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Reflective and Clinical Teacher Education: A Model Proposal towards Application*

Yansıtıcı ve Klinik Öğretmen Eğitimi: Uygulamaya Yönelik Bir Model Önerisi

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ABSTRACT: Very few teacher education models have integrated theory and practice on a context basis and used formative assessment in teachers' personal and professional development. Two are the Clinical Teacher Education Model and the Realistic Teacher Education Model based on reflection. These models prepare teacher candidates (TCs) for their profession as early as possible and most effectively by integrating their professional knowledge, skills, attitudes, and values with personality traits. In Turkey, what needs to be done for teacher education is a meta-philosophical mentality change, and this study aims to lay its foundations. Inspired by these two models, this theoretical study proposes a new and unique teacher education model based on reflection and teaching competencies considering the structure and resources of the Turkish teacher education system. In this model, TCs continue their professional development in a learning community where they internalize the determined competencies in a spiral structure every year, systematically reflect on every phase of the process and obtain regular feedback from their peers, advisors, and teachers from practice schools. This study explains the theoretical background and justifications of the model incorporating theory and practice in a four-year-teacher education, and concrete, practical examples are presented.

Keywords: Clinical teacher education, competencies, realistic teacher education, reflection, teacher education.

ÖZ: Kuram ve uygulamayı bağlam odaklı bütünleştirebilen ve biçimlendirici değerlendirmeyi öğretmenlerin kişisel ve mesleki gelişiminde kullanan pek az öğretmen eğitimi modeli geliştirilebilmiştir. Bunlardan ikisi Klinik Öğretmen Eğitimi Modeli ve Yansıtmaya Dayalı Gerçekçi Öğretmen Eğitimi modelidir. Bu iki model, öğretmen adaylarının mesleki bilgi ve becerisini, mesleğe yönelik inanç ve tutumlarını kişilik özellikleri ile bütünleştirerek onları mesleklerine olabilecek en erken zamanda ve en etkili biçimde hazırlamaktadır. Türkiye'de de öğretmen eğitimi alanında yapılması gereken felsefeler üstü bir zihniyet değişimidir ve bu çalışma ile bunun temellerinin atılması amaçlanmaktadır. Bu kuramsal çalışmada, bu iki modelden esinlenerek Türk öğretmen eğitimi sisteminin yapısı ve olanakları göz önünde bulundurularak yansıtmaya ve öğretmenlik yeterliliklerine dayalı yeni ve özgün bir öğretmen eğitimi modeli önerilmektedir. Bu modelde, öğretmen adayları belirlenen yeterlilikleri her sene sarmal bir yapıda içselleştirmekte, sürecin tüm aşamalarında sistematik yansıtma yapmakta, akranlarından, danışmanlarından ve uygulama okullarındaki öğretmenlerinden düzenli dönüt alarak kişisel ve mesleki gelişimlerini bir öğrenme topluluğu içinde gerçekleştirmektedir. Çalışma kapsamında, kuram ve uygulamayı dört yıllık öğretmen eğitiminde bütünleştiren bu modelin kuramsal altyapısı ve dayanakları açıklanmakta ve somut uygulama örnekleri sunulmaktadır.

Anahtar kelimeler: Klinik öğretmen eğitimi, yeterlilikler, gerçekçi öğretmen eğitimi, yansıtma, öğretmen eğitimi.

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Teacher education (TE) and how it should be conducted is a debate frequently brought into the agenda in Turkey. This is a necessary discussion, though, because, as it is known, the quality of any education system cannot be higher than the quality of its teachers (Barber & Mourshed, 2007). In the field of TE, a variety of implementations have been conducted in Turkey from time to time, just like in the rest of the world, some of which are doing minor for primary school teachers, concurrent teacher education model, consecutive teacher education model, and increasing or decreasing the practicum period. However, a TE model satisfying all stakeholders has not been put forward yet. While some models give more importance to theory and reduce the period for practice, others prioritize practice and neglect the necessary foundations of education. The structural regulations in TE have not yielded the intended results either, and in fact, the situation is not different in many other countries (Schleicher, 2016). Hence, new perspectives exceeding the limits of mainstream approaches have been sought in TE.

The failure of conventional TE has paved the way for teacher educators to develop new models, and two of these, which are based on reflection, have emerged as successful models; "*realistic teacher education (approach)"* (Korthagen, 2017) and "*clinical teacher education*" (Burn & Mutton, 2015; Darling-Hammond, 2006, 2014; McLean Davies et al., 2015). These two models have become so successful that similar TE models and programs have been adapted in different countries and obtained positive results (Adams et al., 2013; Attema-Noordewier et al., 2011; Burn & Mutton, 2015; Darling-Hammond, 2006; Stenberg & Maaranen, 2020).

This theoretical study on document analysis proposes an innovative TE model, which centers around reflection, teacher competencies, and application. The theoretical background of the proposed model implemented at education faculties has been created through the integration of reflection and clinical TE as a result of an extensive literature review considering the realities of the Turkish TE system and conditions. To this end, national and international reports, research studies, and books on teacher education, teacher competencies, clinical teacher education, and reflective teacher education were synthesized. Successful TE education programs integrating theory and practice were examined worldwide, and the features that make them prominent programs were identified. Therefore, in this study, firstly, the reflection and clinical teacher education approaches are explained, the concepts are clarified, sample applications are presented, and finally, the proposed model, which is expected to be put into practice for teacher education in the near future is introduced.

An Overview of Teacher Education

The traditional "*theory to application approach*" applied until the end of the last century was unsuccessful in TE, and this gave rise to school-based TE programs from the beginning of the 1990s (Korthagen, 2001). TE was begun to be given at schools, and "*on-the-job teacher training*" gained importance (Korthagen & Kessels, 1999) because the mainstream TE could not reflect the genuine setting and nature of classrooms and could not prepare teacher candidates (TCs) for genuine classrooms. However, this kind of TE approach caused polarization among teacher educators. The teacher educators who criticized school-based TE advocated that TE could not be reduced to an approach that depends on providing TCs with some practical knowledge of classroom

management. They also supported that TE should be grounded on psychological, sociological, and philosophical foundations and delivered through a broader perspective. According to Korthagen and Kessels (1999), these two views are mistaken since neither asks the critical question. The essential question is not whether teacher education should start with theory or practice but how prospective teachers should integrate theory and practice. Therefore, teacher education programs should emphasize learning for theory and practice and learning from practice by providing teacher candidates with opportunities to engage in reflections and discussions with their educators and peers.

Korthagen and Kessels (1999) advocate a TE model in which knowledge and experience integrate with theory. The most fundamental feature of this new paradigm is "*reflection*." The transfer of theory and its application is a subject addressed many times, yet concrete applications and curriculum proposals are very scarce. This study focuses on how this can be accomplished in Turkey by referring to Dutch teacher trainer Fred Korthagen. The concept of reflection, which was first addressed by Dewey (1910) and revisited by Schön (1987) in detail, was further developed and systematized by Fred Korthagen and his colleagues and emerged as a TE model.

The word "*theory*" is used with two different meanings in educational sciences, and this causes confusion (Biesta, 2012; Korthagen & Kessels, 1999; Lunenberg & Korthagen, 2009). To understand the concept better, Korthagen and his colleagues explain the difference between Aristotle's concepts "*episteme*" and "*phronesis*." When teacher educators provide TCs with "epistemic" knowledge, it is usually the knowledge of concepts and principles which can be generalized to wider areas. It is the type of knowledge obtained from scientific studies, defined as a goal, and used for validity and reliability principles. For instance, the questions such as "*What are the characteristics of effective education? What are the reasons for student drop-out*?" include this type of knowledge, and conventional TE programs are grounded on it (Lunenberg & Korthagen, 2009, p. 226). Although it is necessary for TCs, they also need to learn contextual knowledge and skills related to specific subjects and situations. This type of knowledge is used by researchers while solving problems they meet in their own contexts. Teachers have to make context-specific, spontaneous, and rational decisions in these situations. This requires them to go beyond the conceptual or "epistemic" knowledge and use "phronesis," which is subjective and often unconsciously perceptual knowledge (Biesta, 2012; Furman, 2016; Korthagen & Kessels, 1999; Lunenberg & Korthagen, 2009). Hence, while episteme is the knowledge of "what," phronesis is the knowledge of "how." For this reason, TE programs should be designed to enable TCs to explore how they can use their conceptual knowledge considering the context.

Realistic Approach in Teacher Education

The biggest problem in TE throughout the 20th century was the dichotomy of theory and practice (Korthagen, 2017). Many attempts to integrate theory and practice in TE have been unsuccessful. Korthagen (2017) puts these attempts into three phases. He defines the "*from theory to practice*" approach in which the educational theories are taught to TCs during their university education as "*professional development 1.0*." This approach had been used in TE until the 2000s with different versions for decades and became unsuccessful. Conventional TE schools were in the line of fire and deprived of

many resources (Cochran-Smith & Fries, 2009), and so different pedagogical applications that would make the theory more meaningful for TCs were implemented. Among these are sample lesson videos, computer-aided education, and recruiting TCs from alternative sources, but they were unsuccessful, too (Cochran-Smith & Fries, 2009; Korthagen, 2017). Korthagen defines these attempts as "*professional development 1.1*" since they were not philosophically different from the first approach.

