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Değişime Hazır Olma Ölçeği'nin Geçerlilik ve Güvenilirlik Çalışması

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ÖZ. Bu çalışma okullarda öğretmen, yönetici ve rehber öğretmen olarak çalışan iş görenlerin değişime hazır olma düzeylerini ölçen Değişime Hazır Olma-Bilişsel, Duygusal, Kararlılık (DHO-BDK) ölçeğini geliştirme çalışmalarını içeren süreci anlatmaktadır. Çalışmanın birinci aşamasında, ilk ve ortaöğretim okullarından çalışan toplam 700 öğretmenden toplanan veri ölçeğin yapı geçerliliği ve güvenirliğine ilişkin destek sağlamıştır. Buna göre değişime hazır olmanın üç boyutu ortaya çıkmıştır: kararlılık boyutunda değişime hazır olma, duygu boyutunda değişime hazır olma ve bilişsel boyutta değişime hazır olma. İkinci aşamada, yine ilk ve ortaöğretim okullarında çalışan 603 öğretmenden oluşan bağımsız bir örneklemden toplanan veri 12 maddeli ve üç boyutlu yapıyı desteklemiştir. Kararlılık boyutunda değişime hazır olma, bilişsel boyutta değişime hazır olma ve duygu boyutunda değişime hazır olma için sırasıyla .90, .87 ve .75 düzeyinde Cronbach alfa değerleri bulunmuştur. DHO-BDK'nin ek geçerlik çalışmalarıyla politika yapıcılar ve okullardaki yöneticiler için iş görenlerin değişime hazır olmalarını değerlendirecekleri etkin bir araç olacağı ve buna bağlı olarak okullardaki değişim uygulamalarına yönelik olarak iş görenlerin olumlu tutumlar geliştirmelerine yardımcı olacak stratejileri geliştirmelerine yardımcı olacağına inanılmaktadır.
Anahtar Kelimeler. Okul yönetimi, örgütsel değişim, değişime hazır olma

ÖZET

Amaç ve Önem

Değişimi başarıyla gerçekleştirmek örgütler için sağlıklı bir şekilde faaliyetlerini gerçekleştirmek ve bu sayede varlıklarını sürdürmenin en önemli koşullarından biri olarak ortaya çıkmıştır. Bu durum eğitim kurumları için de geçerlidir. Dünyadaki diğer eğitim sistemleri gibi, Türkiye'de de iç ve dış zorlayıcılar eğitim örgütlerini değişim uygulamalarına yöneltmektedir. Bu zorlayıcılara cevap verebilmek için sistem ve okul düzeyinde değişik değişim uygulamalarına gidilmektedir. Bu ortamda okullar için de değişimi başarıyla uygulamak temel yönetim kaygılarından biri olarak ortaya çıkmaktadır. Ancak değişim uygulamalarında değişimin en önemli öğesi olmasına karşın insan boyutu ihmal edilmekte ve bunun sonucunda da örgütlere finansal ve insan kaynakları anlamında ciddi külfet getiren değişim girişimleri başarısızlıkla sonuçlanabilmektedir. Bu sebeple, değişim sürecinde çalışanların değişime karşı tutumlarının anlaşılması ve bu tutumların olumlu yönde etkilenmesi değişim girişimlerinin başarıyla sonuçlandırılmasına katkı sağlayacaktır. Bu noktadan hareketle bu çalışmanın amacı önemli bir değişim tutumu olan "değişime hazır olma" konusuna yönelik bir ölçek çalışması yapmaktır. Değişime hazır olma ölçeğinin bu konudaki ilk Türkçe ölçek olması bakımında alanyazına önemli katkılar sağlayacağı düşünülmektedir.

Yöntem

Ölçeğe ilişkin madde yazımı öncelikle geniş bir alanyazın taramasına dayandırılmıştır. Bu taramada özellikle diğer dillerde geliştirilen örgütsel değişim, örgütsel değişime yönelik tutum ve değişime hazır olma ölçekleri incelenmiştir. Değişime hazır olma kuramını göz önüne alarak üç alt boyuta yönelik toplam 18 madde yazılmıştır. Yazılan bu maddelere ilişkin alanda uzman iki akademisyenin görüşleri alınmıştır. Alınan geribildirime paralel olarak gerekli düzeltmeler yapılmıştır. Sonrasında ise geliştirilen maddeler 20 kişilik bir öğretmen grubuna da uygulanmış, maddeler üzerinde görüşleri alınmış ve bu görüşler doğrultusunda gerekli düzeltmeler yapılmıştır. Sonrasında ise, ölçek yapısını belirlemek ve elde edilen bu yapıdan hareketle geliştirilen modeli test etmek için iki ayrı örneklemden farklı tarihlerde iki ayrı veri seti toplanmıştır. İlk veri seti Ankara'daki toplam 31 ilk ve ortaöğretim okulunda görev yapan toplam 700 öğretmenden toplanmış ve bu verilerle açıklayıcı

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faktör analizi yapılmıştır. İkinci veri seti ise, yine Ankara'daki toplam 53 ilk ve ortaöğretim okulunda görev yapan toplam 603 öğretmenden toplanmış ve bu verilerle doğrulayıcı faktör analizi yapılmıştır.

