INSTRUCTIONAL REVERSE MENTORING: A PRACTICE PROPOSAL FOR TEACHERS' UNDERSTANDING THE "Z" AND "ALPHA" GENERATIONS' LEARNING PERSPECTIVES

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ABSTRACT

The reverse mentoring refers to a new mentoring model in which traditional mentoring roles are completely changed, accordingly in this new model, less experienced teachers and the students who used to be "apprentice" in traditional mentoring are positioned as "master". However, it has been observed that there are no systematic reverse mentoring practices in the Turkish Education System through which the teachers can receive direct feedback from Z and alpha generation students about their classroom management skills, and also can improve their critical reflective thinking. This study was designed according to the conceptual research approach. After holistically evaluating the important literature studies and theoretical information on the concepts of intergenerational learning and reverse mentoring, the application of "Instructional Reverse Mentoring" as a new practice was discussed and evaluated based on the student-teacher relationships, with its application stages, challenging, strengths and possible risks. In addition, an alternative reverse mentoring practice proposal specific to education field regarding the intergenerational learning approach was introduced with sample implementation stages. The research revealed that the researches in education mostly consist of studies focusing on providing teachers with technological skills; that the studies which are specific to improve the quality of teaching regarding the expectations of new generations through critical reflective evaluations are rather limited; that there is a crucial conceptual gap in this field; and also that the instructional reverse mentoring practice proposal set forth in the study can contribute to the spread of reverse mentoring practices in educational field and to professional development of teachers.

Keywords: Reverse mentoring, teachers, continuing professional development, Z & Alpha generations.

INTRODUCTION

The concept of "generation" often refers to the age groups that emerge as a classification of individuals at close age regarding general characteristics that are thought to be common within a certain period (Rogler, 2002). Different ontological, cognitive and behavioral perspectives reshape the values, beliefs, behavior styles and expectations of the generations, and those perspectives also change with each newcoming generation (Yalçın, 2020; Ünal, 2017; Bayhan, 2016). As of 2020, the X and Y generations, which are still active in current working life, will gradually leave their positions to the Z generation, moreover in later periods to a generation called "Alfa" that is totally different from the previous generations as they were born in the internet age which made them fully equipped with digital skills (McCrindle, 2020; Dumas, 2020; Digitalage, 2018; Terzi & Boylu, 2017; Aka, 2017; Sterbenz, 2015; McCrindle, 2014). In a rapidly changing world, the differences between generations are increasing, and the understanding, expectations and learning styles of new generations are also changing. Within the Industry 4.0, the importance of reverse mentoring (RM) towards digital transformation of the X and Y generations is frequently emphasized, and it becomes more common among the innovative R&D applications of the sectoral organizations, such as banking, finance, communication, technology management, food, cleaning, petro-chemistry and automotive sectors (Terzi & Boylu, 2019; Kişi, 2018; Kadılar, 2017; Keleş-Tayşir & Ülgen, 2017). However, the number of the researches about RM in educational field of Turkey seems to be quite limited.

Traditional mentoring in education refers to a process that consists of the activities of a senior teacher to support and facilitate the professional development process of another less experienced teacher (Sullivan & Glanz, 2000). Unlike traditional mentoring, the RM refers to a new mentoring approach in which traditional mentoring roles are completely changed, in this new system, less experienced teachers and the students who used to be "apprentice" are positioned as "master". Although a conceptual framework has already been formed in many other fields, the applications with an education-oriented focus have rarely been emphasized (Zauschner-Studnicka, 2017) thus a conceptual gap is thought to exist around this point. In the upcoming years, teachers will have to face and carry out their teaching activities only with new Z and Alpha generations in their classrooms. Nevertheless, systematic RM practices are hardly ever observed in the Turkish education system through which the teachers can receive direct feedback from Z and Alpha students about their own performances and classroom management skills.

To introduce a new perspective for RM practices, this study highlights the redesigning of RM on the base of the teacher's instructional practices through direct feedback from Z and alpha generation students, rather than reversing the mentoring process which occur between the novice and the senior teachers. In order for teachers to comprehend the emotions, expectations, understandings, and learning styles of new generations and to ensure continuity in their professional development, a new form of mentoring based on student feedback, called "Instructional Reverse Mentoring (IRM)", has been introduced for teachers in the current study. Accordingly, the main focus of IRM practice is that the teachers' receiving direct feedback by positioning their own students in the role of mentors, by this way, the teachers are thought to be able to reconstruct their

teaching skills through critical thinking focus while recognizing the changing characteristics of the Z and alpha generations. This method is also thought to make contributions to teachers' personal and professional development.

Through these points, the current study aims (i) to determine the conceptual framework of "instructional reverse mentoring (IRM)" as a new RM concept with a focus on education; (ii) to form the application stages towards the students and teachers; (iii) to increase the awareness of the IRM as a new practice among teachers and other educators; (iv) to describe the differences of IRM from other RM practices, its possible contributions to teachers and students; and also aims (v) to put forward an application proposal for teachers regarding this new RM practice.

METHOD

This study is designed according to conceptual research approach. According to Gilson & Goldberg, conceptual papers focus on the development of an existing concept within different dimensions and perspectives, rather than being a theory development study, these studies link the existing theories via bridging different ways across the disciplines and also broaden the multi-level insights and the scope of thinking. In such studies, the conceptual literature is evaluated in a holistic perspective, and the contributions of the research to the development of that concept and future studies are reviewed within a certain framework rather than evaluating the quantitative and qualitative data related to the concept (Gilson & Goldberg, 2015). In conceptual studies, besides presenting important information about the relevant field, shedding light on the problems in the field, informing field experts and managers on these issues (Whetten, 1989), what kind of innovations are brought to the current concept with the current research, what these innovations will do, and who will contribute to the field should also be explained (Van de Ven, 1989). Nonetheless, in conceptual studies, new hypotheses or application proposals for the areas that have not been applied before can also be introduced by the researchers (Gilson & Goldberg, 2015).

Accordingly, after evaluating the important literature and theoretical information on intergenerational learning as well as mentoring and RM concepts, a new RM practice proposal has been developed in the study around the context of the student-teacher relationships and instructional RM perspectives. The current study also highlights what kind of new perspective the proposed "instructional reverse mentoring" practice brings to the existing RM practices, and reveals the strong and risky aspects of the proposed application together with its possible contributions to the current RM concept. Additionally, the study was carried out by considering the research ethical rules. Before the research process, the ethical committee approval for the study was ensured by the Educational Sciences Ethics Committee of Hatay Mustafa Kemal University (The date and number of the document: 12/08/2020-E.35794).

