Development and validation of scale for Change Management Competencies (CMCs) for the school heads in Pakistan

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Abstract: The present study was carried out to develop and validate a measure of change management competencies for the school heads in Pakistan. It is based on theoretical constructs of ADKAR (Awareness, Desire, Knowledge, Ability, & Reinforcement). After pilot study, a scale comprising of five main competency factors and 22 sub-scales were finalized. Then factorial validity of the five main competency factors, comprising of 69 items and sub-competency factors was determined on a sample of 303 school heads from two districts of the Province of Punjab, Pakistan. The scale was subjected to Exploratory Factor Analysis (EFA) using Oblimin method. Finally 54 items were retained in five main competency factors of ADKAR, which collectively accounted for 70-80% of the total variance. Internal-consistency of scale was also calculated. This scale is the first one developed in Pakistan to identify on-ground challenges faced by the school heads.

Keyword: change management, Competencies, ADKAR, school heads

I. INTRODUCTION

The concept of change is as old as the birth of this universe which passed through number of changes, called ‘evolution’. Generally change means “something which is not permanent”. It can cover a broad spectrum. A change can be expected, sudden, non adaptive or it can be welcomed and planned. Change is a way of life today. Most of our lives today are a continuous, endless series of changes. The personality of a human is a dynamic combination of mindset and behavior, changing things are outcomes of ideas and subject matter. Organizations are systematic arrangements of human and non-human capital. A well-established organization of basic elements shapes worthwhile things and individuals or institutions. Nicklos (2004)

Many organizations use different methods to manage changes in a formalized manner. This approach refers to “Change Management” (CM). It provides a framework of managing the change within the people. Therefore, management of such changes certainly requires a range of managerial competencies both at the individual as well as organizational level. Sharma (2007). Kalra (2008 ) in his research was highlighted some key managerial competencies of school principals for the school effectiveness program. Moreover, Hoffman (1999) quoted this term “Competency” as outputs, or results of training – that is, competent performance. Other refers to the inputs, or underlying attributes, required of a person to achieve competent performance.

Besides skills, knowledge or awareness is also one of the crucial competency elements of the management process. As an example, the influence that knowledge has on attitudes which, in turn, has an influence on the actual practices that take place. Thus, knowledge of school’s heads about the change process was dependent on the understanding of the change, to capture change indicators in a school system. Chediel (2009), Prosci (2004), a leading provider in change management tools and benchmarking presented a number of change management models or theories, both at the individual as well as at the organizational level. Similarly Hiatt, presents the ADKAR (Awareness, Desire, Knowledge, Ability, Reinforcement) Model, to diagnose barriers and resistance to cope with change as an individual. Basically due to its individual nature of change measurement, this model has been selected to judge effectively the change management skills of a school Principal in different areas of management as an individual.
Hiatt (2006). The applications of ADKAR provided a strong rationale for this study, and it claimed the heads as change managers realized their objectives of different school reforms more quickly and completely.

**Change Management Practices in Pakistan**

Many researchers have referred to the head of a school as a ‘Unit of Change’ in a school management process. In this regard, Havelock (1995) highlighted the role of the head as a Change Agent by referring to him/her as solution giver, catalyst, process helper and resource linker. Anderson (2003) described the School’s Heads as a change agent playing several leadership and managerial roles. On the basis of multi-competency roles of a Head of school, the Head can be categorised as a “Mentor”. Pegg, (2007) in his book, titled “The Art of Mentoring” has also commented exclusively, that the art of mentoring plays a catalytic role in combating any type of change in a school improvement plan. Noreen (2003) also concluded in her research study that change managerial competencies of heads of schools are directly related to the school effectiveness.

In Pakistan, an empirical evidence of the management and leadership competencies required for secondary school heads for the first time was studied in the Institute of Education and Research (IER), University of the Punjab, Lahore. In this study, some peculiar competencies were identified which are given below: Well-conversant with day-to-day challenges of education, Human relation skills, Counseling techniques, Creative and innovative faculties, Observance religious values, Strategies for diffusing and adopting innovations as a change agent. Siddiqui, (1979) Khan (2010) conducted a study on self-perception of managerial role of school heads and it was concluded from the findings of the study that management competencies of the school heads are directly related to whole school improvement. Naemullah (2010) in his study identified six behavioral competencies of secondary school heads in Punjab: Communication, Coordination, Professional orientation and morale. It was concluded that overall the managerial behavioral competencies of heads are better than average. Chediel (2009) concluded in his study that a school head is required to equip a range of change management competencies in the context of whole school development framework (WSDF). He, further added that managerial competence of a school head is a vital contribution towards the acceleration of a developmental change.