Bulgular

Geliştirilen anketin ilk halinde toplam 18 madde yer almıştır. Bu ölçeğe yönelik olarak ilk veri seti kullanılarak yapılan açıklayıcı faktör analizi sonuçları toplam 12 maddelik 3 faktörlü bir yapıyı göstermiştir. Bu faktörler kararlılık (5 madde), duygusal (3 madde) ve bilişsel (4 madde) hazır olma olarak adlandırılmış ve bu boyutlara yönelik sırasıyla .87, .67 ve .87 güvenirlik değerleri elde edilmiştir. İkinci örneklemden toplanan veri seti ile yapılan doğrulayıcı faktör analizi, açıklayıcı faktör analizinin önerdiği modeli doğrulamıştır. İkinci veri seti kullanılarak ölçeğin kararlılık, duygusal ve bilişsel boyutlarına yönelik güvenirlik hesaplamaları sırasıyla .90, .75 ve . 87 değerlerini vermiştir.

Tartışma, Sonuç ve Öneriler

Bu sonuçlar, Değişime Hazır Olma-Bilişsel, Duygusal, Kararlılık Ölçeği'nin, okullarda yapılan değişim girişimlerine yönelik olarak çalışanların ne ölçüde hazır olduklarını ölçebilecek bir araç olduğunu göstermektedir. Bu ölçümlerden yola çıkarak okullarda değişim faaliyetlerini tasarlayan ve uygulayan değişik düzeylerdeki yöneticilerin, bu değişim girişimlerine yönelik olarak çalışanların tutumlarını değerlendirme ve gerektiğinde bu tutumları olumluya çevirme konusunda stratejiler geliştirebilecektir. Bununla birlikte, geliştirilen ölçeğin değişik düzeylerde ve değişik coğrafi mekânlarda yer alan okullarda uygulanması, ölçeğin güvenirliğine katkı sağlayacaktır.

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Development and Validation of Readiness for Change Scale

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ABSTRACT. This study described the process of developing and validating the Readiness for Change-Cognitive Emotional Intentional (RFOC-CEI) scale that can be used to assess readiness for change levels of organizational members working in schools including teachers, administrators, and counselor. In the first phase, data collected from 700 teachers in primary and secondary schools provided evidence for the construct validity and reliability of the new scale. Three dimensions emerged: intentional readiness for change, emotional readiness for change, and cognitive readiness for change. In the second phase, data collected from an independent sample of 603 teachers in primary and secondary schools confirmed the three-factor structure of the 12-item RFOC-CEI. The Cronbach alpha coefficients were found to be .90, .87, and .75 respectively for intentional, cognitive, and emotional readiness for change dimensions. Followed by the additional validation studies, the RFOC-CEI will serve as a valuable tool for policy makers and administrators in assessing readiness level of their staff and developing strategies for promoting positive attitudes toward indented changes in schools.
Key Words: school management, organizational change, readiness for change

INTRODUCTION

It is commonly argued that ensuring survival of organizations in today's turbulent environment largely depends on mastering change and development. This is equally valid for educational organizations as well. Numerous forces of change constantly push governments to make micro and macro level changes in structural-functional characteristics of their education systems. Like other countries, various internal and external forces frequently push Turkey to initiate change and development interventions in its educational system. Increasing and diversifying societal expectations, quality concern, demographic change, and demands of the economy are some of these external forces leading to system level changes. These changes have direct and indirect repercussions on schools (meso-level) and on various agents taking role in different units and levels (micro-level).

Developing necessary skills and tools has received considerable scholarly interest in the last two decades. One of the core involvements organizational change scholars in educational setting is developing an understanding about how to manage change at individual level. Individual level of change in education setting particularly refers to the experiences of teachers and administrators in change interventions. Organizational change scholars commonly suggest that managing micro-level or human side of change determine the success of change interventions (Clegg & Walsh, 2004). Hence, like in other organizational settings, in education setting managing human side of change becomes a critical involvement for both scholars and practitioners.

