

# ESTABLISHING AND REPORTING CONTENT VALIDITY EVIDENCE OF NEW TRAINING AND DEVELOPMENT CAPACITY BUILDING SCALE (TDCBS)

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*Training and development is a matter of paramount interest to contemporary organisations. The attention given to the subject has given way to a stream of analysis, diagnosis and prescription on the part of organizational scholars, practitioners and popular management writers. But, the closer analysis of the extant training and development literature revealed that focus of the research has been limited to the individual phases of the training cycle. A comprehensive instrument, focusing on assessment of all the phases of training cycle has been missing. This gap in the literature provided the impetus to develop the Training and Development Capacity Building Scale (TDCBS). When an instrument is constructed, psychometric testing is needed and the first step is to study content validity. Hence, it was decided to establish and report the content validity evidence for the newly developed scale.*

## 1. INTRODUCTION

In today's world of business, constellation of forces such as globalization, strong spirit of a free and open market economy, technological development, government regulations, state-of-the art physical infrastructure, intelligent consumer base, changing customer and investor demands, strong consumer advocacy groups combine in a manner that has sparked off intense rivalry among firms. A firm remains relevant and competitive when it is able to gain a competitive advantage over its rivals in a particular industry (Porter, 1998).

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People, possessing knowledge and skills, are undoubtedly the most valuable asset for any firm, wishing to compete and gain competitive advantage (Wright et al., 1994; Barney & Wright, 1998; Shee & Pathak, 2005). Irrespective of the size of the firm, training has traditionally been used as a tool to provide both current and new employees with knowledge and skills needed to perform day-to-day operational activities that eventually shapes the organizational performance, success and competitiveness. A comprehensive training and development program helps in transferring knowledge, skills and attitudes necessary to achieve organizational goals and to create competitive advantage (Peteraf, 1993). Although it goes without saying that training is an expensive proposition, organizations spend huge amount of time and money on training in order to help employees acquire job-related competencies (Cascio, 2000; Noe, 2006) and produce the desired cognitive, behavioral and affective learning outcomes crucial for their survival (Salas & Stagl, 2009).

Forbes Magazine's exclusive analysis of the training industry revealed that US spending on corporate training grew by 15% in 2013 (the highest growth rate in seven years) to over \$70 billion in the US and over \$130 billion worldwide (Bersin, 2014). There is burgeoning body of research suggesting that investments in training employees in problem solving, decision making, teamwork, and interpersonal relations can lead to positive organizational outcomes (Bartel, 1994; Cianni and Wnuck, 1997; Ettington 1997; Barak, Maymon & Harel, 1999). To suggest that there has been a surge of interest in training and development in recent years would be an understatement. The amount of attention given to the subject has given way to a veritable flood of analysis, diagnosis and prescription on the part of organizational scholars, practitioners and popular management writers (Goldstein, 1980; Black & Mendenhall, 1990; Tannenbaum, 1992; Kayode, 2001; Matlay, 2002; Rowden, 2002, 2004; Mertens, 2004; Tai, , 2006; Krishnavani and Sripirabaa, 2008; Kyriakadou and Marondas, 2010).

The significance of training and development programs to overall firm performance was highlighted by several scholars (Mohinder and Katou, 2007; Smith, et al., 2007). Employee training was considered as a key and strategic component for organizations because it had been qualitatively and quantitatively documented and empirically demonstrated that it had a positive impact on organizational performance and competitiveness (Bartel, 1994; Loundes, 1999; Lyau & Purcel, 1995; Hollis, 2002; Wright et al., 2003; Whitney, 2005) A brief review of the literature revealed that training and development emerged as a fertile research ground for conducting researches on: training need assessment (Sleezer, 1993; Zemke, 1994; Bee, F. & Bee, R., 1994;

Baranzini et al., 2001; Edmond & Noon, 2001; Goldstein & Ford, 2002; Torrington et al., 2005, Cekada, 2011); training design and implementation (Yusof & Aspinwall, 1999; Bidanda et al., 2005;), transfer of training (Baldwin & Ford, 1988; Facticeau et al., 1995; Ford & Weissbein, 1997; Goldstein & Ford, 2002, Cromwell & Kolb, 2004; Burke & Hutchins, 2007) and training effectiveness (Carroll et al, 1972; Burke & Day, 1986; Alliger & Janak, 1989). A more detailed analysis of the training and development literature revealed some serious gaps too. Therefore, the research focused only on different phases of the training and development process.