INSTRUCTIONAL REVERSE MENTORING AS A SPECIFIC PRACTICE TO THE EDUCATIONAL FIELD

The Understandings, Expectations and Learning Styles that Changed in Education with New Coming Generations

With the rapid global change in the 21st century, it will be possible to see all the members of the X-Y-Z generations together in today's business life. In addition, with these generations who have quite different understandings and expectations, one of the biggest problems of companies in the future will be to ensure the harmony of these employees working in the same workplace (Terzi & Boylu, 2019; Vardar, 2015; Murphy, 2012; Harvey & Buckley, 2002). Through the evolution of generations, each generation is included in this spiral of change with its new features. However, it is getting more difficult to distinguish the employees from each other with sharp lines from a chronological point of view, and such a classification is thought to have some drawbacks as well (Nagy & Kölcsey, 2017). In such a specified chronology, there might be generations that are in between and considered as "hybrid generations", and it is relatively easier for these generations to adapt to the characteristics of the next generation (Balıkçı, 2017). Nonetheless, to provide information about the prominent features of the human masses in a certain age depending on the social, economic and cultural developments of the time, the generations in the last century may be ordered as *(i)* the silent generation; *(ii)* baby boomers; *(iii)* generation X; *(iv)* generation Y; *(v)* generation Z; and *(vi)* generation Alpha (Yalçın, 2020; Değirmenci, 2018; Ünal, 2017; Göksel & Güneş, 2017; Adıgüzel et al. 2014; McCrindle, 2014; DeAngelis, 2013; Schofield & Honoré, 2009; Harrison, 2009). In Figure 1, the chronological classification of the generations in the last century beginning from the silent generation to the present and the future generations has been displayed.
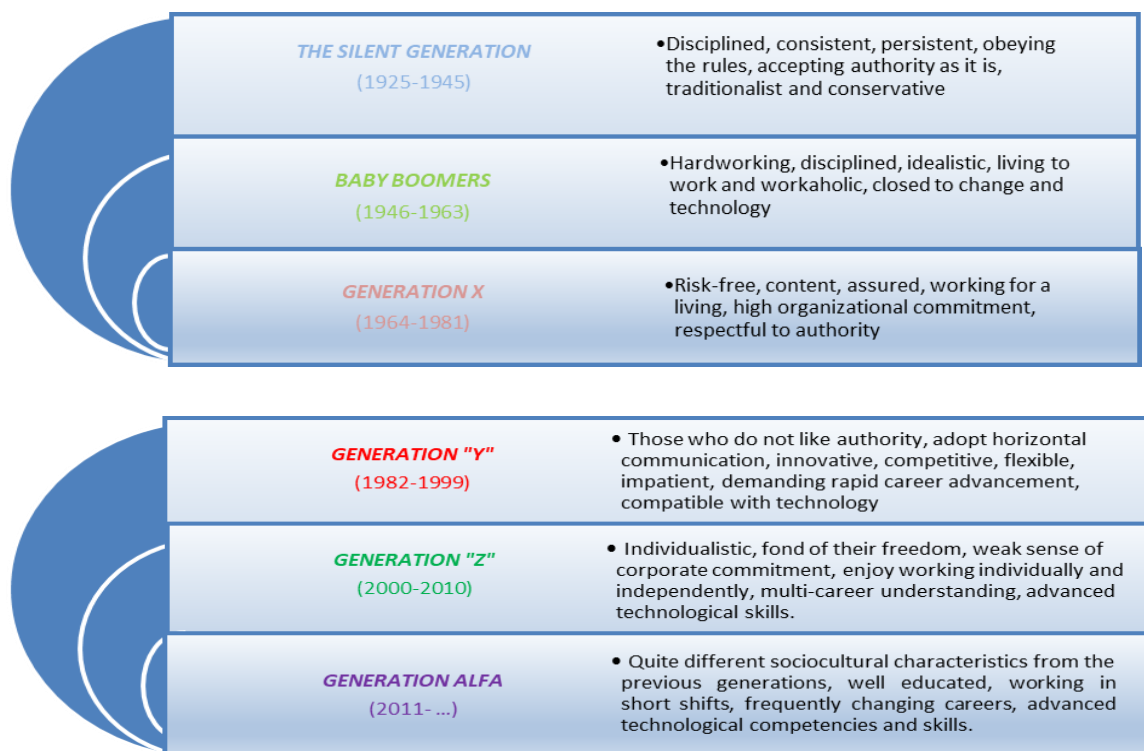

Figure 1: Chronology of development and distinctive features of generations (Cited by evaluating the information within Yalçın, 2020; Değirmenci, 2018; Göksel & Güneş, 2017; Ünal, 2017; Adıgüzel et al., 2014; DeAngelis, 2013; McCrindle, 2014; Schofield & Honoré, 2009; Harrison, 2009)

The silent generation witnessed World War I and World War II, and experienced the troubles brought about by the war, and is generally considered to be a frugal generation that easily submitted to the authority. Although the members of the silent generation differ significantly from the following generations in terms of communication styles and personality traits, they are not actively involved in business life today (Aka, 2017; Türk, 2013; Reeves & Oh, 2008).

The baby boom generation took this name from a period in which many children were born during and after World War II. The baby boomers are considered to be a generation which educated in a strict and traditional education system, adopted a relatively modest lifestyle, kept the tradition of a large family. While the business and work were at the center of their life and paid great importance to business life and ethics, they also represented a new generation that raised their voice against authority more than the previous silent generation (Yalçın, 2020; Değirmenci, 2018; Aka, 2017; Adıgüzel et al., 2014; Kuyucu, 2014; Twenge, 2013; Erden-Ayhün, 2013).

Generation X, born between 1964-1982, is still active in the business world, and often considered as a generation with clear vision, the determination to achieve their targets. Since the members have the chance to experience technological change in business life, the X generation is considered to be a generation that is more open to the use of technology compared to the previous baby boomers (Yalçın, 2020). Generation X also represents a generation that is sensitive to social problems, has individualistic characteristics, is struggling, respects different life styles, and has a high tendency to behave steadily and cautiously (Değirmenci, 2018; Dereli & Toruntay, 2015).

Generation "Y", also known as the millennials, generally characterizes the generation born between 1982 and 2000. According to Schofield & Honoré (2009), the main feature of the "Y" generation is that their technological skills are significantly stronger than the previous "X" generation. Additionally, generation Y is also argued to be a generation with high self-confidence, high expectations for learning and unique learning approaches. Twenge, (2013) and Murphy (2012) consider the millennial generation as a generation that wants to be heard and noticed.

It is generally accepted by many researchers that the generation Y has different characteristics compared to the previous baby boomers and generation X (Twenge et al., 2010; Keleş, 2011); the millennials can be considered to have more individualistic personality traits with low commitment and low job satisfaction, although being more fond of individual and freedom at work, and show frank personality traits (Yalçın, 2020); On the other hand, it is claimed that the millennials as a generation that shape themself through friends, schools and mass communication, while they approach cultural differences more flexibly (Değirmenci, 2018). Additionally, Adıgüzel et al. (2014) draws attention to the ability of the millennials to work regardless of the location, therefore he defines the "Y" generation as "Mobile Collared" thanks to their personality traits, changing technology and communication opportunities. However, the generation Y is claimed to have weaknesses and skills that need to be improved such as budgeting and finance management, self-awareness,

risk management, analyzing and reflecting, analyzing the reliability of information sources, effective face-to-face communication (Schofield & Honoré, 2009).