The failure of the "from theory to practice approach" led teacher educators to an approach applying school-based practices through which TCs spend more time at schools (Korthagen, 2017; Lunenberg & Korthagen, 2009). However, spending more time at school does not guarantee to apply quality practices and bridging the gap between theory and practice (Maaranen & Stenberg, 2017). This time theory is pushed back into the background, and practice is overrated. Korthagen defines this kind of approach as "*professional development 2.0*." The most significant feature of this approach is school-university collaborations in which teachers have a word in the education of TCs. The primary problem in the implementation of this approach is the difficulty of associating practice with theory.

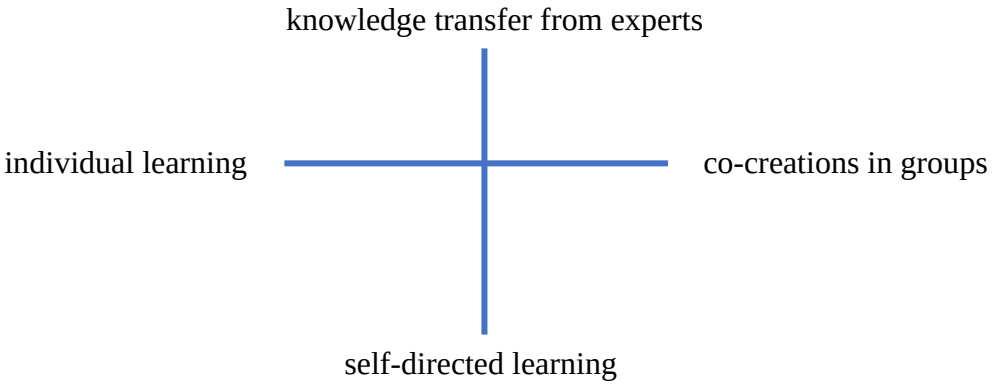
Since solely school-based practices were unsuccessful, Korthagen and his colleagues have advocated an approach based on reflection since the 2000s (Korthagen, 2001, 2005; Korthagen & Kessels, 1999; Korthagen & Vasalos, 2005). This approach is called the "realistic approach" (RA) and places special importance to the self of teacher and teacher's personality. Korthagen (2017) defines RA as "*professional development 3.0*". In this approach, TCs' own interests and concerns are the starting point of their education processes. TCs convene at certain intervals under the supervision of educators and reflect on their experiences, share solutions to the problems they face, and listen to their educators' views and suggestions regarding these issues. There are four key features of realistic approach (Korthagen, 2005):

1. Working on the real situations encountered during teaching that caused concern in teacher candidates,
2. Reflections and interactions of TCs with their peers,
3. Guided reinvention under expert supervision,
4. No Theory with capital (T) (subjects developed by researchers), small theory (t) (theory created by TCs). While capital T refers to "epistemic" (conceptual) knowledge, small t refers to "phronesis" (perceptual) knowledge, as is explained above.

Korthagen visualizes RA with two dimensions and shows the transformation of TE. Figure 1 shows this transformation via change in the vertical axis from top to down and horizontal axis from left to right.

Figure 1

The Transformation of Learning in Teacher Education



Note. (Korthagen, 2005, p. 83)

The vertical dimension in Figure 1 shows who is responsible for theory transfer and it shows a shift from top to bottom in TE. TCs should be provided with opportunities to direct their learning, construct their experiences and be equipped with the skills to develop the theory of their own practices. The second dimension in Figure 1 has to do with individual dimension versus group learning. Research shows that students and teachers learn and construct knowledge better in collaborative contexts (Korthagen, 2005). Therefore, schools should be transferred into learning communities and TCs must gain competencies that will enable them to develop their own knowledge along with expertise knowledge during their education period. Hence, TE shown in Figure 1 should situate somewhere at the bottom right but not at the top left as it is usually in conventional TE.

Reflection in Teacher Education

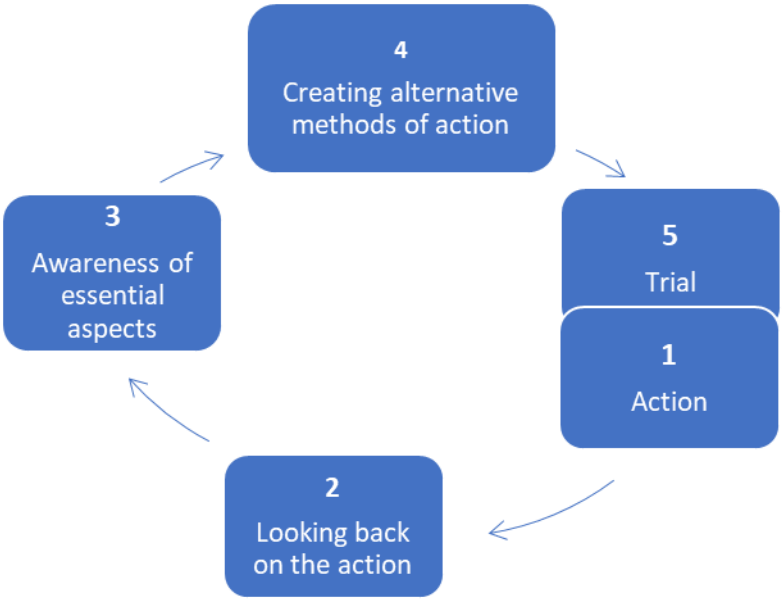
Although successful professionals in their fields have effective reflection skills, there is usually uncertainty about how to do it (Korthagen, 2014; Van Woerkom, 2010). Teachers make spontaneous decisions about the problems they face during their hectic workload, and most of these decisions are superficial and do not yield positive results. This is because of the rapid desire to find quick solutions to problems rather than finding out the underlying reasons. This kind of reflection is called "*action-oriented reflection*" (Hoekstra, 2007). However, the "meaning-oriented reflection" leads to radical change in the thoughts and applications of teachers in the long term. In this type of reflection, teachers engage in deep reflection by identifying the elements and situations in the occurrence of problems. Korthagen and Vasalos (2005) define this type of reflection as "core reflection". The systematic realization of this reflection is explained by what Korthagen calls the ALACT model, which he developed in the Netherlands and later became an integral part of TE in Australia and the USA.

The primary reason for the ALACT model's emergence is the "*reality shock*" that novice and prospective teachers face. This challenge led educators to develop a model bridging the gap between theory and practice. ALACT model grounds on TCs' learning from practice and is comprised of five circular phases. The model is named after the initials of these five phases in English: 1) **A**ction, 2) **L**ooking back on the action, 3) **A**wareness of essential aspects, 4) **C**reating alternative methods of action and

5) **T**rial. The last phase is also a new action and is the starting point of the next reflection cycle (Korthagen, 2014). Not only does the model focus on changing the intellectual structure of TCs but also considers their emotions and needs. The circular shape of the model is presented in Figure 2.

Figure 2

ALACT Model. Structured Reflection Processes



What makes ALACT model different from other action-oriented reflection models is its reliance on meaning-oriented reflection and the special importance it gives to the third phase since this phase is so important for meaningful and deep reflection. In this phase, TCs and their educators/supervisors ask themselves the following questions given in Table 1 for a smooth transition from phase two to phase three:

Table 1

Questions supporting the transition from phase two to phase three

0. What is the context?	
1. What did I think?	5. What did the pupils do?
2. What did I feel?	6. What did the pupils feel?
3. What did I want?	7. What did the pupils want?
4. What did I do?	8. What did the pupils do?

Note. (Korthagen, 2017, p. 394)

After asking and answering these eight questions, the final and most important phase is associating the answers with each other and analyzing the entire process among TCs, teachers and teacher educators (Korthagen, 2017; Lunenberg & Korthagen, 2009). For instance, the questions such as "*How did the teacher candidate's own feelings affect*

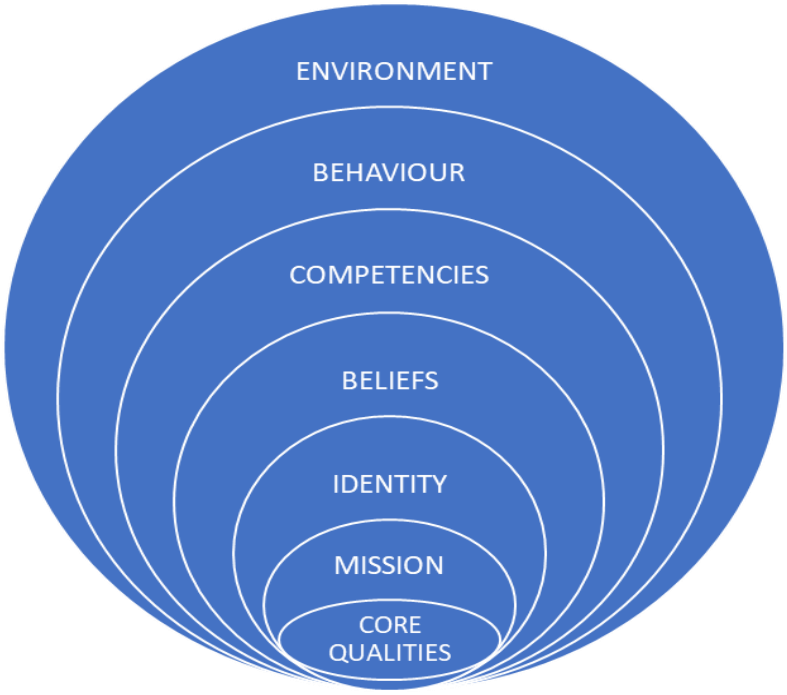
his/her actions and behaviors during the lesson? How did these actions affect what students wanted and felt? How did this affect the behaviors of pupils? What was the effect of this on teacher candidate's behaviors?" make the reflection process more apparent and meaningful for TCs. Besides, how influential these questions on the left and right-hand sides of the table are on each other and how they are mostly neglected can be understood. Hence, TCs can realize that certain behavioral patterns occur in certain situations and as Lunenberg and Korthagen (2009, p. 236) put it, they do not have to reinvent the wheel. As a result of the application of the model over the years, Korthagen (2014, 2017) found out that the concept of reflection is not understood accurately by some teacher educators and TCs and developed a reflection model that he calls "core reflection" (CR).