The success of training depends on the correct implementation of all the steps of the process known as the training cycle: previous analysis of training needs, development and implementation of an adequate training plan, training and evaluation (Pineda, 1995; Gómez-Mejía et al., 1996; Parellada & Vallhonestá, 1997; Baldwin & Ford, 1988). However, complete/ essential details on all the phases of the training and development process have been seldom provided in one place. This paper responds to the call for a more detailed research on the assessment of the entire training and development cycle. Bearing this in mind, the authors developed a Training and Development Capacity Building Scale (TDCBS).

## **2. CONTENT VALIDITY ESTIMATION FOR THE PROPOSED TRAINING AND DEVELOPMENT CAPACITY BUILDING SCALE (TDCBS)**

### **2.1. Methodology overview**

Researchers study complex constructs for which reliable and valid instruments are needed (Rubio, McGartland et al., 2003). A valid instrument is one which measures what it is supposed to measure (DeVellis, 2003). It helps researchers interpret variables and the relationship between variables in a more theoretical manner (Bagozzi, 1980). Hence, the development of a valid instrument is the most important goal of any instrument developer. Validity is a vital factor in selecting or applying an instrument. Traditionally, three types of validity may be established – content, criterion and construct validity. Since content validity is a pre-requisite for other validities, it should be given more importance during the instrument construction. Although there are many measurement scales with known psychometric properties, researchers may need to develop a new measuring device for a particular construct, since the existing measurement may not operationalise the construct in a manner that the researcher has conceptualized it. In instrument development, psychometric

testing is needed and the first step is to conduct content validity. Content validity is a critical step in the development of a new measurement scale and it represents a beginning mechanism for linking abstract concepts with observable and measurable indicators (Wynd, 2003). When an instrument is constructed, psychometric testing is needed and the first step is to study content validity. Lynn's (1986) two-step process (see Figure 1), was used to establish the content validity of the *training and development capacity building scale (TDCBS)*. The purpose of this study is to establish the content validity of an instrument to assess the capacity of the training and development practices using a rigorous development and judgment-quantification process.

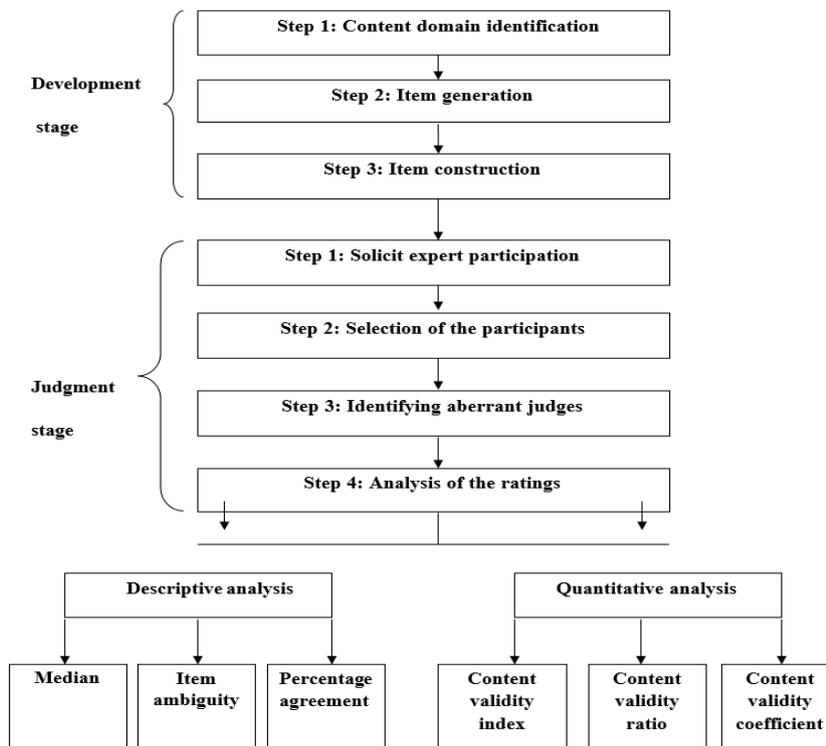


Figure 1. The flowchart of the content validity process

The development of the training and development capacity building scale (TDCBS) was the first phase of the content validity study. The scale was then assessed by a panel of judges using descriptive and quantitative analysis to establish content validity evidence. This formed the second phase of the content validity study.