Generation Z, also known as the post millennials, which generally characterizes the generation born between 2000-2010. Since being the individuals born in a period when technology, especially the internet, has become widespread, the technology skills of generation Z are considerably improved. Like the Y generation, the Z generation is also a generation that demands a new management approach apart from traditional organizational management styles. The generation "Z" is considered likely to adopt a friendly and emotional understanding in working life while being a generation who prefers creativity and being active rather than a passive nature, knows what they want, does not give importance to authority, and prefers to work individually and independently. Although the members of generation Z have much superior skills compared to previous generations in terms of technology and internet use, they are considered to have high tendency to get bored quickly, give up and change jobs frequently (Yalçın, 2020; Taş & Kaçar, 2019; Taş et al., 2017; Arar, 2016; Erden-Ayhün, 2013; Gönen, 2011; Montana & Petit, 2008).

Alpha generation is generally described as the generation born after the year 2010. "Alpha" is the first letter of the Greek alphabet and a metaphor that symbolizes a spiritual beginning. Generation alpha similarly symbolizes the beginning of a new and different generation. In many sectors, especially in the business world, researches have been focused alpha generations which considered as the generation of the future (McCrindle, 2014). The alpha generation will have rather different sociocultural characteristics from the generations that preceded it. This generation is the first generation whose life is entirely digitalized. The year 2010 also symbolizes a new beginning year in which the iPad and Instagram first introduced and also a year of digital apps. Due to digital skills and spending long hours in front of the digital screens, the generation alpha also called "screenagers". It is thought that this generation will also be shaped via artificial intelligence. The current design of technological devices and digital toys aims to catch the attention of this new alpha generation, e.g. Hello Barbie and Hatchimals (McCrindle, 2014; 2020; Stechyson, 2019).

The Alpha generation to enter the business life after the 2030s will have the chance to receive a much more advanced education than the previous generations and will have a multi-career, at least six career changes. This generation will mostly follow an urban way of life and have different digital market consuming and commercial preferences. However, it is also thought that alphas will welcome the social diversities and differences, and keep humanistic social values since they will be grown up by educated parents, additionally, the current religions in the world will also exist among alphas in diffirent rates and forms (McCrindle, 2020; Stechyson, 2019; Religious Landscape, 2017; Williams, 2015; McCrindle, 2014). On the other hand, while this forthcoming generation having more free time themselves, they will likely struggle with health problems such as food allergies, malnutrition, obesity, and common pandemic diseases, as a result, will also come across a number of social and psychological problems, additionally, with spending a long time in front of the digital screens, diseases such as eyesight problems, computer vision syndrome, and other digital addictions are also expected to become more common among the alpha generation (Lloyd, 2020; Strauss, 2020; LaMotte, 2019;

National Post, 2019; Hellmich, 2014).

Nonetheless, there are also criticisms that argue it is a wrong perspective to define the generations within a chronological order because individuals might show those defined characteristics in different levels and aspects. According to those criticisms, the characteristics assumed for alphas are still immature assumptions as most of its members are around age 10. On the other hand, it is widely accepted that the generation born in the last decade will have distinctly different characteristics due to changing social circumstances within a highly digitalized world (Balıkçı, 2017; Nagy & Kölcsey, 2017).

It is claimed that employees who show the characteristics of a hybrid generation, can also play a role in increasing intergenerational interaction and transformation within the organization through reverse mentoring. The hierarchical understanding of management and organization is not accepted by the individuals of the Y-Z generation, and these generations prefer to work in horizontal organizations rather than vertical organizations. For this reason, it is suggested that reverse mentoring as a new method, with its new perspective for the organizational culture, can play an effective role in the establishment of the organizational culture; in increasing the dialogue between the employees at different levels within the organization; in making use of the existing skills among the employees, and by this way, it may also contribute to the integration and harmony of different generations within organizations (Terzi & Boylu, 2019).

When the chronological order of the generations considered, as of 2020, the vast majority of teachers in Turkey are observed to be the members of the X generation and the rest are of the Y generation. Considering that individuals have to start school at an early age before entering the business life, the teachers would be the first ones to come face to face with new generations. Especially as one goes down to the primary school level, the possibility of different generations' being together in the same school organizations also increases. Unlike the business life within other sectors, it is possible to see the representatives of X, Y, Z and Alpha generations together in many school organizations today. Therefore, the teachers are thought to have a pioneer role for developing of teaching systems based on the expectations of new generations. At this point, it is expected that the current IRM proposal, which is considered as a new reverse mentoring practice in the field of education, is likely to provide an opportunity for teachers to better understand the perspectives, expectations and learning styles of new generations.

Traditional Mentoring & Reverse Mentoring Methods

Traditional Mentoring

The mentoring concept, the origin of which might be dating back to ancient Greek mythology, is defined as the process of an experienced person's sharing his/her knowledge and experience voluntarily with someone less experienced (Rhodes & Beneicke, 2002). Accordingly, mentoring means training of a newcomer (apprentice) by an experienced person (master) in accordance with professional norms, values and the technical competencies of that profession within a master-apprentice relationship focus.

When Turkish education history reviewed, the concept of mentoring has been observed to have been practiced in education, e.g. to train princes under the names of "Atabeylik" in Seljuk Turks and "Lalalık" in the Ottoman period. It has been also observed that the mentoring was followed as a vocational training approach based on master-apprentice relationship within tradesmen and craftsmen organizations in Anatolia under the names of "Ahi" and "Lonca" societies (Terzi & Boylu, 2019; Aydoğan & Delibaş, 2017; Aydoğan & Uğurlu-Kara, 2017; Erşahin, 2012; Kocabaş & Yirci, 2011; Bayram, 1991). Mentoring was also applied to primary education system in Turkey. In the 1940s, novice teachers graduated from the institutions called "Village Institutes", the training of which mainly focuses on rural primary education, were mentored by experienced teachers called "Traveling Head Teachers" (Taşdan, 2008; Aydın, 2005). The mentoring still exists within current Turkish education system; the mentoring has still been officially regulating by the Ministry of National Education as an mentoring application in which each novice teacher is mentored by an experienced teacher.

Traditional mentoring can be practiced within different types an in a wide range of zones (Brewer, 2016; Zembytska, 2015). Accordingly, mentoring; *(i)* one-on-one mentoring, group or team mentoring, based on the number of participants; *(ii)* formal and informal mentoring, according to the relationship type of the participants; *(iii)* mentoring at the school and district level, depending on the place and level of practice; *(iv)* face-to-face mentoring and online mentoring or e-mentoring, depending on the mode of application; *(v)* peer mentoring, reciprocal mentoring and RM according to professional development goals; *(vi)* situational mentoring, continuous mentoring and need-oriented mentoring, depending on the duration and scope of the mentoring practice (Zembytska, 2015). However, the concept of traditional mentoring has also changed over the time and been reshaped according to more reformist perspectives, and the most important of these is argued to be the RM practices.