Core Reflection

CR depends on the onion model that Korthagen (2004) developed, and it is performed at certain phases. The model's logic is grounded on the interrelation of all phases or layers. A genuine professional reflection is an endeavor of unveiling deep relations. Figure 3 shows the phases of the onion model.

Figure 3

Onion Model: Phases of Reflection



Note. (Korthagen, 2004, p. 80)

1. Environment: This outmost layer refers to everything and everyone except the teacher. At this phase, the teacher candidate asks himself/herself, "*What did I face with? / What am I dealing with?*"

2. Behavior: This layer is related to what the teacher candidate does. The teacher candidate asks himself/herself, "*What am I doing?*"

3. Competencies: This layer refers to areas that teacher candidate is competent at. The teacher candidate asks himself/herself, "*What am I competent at?*"

4. Beliefs: This layer focuses on the beliefs of TCs about the situations/topics they deal with. "Beliefs" refers to the unconscious assumptions regarding the outer world.

5. Identity: This layer includes TCs' self-concepts, assumptions about themselves and the professional roles they consider for themselves. The teacher candidate asks himself/herself, "*Who am I (in my work?).*"

6. Mission: This layer has to do with what inspires TCs and what gives meaning to TCs' lives and jobs. While the identity layer focuses on how self-perceptions and how TCs deem themselves, this layer entails ideals.

"*Core qualities*" are at the heart of the model. These are dispositions like enthusiasm, curiosity, courage, tenacity, determination, openness and flexibility (Korthagen, 2014, p. 79). CR aims to raise awareness of these qualities and reveal the relationships between layers. It occurs as TCs focus on the layers of identity, mission and core qualities rather than the outer layers. Indeed, CR targets exploring and eliminating the internal elements that inhibit the use of core qualities and ideals of TCs. Hence, it dwells on two primary questions (Korthagen & Vasalos, 2005, p. 54):

1. *What is the ideal situation? - the situation that the teacher wants to bring about?*

2. *What are the limiting factors preventing the achievement of that ideal?*

CR facilitates identifying the factors preventing ideal classroom environment and instruction and finding the methods to overcome these obstacles. Rather than fight against these obstacles to an ideal situation, the essence of CR is to demonstrate a will to be conscious of and to solve them. Thus, TCs should be encouraged to focus on identity and mission layers in reflection and be autonomous (Meijer et al., 2009).

The ultimate purpose of CR is to equip TCs with what Lunenberg and Korthagen (2009) call "*practical wisdom*." It can be defined as the ability to identify the underlying elements of a situation or problem, find appropriate solutions, and take necessary actions. One of the reasons for the failure of the "*from theory to practice*" approach, as explained earlier, is the fact that "*some general or theoretical knowledge bases that work in certain situations may not work with a group of different students and in different contexts*" because as research shows, 75% of the decisions made by teachers in the classroom are spontaneous (Lunenberg & Korthagen, 2009, p. 228). Therefore, CR centers on the experiences of TCs during their practicum and focuses on their concerns, beliefs, interests, curiosity, or the concepts they developed regarding education through these experiences.

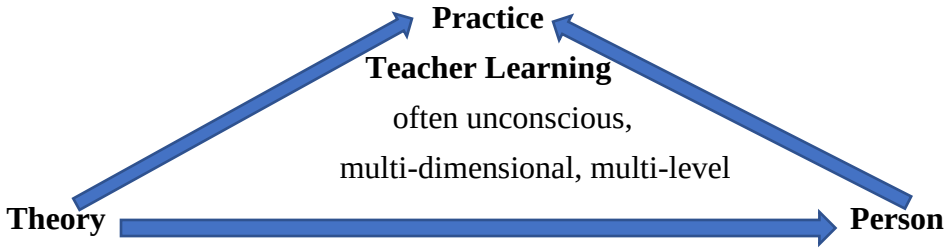
Emphasizing practical wisdom does not mean giving simple information or hints concerning education and teaching. On the contrary, it requires a high level of professional development and enables TCs to learn how theory can be put into practice. Körkkö (2021) advocates that the theoretical knowledge bases of teacher educators are highly influential on the development of meaning-oriented reflection abilities of TCs. In addition, practical wisdom should not be reduced to technical skills. Practical wisdom has to do with ethical values and actions and involves how to treat certain situations (Furman, 2018; Stenberg & Maaranen, 2020). Hence, TCs should be provided with

opportunities and sample cases through which they can listen to each other, raise awareness of authentic situations and internalize theory.

Teaching is a complex and multi-dimensional profession that cannot be performed with solely theoretical knowledge. Therefore, practical wisdom has a key role in properly fulfilling its requirements of it (Stenberg & Maaranen, 2020). This competency enables teachers to make effective pedagogical decisions regarding their situations and problems. Consequently, for an effective TE, the relationship between theory and practice should be linked, as well as personality traits. Korthagen (2017) holds that the connection between theory, practice, and the self can only be established through in-depth reflection. Figure 4 shows this relationship.

Figure 4

Teacher Learning Takes Place in the Connection between Theory, Practice and Person



Note. (Korthagen, 2017, p. 399)

As shown in Figure 4, teachers' learning processes often take place as unconscious, multi-dimensional and multi-level, so TE should be designed in a way to support this structure and these processes (Korthagen, 2017). This can be realized through classrooms that are transformed into learning communities under the supervision of TCs' advisors and applications in which they comfortably share and reflect on their interests, needs and concerns emerging from their own teaching experiences. This type of genuine reflection also functions as a facilitator for teacher educators who have crowded classrooms.

Korthagen (2017) defines an effective teacher as the one who can establish harmony among the phases he explained in the onion model and the one who has impact on the classroom and school with the coherence of his/her core qualities, ideals, sense of identity, beliefs, competencies and behaviors. Professional development also takes place through this coherence. CR and its ultimate result -practical wisdom- have empirically proved their effectiveness. Attema-Noordewier et al., (2011), Hoekstra and Korthagen (2011), Meijer et al., (2009) in the Netherlands; Adams et al. (2013) in the USA; and Körkkö, (2021), Maaranen and Stenberg (2017), Stenberg and Maaranen (2020) in Finland showed that CR or meaning-oriented reflection significantly contribute to the professional transformations of TCs.

A TE model similar to *3.0 teacher education* has started to be implemented especially in the USA, Canada, and Australia. The schools applying this approach have become prominent in the field of TE as exemplary schools. The basic approach adopted by these schools is called "*clinical teacher education*" (CTE), in which theory and

practice are integrated through reflection and school-based applications. It is a TE model that aims to develop pedagogical reasoning skills of TCs. The following part explains the philosophical foundations and exemplary applications of CTE.

Clinical Teacher Education

The failure of "*from theory to practice*" led teacher trainers to alternative approaches. Among these, the most successful and prominent one is CTE. CTE emerged at a time when school-based applications became prevalent. TCs' experiencing and testing the theoretical knowledge bases learned at university in practice schools is the foundation of CTE. However, CTE differs from what Korthagen (2017) calls *teacher education 2.0*, where TCs are left alone in practicum. The most distinctive feature of CTE from other context-oriented approaches is that TCs obtain systematical feedback from their colleagues, mentor teachers at practice schools, and teacher educators at university in a learning community, and they reflect on their practices, thoughts and feelings (Burn & Mutton, 2015; Darling-Hammond, 2006; McLean Davies et al., 2015; National Council for Accreditation of Teacher Education [NCATE], 2010).

CTE is an approach in which TCs apply the theory. The extent that they have acquired the competencies the program specified is tested through performance evaluations, especially with formative assessment (Darling-Hammond, 2014). The objective of CTE is to provide TCs with experiences regarding observation, doing research and teaching practice at schools as early as possible and reflect on and examine the theoretical knowledge they have learned before it has been a long time. Hence, TCs gain contextual knowledge and teaching experience as far as possible before they begin teaching. In the context specific CTE process, TCs develop strategies to enhance their decision-making skills via more structured teaching practices, work in stronger solidarity and collaboration with their colleagues and conduct professional and systematical interviews with their advisors and mentor teachers (McLean Davies et al., 2015). In this respect, CTE and RA explained earlier grounds on similar foundations. In the USA, there are outstanding schools applying for CTE. Boston University, St. Cloud State University, University of Northern Iowa and Hunter College are some examples of those schools.