## 2.2. Discussion

### Stage 1 – Instrument development

Training and development capacity building scale (TDCBS) was developed by following three sequential steps: A) domain identification, B) item generation, and C) item construction.

#### *Step 1: Domain identification*

Employee training and development is regarded as one of the most widespread human resources practices (Boselie et al, 2005). Research studies point out that training is vital for sustainable competitive advantage and survival in the 21<sup>st</sup> century as it is considered the process of providing employees with specific skills or helping them to correct deficiencies in their performance (Poh, 2001). Training is considered as the process of upgrading the knowledge, developing skills, bringing about attitude and behavioral changes, and improving the ability of the trainee to perform tasks effectively and efficiently in organizations ( Palo et al., 2003; Robert et al., 2004).

Organizations have begun to look at training as a robust competitive tool to achieve high levels of productivity, quality and effectiveness and align their business strategies with the external environment (Yadapadithaya, 2001). Hellriegel et al. (2001) observed that training increases productivity through better job performance, ensures more efficient use of human resources, helps retain the existing staff, reduces cost due to less labor turnover, goals and objectives are met more efficiently, there are fewer errors and accidents and less absenteeism.

The human capital theory suggested that training can substantially enhance employee's skills and competences, which in turn improve their productivity and performance (Youndt et al., 1996; Salas & Cannon, 2001; Dennis & Johnson, 2003). In addition, the significance of training and development practices has also been emphasized by both academics and practitioners (Bacon & Hoque 2005; Beaver & Hutchings, 2005; García, 2005).

Hence, it was concluded from the literature that training and development were the most crucial areas for strengthening an organization. Researchers across the world had defined training and development through different dimensions (Marlow & Patton, 1993; Loan-Clarke et al., 1999;

Antonacopoulou, 2001). After summing up all the definitions, this research viewed training as “*a planned structured activity which allows employees to systematically acquire competences and which fosters learning and application of the competences to accomplish the desired outcome.*”

A more detailed analysis of the literature revealed that need analysis is the initial phase of a cyclical process which provides data for training and educational strategy for the employees. On the basis of the identified training needs, the organization will set SMART objectives (Yadapadithaya, 2001).

The identified training objectives will become the basis for designing and developing training methods and materials, identifying trainers and techniques, facilitating the transfer of training and then developing solid criteria for evaluating the effectiveness of training programmes (Moore et al., 1974; Baldwin & Ford, 1988; Nowak, 1991; Gould et al., 2004; Brown, 2002; Saks & Belcourt, 2006). It can thus be concluded that training needs analysis, design and implementation of training programs, transfer of training and evaluation of training programme are crucial phases of training.

#### *Step 2: Item generation*

In order to generate items, two approaches were used. The first approach involved taking or adapting items from existing scales. The second approach involved a qualitative method. This study avoided the qualitative item generation for many reasons. It was observed from the literature that many scales published in journals such as the *Journal of Business Research* (Sin et al., 2005a), *Journal of Service Research* (Lings and Greenley, 2005) did not always include a qualitative item generation stage.

Although Churchill's (1979) research suggested a qualitative stage, recent scale development literature (e.g. Netemeyer et al., 2003) highlighted the importance of reviewing literature to generate items instead of incorporating qualitative stage. The researchers were also concerned regarding the administration of a large number of items to the expert panel.

Such a large number of items had the potential to adversely impact the quantity and quality of expert panel participation. Therefore, it was decided to generate items grounded in literature. The following table shows the sources from which items were generated /adapted or taken from.