Reverse Mentoring

The RM, as a reformist perspective, differs from traditional mentoring practices and applied itself as a new mentoring approach towards career and professional development. According to Murphy (2012), unlike the traditional mentoring process the RM is considered as a new method in which less experienced employees do mentoring for senior employees. The rapidly changing technology applications, innovation, internet and social media networks and the evolution of business life towards a more cosmopolitan structure are thought to be pioneering effects in the emergence of RM method (Terzi & Boylu, 2019; Burdett, 2014; Roberson & Park, 2007; Greengard, 2002; Cotugna & Vickery, 1998). Although the RM was studied first in educational field in the world (Cotugna & Vickery, 1998), More studies have been made within other sectors in Turkey, such as banking, finance, communication, technology management, food, cleaning, petrochemistry, and automotive (Kişi, 2018; Kadılar, 2017; Keleş-Tayşir & Ülgen, 2017).

Murphy (2012) states that the RM has four basic features: *(i)* reverse status *(ii)* focus on sharing new knowledge and skills *(iii)* leadership and professional development of young mentors *(iv)* supporting each other for mutual common goals and learning. In the RM process, there is an opposite and unequal status, the roles are the

opposite of traditional mentoring, the senior's learning is more prominent. The RM mostly focuses on learning technology and digital skills, and at this point the personal needs and demands shape the process. Furthermore, the young mentors may acquire various knowledge and experiences about functioning and social networking within the job thanks to senior employees. Unlike traditional mentoring, the RM is likely to improve the leadership skills of young mentors as well. In this process, the young employees in the mentor position have the chance to better understand the roles and expectations in the job to improve their personal management skills. The differences between generations are considered as an opportunity for joint and mutual learning, while both parties learn to be more flexible and considerate about their differences, they also share mutual knowledge, skills and experience (Zauschner-Studnicka, 2017; Augustiniene & Ciuciulkiene, 2013; Murphy, 2012).

Strengths of Reverse Mentoring

There is a two-way interaction in RM practices. Contrary to common belief, it does not simply refer to a process in which the younger generations would dominantly teach senior employees. The RM within a two-way interaction, may have positive contributions at various levels for both parties (Zauschner-Studnicka, 2017; Harvey et al., 2009; Chandler & Kram, 2005; Gonzales & Thompson, 1998), moreover, it offers opportunities to gain different knowledge, skills and experience at personal, organizational and professional levels. While the RM contributes to the development of the technological knowledge and skills of senior employees, make them closely familiar with younger generations, help them make decisions at a global scale with a multicultural perspective, make them be aware of business and occupational innovations (Harvey et al., 2009), it is also argued to contribute to young employees' gaining hands-on experience and progress within the organization by interacting with senior employees (Lundman, 2020; Zauschner-Studnicka, 2017; Murphy, 2012; Meister & Willyerd, 2010; Harvey et al., 2009; Mullen, 1999). In addition, the RM also supports the leadership development of young employees (Murphy, 2012), also contribute to the creation of new networks and bridges between generations within organizations since young employees prefer self-directed leadership skills while organizing their tasks and goals in business (Bărbuceanu, 2019; Murphy, 2012; Chaudhuri & Ghosh, 2012; Towns, 2006).

It is possible to mention a series of two-sided strengths of mentoring in terms of career and professional development and psycho-social development for senior and young employees (Özdemir & Ardıç, 2019; Murphy, 2012; Ragins & Cotton, 1999). Accordingly:

(1) *Strengths at the career and professional development dimension* refer to providing new skills for the job; sharing of technical knowledge and experience at professional level; providing mutual personal and professional development; providing new perspectives etc. (Özdemir & Ardıç, 2019; Chen, 2013; Murphy, 2012; Allen & Finkelstein, 2003). While young people, who are expected to be more dominant in the process, transfer up-to-date technology and internet-based skills to their senior colleagues, young employees benefit from the experience of senior employees and transfer those personal and professional skills related to work and

organization in a practical environment. The argument that senior generations are not successful in career adaptation is still a matter of discussion. When the appropriate environment provided, senior employees would continue their career development by choosing even the younger persons as role models, but this role modeling process is more selective and specific to acquire certain subjects and skills (Gündüz & Akşit, 2018; Callahan, 2017; Beane-Katner, 2014; Murphy, 2012; Harvey et al., 2009; Gibson & Barron, 2008; Mullen, 1999). From this point, that RM's being effective on the career adaptation skills of young people as well as on the professional development skills of senior employees is also considered to be another strength of this method.

(2) *Strengths at psychosocial development dimension* refer to the mutual interaction of different generations, e.g. the sharing of intergenerational understanding, friendship and tolerance and the skills between generations. The RM also provides psychological support, guidance, counseling and friendly environment to employees (Özdemir & Ardıç, 2019; Chen, 2013; Murphy, 2012). As a result of intergenerational interaction, different generations may have direct information about each other's perspectives, expectations and behavioral norms, and also be free from prejudiced perspectives.

(3) *Strengths at organizational dimension* can be sorted as *(i)* ensuring the effective management of human resources, increasing the success of the employees at work, in this way, reducing the number of quitting; *(ii)* eliminating the information and technology deficiencies that occur within the organization with a perspective based on sharing, equality and diversity among employees; *(iii)* encouraging the innovation in the organizational context by analyzing new demands and trends in the business field; *(iv)* creating a continuous learning culture based on the interaction of different generations; *(v)* increasing the quality of human resources by improving organizational skills of young employees; *(vi)* teaching to newcomers the work-related values and ways of communication, thus enabling them to progress within the organization, in this way, developing a culture of common purpose and solidarity and contributing to organizational efficiency (Callahan, 2017; Beane-Katner, 2014; Murphy, 2012; Meister & Willyerd, 2010; Allen et al., 2005; Mullen, 1999).

To sum up, it can be argued that the ultimate strength of the RM practices converges at the point of organizational change, development and transformation, and that the employees in the organization share and collaborate between generations which will contribute to the organizational climate and organizational efficiency as well.

The Challenges of Reverse Mentoring

The individual differences are important in the selection of participant couples in the RM practices, the personal needs and the appointment of appropriate mentors for these needs should be also considered while selecting the couples. Therefore, the risks that may arise from individual conflicts or personal distress are thought to be one of the weaknesses of RM. Nevertheless, the individual differences are also thought to be necessary to some extent for interaction since the employees are expected to adapt to such differences and diversity in today's working life that is getting more cosmopolitan and globalized. Moreover, some research also reveals that new generations may facilitates this process, as they are more flexible towards intergenerational differences without prejudice (Yalçın, 2020; Değirmenci, 2018; Schofield & Honoré, 2009;

Turban & Dougherty, 1994).