Faisalabad is one of the significant industrial districts of Pakistan. In this district, the Strategic Policy Unit (SPU) was established by the Faisalabad District Government in 2002. The United Kingdom Department of International Development (DFID) agreed in 2004 to provide technical assistance to the district using SPU as the platform from where the change was driven. Under this project, a modular approach has been adopted to equip, the secondary school heads with change management competencies, with reference to the school development plans. SPU-MoE (2008). United Nation of Education and Scientific Organization’s (UNESCO) Earthquake Response Program (ERP) was launched to support the Government of Pakistan in its efforts to rebuild the education system better in the earthquake affected areas of Azad Jammu Kashmir (AJK). It aimed to reconceptualize the role of school heads as change agents through an appropriate change management competency scale and also learn approaches and strategies for leading and managing change in schools. UNESCO (2009). Another School Improvement Program SIP (2008) was launched in one of the districts of Punjab province, in partnership between Plan Pakistan and MIED (Mountain Institute of Educational Development) supported by Swedish Students Organization (SSO) in November 2005. One of the strong recommendations of this project was that the more focused support should be provided to the school heads, support in mentoring, school management and administration, and developing School Development Plans (SDP) which helped the school heads to accelerate the pace of the progress of their schools in a new changed environment MEID (2008). In Lahore,( one of largest districts of Punjab, Pakistan) since 1959, the Directorate of Staff Development DSD has been considered as a “Hub of Professional Training Programs” for school teachers and school heads of both governments Secondary and primary schools in whole Punjab province. In 2008 the visionary approach of DSD, Pakistan towards developing management competencies of secondary school heads under one of the induction training programs of newly recruited secondary school heads and deputy heads but so far, no efforts have been made so far for the measurement of managerial competencies of secondary school heads. The formulated CMC scale was also recommended for this directorate. DSD-PITE (2008). Alam (2008), one of the pioneer change management experts in Pakistan, developed a change management model for the heads of government primary schools. The guiding principles of change in this model were: Strategic,
Inclusiveness, Integrity, Ethical, Openness, Efficiency, Consensual, Participative, Responsiveness, Accountable and Transparent. In this endeavor, the researcher found this model, more relevant to the change management competency building (CMCB) training framework developed for the school heads at secondary level in the Punjab province.

Similar initiatives have been tried in other provinces, areas and districts of Pakistan. In Aga Khan University, the Institute of Educational Development, Karachi have been conducted a number of both qualitative and quantitative researches to assess the managerial competencies of school principals as change manager. In this regard, the empirical research evidences in the field of change management have been traced both in management and social sciences. The changing role of school heads had also been reported by the Institute of Educational Development (IED), Aga Khan University, Karachi, Pakistan. However, the ultimate goal of such studies to develop an effective instrument to measure the managerial competencies of school heads in a rapidly changing school environment.

The Punjab (one of the largest province of Pakistan), comprises of 36 districts. The Survey of Pakistan (2011), gave the distribution of all 36 districts along with their literacy rates, in three parts of Punjab: Northern, Central and Southern Punjab. In this province, a number of initiatives have been taken for the managerial trainings of both male and female heads of secondary and higher secondary schools. Different agencies like Directorate of Staff Development (DSD) & Punjab Institute of Teacher Education (PITE) Lahore, Pakistan, ITA Trust (Center for Education & Consciousness) in Punjab, Whole School Improvement Program (WSIP), SAHE (Society for Educational for the Advancement in Education) in Lahore are working under currently, under Punjab Government for the professional empowerment of heads of schools:

All these programs have been launched to meet “One Objective” that is, to enable the whole managerial hierarchy of these school to meet the challenges of change of school education in the 21st century. Zafar (2008) developed three significant training modules of change for the school principals, titled: Measuring Change, Promising Change and Managing Change. Under these modules intensive training programs have been organized to enhance the change management competencies of School heads. These challenges can be categorized as ‘problems’, ‘tensions’, or ‘dilemmas’. Therefore, this calls for more inquiry from researchers, to investigate the role of head as an “individual”, especially in secondary schools, that how the heads of these schools address the challenges they encounter. Shafa (2010).