Change interventions designed and implemented by Ministry of National Education (MONE) obviously pose several challenges for teachers in Turkish public schools. In many cases they feel obliged to examine their skills, competencies and knowledge in order to ensure their survival in the post change era. In many cases of change, individuals are expected to move from the known to the unknown experiences. Naturally such situations cause the feeling of loss of known, triggers the fear of becoming obsolete or losing position within the organization. As a result, teachers experiencing these feelings in the face of system level or school-level changes are likely to react with negative attitudes including cynicism (Reichers, Wanous, & Austin, 1997) and resistance to change (Burke, 2008). One core involvement in managing the human side of change is neutralizing these negative feelings and getting the individuals back to change interventions. Hence, it is argued that resistance as a potential threat for successful change interventions can be neutralized by creating readiness for change (Armenakis, Harris, & Mossholder, 1993).

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Readiness for change is defined as the "cognitive precursor to the behaviors of either resistance to, or support for, a change effort" (Armenakis et al., 1993, p.681). Therefore, readiness for change is the prerequisite for reducing resisting behaviors and empowering supportive ones on the part of the employees. However, readiness and resistance are not completely opposing constructs in a way that creating readiness leads employees to embrace change rather than to resist it (Self, 2007). Bernerth (2004) associated readiness for change with sustainable successful change because readiness means change in the cognitive states of the individuals and indicates the willingness of an individual to change his/her own way of thinking. Thus, readiness for change manifests itself on the individuals' beliefs, attitudes and intentions (Armenakis et al., 1993). More specifically, readiness is more than solely willingness to support and enact the change but it comprises positive feelings and beliefs toward change. Several scholars also associated readiness for change with the unfreeze step of Lewin's three steps change process model (e.g., Bernerth, 2004; Jones, Jimmieson, & Griffiths, 2005; Self & Schraeder, 2009; Weiner, Amick, & Lee, 2008). Thus, creating dissatisfaction with the current state and justifying employees' the need for change create readiness, which becomes the first step for the successful organizational change interventions (Self & Schraeder, 2009). If the desired outcomes of change efforts are largely related to individuals' enthusiasm and efforts (George & Jones, 2001), creating readiness for change becomes a vital involvement for change agents. Readiness for change is an individual state which shows variation from one person to another and the difference between the readiness levels' of the individuals is associated with the content, process, and context of change and individual attributes or the combination of these four factors (Holt, Armenakis, Harris, & Field, 2007a). Thus, the authors concluded that readiness can be altered in the course of time. This discussion suggests that an individual's readiness for change can be formed by appropriate strategies. Naturally employment of any strategy requires identifying readiness level of the individuals for experiencing change.

One of the primary concerns of scholars studying attitudes toward change was the way of assessing organizational members' readiness for change appropriately (Holt et al., 2007a). For this purpose, various instruments have been published. In their review of research and instrumentation on readiness for change, Holt et al. (2007a) examined 32 instruments measuring readiness under the dimensions of process, content, context, individual attributes and intentions and reactions. Among the examined instruments, the authors reported that only eight of them were designed for education as a research discipline. However, when the overall scores for the instruments were calculated, the only instrument which was rated psychometrically adequate compared to others within the education discipline was the Change Abilitator Scale developed by Human Resource Development Process (1995). Other scales developed for the area of education were constrained by the lack of reliability, and content and/or predictive validity evidences.

To address the need of a psychometrically adequate and sound measure to assess readiness for change, Holt, Armenakis, Field, and Harris (2007b) developed a 25-item instrument that measure readiness at individual level under the dimensions of appropriateness of the proposed change, management support, perceived efficacy to implement the change and personal valence of the change with a seven point scale ranging from strongly disagree to strongly agree. Following the same model, which was recommended for creating readiness and easing the adoption and institutionalization process of organizational change (Armenakis et al., 1993; Armenakis, Harris, & Field, 1999), Organizational Change Recipients' Beliefs Scale was developed (Armenakis, Bernerth, Pits, & Walker, 2007). The scale intended to gauge organizational members' beliefs regarding the discrepancy, appropriateness, efficacy, principal support and valence dimensions of organizational change on a seven point scale ranging from strongly disagree to strongly agree so that the scale can be helpful in assessing the change recipients' level of buy-in. Both scales provided all validity and reliability evidences and were proved to be psychometrically adequate to assess readiness for change; however, the scale developed by Holt et al. (2007b) was criticized by Bouckenooghe, Devos, and Van Den Broeck (2009) for being tested in two organizations undergoing only structural change so that they have some concerns regarding the generalizability of the results produced by this scale. Moreover, these scales were not designed for and tested in educational organizations. These issues have raised content and context related concerns. In other words, the items in the scales and the

contexts in which the instruments were administered may not reflect the case of educational organizations.