One of the main reasons that paved the way for CTE in the USA is the Professional Development Schools (PDSs) opened in the 1908s. Being similar to the laboratory schools at the beginning of the 20th century, these schools aim to bridge the gap between practicum applications and university courses (Darling-Hammond, 2006). Thanks to these schools, pre-service teachers get prepared for the profession within the scope of CTE and in-service teachers can continue their professional development. Also, PDSs function as a laboratory for TCs to be able to conduct their educational research (Burn & Mutton, 2015; Darling-Hammond, 2006; Grossman et al., 2009) and they help bridge the gap between field studies and university courses. In the practicum, TCs discuss their observations, case studies, reflective diaries and experiences in practice schools with their mentor teachers and colleagues and in universities. During these discussions, TCs generate solutions to the problems faced, and reflect on lesson records, materials and examinations they have prepared. In CTE, mentor teachers are also an integral part of the process. Carefully selected mentor teachers may become assistants of advisors and at the same time, they can occasionally teach to TCs at

practice schools and university. What is more, mentor teachers take part in portfolio evaluation commissions of TCs and play an active role in the evaluation processes (Darling-Hammond, 2006).

CTE is applied in Europe, too. One of the best examples to CTE is Oxford Internship Scheme (OIS) conducted in the United Kingdom (UK). OIS refuses "from theory to practice" approach and focuses on clinical reasoning and "*practical theorizing*" (Burn & Mutton, 2015). In these two approaches, practice teachers share the underlying reasons of their classroom practices, reflect on and discuss the cause-and-effect relationships of these practices or the decisions they have taken with TCs. Such an implementation enables to unveil the tacit knowledge of teachers and helps TCs to internalize which decisions are taken under which circumstances (Kriewaldt & Turnidge, 2013). The success of OIS paved the way for OIS to be implemented in the other regions of the UK, and similar programs such as School-Centered Initial Teacher Training became widespread. (Conway et al., 2009).

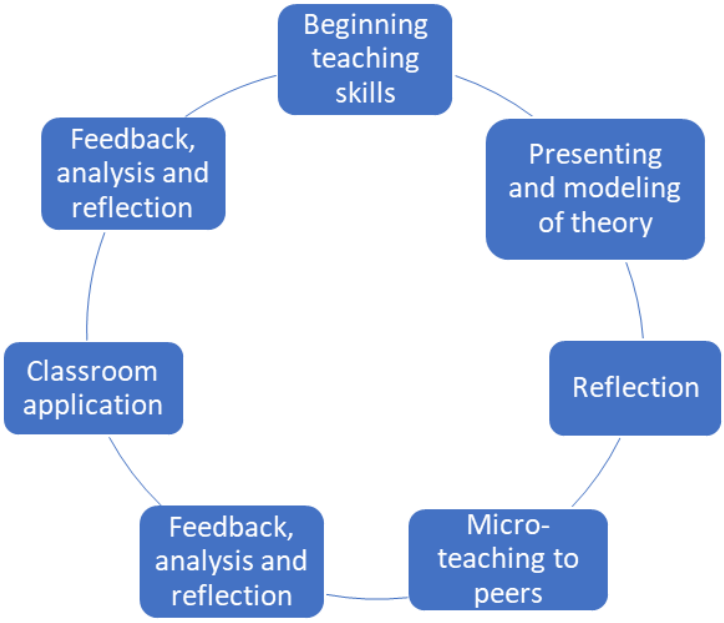
TE system in Finland can also be considered within the scope of CTE (Burn & Mutton, 2015). The most distinctive feature of Finnish TE is the effective cohesion of theory, practice and scientific research throughout the process (Körkkö, 2021; Maaranen & Stenberg, 2017; Sahlberg, 2010). In the final practicum where two teacher educators are assigned to a school in the fourth or fifth year of university education, TCs are expected to reflect on both the duties and responsibilities of teachers and the theory and practice. Regarding teaching practice, TCs are observed by their mentor teachers and university advisors at the same time, and they get feedback (Maaranen & Stenberg, 2017). In addition, Teacher Education Schools in Finland are similar to the PDSs in the USA. In these schools, TCs and teachers conduct research and development activities in the framework of collaborations with universities.

CTE and clinical reasoning approach in the USA and Europe have also been adopted in Australia. The Master Teaching Certificate program given at Melbourne Graduate School of Education is an example of this (Kriewaldt & Turnidge, 2013). As part of CTE, TCs are assigned to practice schools at the beginning of the semester, and their mentor teachers and university advisors educate them. The university teachers who are defined as clinical experts also take charge in practice schools and become a liaison between schools and the university. Clinical reasoning requires TCs and teachers to express and think aloud about their experiences regarding the issues discussed by providing evidence from student assignments, evaluation tools, or their own lesson records sincerely and thus, to make sense of their own experiences. This reflection process is conducted in a free environment based on mutual respect, dialog, criticism and feedback (Kriewaldt & Turnidge, 2013).

Another successful teaching application is conducted by Regina University in Canada. The program centers around the Teacher Competency Profile (TCP), which was developed by the collaboration of Regina University and regional schools (Lang & Evans, 2006). TCP consists of twelve core competencies and their performance indicators. Even though Lang and Evans (2006) do not define TCP explicitly as CTE, the way the model is applied and its components are the indicator of CTE. TCP consists of awareness, discussion, reflection and practice phases. In the TCP model, the competencies are targeted to be gained by TCs in a cycle. Figure 5 shows this cycle.

Figure 5

Professional Development Cycle



Note. (Lang & Evans, 2006, p. 15)

As shown in Figure 5, TCs initially study, discuss and reflect on the competency domain and related theoretical knowledge at university courses. Then the theoretical knowledge is experienced through micro-teaching. Lang and Evans (2006) suggest observing real classrooms or watching exemplary lessons if this is not possible. Following micro-teaching, TCs reflect on the practices and experiences under their advisors' guidance, and they prepare for the next phase, which is classroom application in a most effective way. TCs also reflect on their individual experiences into their professional development diaries. In the third phase, TCs apply their lesson plans regarding the target competency domain they develop with their peers at the practice school they have been assigned. The teacher candidate is observed by their mentor, teacher, and peer to obtain extensive feedback and reflect on and keep a record of his/her individual teaching experience. The objective is to minimize the problems due to inexperience before practice and to prepare TCs for the profession through context-specific continuous feedback.

In the following section, in light of these developments and considering successful TE implementations in various countries, a reflection and competency-based model is proposed for TE in Turkey. The model depends on bridging the gap between theory and practice within the framework of education given at education faculties and developing practical wisdom and clinical reasoning skills of TCs during their four-year education through applications.

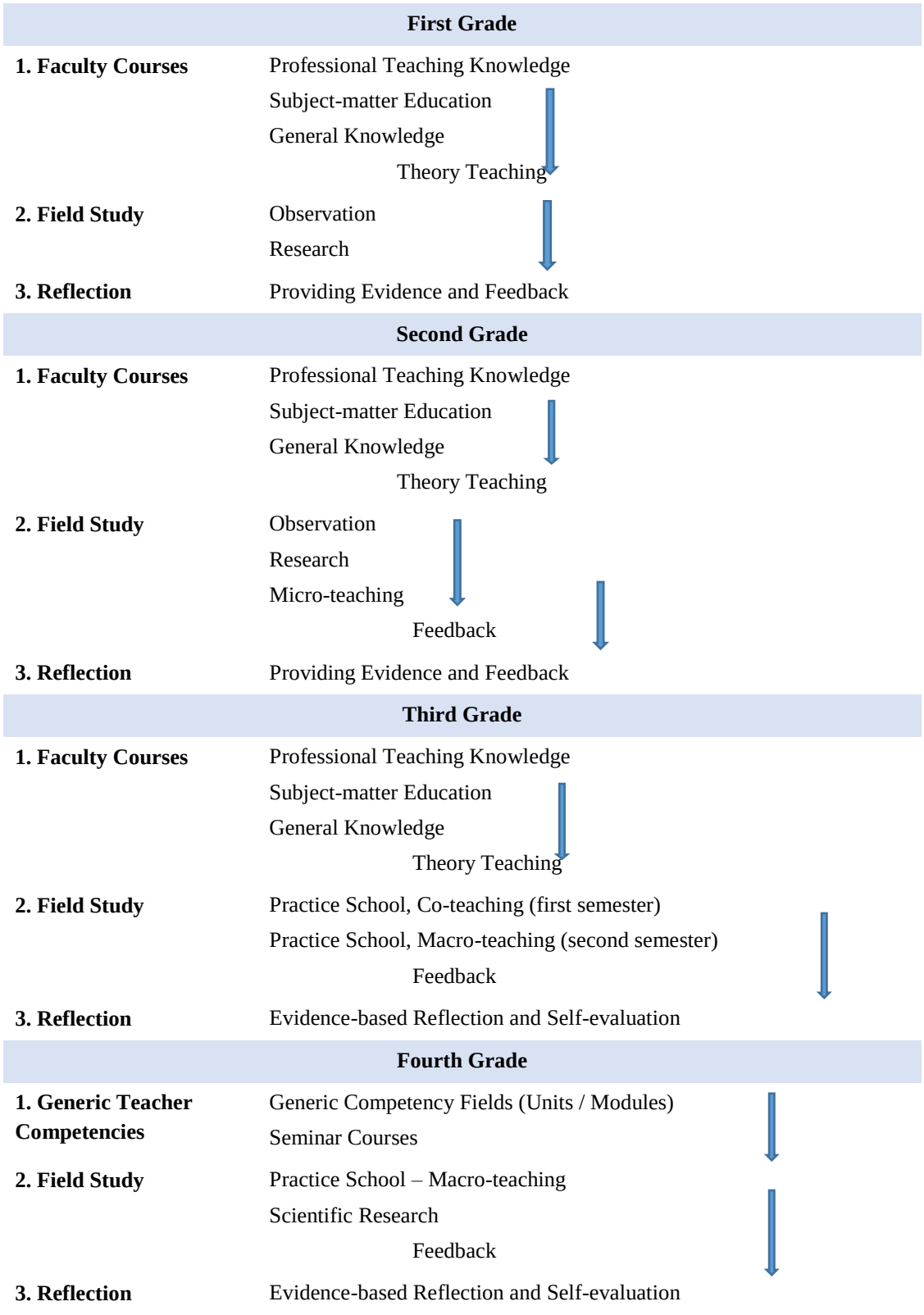
Four-Year Clinical Teacher Education Based on Reflection and Competency