The role of a head as a change agent has been viewed by Sewani (2010) in the framework of transformational leadership. She provided an empirical evidence of competency of school head to transform school culture and the environment. In many developing countries like Pakistan, the role of a school head is relatively insignificant. Since there is no single change management scale to measure the changing role a school head. Shafa (2010) briefly studied the nature and intensity of challenges a government secondary school principal is facing with reference to school improvement program. The title of this undertaking is “Challenges of School Improvement: Case Study”. These challenges range from the most basic needs of the internal school world to the hostile pressures of the external world and he further recommended to develop an effective measure in order to combat such challenges. Regarding the pivotal role of a school heads’ competencies, both the as a school head and field education officers always acts as a ‘the lever of change’ moving change from school to community and by giving this lever of change. In addition, there is growing recognition that changes in schools will not last until the voices and viewpoints of those directly involved in and responsible for the change are heard and valued. Tajik (2010). The study entitled as “Strategies for Making School Change and Community Development as Mutually Supportive Courses of Action” was also aimed to develop an appropriate change management competency scale especially for the school heads of Punjab, province. Since there was no single measure of change management, in order to recognize their true role as a ‘change agent.

The main aim of the study to develop a change management competencies scale based on ADKAR change model for the school heads. The applications of ADKAR change model provides as strong rationale to the scale development process. The ADKARs’ applications include: (i) A learning tool for teaching change management, when one has to analyze pros and cons of a change process, (ii) A tool for the change management teams to assess their willingness for developing new plans, (iii) A coaching tool for managers and administrators during a change
management process, (iv) An assessment tool for diagnosing changes underway and identify potential challenges as barriers points to change, (v) A planning tool for change. It allows the planners to resolve the issues and problems of change management in a sequential manner, (vi) This model can be used as a 'checklist' to evaluate the completeness and effectiveness of any plan. The goals or outcomes defined by ADKAR are sequential and cumulative. An individual must obtain each element in sequence in order for a change to be implemented and sustained. Hiatt (2006)

In the context of aforementioned purposes, the major objectives of the present study were:
To develop a change management competency scale based on ADKAR change model for the school heads in Pakistan.
To establish the psychometric properties, that is, reliability and validity indices will be determined.
To explore the sub-competency factors and their constructs within the context of Pakistani culture under the five main-competency factors of ADKAR.
To analyze the change management practices have been taken so far in Pakistan for the school heads in Pakistan.

II. Method

Study I: Development of the Change Management Competency Scale

The development of the scale was carried out in three phases. Study I intend to develop the Change Management Competency Scale for the school heads, and comprised of three phases. Phase I aimed to generate item pool with the help of literature review related to ADKAR change model, taking opinions of the school heads of government schools regarding the level of the difficulty of this novice scale. At the end of study I subject matter expert’s opinion was taken for selection of final items. The selected items were factor analyzed to determine the factorial structure of final scale. Details of each phase of study are as follows:

Phase I: Generation of item pool: The overall item pool was generated with the help of theoretical underpinnings on the theory of ADKAR given by Hiatt (2006), school heads’ opinions and experts’ opinion of different educational institutions of Pakistan. The construction of change management competency scale was preceded in the following manner:

Literature Review

The item pool for the scale was generated with the help of review of the existing literature. The identified categories through literature review related to five main-competency factors of ADKAR (Awareness, Desire, Knowledge, Ability & Reinforcement) were 22 : (1) Awareness of the need of change: vision of the current state: (i) Problem perception (ii) Credibility of the sender of awareness of change (iii) Circulation of the misinformation or rumor (iv) Contestability of the change: (2) Desire to support and participate in the change: (i) Nature of the change (ii) Organizational or environmental context for the change (iii) Each individual’s personal situation (iv) Intrinsic motivation: (3) Knowledge of how to change (i) Persons’ current knowledge (ii) Persons’ capability & capacity to gain knowledge (iii) Resources available for education and training (iv) Access to or existence of the required knowledge: (4) Ability to implement required skills & behavior: (i) Psychological blocks: (ii) Physical abilities (iii) Intellectual capability (iv) Time available to develop the needed skills (vi) The availability of resources to support skill development: (5) Reinforcement to sustain the change: (i) Degree to which the reinforcement is meaningful: (ii) Association of the reinforcement with accomplishment (iii) Absence of negative consequences (iv) Accountability system to reinforce the change (see for example: Hiatt, 2006; Prosci, 2012; Fullan, 2006; Naderi, 2010; Noreen, 2003; WSDF, 2008; Shafa, 2010; Tajik, 2008; Memo- n. 2008; UNESCO, 2009; SIP, 2009; SPU-MoE, 2008; SAHE, 2008; DSD-PITE, 2008: Naemullah, 2010). A total of 130 items included both closed and open ended items were generated on each sub-competency factor (Awareness=20, Desire=26, Knowledge=26, Ability=28 & Reinforcement=25)

A deductive strategy was adopted to extract items from different sources of literature mentioned above, these were transcribed in the form of statements and a questionnaire was prepared by combining all these statements. The items for overlapping and repetitive content were carefully checked and the redundant items were dropped: while
remaining items were improved by rephrasing. Frequencies were also assigned to see which items were greatly emphasized and were common in all these different sources before deleting any repeated item. For the final confirmation of short listed 67 items, the list was given to the judges.