Risks that may arise from individual conflicts or personal distress along the application process of the method are also considered as one of the weaknesses of this method. Özdemir & Ardıç (2019) pointed out that cultural differences should also be taken into account since the problems such as hierarchy between employees, power distance and resistance of senior generations within the organization that exist in Turkish culture may arise in practice, and therefore he argues that studies addressing this weakness should also be searched. In addition, it is likely to exist other challenges in the process due to the differentiation of traditional mentoring roles, having not enough time for the process, disagreements with the method, ignoring the voluntary participation, and insecurity due to prejudices regarding the mentoring practice (Murphy, 2012). However, if the participants are well educated about the practice beforehand and started with the volunteers, those risks mentioned are thought to be largely eliminated.

Reverse Mentoring in the World and in Turkey

One of the first pioneering researches on the concept of RM was observed to be conducted by Cotugna & Vickery (1998) on the transfer of internet skills of students who attended a nutrition education course to experts. When the other related studies in the world examined, the concept first emerged in educational field (Callahan, 2017; Leh, 2005; Butler & Chao, 2001; Cotugna & Vickery, 1998); continued in other fields such as the business (Morris, 2017; Elmore, 2015; Burdett, 2014; DeAngelis, 2013; Biss & DuFrene, 2006); public relations (Hays & Swanson, 2011); human resource management (Chaudhuri & Ghosh, 2012); technology management (Chen, 2013); communication (McCoy, 2015); and sociology (Breck et al., 2018). On the other hand, the studies on RM in Turkish educational field are observed to be rather limited, except for few studies in higher education (BAU,2020; Gündüz & Akşit, 2018; Özdemir, 2016). However, it is observed that there are more studies in other fields than education sector in Turkey such as the human resources management (Vatansever & Çalışkan 2015), the banking (Güğerçin, 2018; Keleş-Tayşir & Ülgen, 2017); the management and organization (Kişi, 2018) and the business management (Terzi & Boylu, 2019).

It is observed that the RM in business life has carried out with a focus that intergenerational communication and interaction on young generations' transferring technology and internet-based digital skills to senior employees. The first RM practice in business life was implemented with an in-house project initiated with the aim of transferring the internet skills of younger employees to 500 senior executives at General Electric; after the positive results, this practice was applied for similar purposes in well-known companies such as Dell, Procter & Gamble and Time Warner, furthermore, it is getting more common in business life as an alternative mentoring practice towards the integration of the seniors and the millennials (Murphy, 2012; Leh, 2005; Greengard, 2002).

The samples of RM applications in Turkey are carried out in different sectors, such as the banking (Denizbank, Garanti Bank, Akbank); the automotive (Mercedes-Benz Turkey, Doğuş Otomotiv, MAN Turkey; Coşkunöz

Holding); the health and medicine (Eczacıbası Holding, GlaxoSmithKline Turkey, AstraZeneca Turkey); the food and beverages (Danone Turkey, Yıldız Holding, Anadolu Efes); the fuel and energy (Total Oil Turkey, Shell Turkey); the electronics (Bosch Turkey, Arçelik Global); the Hygine and cleaning (Unilever Turkey) and the communications technology and software (SAP Turkey; Verifone Turkey, Turkcell), but the practices in the educational field are rather limited (Başakşehir University, Maltepe University).

The RM practices in Turkey mostly concentrate upon the subjects below in figure 2, accordingly:
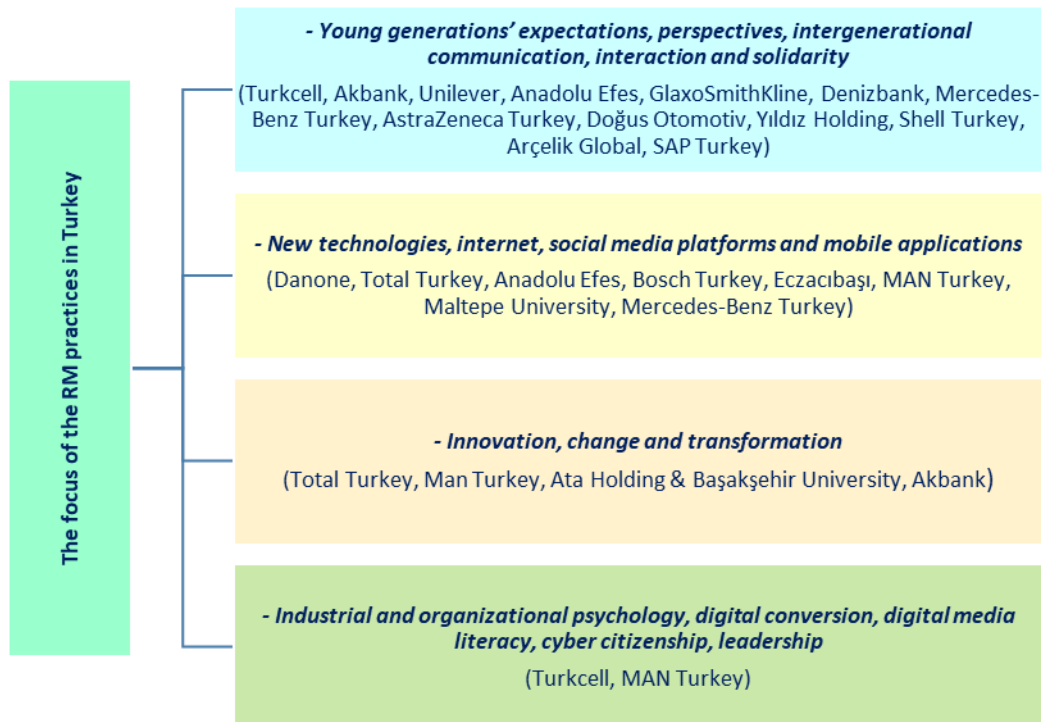

Figure 2: The focus of the RM practices in Turkey

When the applications in Turkey holistically reviewed, the RM in all sectors is seen to practice for the interaction between the senior and young employees, and particularly the dissemination of information technology skills among the senior staff. In many of these practices, besides increasing internet and digital skills, it is also reported that the positive results such as the development of intergenerational understanding and solidarity within the organizations, improving the innovative organizational culture focused on change and transformation were observed (BAU & Unilever, 2020; Eczacıbaşı, 2020, Pharma Turkey, 2020; Aksakal, 2020; Doğuş, 2020; Yıldız Holding, 2020; Shell Türkiye, 2020; Arçelik Global, 2020; Hürriyet, 2019; Erdoğan, 2019; Terzi & Boylu, 2019; Akşam, 2018; Gündüz & Akşit, 2018, İHA, 2018; Milliyet, 2014; 2016; 2018; HRdergi, 2015; 2017; Bozkuş, 2016; SAB Forum, 2015; Capital, 2014).

Reverse Mentoring in Education

Conceptual Framework of Reverse Mentoring towards Education

The traditional mentoring approach is considered to have been influenced by career development, cognitive learning, adult education, social constructivism and social learning approaches (Zauschner-Studnicka, 2017).