In a more recent review on conceptualization and measurement of organizational readiness for change, Weiner et al. (2008) examined 106 peer-reviewed articles published in the last two decades in different fields including health care, business, government as well as education. Of the studies investigated, only 6% was reported to focus on educational organizations. The review also presented 43 instruments for gauging readiness for change of which only 5 were designed for educational setting. However, the authors indicated that except for the instrument developed by Jansen (2004) named Change-related Commitment, other instruments designed for educational setting did not provide adequate evidence on reliability and validity to be assessed as sound measures to gauge readiness for change.

Recent research on assessing readiness for change underlined the multifaceted nature of readiness for change construct. The scale developed by Bouckenooghe et al. (2009) was labeled as Organizational Change Questionnaire_Climate of Change, Process and Readiness (OCQ-C, P, R) and encompassed three sub-scales as internal context of change, process factors and readiness for change. In accordance with the three dimensional structure of attitudes (Piderit, 2000), readiness for change was measured under three dimensions as intentional readiness, cognitive readiness, and emotional readiness with nine items in the OCQ-C, P, R Scale. Indeed, intentional readiness is delineated as the extent of energy and effort that individuals want to invest in the change process (Bouckenooghe et al., 2009). Cognitive readiness is defined as the belief of the individuals regarding the positive outcomes of the change efforts for organization, co-workers and him/herself (Nikolaou, Gouras, Vakola, & Borantas, 2007). Oreg (2006) also elaborated on the cognitive domain and stated that this dimension seeks an answer to the questions like "is it necessary?" and "will it be beneficial?" (p. 79). Emotional readiness, on the other hand, deals with individuals' feelings toward particular changes (Bouckenooghe et al., 2009). Therefore, intentional, emotional, and cognitive domains are individual manifestations regarding the proposed changes. Moreover, promising evidence on the reliability and validity of the scale were provided and it was tested in various organizational setting including schools undergoing different types of change so that it is a psychometrically sound instrument for measuring organizational change and produces more generalizable results. Although OCQ-CPR was not particularly designed for educational organizations, it was used as a base in this study since the three-dimensional framework utilized in the scale is useful in handling the differences in individual's intentions, emotions and cognitions towards the proposed changes (Piderit, 2000). Covering these dimensions seems to be vital in developing a valid and reliable measure of the construct. Furthermore, intentions, emotions, and cognitions are discussed to be the precursors which determine enacting or resisting employee behaviors (Armenakis et al., 2007). Therefore, by using three-dimensional framework in investigating readiness for change in the educational setting, the missing part of teacher attitudes which is likely to result in resisting behaviors can be figured out. As a result, appropriate strategies can be developed and implemented to deal with negative attitudes toward change and to promote positive ones.

Although extensive research was conducted to measure readiness for change, assessing school organizational members' readiness has not been a topic that attracted the attention of many scholars both in the world and in Turkey. Moreover, majority of the scales developed for educational setting are criticized for being psychometrically inadequate. However, the change atmosphere in Turkish educational system created by MONE results in a need for a valid and reliable measure designed specifically for educational setting to assess school organizational members' readiness for change. Therefore, the most overlooked part of many change efforts, which is human side, can be strengthened. In the light of these arguments, the purpose of this study is to explicate the development of Turkish Readiness for Change Scale and provide validity and reliability evidences.

METHODS

Participants

For the purposes of this study, two empirical studies were conducted with two independent samples. Only the public schools constituted the samples of both studies as public schools have recently been experiencing organizational change more intensively than the private schools. Moreover,

data collections were performed in primary and different types of secondary schools (e.g., regular high schools, Anatolian high schools, and technical-vocational high schools) in order to increase the representativeness of the sample.

The first data collection for Exploratory Factor Analysis was carried out at 31 public primary and secondary level schools randomly selected from 8 school districts (viz., Çankaya, Yenimahalle, Sincan, Altındağ, Mamak, Etimesgut, Polatlı, & Keçiören) which were selected through cluster sampling in the province of Ankara. The sample of the study comprised of 700 teachers, 412 of whom were working at primary schools and 279 of whom were working at secondary level schools. Of the sample, the number of female respondents (n = 472) were greater than that of male respondents (n = 228). The ages of the participants varied also within the sample. Majority of the participants' ages were cumulated within the age of 30 to 39 (32.3%) and 40 to 49 (40.9%). In the sample, 10% of the participants were younger than the age of 30 and 15% of the participants were older than the age of 50. In the sample, the participants' years of teaching experiences also showed diversity. By majority, the participants' years of teaching experiences were cumulated within the range of 10 to 19 years (48.6%), 20 to 29 years (25.7%) and 1 to 9 years (15.2%).