**Phase II: Judges’ opinion:** The judges (13 men and 3 women) included senior faculty members (phd degree holders), seniors education district officers, school heads, Deans and directors of different public sector educational institutions of Pakistan. The short listed questionnaire of 67 items comprising of 22 sub-factors under five main-competency factors, was sent to the experts while in local institutions, the scale was thoroughly discussed with the experts. Finally on the basis of judges’ opinion, overlapping and redundant items were eliminated and repeated items were merged. As a consequence, the total items were reduced to 59 from 67 while number of total categories was remained same i.e 22 while the number of items in each category was also reclined. Thus the items for the five main and 22 sub-competency factors included: (1) Awareness (5 factors & 10 items); (2) Desire (4 factors & 12 items); (3) Knowledge (4 factors & 12 items); (4) Ability (5 factors & 13 items); (5) Reinforcement (4 factors & 12 items). The statements of all items involve different challenges, attitudes, behaviours handled by the school heads of government schools, in order to meet internal and external challenges of change.

**Phase III: Factor analysis on the sub-competency factors and their items of change management competency scale.**
In order to select the final items and get a factor situation of the scale, a factor analysis was carried out on independent sample.

**Sample:** The sample for performing factor analysis was selected keeping in view the criteria given by Field (2009). Sample size was 205 and it was also empirically tested by KMO (Kaiser-Meyer-Olkin) and Bartlett tests. KMO= .750 which is fairly enough to perform factor analysis. Field (2009). The sample consisted of 305 school heads (153:152) of government secondary and higher secondary schools of the two districts of Punjab province, one with low literacy rate (Okara: 50) and the other with high (Attock:61) literacy rate.

**Measure:** The initial form of the Change Management Competency Scale (CMCS) comprising 59 items was used to collect data. The scale consisted of five response categories reflecting the desirability of the competency to be present in school heads in order to manage change effectively. The five response categories ranged from strongly disagree (1), to strongly agree (5). The minimum possible score was 59 and maximum score could be 295. Demographic information was also obtained along with the questionnaire. The greater score on CMCS indicates school heads’ positive Change Management (CM) competency effectively and low score school heads’ negative rating of CM competency. Demographic information was also obtained along with the questionnaire. These individual and situational factors included: age of the school heads, professional academic qualification and managerial experience. The higher score on CMCS indicated school heads’ high enabling competency and low score reflected low enabling competency.

**Psychometric Properties of CMCS**
The purpose of this phase was to determine the factorial structure, internal consistency, reliability and validity of Change Management Competency Scale (CMCS). Exploratory Factor Analysis (EFA) with Oblimin Rotation and Scree plots were used to explore the factor structure of CMCS. Two trials of EFA was taken because in first trial of applying exploratory factor analysis was applied on all 59 items collectively and it was found that no factor reduction was taken place and no new factor formation was occurred, as all five dimensions are linear not parallel. Moreover, these five dimensions are theoretically unidimensional. Therefore, it was decided to conduct EFA on each dimension of ADKAR model separately. According to Field (2009) using the technique of factor analysis in different disciplines of Social Sciences might generate different ideas like psychologist might believe that factor represent dimension of the psyche, education researchers might believe they present the abilities and sociologists might believe they represent races or social classes According to Field (2009) it is not possible to retain all factors, logically only those factors will be retained with an Eigen value larger than 1, which was accounted for about 70-80% of the total variance, revealed an 16 sub-competency factors solution for CMCS.