According to the social constructivism theory by Vygotsky, the learning process emerges as a result of mutual relations and interactions with other people and shapes the individual (Ergün & Özsürer, 2006), and similarly, according to Bandura, learning through observation can play a decisive role in the acquisition of certain behaviors through observation, modeling, cognitive comprehension, evaluation and internalization (Korkmaz, 2018; Senemoğlu, 1998; Akman & Erdem, 1997; Köknel et al., 1993).

The concept of *"Zone of Proximal Development"* developed by Vygotsky within the social constructivism approach, argues to strengthen the peer and adult-supported learning of children and to carry them further than they could do individually (cited in Küpeli, 2019). Likewise, zone of proximal development is likely to increase social learning-based professional skills of individuals in mentoring practices for adults. However, traditional mentoring, the RM, and other similar methods all seem to focus on bidirectional learning interactions between peers or colleagues. On the other hand, the IRM practice discussed in this study, focuses on the interaction between student-teacher as opposed to the interaction between colleagues and peers. The teachers and students are considered to be two important stakeholders, but not peers or colleagues, in the education system. For this reason, the study argues that it would be more appropriate to base IRM on *"intergenerational learning"* and *"critical reflective thinking"* approaches.

However, the intergenerational learning approach is based on social constructivism, it also refers to mutual interaction and learning between different generations rather than learning from an experienced to an inexperienced person via vertical structure as social constructivism predicted (Baily, 2009; Tempest, 2003). Intergenerational learning integrates the knowledge and experience of people from different generations, facilitates the implementation of new ideas, and improves innovation at a corporate scale (Tempest, 2003). One of the first studies which addressed this concept by Craig (2001), discusses the intergenerational learning approach through the coexistence of different generations in business life with the increase of average life expectancy in Japan, and Craig defines it as a common learning legacy left by a generation to the other (Craig, 2001). Thus, such a shared perspective depending on intergenerational cooperation among working staff can also be thought as an efficient means to improve the continuing professional development (CPD) culture within working life.

The IRM application discussed in this study has a number of features that can be based on reflective thinking skills within the scope of social learning. The reflective thinking by Dewey (1944), is also considered as a systematic process that aims to develop teaching skills based on logical thinking within cause and effect relationship (Zahid & Khanam, 2019; Goodley, 2018; Jay & Johnson, 2002; Pollard & Tann, 1995). It refers to such skills as reflection, self-inquiry, self-analysis, and self-evaluation. According to the reflective learning, it is foreseen that teachers continuously evaluate their professional practices and behaviors with a critical perspective (Thomas & Packer, 2013; Ryan & Scoot, 2008). While reflective thinking helps individuals' personal and intellectual development, it also contributes to individuals' solving problems in different ways by developing open-minded perspectives. The concept of "reflective thinking" was reconstructed in stages after Dewey and discussed under the name of "Critical Reflective Thinking" in a larger perspective including cultural

values and beliefs as well (Genç, 2004; Hatton & Smith, 1996).

The concept of IRM in this study is based on *"intergenerational learning"* and *"critical reflective thinking"* approaches which also originated from constructivism and social learning theories. At the application level, unlike other RM practices, it refers to a new form of RM which will function in a process of interaction from student to teacher without collegiality, not through the interaction in the same job or profession. On the other hand, critical reflective thinking is associated with the IRM in terms of self-evaluation and professional development of teachers. Accordingly, it is thought that direct feedback from students regarding the lesson taught in the educational environment, teaching practices and communication skills towards students will help teachers to make self-critical reflective evaluations. In this way, the IRM also aims to enable teachers to better understand the different expectations, understandings and learning styles of the new Z and Alpha generations both at cognitive and sensory levels.

In summary, in traditional mentoring practices, while there is a hierarchical learning model in which more experienced employees teach less inexperienced ones and in such mentoring the young employees can only consult seniors, the RM is considered as an application that completely reverses this system and hierarchy. The RM mostly uses technology as a tool for the career, professional and social development of individuals, and provides the opportunity for young employees to teach senior employees, thus, contributes to the construction of a new networks between generations (Murphy, 2012; Chaudhuri & Ghosh, 2012; Baily, 2009; Biss & Duferene, 2006; Tempest, 2003; Butler & Chao 2001; Closser, 2000). However, the concept of "instructional reverse mentoring (IRM)" has been evaluated in this study from a quite different perspective than the other RM practices which focused on teaching a set of digital technological and innovation-oriented skills to the senior employees because the IRM focuses on the interactions between the students and teachers, and the relationship between the students and teachers are not the same as between peers or colleagues, but it is still a unique relationship of being stakeholders of the same educational organization. Accordingly, the current proposed IRM practice in the study aims the students to do mentoring towards the instructional skills of their own course teachers by conveying the Z and alpha generations' expectations, understandings and learning styles through direct feedbacks.

A Reverse Mentoring Practice Proposal Specific to Education: "Instructional Reverse Mentoring (IRM)"

The Problem Situation

As of 2020, the vast majority of teachers in Turkey are likely to be the members of the X and the rest are of the Y generation. In near future, the teachers will have to face and carry out their teaching activities only with new Z and Alpha generations in their classrooms. Unlike the business life in other sectors, it is likely to see the representatives of X, Y, Z and Alpha generations together in many school organizations today. Therefore, the teachers are thought to have a pioneering role for developing of teaching systems based on the expectations of new generations. However, it is argued that systematic tests, surveys, and practices of RM which provide direct

feedback by students on the teachers' classroom management and reflective thinking skills are not common in Turkish education systems. While the conceptual framework of RM was formed in many other fields in Turkey, the education focused framework has not been fully conceptualized yet and there is thought to be a conceptual gap around this point. The teachers have the opportunity to receive feedback about their instructional practices only through classroom visits by school administrators, apart from this, even if it is possible for students and parents or colleagues to provide feedback to the teachers on these issues, this is said to be not systematic and widespread in the current Turkish education system. With the IRM practice, it is expected that the teachers will be able to gain professional development in a positive way; develop their critical reflective thinking skills; give more importance to the expectations, opinions and suggestions of their students; do self-criticism when necessary; and redesign their teaching approaches, methods, and techniques thanks to the feedback they receive from their students.

Although a large number of CPD practices in the form of face-to-face and distance learning are considered to be carried out by Ministry of National Education of Turkey, such practices, besides being costly, are also considered to be not always sufficient to fully respond to the CPD needs of teachers. If IRM would widespread, it would be a method that can meet the practical needs of teachers on both cost and school basis more than the other CPD applications. In addition, it is considered to be essential for teachers to ensure continuity in their professional development, and to pace with the digital transformation that is likely to be dominant within all fields in near future, therefore, the IRM is thought to be an alternative CPD practice to serve this function and will significantly contribute to the professional development and transformation of teachers.