TCs in Turkey take their professional teaching knowledge courses starting from the first year. However, these courses are deemed theoretical and cannot be associated with practice by TCs (Alan, 2019, p. 178). Alan's (2019) study revealed that TCs, who consider themselves quite knowledgeable in terms of theory and see their university teachers as well-equipped in their profession, state that they cannot find environments, opportunities and practical applications that will enable them to make sense of, test and evaluate their extensive knowledge. TCs think that their education does not prepare them for the profession with respect to practice. Alan's (2019) study indicates that TE system in Turkey still bears the trace of *teacher education 1.0* or *from the theory to practice approach*. Practicum applications (which can be accepted as *teacher education 2.0*) do not hold the quality to gain TCs practical wisdom in relation to the duration or the applications conducted. TCs are unable to experience and reflect on a topic they study in the first year until practicum applications are squeezed to the last year. There is a long time between their courses and teaching applications. They cannot find time and opportunities for practice, so they forget what they have learned. For instance, TCs study *developmental psychology* in the first or second grade but do not have a chance to experiment with it until the final year's practicum (Alan, 2019, p. 179). Some other courses like *classroom management* and *teaching principles and methods* can be given for further examples. It is of great significance with respect to this study and to the proposed model that the TCs interviewed regarding this subject gave examples from medical education, wanted to stay longer in the field and conduct practical applications at school even though they were not informed of clinical education while talking about ideal TE.

Within the scope of this study, a model in which theory and practice are experienced coordinately, TCs reflect systematically in all phases of the process, get regular feedback from their peers, advisors and teachers at practice schools, and develop knowledge, skills, attitudes and values towards their profession within a learning community. Figure 6 shows the stages and general framework of the CTE based on reflection and competency.

Figure 6

Stages of Clinical Teacher Education



As is seen, Figure 6 shows the applications of CTE expanding four years. According to this, practical applications are conducted at all stages and are not limited to the last year. The proposed model is aligned with the realities of Turkey. In education

faculties, similar to the examples across the world, professional teaching knowledge, subject-matter teaching and general knowledge courses are taught. These courses remain the same in this proposed model, but their delivery and timing change. More student-centered, school and reflection-based activities are conducted in these courses, and TCs' professional development is supported by formative assessment at all processes.

The proposed model is based on the determined teacher competencies (Alan & Güven, 2022). Likewise, Turkish Ministry of National Education (MoNE, 2017) also emphasizes the importance of designing and grounding programs and course contents of TE programs on MoNE's generic competencies and training candidates of competency. The motive for competency-based education (CBE) derives from the gap between the knowledge bases and skills of individuals they learn at university courses and the required knowledge and skills in the business world. The biggest issue in TE is the failure to build a bridge between theory and practice. This is why CBE, which entails knowledge use in authentic work context rather than knowledge transmission, has become widespread in TE (Koenen et al., 2015). CBE focuses on what an individual can do regarding a particular profession after completing training and in doing this, rather than their achievements in comparison to others, but the sector's standards and requirements are determined as a benchmark (Guthrie, 2009).

It might seem contradictory for some that the proposed TE model is reflection-based and centered around competencies because Korthagen (2017) developed the CR concept and advocates the professional development of TCs through this concept and approach, and also the starting point of this proposed model is against CBE. However, CBE that Korthagen is against is the technician TE approach in which competencies are dealt in quite a strict manner, neglects the complex structure of teaching and humanistic and personality traits, values, beliefs, and the influential factors shaping them. This view depends on the deficiency determining / diagnosis approach. Competencies are a crucial element and layer in Korthagen's onion model, but Korthagen emphasizes associating these competencies with what he calls core qualities, and personality traits.

The teacher competencies that Alan and Güven (2022) determined consist of six generic competencies and their sub-competencies and each sub-competency consists of observable and measurable performance indicators. Indeed, one of the reservations of Korthagen towards CBE is the difficulty of measuring competencies. The competencies Alan and Güven (2022) determined, though, define performance indicators at four different levels, and rather than being an ultimate summative assessment tool, it is a reference resource exemplifying the level of performance expected from teachers and TCs at varying ranks enabling them to do their self-evaluation and reflection. In addition, Alan (2019) revealed that the TCs also need a generic competency framework scaffolding their self-evaluation and professional development.

Competency and reflection-based CTE is modular, and the modules are comprised of the determined competency domains. The competencies (content) are targeted to be gained through structured modules or units. The competencies are studied by associating with the courses taught in the first, second, and third years. The theory learned at university is tested at schools through observation, research, application, and reflection. Within the framework of the courses at various grades designed with a spiral program, the competencies are revisited at an increasing width, depth and difficulty, and

they are experienced through activities based on application and reflection. Thus, TCs reach a certain competency level before the final and comprehensive practicum. This kind of TE model delivered in four years prepares TCs for the reality shock they may experience in the first years of their profession.

First and Second Grade

In the CTE model, TCs experience the professional teaching knowledge and skills and the applications that help them gain positive attitudes and values towards their profession from the first grade of their education. Apart from university courses, TCs are assigned to practice schools, and they test the theoretical knowledge they learn at university and self-reflect on their experiences by providing evidence from the field. In this way, they are able to experience the theory and practice coordinately and at the same time, they begin developing their clinical reasoning skills at the earliest through reflection. TCs benefit from the following methods and tools to gain clinical reasoning via reflection and evidence.

Observation and Research

Observations have a key place in CTE. TCs learn theoretical knowledge, discuss and examine the examples regarding their own discipline at faculty courses with their university teachers and then make observations related to these issues at practice schools. These observations might be about a wide range of topics such as duties, responsibilities and applications of teachers and administrators or for an understanding of why and how teachers and students treat in certain ways in certain situations regarding the subjects studied. In this respect, TCs conduct research and interviews with students and teachers. TCs examine the validity and practicality of theoretical knowledge they learn at faculty courses via findings and evidence they obtain from the field and do their self-reflections on the cause-and-effect relationship. The faculty teacher (field expert) leads and guides these reflection processes and gives feedback to TCs. These applications also provide a background for the scientific research TCs will conduct in the following years to feed theory and practice with scientific research, which is an important characteristic of CTE.

Peer Feedback

Another significant feature of CTE is that TCs are the members of a learning community, and they make sense of their experiences by sharing and discussing with each other. At the end of every unit (competency field) completed and the lived experience at practice school, TCs discuss their findings, thoughts, feelings, disappointments, problems and other aspects and factors that impact their professional and individual development. TCs compare and contrast the similarities and differences of the experiences lived and reflect on who did what in certain situations, which applications resulted positively and negatively and what kind of a clinical reasoning process they went through during these experiences. Thus, individual experiences become a learning tool for others, too, since these reflections will reveal some generalizable patterns of behavior. Besides, because TCs gain experience at different schools, they become knowledgeable about various student profiles and be more prepared for the probable situations they will face with. However, to this end, TCs should be provided with an environment in which they feel secure, be encouraged to

share their experiences without hesitations, and be informed that these applications are not for judgmental purposes but to support their professional development. They should also be given information about how to provide constructive criticism and the instructor should demonstrate concrete examples.