Table 1
Eigen Values, and Variance explained by Five-main Competency Factors of Change Management Competency Scale (CMCS)

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<table>
<thead>
<tr>
<th>Components</th>
<th>Factors Loadings</th>
<th>Initial Eigen values</th>
<th>Extractions Sum of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>% of variance</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>1.431</td>
<td>14.308</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>1.108</td>
<td>11.082</td>
</tr>
<tr>
<td>Desire</td>
<td>1.</td>
<td>3.818</td>
<td>31.818</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>1.338</td>
<td>11.149</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>1.253</td>
<td>10.446</td>
</tr>
<tr>
<td>Knowledge</td>
<td>1.</td>
<td>3.968</td>
<td>33.064</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>1.317</td>
<td>10.973</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>1.190</td>
<td>9.919</td>
</tr>
<tr>
<td>Ability</td>
<td>1.</td>
<td>4.413</td>
<td>33.944</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>1.177</td>
<td>9.054</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>1.110</td>
<td>8.539</td>
</tr>
<tr>
<td></td>
<td>4.</td>
<td>.936</td>
<td>7.198</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>1.</td>
<td>4.077</td>
<td>33.976</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>1.238</td>
<td>10.320</td>
</tr>
</tbody>
</table>

A descriptive label was assigned to each factor of CMCS on the basis of commonality of themes in each factor. The five factors of CMCS namely Awareness, Desire, Knowledge, Ability and Reinforcement.

**Factor 1: Perceiving a Change in a Current State:** The first sub-competency factor comprised of 9 items deals with individual’s competency to perceive a change effectively according to the current situation in order to make improvement plans within available resources. The sample items include, “school heads’ own attitude in welcoming a change”, “effective us of managerial methods”, “lack of communication between top management and school committees”, “depending tactfully on available resources”.

**Factor 2: Managerial Style:** The second factor consisting of only 2 items describe the effect of a persons’ managerial style “.The sample item include effect of managerial policies of ex-principals on current school setup”, “feels hesitation in making new plans as a result of resistance”.

**Factor 3: Credibility of Information:** This factor held 3 items three items and reflected the role of top management in change management process and a person’s attitude towards giving credit to those information provided by top managers. The three items involved, “welcoming change with open-mind”, “role of top management in circulating information”, “regular support of top management”.

**Factor 4: Supporting desire to change through stakeholders:** This factor consisted of 6 items, all commonly reflected “the demanding role of stakeholders in promoting desire to change”. All 6 items mentioned, “assessing change as a threat”, “creating favourable climate for the staff members”, “professional competency of a school head”, “seeking senior managers’ help”, “motivational level of a school head”, “facing criticism from the staff members in a planning process”.

**Factor 5: Motivational Level:** This factor comprised of 3 items regarding motivational level of a school head. The 3 items reflected, “setting practical examples”, “physical potential of a head”, “listening others carefully”.

**Factor 6: Facing Challenges to Support Change:** This factor also comprised of three items depicting challenges to support change. The sample items are “facing pressure from school committees”, “social and economic background”, “deciding different motives of change”.

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Factor 7: Knowledge Base of an Individual: This factor consisted of 4 items. The sample items are, “needing skill of knowledge application”, “social and cultural barriers to change”, “needing well defined hierarchy of management”.

Factor 8: Facilitating Change: This factor included 3 items. The sample items are, “peer learning”, “location of school”, and “availability of resources”.

Factor 9: Equipping Change with Latest Technology: This factor comprised of 3 items. The sample items are, “internet connectivity”, “updating current policies”, “handling unplanned change”.

Factor 10: Combating Change Psychologically: This factor consisted of 4 items. The sample items are, “time management”, “financial source as one of driving forces of change”, “dealing employees’ mistakes with open-mind”, “reward and appreciation from top managers”.

Factor 11: Practicing Change Intellectually: This factor involved 4 items. The samples are “identifying the type of change”, “seeking opinions of educational experts”, “acting in a new changed environment”, “turning new ideas into active plans”.

Factor 12: Behavioral Change Initiatives: This factor comprised of 3 items. The sample items are “inborn qualities of a head”, “availability of teaching-learning aids”, “taking rounds of school”.

Factor 13: Coaching Change Actively: This factor holding 2 items. The sample items are “dual role a school head”, “communication skills”.

Factor 14: Maintaining Momentum of a change Process: This factor contained 3 items. The sample items are “celebrating successful implementation of a change”, “a sudden replacement of key persons”, “conflict to change among school staff”, “planning a change according to school environment”.

Factor 15: Accountability of Participants of Change Process: This factor holds 3 items. The sample items are “matching abilities of employees with desired skills”, “effective incentive and reward system”, “establishment of a formal accountability system”.

Factor 16: Reinforcement of a Change Process: This factor involved 3 items. The sample items are “enrichment of existing plans”, “initial control over the pace of development plan”, “sustaining momentum of an implemented plan”.