Table 1. The items generated and their sources

	ITEMS	ITEMS TAKEN / ADAPTED FROM
Training needs analysis	Training needs are assessed at regular intervals	Nelson, 1996
	Data for training needs will be gathered based on: a) Performance appraisal forms b) On-site observation c) Interview d) Focus groups e) Questionnaire survey	Brown, 2002; Rossilah Jamil, 2006
	Tripartite level (organization, operation and individual) system is adopted to identify training needs.	Yadapadithaya, 2001
	Training programs are designed after considering employees' needs and requirements.	Rossilah Jamil, 2006
	Employees in the organization participate in determining the training they need.	Rossilah Jamil, 2006
	There is a process for assessing the organization's immediate training needs and individual's development needs.	Rossilah Jamil, 2006
Design and implementation of the training program	Training programme has an objective/goal	Pedersen, 1983
	Training manual is prepared before the start of the programme.	Yadapadithaya, 2001
	Training program is customized according to the needs of the participants.	Faerman et al., 1987
	Training program is scheduled according to the convenience of participants.	Faerman et al., 1987
	Multiple departments are involved in the design and implementation of the training program.	Appleyard and Brown, 2001
	Organization adopts innovation in training practices.	Cooney, 1997; ulcahy & James, 2000
Transfer of training	Training program uses internal or external experts depending on the requirements.	Riding & Mortimer, 2000
	Organization uses result-based indicators to measure the extent of learning transferred from training to the job.	Oslen, 1998
	Organization continuously monitors the implementation of learning from training programmes.	Bass & Vaughan, 1966
Training Evaluation	Team work is effectively used to implement the learning from training programs on the job.	Gumuseli & Ergin, 2002
	Evaluation of the training program focuses on: a) Usefulness of the training program b) Assessment of learning from the program c) Participants' performance on the job d) Assessment of training in terms of business results	Winfrey, 1999; Sugrue & Rivera, 2005; Van Buren & Erskine, 2002
	Effectiveness of training programme is evaluated by: a) Post-training surveys b) Conducting a follow-up needs assessment c) Monitoring metrics like scarps, errors, etc. d) Interviews	Winfrey, 1999; Yadapadithaya, 2011

### *Step 3: Item Construction*

Items were organized into constructs of the *Content rating review* form. All the items in the *Content rating review* were defined at the top of the form. These definitions provided a reference for the experts to rate the relevance and representativeness of the items. Content experts were asked to assess the degree to which an item fits with the respective construct. Items found to fit each of the construct were listed on the left and rating scale of 1 (No fit) to 4 (Excellent Fit) were listed on the right side.

In line with the recommendations of Siereci (1998) and Lyn (1986), a four-point scale was used in order to avoid neutral responses. Additional room was provided for the judges to write their suggestions on how the items could be further revised. At the bottom of the form, space was also provided for any additional comments. At the bottom of the *Content rating review* form, the judges were required to answer the following open-ended question: “*Are there any items that you would recommend as ‘having an excellent fit’ that have been omitted from this item pool?*” The second question was intended to meet the requirements of content validity that each of the domains were adequately sampled (Linn, 1980). The experts had to review 30 items.

### **Stage 2 - Expert judgment**

The underlying objective of this stage was to analyze the extent to which items created were representative of the target construct and the degree to which such items represented the facet of construct they were developed for (Beck and Gable, 2001). In this study, the items were assessed based on the relevance and representativeness. The higher the rating of relevance and representativeness, better the content validity rating.

A description of the study conducted to obtain expert judgment of the items developed for the training and development capacity building scale is presented below:

- Step 1: Solicit expert participation.
- Step 2: A description of the experts (content reviewers), who participated in the study.
- Step 3: Identifying aberrant judges.
- Step 4: The analysis of expert ratings.

*Step 1: Solicit expert participation*

Experts who expressed a desire to participate were sent a package containing: a) covering information letter, b) content rating review form (appendix III), and c) a self-addressed stamped envelope. Participants were given 20 days to complete the review form and send it back to the researchers. The covering information letter explained the rationale for undertaking training and developing the capacity building instrument, the target population that would be surveyed using the questionnaire, and a summary of the tasks involved in this segment of the study.

Participants were assured that their responses would be kept strictly confidential and that only the researcher and supervisor would have access to the data collected. Participation was voluntary and participants were free to withdraw from the study anytime. If the participants decided to withdraw, they were asked not to return the envelope. Envelopes that were not received seven business days after the stipulated 30 days were considered withdrawn. The content judges were requested to judge each item based on the degree of fit with the definition for the domain (Crocker & Algina, 1986).

After the completion of all the tasks, judges were requested to place the content rating review form in the pre-paid self-addressed envelope and return it to the researcher. Upon the receipt of the package, the content judges were given a period of 30 days to complete and return the form. All the returned forms were used in the analysis.

*Step 2: Selection of the participants*

In selecting the panel of experts, the criteria outlined by Yun and Ulrich (2002) were used as a reference point. Experts were selected on the basis of their job title, experience, knowledge and availability to complete the task within the specified time frame. Specific guidelines used to select and include experts were:

- a) experienced HR managers with over ten years of experience in training and development,
- b) experts in the thematic domain of training (i.e. an expert who teaches and /or publishes peer-reviewed papers in HRM and holds a PhD).