Interaction with Mentor Teachers

Practice schools and field studies are an integral component of CTE, but for these studies to be meaningful and supportive for the professional development of TCs, the mentor teachers bear important roles and responsibilities. Foremost among these is the framework of an intimate but professional interaction of mentor teachers with TCs. The professional development of TCs in practicum cannot solely be actualized by observing mentor teachers or doing research assignments. There might be various justifications beneath teachers' pedagogical decisions regarding their daily practices. What matters is their ability to understand why, how, when and with what justifications these decisions are made, and this can be achieved by establishing a systematical communication and feedback process. With this systematical communication, the clinical reasoning and practical wisdom of TCs are developed. Clinical reasoning is to make invisible things visible and to make indiscernible things discernible for TCs. During clinical reasoning, mentor teachers regularly meet with TCs after their in-class practices or teaching. In these reflection meetings, mentor teachers explain what they thought about, what they felt, what their motives were, why they changed their minds (if there are any) and how these impacted students' learning at that particular moment to TCs. TCs, on the other hand, share and reflect on their feelings and thoughts concerning the lesson they have observed with both mentor teachers and their peers.

The fact that TCs and mentor teachers mutually share mental and affective processes they have gone through in all applications sincerely and transparently provides invaluable opportunities for TCs' professional development. These applications within the scope of CTE are aligned with Korthagen's CR model, too, because in such a reflection environment grounded on collaboration and mutual sincerity, TCs reflect not only on the external factors influencing their professional development but also on the identity and mission layers that constitute the essence of CR. According to a recent study (Maaranen & Stenberg, 2020) conducted in Finland, the foremost factor in the identity development of TCs following internship studies is the collaboration with school staff and the share of school culture.

Micro-teaching Applications

The delivery of the first and second-grade courses and applications TCs conduct remain the same, but TCs begin micro-teaching applications starting from the second grade. TCs consider micro-teaching applications they conduct at university beneficial for gaining teaching experience by principle; however, they also believe that these applications are stilted and for this reason, they do not yield the intended results (Alan, 2019). TCs believe that playing student roles is effective to a certain extent, but they get bored or hesitant in this artificial setting, and they think that a genuine classroom environment and student interaction cannot be achieved no matter how hard it is tried. For this reason, TCs wish to gain micro-teaching experience at practice schools rather than at universities. This wish and view of TCs have similarities with the teaching

applications conducted abroad. For instance, in successful TE schools in the USA, TCs conduct teaching applications starting from the first semester of the second grade initially with shorter durations (5-10 minutes) and then at an increasing rate (Darling-Hammond, 2006).

The objective of conducting micro-teaching at practice schools is to gain teaching experience as much as possible and be familiar with working contexts and conditions at the earliest as a requirement of CTE. Just like skippers and pilots gain experience at different seas and weather conditions or medical students visit hospitals and take on different tasks by caring for patients from the beginning of their education, TCs should also be provided with opportunities and experiences to gain the competencies expected of them as early as possible (NCATE, 2010). The best place to gain these experiences is the practice schools.

Within the scope of micro-teaching, constructive feedback is an integral component of the proposed model as part of clinical and reflective education. With this application, TCs are able to test the theoretical knowledge they learn at university and experience its practicality in advance. This is called "practical theorizing" in the literature (Burn & Mutton, 2015). With practical theorizing, TCs can experience under which circumstances and on which student groups the theory they learn has an impact firsthand, and they reflect on these experiences by discussing. These applications positively reflect on faculty courses since classroom discussions become more authentic and meaningful, and university teachers provide TCs with richer and more constructive feedback. In this way, theory and practice mutually feed each other.

Following micro-teaching applications, TCs get feedback from their mentor teachers and colleagues regarding their teaching. The feedback they get on their teaching focuses on two fundamental issues. The first is about to what extent the targeted subject or learning outcome has been achieved or not by students and how it can be checked. The second is related to TCs' in-class performance. After TCs discuss and reflect on these two issues with their mentor teachers and colleagues, they share their experiences at university courses with their university teachers. TCs and university teachers associate micro-teaching experiences with the literature and university teachers give TCs feedback.

Third Grade

In CTE, the teaching applications of TCs increase gradually, their teaching duration gets longer, and they fulfill various duties and responsibilities.

Co-Teaching Application

In the third grade, TCs practice co-teaching different from micro-teaching. Co-teaching is a teaching application through which a candidate teacher and a mentor teacher teach either a whole lesson together or by sharing certain parts of it. This is such a practical and successful application that especially mathematics and reading skills achievement of students with special needs is 20% higher than the average (NCATE, 2010).

TCs begin teaching from the first semester of the third grade with and under the supervision of their mentor teachers and hold regular meetings before and after lessons. In these meetings, teachers and TCs discuss who will teach certain parts of the lesson,

how long it will take, what materials they will use and how they will use them. In the post-lesson meetings, mentor and candidate teachers reflect on the lesson they have conducted and get feedback about the process. Co-teaching is not an application that only TCs benefit from. Mentor teachers are also informed about the state-of-the-art educational approaches that TCs bring from universities and adapt them to their teaching applications. With the integration of TCs' dynamism and experiences of mentor teachers, richer learning settings emerge, turning into an acquisition for students (NCATE, 2010). Another feature of CTE is that students do not get harmed by these processes and are not deprived of quality education.

The fact that mentor teachers can instantly intervene in any problems that may occur in the classroom is another benefit of CTE for TCs. TCs who teach under the supervision of mentor teachers feel secure, and their self-efficacy does not break down since the potential problems they may face will be intervened without them worsening. In the second semester of the third grade, TCs continue co-teaching with mentor teacher or one of their colleagues but again under the supervision of their mentor teacher within the framework of the determined calendar. The difference in the second semester is, though, that TCs conduct macro-teaching instead of micro-teaching. In macro-teaching, TCs start teaching longer periods or the whole lessons. Apart from the regular meetings with mentor teachers as part of clinical and evidence-based education, TCs reflect on this process together with their university teachers and colleagues at university courses. TCs reflect on their experiences at school by providing evidence, discussing the applications that went right or wrong with reasons, and sharing how they felt and how they should behave the next time over concrete examples and evidence.

Scientific Research

Gaining scientific research skills and having competencies that will enable TCs to solve problems that might occur in their classrooms are more important than ever. For this reason, scientific research applications in which TCs can obtain and analyze data with regard to subjects such as school, students and learning-teaching have become an important part of TE programs in various countries. Some of these countries, Finland being in the first place, are Belgium, France, Lithuania, the United Kingdom and Spain. Studies analyzing successful TE policies of Finland show that research-based TE is the major reason why Finland stands out in this field (Conway et al., 2009). TCs in Finland conduct scientific studies with genuine classrooms and students at practice schools and link theory with practice.

CTE is evidence-based, and it feeds on scientific research. In this respect, TCs can conduct scientific research in the third grade thanks to the skills and knowledge they acquire from research assignments and courses they take since the first and second grades. These research studies are usually designed as case studies. TCs conduct case studies on particular students or subjects they are interested in. Case studies in the prominent TE schools in the USA are also an integral part of curricula (Darling-Hammond, 2006). TCs' self-efficacy with regard to conducting scientific research develops through these studies.

TCs conduct case studies about at least one of the students they teach. They collect systematical information about students' development they analyze, those students' behavioral patterns in certain situations and the impact of their applications on

students. Then TCs associate the information they obtain with theoretical knowledge they learn in university courses. In this respect, TCs' comprehensive observations, systematical data collection and analysis regarding a particular student are important applications of the program. Besides observations and case studies focusing on a single student, TCs can conduct studies about whole class.

Fourth Grade

One of the most distinctive features of the CTE based on competencies and reflection is the applications conducted in the last grade. Although competency and reflection-based CTE does not compress the practicum applications into the last grade, all of the last year is allocated for practicum. TCs who have already completed most of the courses at education faculty now focus on practical applications and conduct macro-teaching. TCs teach lessons within the framework of the determined target competencies in the autumn and spring terms of the academic calendar. TCs experience the determined competencies that constitute the program's content and become ready for the profession before graduation as much as possible. Practicum applications are not limited to practical teaching experiences at practice schools. TCs continuously and systematically reflect on the applications they conduct at practice schools and universities in a learning community.

Application – Reflection Cycle

The fourth-year practicum applications take place in two-week cycles in the CTE based on competency and reflection. TCs experience the competencies within the application-reflection cycle. TCs apply the target competency in the practice schools they are assigned and shoot the video of their lessons. They make their written and oral reflections after the evaluation and reflection meeting with mentor teachers following their lessons. TCs are assigned to practice schools as groups that are large enough to collaborate and support each other. They help their friends by shooting videos of their colleagues' lessons, preparing lesson plans, observing their colleagues' lessons, and giving them feedback after teaching. Thus, TCs both continue their professional development within a learning community and realize the importance of colleague solidarity before they begin their profession.

In the second week, TCs evaluate the previous week under the guidance of their university teacher and discuss to what extent they have gained the targeted competency, how successful students have been, what they have felt during this process, what difficulties they have faced and how they have coped with these difficulties by providing evidence (video records, lesson plans, lesson materials, student products, etc.). Other TCs also give their friends constructive feedback, compare and contrast their experiences and discuss the similarities and differences within cause-effect relationship, showing evidence. The university teacher provides TCs with individualized feedback and support during this process. According to Darling-Hammond (2006), the success of reflective practices depends on systematical and in-depth feedback that TCs obtain towards their reflective writings and thoughts.