Alpha Reliability of CMCS

After final selection of 54 items under 16 sub-competency factors of 5 main-competency factors of the scale CMCS, the five values of both the range of alpha reliability and item total correlation are “Awareness” alpha reliability (.501 to .692) and item correlation (.620 to .820), “Desire” alpha reliability (.520 to .734) and item correlation (.545 to .818), “Knowledge” alpha reliability (.675 to .694) and item correlation (.639 to .791), “Ability”, alpha reliability (.503 to .723) and item correlation (.637 to .849), Reinforcement, alpha reliability (.595 to .747) and item correlation (.634o .844).

Internal Consistency: It was revealed that all the sub-competency factors of CMC scale are positively correlated within each outcome competency factor and between the sub-competency factors of each outcome competency factor. The details are given in the following table:

Table 2

Inter scale Correlations of CMCS

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
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<tbody>
<tr>
<td></td>
<td>1.0</td>
<td>.167*</td>
<td>.564*</td>
<td>.646*</td>
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<td>or 1</td>
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<tr>
<td>Factor 1</td>
<td>.564*</td>
<td>1.0</td>
<td>.234*</td>
<td>.119</td>
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<td>or 2</td>
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<td>Factor 2</td>
<td>.614*</td>
<td>.234*</td>
<td>1.0</td>
<td>.195*</td>
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<td>or 3</td>
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<tr>
<td>Factor 3</td>
<td>.380*</td>
<td>.119</td>
<td>.214*</td>
<td>1.0</td>
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<td>or 4</td>
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<tr>
<td>Factor 4</td>
<td>.540*</td>
<td>.167*</td>
<td>.447*</td>
<td>.457*</td>
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<td>or 5</td>
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<tr>
<td>Factor 5</td>
<td>.449*</td>
<td>.564*</td>
<td>.133*</td>
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<td>or 6</td>
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<td>Factor 6</td>
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<td>Factor 8</td>
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<tr>
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<td>.457*</td>
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<td>Factor 10</td>
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<td>.468*</td>
<td>.457*</td>
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<td>Factor 11</td>
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Desire

| Factor 4 | .646* | .119 | .457* | 1.0 | .430* | .359* | .540* | .394* | .554* | .412* | .617* | .506* | .437* | .481* | .501* | .423* |
| Factor 16 | .646* | .119 | .457* | 1.0 | .430* | .359* | .540* | .394* | .554* | .412* | .617* | .506* | .437* | .481* | .501* | .423* |
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change managers realized their objectives of different school reforms more quickly and completely. Moreover,
understandings, attitude, too
c	aking a planned and structured approach changes to help align the organization with the change.

According to Armstrong and Stephen (2008) Change management is the process of ensuring that an organization is
ready for change and takes action to ensure that change is accepted and implemented smoothly. It is the process of
taking a planned and structured approach changes to help align the organization with the change. While competencies as a set of interacting and interdependent factors. These include skills, knowledge, methods, understandings, attitude, tools and purposes. Kalra (2008).

originally, the applications of ADKAR provided a strong rationale for this CMC scale, and it claimed the heads as
change managers realized their objectives of different school reforms more quickly and completely. Moreover, the
elements of the ADKAR model fall into the natural order of how one person experience change. ADKAR provides a
solid foundation for change management activities, including readiness assessment, sponsorship, communications,
coaching, training, recognition, and resistance management. Therefore, CMCS is a helping tool, to identify gaps in
change management process and to provide effective coaching for employees.

### III. Discussion

Construct Validity: Construct validity of Change Management Competency Scale (CMCS) revealed that all main
5 competency-factors have positive relationship with their 16 sub-competency factors. The first main-competency
factor i.e Awareness r = reliability coefficients were determined, thereby demonstrating CMCS as an internally
consistent within each outcome competency factor and between the sub-competency factors of each outcome
competency factor.

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In the field of change management, this scale would be recognized as goal-oriented model and based on research based practical applications. The essence of this CMCS is that it can successfully measure the change management competencies of an “Individual” that lead or manage the change within an organization. Therefore, it represented the essential competencies of change for a single person.