For Confirmatory Factor Analysis, the data were collected from 53 primary and secondary level public schools randomly selected from 4 school districts (viz., Çankaya, Yenimahalle, Altındağ, & Keçiören) which were chosen through cluster sampling in the province of Ankara. Of the participants, 52.6% were from secondary level schools while 47.4% were from primary level schools. A total of 603 teachers working at selected primary and secondary level public schools participated in this study. The number of female participants (n = 398) exceeded the number of male participants (n = 205). The ages of the participants varied within the sample. By majority, participants' ages were within the range of 40 to 49 (39.6%) and 30 to 39 (33.8%) while 21.1% of the participants' ages were cumulated within the range of 20 to 29. Of the sample, the years of teaching experience also indicated variations. Approximately, half of the participants have teaching experience between 10 and 19 years (46.1%) while the rest were cumulated in the 20 to 29 years group (28%), 1 to 9 years group (13.4%) and 30 to 39 (12.1%) years group.

Item Development

Readiness for Change Scale was developed with the aim of gauging school organization members' readiness for change at individual level and designed particularly for educational organizations. During the scale development, Readiness for Change dimension of the Organizational Change Questionnaire_Climate of Change, Process and Readiness (OCQ-C, P, R) scale developed by Bouckenooghe et al. (2009) was used as a base. Although OCQ-C, P, R scale and Turkish Readiness for Change Scale depend on the same theory, item number of Turkish scale was increased and the items were appropriately worded for educational setting. Different scale construction studies pursue structural equivalence with theory (e.g., van de Vijver & Poortinga, 2005; Wolff, Schneider-Rahm, & Forret, 2011), rather than accomplishing literal item-by-item match. Besides, in order to eliminate the possible flaws in factor analyses, it was necessary to develop adequate number of items allowing examination of psychometric properties of the scale. In addition to accomplishing structural equivalence with theory, adaptation of a theory into a different cultural context may require more items than comparable scales developed in other languages in order to ensure the minimization of item bias is also a worthwhile aim in scale adaptation (van de Vijver & Poortinga, 2005). In a similar way, in this study adapting Piderit's (2000) theory into a Turkish cultural setting for scale development required additional items compared to other readiness for change scales in different languages. Given the related theory (Bouckenooghe et al., 2009; Piderit, 2000), items toward three different dimensions as intentional readiness, emotional readiness, and cognitive readiness were developed.

Deciding on the number of dimensions in scale development was an important first step. As stated above both theory (Piderit, 2000) and scales developed for measuring readiness for change (Bouckenooghe et al., 2009) suggest three dimensional structures. Cognitive, emotional, and intentional readiness were identified as the essential dimensions in readiness for change. After specifying the scale structure three of the researchers independently wrote items toward each of the dimensions. Subsequently the researchers gathered in a group and specified an item pool with 18 items on a five-point rating scale ranging from *strongly disagree* (1) to *strongly agree* (5). It is important to

note that the current scale was developed for educational organizations. Hence, item number incompatibility is normal given the cultural and contextual differences between this scale and other readiness for change scales. After the development of 18-itemed initial version of the scale, opinions of two scholars working in the fields of educational administration and organizational change were solicited. The scholars were asked to assess content relevance of each item as well as their clarity. Their feedbacks were solicited in written and verbal versions. Based on their assessments, the items were revised and some minor modifications were made. Finally, the scale was administered to a group of 20 teachers. The teachers were asked to assess the clarity and relevance of the items. Based on the feedback gathered from this group of teachers in accordance with the pilot study results, some items were modified. As a result, the scale was finalized for the initial implementation in the first sample.

Data Collection Procedure

Before visiting the schools for data collection, required permissions were gathered both from the Human Subjects Ethic Committee of the Middle East Technical University and Provincial Directorate of Education in Ankara. During the first and second data collection processes, the scale was implemented individually with each teacher. The implementations typically took place in different settings of the schools (e.g., teachers' lounge, laboratories, music rooms, and classrooms). Before administering the instrument, the participants were informed about the purpose of the study and asked to submit a written consent for participating in the study. The researchers also ensured the confidentiality of the participants.

Data Analysis

The data were analyzed by both descriptive and inferential statistics. In essence, descriptive statistics, including means and frequency analyses, were used to present demographic characteristics of the participants. Bivariate correlations were calculated among the scale items. The data collected from the first sample were subjected to exploratory factor analysis (EFA). EFA enabled to reveal factor structure of the scale and calculate the reliability scores of sub-scales. The EFA was conducted with PASW 18 software program. Subsequently, confirmatory factor analysis (CFA) was conducted in analyzing the data collected from the second sample. The prime purpose of CFA was verifying the factor structure revealed by EFA for the new sample as well. CFA was conducted by the use of AMOS 18 software. Finally, MANOVA was conducted to provide further validity evidence with the data gathered during the second phase through the use of PASW 18 Statistics.