In CTE, TCs utilize certain tools to make their individual reflections and develop clinical reasoning skills. Not exclusive to the fourth grade, observation notes, reflective diaries and writings about particular situations or problems are used in every

phase of CTE. Reflective writings may be about scientific texts TCs have read, teaching applications practiced, scientific research or observations conducted. Along with TCs' learning in a learning community and having necessary qualities regarding socialization, the "subjectification" dimension of the teaching profession should not be neglected (Biesta, 2012). It is a valuable tool for teachers and TCs to critically express any decisions they make, factors influencing these decisions and what they feel in these processes in written or oral ways. The most effective and systematic way to do this is through reflective practices (Biesta, 2012). The subjectification of TE is also aligned with Korthagen's CR model because a genuine reflection requires an in-depth reflection entailing the identity and mission phases, as emphasized earlier.

Based on competency and reflection in CTE, TCs keep reflective diaries starting from the first grade. A reflection application similar to the one conducted at Regina University in Canada is conducted in this model, too (Lang & Evans, 2006). TCs reflect on their individual experiences in these diaries as a constructive tool. They keep their diaries under certain headings; university course experiences, micro-teaching experiences, classroom experiences, school observations, skill inventory and career choices.

University Course Experiences. TCs reflect on the competency field targeted or subjects studied at university courses. The questions to be answered under this heading are as follows:

- Expression: What was the subject explained, discussed and exemplified in the lesson? What were the activities conducted?
- Effect: How influential were the subjects studied in the lesson on your professional development? What did you learn? How did you feel?
- Purpose: Regarding the target competency explained and exemplified in the lesson, what do you want to do in micro-teaching? How? / When?

Micro-teaching Experiences. Under this heading, TCs reflect on the lessons they have taught. They answer these questions:

- Expression: Explain your micro-teaching experiences briefly.
- Effect: Regarding the target competency, what did you learn from the lesson you taught and from your friends' lessons as well? How do you feel now?
- Purpose: How will you apply what you learned from micro-teaching in the classroom related to the target competency? Add your lesson plans and the feedback you get into your reflections.

Classroom experiences. With regard to classroom experiences, TCs answer these questions:

- Expression: How did you, your colleagues and mentor teacher apply the target competency? Explain.
- Effect: Regarding the target competency, what did you learn from the lesson you taught and from your friends' lessons as well? How do you feel now?
- Purpose: How do you plan to apply the same target competency in your next lesson? Add your lesson plans and the feedback you get into your reflections.

School Observations. For school observations, TCs write about the topics that arouse their interest at school, classroom, and during micro-teaching and answer these questions: Did you interview your advisor, mentor teacher, or school principal about this topic? Did you do any research?

Skill Inventory. TCs prepare a skill inventory showing their professional development. In the inventory, they explain what they knew and could do at the beginning of the semester and what they know and can do now. They repeat the same process at the middle and end of the semester.

Career Choice. TCs write their thoughts about the teaching profession at the end of the semester and answer these questions: Are you pleased with your choice? What are your plans? What are the factors influencing your choice and decisions?

TCs conduct their own self-evaluations through this reflection application. In this way, they can realize how much they have proceeded in the teaching profession, how much they have developed and where they should reach.

Another component of reflection-based TE is teacher portfolios. The use of portfolios in TE has become widespread, especially as a result of performance-based evaluation approach. Portfolios are alternative assessment tools to determine what and how much TCs have learned by showing evidence and to what extent they are ready for the profession (Stolle et al., 2005). However, portfolios are not only assessment tools but are also a development tool in which TCs reflect on their self-evaluation, and they are even used for accreditation processes of TE programs (Ntuli et al., 2009).

There are usually two types of portfolios in TE. The first is called "learning portfolios" (Strudler & Wetzel, 2011). Learning portfolios, as a result of the constructive approach, are unstructured portfolios in which TCs choose and evaluate the components to be included. In these portfolios, TCs are able to showcase their individual education philosophy, lessons they have prepared, materials they have designed, examinations they have developed, and their applications towards students with special education needs or student products, and they reflect on these. The purpose of this application is to make the invisible visible for TCs (Strudler & Wetzel, 2011) and it is one of the key principles of both CTE and CR. The second type of portfolio are "assessment portfolio." These portfolios are used to assess the extent of certain competencies and qualities that TCs have gained within the framework of the criteria specified by the TE program. For instance, in Chile, portfolios are the primary tools used in the assessment of beginning competencies of teachers (Santiago & Benavides, 2009). In CTE, both performance and assessment portfolios are utilized. This is the requirement of clinical education to use formative assessment in every part of the program.

Seminar Courses

The reflection meetings of practice university teachers (advisors) and TCs are conducted at seminar courses at the university. In the seminar courses conducted after the practice week, TCs reflect on their previous applications, discuss the competency field they will target and the lesson plans they will apply next week, and take feedback. At times, the mentor teachers participate in seminar courses, which helps build a stronger school-university partnership; hence, mentor teachers feel a sense of ownership

of the program and establish more effective communication with TCs. Mentor teachers also have a word in the evaluation processes of TCs. In addition, seminar courses are conducted at practice schools at certain weeks to show that they are an integral part of the program. This kind of school-university partnership and mentor teachers' active role in the process has long been used in the USA and proved successful (Darling-Hammond, 2006).

In the practice-reflection cycle, TCs examine the generic competencies determined for a whole semester through seminar courses, and they are able to identify the extent of the competencies they are expected to have before the last semester in the final year of their four-year-education. Seminar courses create an appropriate environment and opportunity for TCs to gain clinical reasoning skills.

As a result of the applications explained above, before the final practicum in the last semester, TCs draw their own road maps with the guidance of their practice university teachers and become aware of the fields they need to develop themselves. This process also provides a data set for practice university teachers regarding the competencies of TCs. In short, before the final practicum, TCs are able to realize their strengths, weaknesses, and study accordingly within CTE based on reflection and evidence, and mentor teachers guide TCs in this process. The cycle in the first semester of the fourth year continues in the second semester and TCs enhance their professional development by experiencing teacher competencies. The final practicum applications become influential in determining the competencies of TCs.

Conclusion and Suggestions

Attempts to increase the quality of TE continue in Turkey as it does across the world. Since the republic period, different TE schools and various models have been implemented. During the period between the establishment of the republic and 1982, MoNE was responsible for TE. Under law no:2547 in 1981, the responsibility of TE was given to education faculties that were commissioned within universities, and since then, education faculties have been the only institution, training teachers. After the 1989-1990 education year, the duration of TE was raised to four years at all levels. In 1992-1993, with the establishment of the department of primary education at education faculties, the education of primary and secondary school teachers was gathered under a single roof.

The education faculties were restructured by Basic Education Support Project in 1997-1998. With the new regulation, the primary education departments of education faculties consisted of programs in primary school education, pre-school education, primary school mathematics and science teaching, and social studies education. After 2006-2007, the study periods of all departments, required and elective courses and their names were reorganized. In the course of the time, a variety of TE models have been implemented and these are; making minor application for primary schools teachers, increasing the study periods of branch teachers to 5-5.5 years at graduate degree and decreasing to four years again after 2014-2015, concurrent model (TCs take their general knowledge, subject-matter and professional teaching knowledge courses from the faculties they are enrolled in) and consecutive model (TCs complete their subject-matter knowledge at the faculties they are enrolled in and then they take professional teaching knowledge courses at education faculties).

When the abovementioned regulations are analyzed, it can be seen that they brought about only structural changes; therefore, most have been either given up or previous implementations were put into practice again. In fact, the radical changes to be implemented in TE cannot be actualized solely by structural regulations such as reorganizing the study periods and names of the courses. The current programs and courses at education faculties are not so different from TE programs abroad. For this reason, what needs to be done is a change of mentality and philosophy. This can be realized through a meta-philosophical approach and a unique system appropriate to the conditions of Turkey rather than shaping programs according to the doctrines of a particular teaching philosophy.

Research shows that TE in Turkey is theoretical even though the practicum periods were increased (Alan, 2019). In addition, increasing practicum periods will not be sufficient alone. This refers to *teacher education 2.0* which is explained in the first part, and it is not enough to bridge the gap between theory and practice. What matters for TCs is engaging with meaningful activities, establishing constructive and effective communication with mentor teachers and colleagues, and being equipped with necessary competencies by determining the strengths and weaknesses before graduation. Besides, all field studies should be associated with the courses given at education faculties. TCs should internalize all faculty courses at application, develop their own theory and subjectify the instruction based on core and generic competencies. One optimal way to actualize this aim is the "realistic approach." TCs should be able to explore the knowledge of "how" with "what" deriving from their individual experiences in authentic environments.

For this reason, TCs need a TE approach in which they are able to reflect on their university education and in-depth field studies starting from the first year to realize which decisions are taken under which circumstances and which visible-invisible factors are influential on these decisions to continue their professional development according to this mentality. When the literature is analyzed, it is seen that the TE model conducting this kind of approach in the most effective way is CTE. Implementing a TE model in which theory and practice are taught concurrently, similar to the medical education that is based on reflection and evidence, will enhance the quality of TE in Turkey. In the CTE model based on competency and reflection depending on an evidence-based approach, more qualified and experienced teachers will be trained. CTE and CR aiming at developing clinical reasoning skills and practical wisdom of TCs facilitate to gain the necessary teaching knowledge, skills, values and attitudes at the earliest and most effective way. At the same time, this model guarantees students' quality education rights.