In this study, the target group was the ‘heads of government Secondary Schools’, who has been considered as a ‘Gatekeeper of Change, a “Champion of Change” within the context of school development system. Therefore, this scale played a significant role in assessing a Change Management Competencies (CMC) of school heads and an effective tool in identifying Change management challenges faced by the head of schools in Pakistan. The items and sub-competency factors under five outcome competency factors (Awareness, Desire, Knowledge, Ability & Reinforcement) were generated while developing the item pool for the Change Management Competency Scale (CMCS) a systematic process of empirical generation and careful selection of items was employed. The elaborated process for this purpose was carried out because of the emphasis that has been placed by several researchers and theorists on careful writing and selection of the items for development of an instrument (Noreen,2003; Kalra, 2008; Shafa, 2010; Alam,2007). The findings of the study showed that “Change Management Competency Scale” is a unidimensional construct. The CMCS is found to be internally consistent and reliable scale. Thus findings are consistent with the findings of previous which identified the managing or competing a change as multi-competency factor construct (e.g. Naeemullah, 2010; Sewani, 2010; Tajik: 2010; Khan, 2010; Khaki, 2010; Memon, 2010; UNESCO, 2009; Naderi, 2010). The Exploratory Factor Analysis (EFA) revealed that after the final selection of 54 items and 16 sub-competency factors, the five outcome competency factors of CMCS. These five enabling competency factors are: (1) Awareness of the need of change: vision of the current state: problem perception, credibility of the sender of awareness of change, circulation of the misinformation or rumor, contestability of the change: (2) Desire to support and participate in the change process: nature and context for the change, individual’s personal situation, intrinsic motivation: (3) Knowledge of how to change: current knowledge, capability & capacity to gain knowledge, resources available for education and training, accessing required knowledge: (4) Ability to implement required skills & behavior: psychological blocks, physical abilities, intellectual capability, availability of time and resources to support skill development: (5) Reinforcement to sustain the change: degree to which the reinforcement is meaningful, associating reinforcement with accomplishment, absence of negative consequences, accountability system to reinforce the change.

The items for the CMC scale were generated with an intent to identify varied change management challenges faced by school heads in the form of problems, tensions and dilemmas, towards meeting the challenges of change in a sequential manner. Therefore, the analysis of compiled data on this scale would be crucial in identifying day to day key challenges in a school system. Such challenges can be counted as ‘barrier points’ or hurdles in the way of heads of schools for competing managerial changes. Hiatt (2006) referred these main competencies (Awareness, Desire, Knowledge, Ability, Reinforcement) as ‘as one cannot move forward towards ‘Desire’ without resolving issues of ‘Awareness’ and vice versa. While Prosci (2004) labeled these five major outcome competency factors ‘Levers of change’. Therefore, in this scale, reporting of both the internal and external challenges on all five outcome competency factors indicated that the heads of schools were lacking of a range of competencies, both as a leader and as a manager. The meta analysis regarding the significance of such challenges of change management faced by school heads have proved that same kind of challenges were empirically reported as well as qualitatively analyzed by a number of researchers, not only in Punjab Province but also in other Provinces of Pakistan. This fact was supported by Saifdar (2010), Shafa (2010), Khaki (2010), Khan (2010), Tajik (2010), Sewani (2010), Noreen (2003), Memon (2010), WSD (2008), SIP (2009), UNESCO (2009), Naderi (2010).

Another potential aspect of CMCS, it would facilitate the researchers to prepare a change management competency (CMC) profile of heads of Pakistan after analyzing their views against five enabling competency factors i.e Awareness, Desire, Knowledge, Ability, Reinforcement. This analysis was done with respect to demographic and situational factors of head. It was revealed that the CMC profile of prospective heads was comparatively better than older heads. According to Hiatt (2006,) the age and physical fitness of a head of school matters in competing change management challenges. This finding was further supported by Tajik (2010) that “A prospective head can be a better lever of change”. Further, it was also revealed the CMC profile of heads having more managerial experience and
professional qualification was better on overall CMC scale. That was the reason they were competent enough to identify the challenges of change management mentioned in CMC scale. Both Noreen (2003) and Sewani (2010) also concluded in their study that the management experience and professional qualification of heads play a crucial role in developing managerial competencies of heads for meeting day to day challenges of school effectiveness.