RESULTS

Exploratory Factor Analysis Results

Assumption check: Before running EFA, the required assumptions were checked for the factorability of the data. Significant Bartlett Test (χ^2 = 7449.702, p = .00) and Kaiser-Meyer-Olkin measure exceeded the recommended value of .60 (Hair, Anderson, Tatham, & Black, 2006) by yielding the value of .96 ensured the factorability of the data. The inspection of correlation matrix also indicated the presence of bivariate correlations greater than .30 (Hair et al., 2006) among some items of the scale. This result also implied the existence of some underlying factor structure in Readiness for Change Scale.

Factor analysis procedure: In order to determine the underlying factor structure of Readiness for Change items, the data collected from the first sample with the eighteen-itemed scale was subjected to EFA. For the extraction of the factors, principal axis factoring technique was utilized since Fabrigar, Wegener, MacCallum, and Strahan (1999) suggested that it is a more robust factor extraction technique against the violation of the assumption of multivariate normality. To make the interpretation of the analysis easier, oblique rotation was used as a rotation method and three-factor solution was forced for the analysis. Oblique rotation (direct oblimin) was preferred since this method allows for factor correlation (Preacher & MacCallum, 2003). The inspection of factor correlation matrix also supported the use of oblique rotation as there are high correlations between the three factors of the scale by using Cohen's (1988) standards (Table 1).

Table 1. *Factor Correlations of RFOC-CEI*

	1	2	3
1. Intentional Readiness	–		
2. Emotional Readiness	-.62	–	
3. Cognitive Readiness	.84	-.63	–

EFA Results: The retention or extraction of the factors was performed by both considering the theory and quantitative results (Hinkin, 1998). Therefore, eigenvalues greater than 1, scree test and percentage of variance accounted for were used as quantitative criteria to extract the factors (Conway & Huffcutt, 2003). Although eigenvalues criterion and scree test indicated two factor solution for the scale, the minimum acceptable percentage of variance criterion as being 60% (Hair, Black, Babin, & Anderson, 2010) was met by three-factor solution. In accordance with the proposed structure for the construct in previous readiness for change studies, three-factor solution was adopted for this study.

In interpreting the rotated factor pattern matrix, Ford, MacCallum, and Tait (1986) recommended that loadings greater than .40 are regarded as minimum level for the interpretation of the items. On the account of these criteria, results from EFA indicated three factor solution comprised of 12 items which was accounted for 64.58% of the common variance. Factor loadings of retained items for each factor and their explained variance are displayed in Table 2 and no items were found to cross-load on multiple factors.

Table 2. *Factor Structure and Item Loadings of RFOC-CEI*

Dimension	Items	Factor Loadings			% of Variance	Cronbach's Alpha (α)
		1	2	3		
Intentional Readiness	Item 14	**.92**	.07	-.04	52.21	.87
	Item 18	**.82**	-.02	-.06		
	Item 15	**.77**	-.06	.04		
	Item 17	**.68**	-.17	.03		
	Item 9	**.40**	.01	.21		
Emotional Readiness	Item 16	-.03	**-.58**	.13	7.59	.67
	Item 10	.01	**-.54**	.14		
	Item 4	-.02	**-.53**	.13		
Cognitive Readiness	Item 1	-.03	-.02	**.78**	4.78	.87
	Item 5	.06	-.05	**.76**		
	Item 3	.08	-.03	**.74**		
	Item 6	.24	.02	**.60**		

EFA provided promising evidence on the three factor structure of the scale as proposed in the literature which are labeled as intentional readiness, emotion readiness, and cognitive readiness for change (Bouckenooghe et al., 2009; Piderit, 2000) after the extraction of 6 items based on the primary item loadings and theory of readiness for change.

Intentional readiness for change factor: Although 6 items were intended to measure this dimension initially (i.e., item 2, item 9, item 14, item 15, item 17, item 18), 7 items loaded on this factor. Of the items loaded, 5 of them were the items written in order to measure participants' intentional readiness. Hence, the final version of the intentional readiness for change after EFA was formed with 5 items (i.e., item 9, item 14, item 15, item 17, item 18).

Emotional readiness for change factor: Emotional dimension of the scale was aimed to be gauged with 6 items primarily (i.e., item 1, item 4, item 7, item 10, item 13, item 16). EFA results revealed that 5 items loaded on this factor. After omitting the ones loaded with lower than .40 factor loading, emotional readiness dimension contained 3 reversed items (i.e., item 4, item 10, item 16).