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Statement of Responsibility

The authors made equal contribution to this study. Therefore, each author is equally responsible.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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References

Adams, R., Kim, Y. M., & Greene, W. L. (2013). Actualizing core strengths in new teacher development. In F. A. J. Korthagen, Y. M. Kim, & W. L. Greene (Eds.), *Teaching and learning from within: A core reflection approach to quality and inspiration in education* (pp. 61-75). Routledge.

Alan, B. (2019). *Determining generic teacher competencies and designing a pre-service teacher education program based on competencies* [Unpublished doctoral dissertation]. Anadolu University.

Alan, B., & Güven, M. (2022). Determining generic teacher competencies: A measurable and observable teacher competency framework. *International Journal of Psychology and Educational Studies, 9*(2), 308-331. https://dx.doi.org/10.52380/ijpes.2022.9.2.472

Attema-Noordewier, S., Korthagen, F., & Zwart, R. (2011). Promoting quality from within: A new perspective on professional development in schools. In M. Kooy & K. van Veen (Eds.), *Teacher learning that matters: International perspectives* (pp. 115–142). Routledge.

Barber, M., & Mourshed, M. (2007). *How the world's best-performing schools systems come out on top.* McKinsey & Company.

Biesta, G. (2012). The future of teacher education: Evidence, competence or wisdom? *RoSE–Research on Steiner Education, 3*(1), 8-21.

Burn, K., & Mutton, T. (2015). A review of 'research-informed clinical practice' in initial teacher education. *Oxford Review of Education, 41*(2), 217-233. https://doi.org/10.1080/03054985.2015.1020104

Cochran-Smith, M., & Fries, K. (2009). The AERA Panel on research and teacher education: Context and goals. In Cochran-Smith, M., & Zeichner, K. M. (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 37-68). Routledge.

Conway, P., Murphy, R., Rath, A., & Hall, K. (2009). *Learning to teach and its implications for the continuum of teacher education: A nine-country cross-national study*. University College Cork.

Darling-Hammond, L. (2006). *Powerful teacher education: Lessons from exemplary programs*. Jossey-Bass.

Darling-Hammond, L. (2014). Strengthening clinical preparation: The holy grail of teacher education. *Peabody Journal of Education, 89*(4), 547-561.

Dewey, J. (1910). *How we think.* D.C. Heath.

Furman, C. (2016). Learning to teach: Developing practical wisdom with reflective teacher narratives. *Philosophy of Education Archive, 2015,* 139-148.

Furman, C. (2018). Descriptive inquiry: Cultivating practical wisdom with teachers. *Teachers and Teaching, 24*(5), 559-570. https://doi.org/10.1080/13540602.2018.1452727

Grossman, P., Hammerness, K., & McDonald, M. (2009). Redefining teaching, re-imagining teacher education. *Teachers and Teaching: Theory and practice, 15*(2), 273-289. https://doi.org/10.1080/13540600902875340

Guthrie, H. (2009). *Competence and competency-based training: What the literature says*. National Centre for Vocational Education Research.

Hoekstra, A. (2007). *Experienced teachers' informal learning in the workplace*. IVLOS Series. Online Submission. https://eric.ed.gov/?id=ED581224

Hoekstra, A., & Korthagen, F. (2011). Teacher learning in a context of educational change: Informal learning versus systematically supported learning. *Journal of Teacher Education, 62*(1), 76-92. https://doi.org/10.1177/0022487110382917

Koenen, A. K., Dochy, F., & Berghmans, I. (2015). A phenomenographic analysis of the implementation of competence-based education in higher education. *Teaching and Teacher Education, 50,* 1-12. https://doi.org/10.1016/j.tate.2015.04.001

Körkkö, M. (2021). Towards meaningful reflection and a holistic approach: Creating a reflection framework in teacher education. *Scandinavian Journal of Educational Research, 65*(2), 258-275. https://doi.org/10.1080/00313831.2019.1676306

Korthagen, F. (2001, April 10-14) *Linking practice and theory: The pedagogy of realistic teacher education* [Paper presentation]. The Annual Meeting of American Educational Research Association.

Korthagen, F. (2004). In search of the essence of a good teacher: Towards a more holistic approach in teacher education. *Teaching and Teacher Education, 20*(1), 77-97. https://doi.org/10.1016/j.tate.2003.10.002

Korthagen, F. (2005). Practice, theory, and person in lifelong professional learning. In Beijaard, D., Meijer, C.P., Morine-Dershimer, G., & Tillema, G. (Eds.), *Teacher professional development in changing conditions* (pp. 79-94). Springer.

Korthagen, F. (2014). Promoting core reflection in teacher education: deepening professional growth. In Craig, C. J., & Orland-Barak, L. (Eds.), *International teacher education: Promising pedagogies (Part A)* (pp. 73-89). Emerald Group Publishing Limited.

Korthagen, F. (2017). Inconvenient truths about teacher learning: Towards professional development 3.0. *Teachers and Teaching*, *23*(4), 387-405. https://doi.org/10.1080/13540602.2016.1211523

Korthagen, F., & Kessels, J. P. (1999). Linking theory and practice: Changing the pedagogy of teacher education. *Educational Researcher*, *28*(4), 4-17. https://doi.org/10.3102/0013189X0280040

Korthagen, F., & Vasalos, A. (2005). Levels in reflection: Core reflection as a means to enhance professional growth. *Teachers and Teaching*, *11*(1), 47-71. https://doi.org/10.1080/1354060042000337093

Kriewaldt, J., & Turnidge, D. (2013). Conceptualising an approach to clinical reasoning in the education profession. *Australian Journal of Teacher Education*, *38*(6), 7. http://dx.doi.org/10.14221/ajte.2013v38n6.9

Lang, H. R., & Evans, D. N. (2006). *Models, strategies, and methods for effective teaching*. Pearson.

Lunenberg, M., & Korthagen, F. (2009). Experience, theory, and practical wisdom in teaching and teacher education. *Teachers and Teaching: Theory and Practice*, *15*(2), 225-240. https://doi.org/10.1080/13540600902875316

Maaranen, K., & Stenberg, K. (2017). Portraying reflection: The contents of student teachers' reflection on personal practical theories and practicum experience. *Reflective Practice*, *18*(5), 699-712. https://doi.org/10.1080/14623943.2017.1323729

McLean Davies, L., Dickson, B., Rickards, F., Dinham, S., Conroy, J., & Davis, R. (2015). Teaching as a clinical profession: Translational practices in initial teacher education–an international perspective. *Journal of Education for Teaching*, *41*(5), 514-528. https://doi.org/10.1080/02607476.2015.1105537

Meijer, P. C., Korthagen, F. A., & Vasalos, A. (2009). Supporting presence in teacher education: The connection between the personal and professional aspects of teaching. *Teaching and Teacher Education*, *25*(2), 297-308. https://doi.org/10.1016/j.tate.2008.09.013

National Council for Accreditation of Teacher Education [NCATE]. (2010). *Transforming teacher education through clinical practice: A national strategy to prepare effective teachers. Report of the Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning*.

Ntuli, E., Keengwe, J., & Kyei-Blankson, L. (2009). Electronic portfolios in teacher education: A case study of early childhood teacher candidates. *Early Childhood Education Journal*, *37*(2), 121-126. https://doi.org/10.1007/s10643-009-0327-y

Sahlberg, P. (2010). The secret to Finland's success: Educating teachers. *Stanford Center for Opportunity Policy in Education, 2*, 1-8.

Santiago, P., & Benavides, F. (2009, December 1-2). Teacher evaluation: *A conceptual framework and examples of country practices* [Paper Presentation]. The OECD-Mexico Workshop "Towards a Teacher Evaluation Framework in Mexico: International Practices, Criteria and Mechanisms," Mexico City, Mexico.

Schleicher, A. (2016). *Teaching excellence through professional learning and policy reform: Lessons from around the world.* International summit on the teaching profession. OECD Publishing. Retrieved from http://dx.doi.org/10.1787/9789264252059-en

Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the profession*. Jossey-Bass.

Stenberg, K., & Maaranen, K. (2020). Promoting practical wisdom in teacher education: a qualitative descriptive study. *European Journal of Teacher Education,* Ahead of Print, 1-17. https://doi.org/10.1080/02619768.2020.1860012

Stolle, C., Goerss, B., & Watkins, M. (2005). Implementing portfolios in a teacher education program. *Issues in Teacher Education, 14*(2), 25-43.

Strudler, N., & Wetzel, K. (2011). Electronic portfolios in teacher education: Forging a middle ground. *Journal of Research on Technology in Education, 44*(2), 161-173. https://doi.org/10.1080/15391523.2011.10782584

Turkish Ministry of National Education [MoNE). (2017). *General competencies for teacher education*. Directorate General for Teacher Training and Development. http://oygm.meb.gov.tr/meb_iys_dosyalar/2018_06/29111119_TeachersGeneralCompetencies.pdf

Van Woerkom, M. (2010). Critical reflection as a rationalistic ideal. *Adult Education Quarterly*, *60*(4), 339-356. https://doi.org/10.1177/0741713609358446