When the points above holistically evaluated, the ultimate aim of the IRM is to support the professional development of teachers and to develop their critical reflective thinking skills together with their classroom management skills based on the feedback from their students in the class. In addition, to introduce IRM as an alternative professional development application in educational field. At this point, it is expected that the IRM method, which conceptualized within this study as a new RM practice in the field of education, will provide teachers with an opportunity to better understand the emotions, thoughts, perspectives, expectations and learning styles of Z and alpha generations in their classes, and thus, contribute to their professional development as well.

The general information about IRM is outlined in Figure 3 as follows:

The purposes

- to increase the awareness of the IRM as a concept specific to educational field and to spread its practices in education;
- To contribute to increasing the variety of RM methods by presenting a new and different perspective on the practices of education focused reverse mentoring;
- to put forward a road map for how the IRM will be applied by teachers, through this way, to guide the practitioners;
- to help the teachers develop a critical reflective thinking perspective and make professional self-evaluation about their teachings by recognizing the views and expectations of new generations;
- to contribute to the teachers' recognizing their strengths and weaknesses as well as developing new perspectives for their professional development based on the student-centered feedbacks.

The stages

- Pre-informing training;
- Selection of the participants and providing practical training;
- Receiving feedback via electronic forms and internet applications;
- Analyzing and evaluating the feedback by the course teacher;
- Evaluating the feedback within the study team.

The Methods

- Intergenerational learning approach
- Critical reflective thinking approach
- SWOT analysis at individual level;
- Peer sharing,
- Focus group discussions

Teams & Professionals

- The working/study teams at schools;
- The educational consultants at schools;
- The academicians and other external professionals in RM field.

Duration

- An academic year (two semesters) is needed for the trainings to be provided, the formation of teams, the determination of participating teachers and students, the development and implementation of the necessary measurement and evaluation tools and the evaluation of the results.

Figure 3: General information on the practice of IRM

The Stages of the Implementation

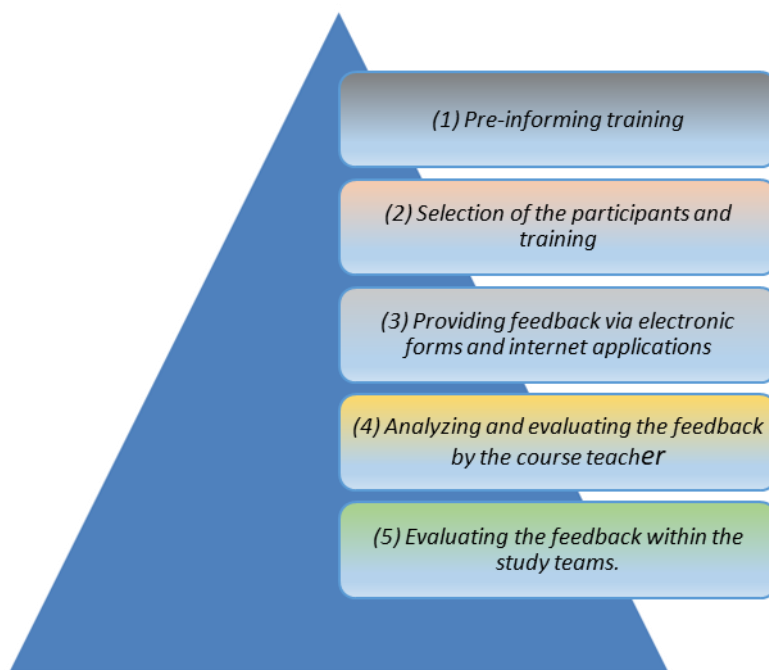IRM will be put into practice within those 5 stages below:

Figure 4: The stages of the IRM

(1) Pre-informing training

Before the IRM application, all the teachers at school should be informed about RM practices within a short pre-informing meeting around 45 minutes. In this meeting, the points such as what perspective the IRM introduces, and possible benefits, challenges for education and teachers, the importance of understanding the new generations' basic characteristics for education and teachers should be explained. It would be preferable for such training to be given by an academician with subject knowledge. If not applicable, a presentation can be prepared by the counselor or another teacher. The main goal here is to explain well why such an application is desired and which benefits it will introduce to the teachers and school. In order not be considered by teachers as an audit or evaluation criterion, it should also be emphasized that feedback will be received through internet forms, that information will only be seen and evaluated by teachers themselves and will definitely not be shared with the other parties.

(2) Selection of the participants and training

Participants should be selected on a voluntary basis following the pre-informing training, and volunteer teachers should organize their study teams that have at least three teachers. Then, the teams cooperatively decide on which subject and questions to be asked in electronic feedback forms. Participant students to

provide feedback can be selected from the whole member students in any class, or, to have a more multiple perspective, a "Multiple Intelligence Assessment Scale" can be applied. The number of students may be limited according to the scores obtained in the fields of "verbal-linguistic; mathematical-logical; visual-spatial; body-kinesthetic; musical-rhythmic; naturalistic; interpersonal and intrapersonal intelligence" by Gardner. The participant students should also be passed through a second selection by using a "Critical Thinking Disposition Scale". With "multiple intelligence assessment scale", is aimed to provide more diversified feedbacks which reflects the students' existing needs and expectations in each class while with "critical thinking disposition scale" is aimed to improve the objectivity and technical quality of the students' feedback. Which of these two approaches (The whole class members or selection via tests scores) to be applied should be determined by the course teachers or with the joint decision of the study teams.

After the selection of participant classes and students, the participant teachers need to inform the participant students via training seminar, they need to explain to students what this feedback will be used for, that this is an opportunity to convey the expectations of the students to their teachers, that those e-forms will not include the personal information, that written views of students will remain confidential, and also how the electronic feedback forms should be filled. In addition, the participant students are informed through concrete examples that they should use a frankly but also constructive language while conveying their feelings, thoughts and expectations. The experts and academicians of adult education, mentoring fields and feedback should also be invited to these trainings activities if applicable. Alternative trainings by these experts may also be carried out in the form of video conferences/meetings over the internet for those schools which do not have face-to-face training opportunities.

(3) Providing feedback via electronic forms and internet applications

After the study teams forming their questions in the feedback forms jointly, they will load them to the internet via "google forms, mentimeter or kahoot etc". The crucial point at this stage is that students being able to express their feelings, thoughts and expectations freely. The feedback within application should be collected just via anonymous e-forms that exclude the personal demographics and e-mails of the students. The study teams need to determine feedback questions with a joint decision before the implementation, however, teachers may also prepare additional questions at individual level and add them to their own evaluation forms. The questions given below are considered to guide or give ideas for the study teams to form their own questions.

✓ *How efficient was the "X........ course" you took this semester?* (Score between 1-5. / 1 is the lowest; 5 is the highest) 1 - 2 - 3 - 4 – 5

✓ *In your opinion, what are the reasons for this lesson's being efficient or inefficient?* (Open-ended)

✓ *What would you like your teacher to do for a more efficient lesson? What would your advices be for your teacher on this issue?* (Open-ended)

✓ *When considered your own learning styles as a student, how do you learn best? What would you recommend your teacher to improve your individual learnings in this lesson?* (Open-ended)

✓ *Can your teacher fully understand the feelings, thoughts, expectations and learning styles of you and your friends? What would you recommend to your teacher so that s/he can understand your feelings, thoughts, expectations and learning styles in a better way?* (Open-ended)

✓ *Can your course teacher efficiently use technology in the lessons? What would you recommend to your teacher on this issue?* etc.