Cognitive readiness for change factor: Like other dimensions, cognitive dimension of the scale initially designed to contain 6 items (i.e., item 3, item 5, item 6, item 8, item 11, item 12). Among the 6 items loaded on this dimension, 4 items were decided to be retained. Of these items, item 1 was originally developed to gauge emotional readiness for change. However, EFA results indicated that item 1 loaded on the cognitive dimension of the scale. Closely analyzing the content of the item, it was concluded that it reflects the cognitive dimension as well. This is parallel to approach of

Bouckenooghe et al. (2009) because in their validation procedure they merged cognitive and emotion dimension in order to test an alternative model fit. Their approach was motivated by the belief that intention is caused by the combined effect of cognitions and emotions. Hence, in this study item 1 was classified under the cognitive readiness for change dimension and the final version of cognitive readiness dimension of the scale comprised of 4 items (e.g., item 1, item 3, item 5, item 6).

Reliability analysis: Referring to the convincing results of EFA, the internal consistencies of the three dimensions of the scale were calculated in terms of Cronbach's alpha values as presented in Table 2. Intentional and cognitive readiness dimensions indicated satisfactory results (.87 for both) although emotional dimension of the scale revealed slightly lower reliability than the other two dimensions (.67) which is also within the acceptable limits in the exploratory research with the proposed critical value of .60 is taken into consideration (Hair et al., 2010). Item-total correlations for three subscales were positive and within the range of .44 and .79. Additionally, no item was concluded to increase the Cronbach's alpha value when it is excluded from its related factor.

Confirmatory Factor Analysis Results

In order to verify the factor structure emerged from EFA, confirmatory factor analysis was conducted with the data collected from the second sample. The assessment of the model fit was made by using Brown's (2006) recommendations; hence, the model chi-square, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) and Non-Normed Fit Index (NNFI) values were used to evaluate the fit for the three factor CFA model of Readiness for Change Scale. However, chi-square can be regarded as problematic in model fit assessment since it is a test which is sensitive to the sample size; hence, the test tends to give significant results with large sample sizes (Tabachnick & Fidell, 2007) as in the case of this study. Therefore, other fit indices of RMSEA, NNFI and CFI were used to compensate the limitations caused by chi-square test (Çapa, Çakıroğlu, & Sarıkaya, 2005). The CFA results for the three-factor basic model and revised two models of Readiness for Change Scale are displayed in Table 3.

Table 3. *CFA Results for the Basic and Revised Models of RFOC-CEI*

Models	χ^2	*df*	χ^2/df	RMSEA	CFI	NNFI
Basic Model	368.512	51	7.226	.102	.931	.910
Model 1 (1 covariate)	243.409	50	4,868	.080	.958	. 944
Model 2 (2 covariate)	206.403	49	4,212	.073	.966	.954

The initial CFA results indicated significant chi-square value ($\chi^2 = 368.512$, $df = 51$, $p = .00$) with CFI of .931, NNFI of .910, and RMSEA value of .102. Using the criterion RMSEA value of .10, the results indicated poorly fitting model (Browne & Cudeck, 1993). Therefore, the model was revised through examination of the modification indices (MI) with the highest values (Arbuckle, 1999). The largest MI value in the three-factor CFA model of the scale suggested the addition of a covariance between the errors of items 1 and 2 which were designed for cognitive readiness dimension. After connecting ε_1 and ε_2, CFA results revealed better fitting model with a significant chi-square with $\chi^2 = 243.409$ and $df = 50$. The fit indices of this new model also showed improvement (CFI = .958 and NNFI = .944) which indicated a mediocre fit with RMSEA value of .080 (Browne & Cudeck, 1993). However, using Brown's (2006) recommendations, NNFI was slightly below the critical value of .950 for good fitting model; therefore, the model needed further modification.

For the last model, the MI values were examined again and the largest value was identified between the errors of items 9 and 12. Since these two items were intended to measure the intentional readiness dimension and theoretically related, covariance was added between ε_9 and ε_{12}. The final CFA model indicated a better fit with significant chi-square value ($\chi^2 = 206.403$, $df = 49$). The final model also brought about better RMSEA value of .073 which indicated mediocre fit (Brown & Cudeck, 1993). Other fit indices of CFI and NNFI also indicated improvement (CFI = .966, NNFI = .954) and resulted in a good fitting model by exceeding the suggested critical value by Brown (2006). Moreover, the standardized estimates range from .64 to .86 and the items are all loaded on the related factors significantly. Consequently, the final CFA model revealed promising results on the three factor

structure of Readiness for Change Scale and added further evidence on the construct validity of the scale.

Reliability analysis: Following the convincing results of CFA on the three-factor structure of the scale, the reliability scores of the three sub-scales of Readiness for Change Scale were calculated again. The results indicated consistency with the previous reliability scores for the intentional and cognitive dimensions of the scale while showed improvement for the emotional dimension. The reliability scores calculated in term of Cronbach's alpha values were .90, .87 and .75 for intentional, cognitive, and emotional dimensions respectively and no item were concluded to improve reliability of its related dimension if it is deleted.