Moreover the application of CMC scale would facilitate the development CMC profiles of heads of the schools. The major findings included that these heads were familiar with their role. They were well-versed to identify the challenges of change management competencies. Conversely, they needed professional competency in meeting CMC challenges, they strongly in favour of developing of CMC model for training of the heads of the schools by identifying day to day challenges in associated with problems, tensions and dilemmas. This was one of the most significant empirical findings that though the heads were possessing competency to identify the CM challenges within a school system but lacked desired competencies to meet such challenges. Critical analysis of CMC profiles on five outcome competency factors, made one to realize how desperately a school head as a ‘single change manager’ was confronting with a wide range of challenges directly as well as indirectly. These challenges were the source of exploitation of both heads’ cognitive and physical capabilities as an individual. Since a head had to interact with different stakeholders of school at different levels, ranging from students to community members. He is held accountable to everyone in different positions: as a teacher, as a head, as a manager, as community mobilizer etc. Here, these multi-positioned roles of were clouded or distorted his or her impression and reputation as a leader of an institution. Khaki (2010) recommended that since ‘head of school’ was placed at the bottom place in managerial hierarchy of school system. It was observed that the policy issues regarding recruitment procedure of secondary school heads substantially needed change. In fact these heads were senior teachers before appointing as a ‘head of a school’. Analysis of data yielded that a set of managerial skills formed the hub of a managerial position in order to meet multi-faced challenging a school system. The five outcome competency factors played instrumental role in assessing change management competencies of a head. With the help of these competency tools, a head had to ‘build awareness’ of school improvement, ‘creating desire’ for participation, ‘develop knowledge based professionalism, ‘fostering ability’ for increased performance level and making continuous efforts for sustainability of a school plan. Keeping in view versatility and intensity of such challenges, it was recommended to train these heads under a formal “Change Management Competency Building” program under five ‘enablers of change” based on ADKAR model.

IV. Conclusion and Suggestions
The rationality of this CMC scale is based on following facts: first, there was no formal change model or training framework for school heads was available in Pakistan, second, this is research-based and goal-oriented model and secondly, it was successful model in presenting a framework for understanding change sequentially, at individual level, third, it was a assessment tool for diagnosing changes underway and identifying potential barrier points to change and lastly, it was a planning, learning coaching tool in the field of change management. Moreover, the construct validity of CMCS indicates the individual change management structure and represented the essentials competencies of change as a lead person.

The present practice of scale development for school heads aims at professional and managerial competency enhancement. CMC scale can be used as an ‘effective tool’ in Pakistan and elsewhere by the educational planners, administrators, policy makers for assessing the CM competencies of heads of educational institutions. Moreover, the continuous use of profiles in diversified administrative departments of secondary education followed by experimental research would further refine the CM competencies as well. It is concluded further that with the help of this scale, the heads of secondary schools may be empowered to develop CMC profiles of the teaching and administrative staff for effective evaluation mechanism. As the hierarchy of administrative machinery of elementary and secondary schools are governed under one management umbrella. Selected reports of CMC schools can be important source of exploitation of both heads’ cognitive and physical capabilities as an individual. Since a head had to interact with different stakeholders of school at different levels, ranging from students to community members. He is held accountable to everyone in different positions: as a teacher, as a head, as a manager, as community mobilizer etc. Here, these multi-positioned roles of were clouded or distorted his or her impression and reputation as a leader of an institution. Khaki (2010) recommended that since ‘head of school’ was placed at the bottom place in managerial hierarchy of school system. It was observed that the policy issues regarding recruitment procedure of secondary school heads substantially needed change. In fact these heads were senior teachers before appointing as a ‘head of a school’. Analysis of data yielded that a set of managerial skills formed the hub of a managerial position in order to meet multi-faced challenging a school system. The five outcome competency factors played instrumental role in assessing change management competencies of a head. With the help of these competency tools, a head had to ‘build awareness’ of school improvement, ‘creating desire’ for participation, ‘develop knowledge based professionalism, ‘fostering ability’ for increased performance level and making continuous efforts for sustainability of a school plan. Keeping in view versatility and intensity of such challenges, it was recommended to train these heads under a formal “Change Management Competency Building” program under five ‘enablers of change” based on ADKAR model.
In Pakistan, this CMC scale would provide a strong rationale for the experimental studies in the field of change management at school level. Moreover, the implications of this scale will also support the follow up studies, elsewhere in Pakistan.

**Limitations:**

Although the CMCS, on the basis of its psychometric characteristics, can be regarded as valid and reliable instrument to assess change management competencies, there are few limitations. The findings of the present research provide a favorable evidence of and construct validation of the CMCS, but it should not be considered conclusive and the study is needed to replicate. Since it is quite hard to achieve the construct validation in a single research as it is an ongoing and dynamic process of revising the definition and measurement of the construct. It can be further observed that the convergent validation was not determined, since no such scale has been developed so far in Pakistan. However, further studies can be conducted to determine discriminant validity of CMCS with related measures. Moreover, the scope of the study can be increased by testing further the reliability of this CMC scale through an experimental research.

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