The link of the feedback forms will be shared with the students, and they will fill the feedback forms at home or at an appropriate time at school, and send them to the course teachers. Although the feedback questions are of general questions above at the beginning, in the following stages after the method's being successfully implemented, the feedback forms may also be structured within a wide range of options, e.g. internet-based instant score based quantitative evaluation scales applied at the end of the course by teachers regarding the efficiency of each single lesson, or, the more detailed qualitative phenomenological scales supported by the internet applications, e.g. google forms, mentimeter etc.

(4) Analyzing and evaluating the feedback

Quantitative data via google forms or similar internet applications is automatically viewed on the system with the percentage and frequency, thus by means of which the teachers are able to see the score and make the necessary self-evaluations. Nonetheless, the teachers need to make a SWOT analysis based on the qualitative feedback to evaluate their own strengths and aspects to be improved. Depending on the qualitative feedback, the participant course teachers will prepare a short report on their strengths and improvements to be shared with his teammates. On the other hand, the content of this report, what feedback to be shared will be decided only by the course teacher. The sharing at this point will be just on a voluntary basis, the participant course teachers will not be forced to share on any subject by their teammates.

(5) Evaluating the feedback within the study teams.

The teams should have a joint meeting and share individual evaluations each other based on SWOT analysis and reports prepared by the participant teachers. Teachers will be free to decide which points to share or which to take care of themselves. Incoming electronic feedback should just be seen by the participant teacher, and also should not be urged to share with other teammates unless the person requests. The working team will conduct collaborative evaluations just on the points shared by the teacher. Therefore, confidentiality and trust within the working team is crucially important. However, if demanded, the teachers may get help from their teammates, evaluate feedback issues and develop common solutions for the problems. Furthermore, if demanded by the teachers, the peer guidance (coaching) practices may be performed within the team, problems may be observed to develop joint solutions. Additionally, the continuity is thought to be important

for IRM's effective results. The method should be considered as a long-term application rather than a time limited application. It is also crucial to follow up whether the deficiencies, problems or expectations recognized through feedback are resolved by testing them again with the similar methods in the future.

CONCLUSION and DISCUSSION

It was observed in the study that the studies on the RM in educational field both in the world and in Turkey are mostly focused on improving the teachers' technological and digital skills, on the other hand, that the RM applications which highlight the awareness of teachers around the expectations, thoughts and learning styles of new generations through teachers' critical reflective evaluations are rather limited, and also a conceptual gap is observed around this point. For that reason, to fulfill this conceptual gap around RM in the field of education, the concept of instructional reverse mentoring (IRM) has been introduced in this study as a new RM practice proposal in education with its application stages by comparing it with the existing examples of RM in other fields.

When the adaptation of RM to the educational field considered, the interaction and replacement of an experienced teacher with a novice teacher preliminary stands out and also some of the RM practices in the field of education are concentrated at this point (Porras, Díaz & Nieves, 2018; Augustiniene & Ciuciulkiene, 2013; Taylor et al., 2013). However, there is a collegial bond between those teachers in such practices. On the other hand, the IRM in this study differs from this common path, it focuses on the interaction of teachers and students as two specific stakeholders of education, not between young and senior employees within collegial relationships. Another subject area that educational RM studies focuses is mentor students' helping to their course teachers to update their technology and digital skills (Zauschner-Studnicka, 2017; Preston et al., 2015; Beane-Katner, 2014; Peterson, 2012; Pelliccione & Dixon, 2009; Cotugna & Vickery, 1998). However, the IRM in this study puts forward a new perspective for RM that goes beyond the interaction of sharing the digital information between generations, and it aims to re-evaluate the teaching in the classroom through the feedback of Z and Alpha generations with a holistic perspective.

Although the IRM has many common points with other RM practices in different fields, the study argues a crucial need for a new RM design in the field of education due to its own unique dynamics. In a RM practice conducted by Augustiniene & Ciuciulkiene (2013) for novice teachers revealed that the RM in education differentiates from other sectors and indicates a number of unique features. For this reason, the concept of IRM has been highlighted within the study as a new RM practice that aims to provide direct feedback to the teachers around the instructional expectations, thoughts and learning styles of the new generation students.

The reverse mentoring practices around the field of education in Turkey are observed to be extremely limited (BAU, 2020; Gündüz & Akşit, 2018), these studies as in many other sectors, focus on the interaction of the senior managers with the younger generations, and through this, they aim to improve the digital skills of seniors via internet and social media use. The fundamental philosophy of the Turkish Education system is based

on the constructivism approach, which predicts students to freely express their feelings, thoughts and expectations in a learning environment in a democratic structure (Dewey, 1944). From this point, it can be argued that the practice of IRM in the study also overlaps with the objectives of the constructivism philosophy in educational field, thus, it has the potential to contribute positively to the general goals of the education system as well.

The RM is considered as an effective professional development practice still applied in many different fields and has effective results in providing internet-based technological skills to senior employees, especially through intergenerational communication and interaction (Porras et al, 2018; Callahan, 2017; Beane-Katner, 2014; Augustiniene & Ciuciulkiene, 2013; Murphy, 2012; Meister & Willyerd, 2010; Mullen, 1999). For this reason, the IRM proposed in the study will also likely to contribute to the professional development of teachers, and also fulfill the functions such as communication, cooperation, solidarity and gaining common perspectives among teachers. When advantages such as being more economical and student-oriented compared to the current CPD practices considered, the IRM is likely to have high potential to serve as a new CPD method towards teachers. However, the RM studies around the field of education in Turkey are observed to be extremely limited. Furthermore, the IRM is also likely to increase the number of academic studies on RM as well.

RECOMMENDATIONS

When the results holistically evaluated, those suggestions below have been made in the current study:

- Academic studies, particularly the experimental studies, on RM in the educational field should be carried, such as the limitations of RM, problems that may arise in the application dimensions, and the effects of RM on students' leadership skills are the subjects that have not been studied yet in Turkey.

- IRM, as a new constructivist CPD approach as well as a personal development tool, should be introduced to the Turkish education system by the ministry of education, furthermore, the teachers and school principals should also be encouraged to implement the IRM systematically at schools.

- IRM should not be implemented as part of the supervision or evaluation process, it should be regarded as an effective tool to support the personal and professional development of the school teachers.

ETHICAL TEXT

This study has been fulfilled in accordance to the journal writing rules, publication principles, ethical research standards. The ethical committee approval for this study was given by Educational Sciences Ethics Committee, Hatay Mustafa Kemal University (The date and number of the approval document is 12/08/2020-E.35794). All the responsibilities belong to the author for any violations regarding the article.

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