In order to provide further validity evidence, the known group validity was calculated by comparing teachers' scores on cognitive, emotional, and intentional readiness dimensions working at different school levels. Known group validity is based on the assumption that people belong to a certain group will score differently on a scale than the others (Spector, 1994). Parallel to this assumption, in this study it was hypothesized that significant difference would be reached for teachers working in primary and secondary level schools on cognitive, emotional, and intentional readiness for change dimensions. This hypothesis was tested with a Multivariate Analysis of Variance (MANOVA). Multivariate tests showed that school level is significant on the combination of the dependent variables (cognitive, emotional, & intentional readiness) (*Wilks' L*= .98, $F(3, 586) = 3.71$, $p = .01$). Univariate ANOVA results also revealed that cognitive and intentional readiness for change dimensions are significantly different for primary and secondary school teachers. This finding suggested that teachers working at primary level schools scored significantly higher in the cognitive and intentional readiness for change dimensions compared with their counterparts working at secondary schools (see, Table 4). Therefore, the scale can be regarded to have discrimination power between different school levels.

Table 4. *Comparison of Main Effect Differences for School Level: A Summary of Know Group Differences*

Dependent Variable	School Level	*M*	*SD*	*n*
Cognitive Readiness	Primary	4.23	.79	279
	Secondary	4.00	1.01	311
Emotional Readiness	Primary	4.19	.86	279
	Secondary	4.16	.98	311
Intentional Readiness	Primary	4.04	.78	279
	Secondary	3.86	.92	311

DISCUSSION and CONCLUSION

With the ever increasing number of change projects initiated by MONE in Turkish educational system, teachers and principals face with more and more challenges in adopting change interventions. Increase in workloads and the feeling of the uselessness of the situated skills and competencies unavoidably result in their resisting behaviors. Readiness for change emerges as the cognitive state reducing resisting behaviors and empowering enacting ones; hence, assessing readiness for change appropriately is vital to reach intended outcomes of the change interventions. Although extensive amount of research has been conducted on readiness for change and there are several different scales to measure readiness for change in the world, there is no instrument designed to assess teachers' and principals' readiness for change in Turkish educational organizations. Therefore, the purpose of this study was to develop and validate a readiness for change scale under intentional, emotional, and cognitive dimensions as suggested by the literature. Exploratory factor analysis and confirmatory factor analysis validated this three-factor structure of the scale through modifying the model with the inclusion of two covariates. The reliability scores of the scale provided additional evidence on the internal consistency of the scale dimensions. By providing additional evidence through known-group validity, we concluded that the 12-itemed Readiness for Change Scale is psychometrically adequate to measure individual level readiness for change among teachers and principals in Turkish public schools. Individuals are expected to exhibit readiness for change with their beliefs, attitudes and intentions (Armenakis et al., 1993). Any measure is expected to reveal these dimensions for full

assessment of readiness for change. In this study, the emergent structure posits structural equivalence with theory of Piderit (2000) and other scales developed in different languages such as the scale of Bouckenooghe et al. (2009).

The instrument; thus, can be an effective tool to assess readiness for change in educational setting and useful in detecting the lacking aspect of the school organizational members readiness for change in the domains of intention, cognition and emotion that have been discussed to affect supportive or resisting behaviors of the employees. Also, the scale will potentially provide guiding information for policy-makers and school principals to compensate the lacking parts of positive attitudes towards the proposed changes by developing appropriate strategies. As different scholars indicated, one of the core challenges in change interventions is mismanaging the human side of change process, which consequently leads to negative attitudes, feelings and intentions (e.g., Burke, 2008; Clegg & Walsh, 2004; Reichers et al., 1997). Developing informed intervention strategies for managing the human side of change in educational setting requires identification of the nature of attitudes toward change (Armenakis et al., 1993). The current scale, presents a sophisticated measure for identifying the nature of problems in order to elicit positive attitudes and promote readiness on the part of teachers in schools. Strategies promoting readiness contribute to eliminating resistance because as implied by Self (2007) improvement of readiness for change leads to decrease of resistance to change.

The scale will contribute to research on readiness to change as scholars may consider it as a tool to measure readiness to change. Individuals' readiness for change can be investigated in relation to other constructs in the school setting to provide practical information for teachers and principals and to broaden change literature in education.

Future studies are recommended to carry on the validation of the scale. Different samples selected from other school districts in Turkey should be used in the further validation studies in order to increase the generalizability of the results produced. Finally, readiness for change should be investigated in the school setting in relation to other process, content, context and individual variables which are suggested to affect readiness for change.

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