaches more according to what coachees found helpful than according to existing "coaching models" in the profession.

(c+d) Methods used to evaluate the results of mentoring and evidence supporting the use of mentoring

Our finding that the design of previous research into the effects of mentoring in educational development was relatively weak corroborates with conclusions from some earlier studies. For example Williams (1991) found published research limited to assessing participants' satisfaction with the program or to investigating program effects on specific pedagogic skills rather than focussing on broader program effects. Also, Woodd (2001) criticized that previous studies tended to measure differences between mentored and unmentored teachers rather than to seek out the reasons for those differences.

In this literature review, however, we went further by raising the attention to numerous data collection methods that – when really in use – could provide a more comprehensive picture of the outcomes of mentoring in educational development. Moreover, as a result of this review, we advise that further research includes more pre-test/post-test studies, uses larger samples than 20 people, explores the effects of mentoring beyond the individual level and examines the longer-term impact of mentoring. The latter is consistent with earlier and broader calls to address more effectively the impact of educational development (e.g. Weimer and Lenze, 1991). Based on this we can conclude that even if existing literature describes 13 different outcomes of mentoring, this will continue to represent limited evidence unless mentoring in educational development becomes better researched.

(e) Areas of debate and gaps in research about mentoring in educational development

We link the missing scholarly debate on how to make mentoring an effective tool for enhancement of university teaching with the fact that previous research has left so many gaps in our knowledge about the use of mentoring in educational development. Our analysis confirmed several of challenges mentioned by earlier works, notably confusion with terminology and methodological pitfalls of existing studies. Another new research gap we can see is the impact of selection and training of mentors on the results of mentoring in educational development.

Conclusion

In some countries, as for example in the UK, it is claimed that mentoring has already become a common feature of educational development programs (Mathias, 2005, p. 102). In spite of this, there are relatively few scholarly publications which document existing practices and outcomes of mentoring. This review provides some insights into the scope of the literature on mentoring in educational development. A critical concern was the lack of clarity regarding the definition and nature of mentoring used in the different studies. A second concern was the lack of clarity as regards methods used. Nevertheless, there is some evidence that mentoring could have a positive effect on attaining the aims of educational development programs at all levels. Therefore it can be recommended as a useful element of courses for teachers in higher education – though its purpose should be more evident.

Notes

1. Harnish and Wild (1994) report similar results also in their study published in 1994 in *Studies in Higher Education*.
2. SoTL denotes public dissemination of pedagogic research in peer-review contexts (Hubball *et al.*, 2010, p. 118).
3. Action learning means exploring practical issues related to teaching through group discussions and reflection (Regan and Besemer, 2009, p. 211).

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About the authors

Dr Gabriela Pleschová is a Political Science Teacher at the Comenius University in Bratislava. In 2010-2013 she led an educational development program at the Institute of Physics, Slovak Academy of Sciences, Bratislava. She has been a Co-Editor of book *Teacher Development in Higher Education. Existing Programs, Program Impact and Future Trends* published in 2012 at Routledge. In 2012 she completed a graduate degree in education at the University of Oxford. She is a Senior Fellow of the Higher Education Academy. Dr Gabriela Pleschová is the corresponding author and can be contacted at: gabriela.pleschova@savba.sk

Professor Lynn McAlpine is the Head of the Oxford Learning Institute's Research Group; and Professor of Higher Education Development. She is also a Senior Research Fellow at the Department of Education, University of Oxford. She was formerly a Professor and Director of the Centre for University Teaching and Learning at the McGill University, Montreal, Canada.