Researchers' personal connections were used to contact 30 HR managers by e-mail. A total of 20 professors of HR from various universities and colleges in Tamil Nadu were asked to participate as content validation experts. Finally,

50 invitations were sent out through e-mail. Ten experts agreed to participate and the packages were sent to them. Finally, nine packages were received. Out of the total nine participants, seven were HR practitioners and two were professors.

Table 2. The distribution of judges

Judge	Category	Area of expertise	Years of experience
1	Industry	HRM	15
2	Industry	HRM	15
3	Industry	HRM	10
4	Industry	HRM	15
5	Industry	HRM	11
6	Industry	HRM	12
7	Industry	HRM	23
8	Academia	HRM	15
9	Academia	HRM	20

As demonstrated by the table, the HR practitioners had a minimum of 10 years of experience in their field. Out of the nine experts participating, two were academics. They all had completed PhDs, with over 15 years of strong research background.

*Step 3: Identifying aberrant judges through inter-judge agreement*

Although the participants are experts in their chosen field, the possibility of some judges scoring the items in a biased manner is quite high and can lead to measurement error across the ratings. Inter-rater agreement was therefore employed to identify aberrant judges. Inter-rater agreements seek to examine the degree of inter-judge agreement and identify the aberrant raters against the rest of the judges. It was decided to remove aberrant judges from further analysis if they were found before conducting analysis. The formula used for calculating inter-rater agreement was suggested by Rogers (2010), as presented in Appendix I.

The *JDM*'s for the eight judges rating the Training and Development Capacity Building Scale ranged from 8 to 72. The details on each judges' ratings of all the items are listed in Appendix I. One judge, i.e. judge 9, was sufficiently different from other judges and therefore was considered to be an aberrant judge. The incompatibility of judge 9 was a systematic preference for

rating items at the extreme that he/she was assigning only 1 (*No Fit*) option to almost all the items except a few. Judge 9 only chose a fit option of two for only four (i.e. items 9, 10, 11, and 13), out of the 33 items he/she rated.

*Table 3. The summary statistics of judges' discrepancy from the median*

Judge	JDM	JDP
1	19	9.5
2	8	20.5
3	18	26.5
4	17	7
5	20	7.5
6	16	22.5
7	19	31.5
8	22	17.5
9	72	

Note: JDM = Judges' Discrepancy from the Median (Judges 1-9);  
JDP = Judges' Discrepancy from the Median (Judge 9 removed).

Therefore, the ratings of judge 9 were removed prior to completing any further analyses. Rogers (2010) noted that if one judge was removed, the median should be recalculated with the rest of the judges. In addition, the inter-judge agreement needed to be recalculated to determine if there was another aberrant judge. In line with these recommendations, the median and JDP were recalculated. After removing the aberrant judge 9, the total number of expert panel members for this research stood at eight. Following the removal of judge 9, the JDP was recalculated and ranged from 7 to 31.5.

#### *Step 4: Analysis of expert ratings*

This paper relied on descriptive and quantitative analyses to obtain expert judgment. Qualitative analysis was not done due to paucity of time and resources. Though researchers acknowledged the merits of qualitative analysis, quantitative and descriptive analyses were more time- and cost-efficient. Three types of descriptive analyses (i.e. item ambiguity, median, and percentage agreement) and three quantitative methods (i.e. content validity index, content validity ratio, content validity coefficient) were used to determine the quality of the items. Descriptive analysis was conducted first as it highlighted the properties of the items. First, the median item rating was worked out for each subscale. A higher median value indicates a more relevant item. Consistent with

the work of Hellsten (2008), an item with a median of 2.75 or above was fixed for the study.

Second, the *item ambiguity score* or the range of scores for each item was calculated (the formula is available in the appendix). In line with the work of Rogers (2010) a range of three or more between scores (or Rk of 4 or higher) was deemed ambiguous since this research used a rating scale of 1 to 4. Out of the 32 items, 8 were highly ambiguous. Rogers (2010) observed that highly ambiguous items should be avoided. Nonetheless, ambiguous items should not be easily removed until evidence from other method has been collected. Adequate attention should also be paid when the items are less ambiguous because low ambiguity need not necessarily mean an item is referenced to the domain. It could well be true that an item does not fit well with lower ratings thereby resulting in low item ambiguity score. Hence, before any item is deleted on the basis of this score, judges' rating of how well an item fits the category should also be assessed.

Hence, *percentage agreement* was used to examine the percentage of judges who agreed an item was a good fit to the category. The question "Is this item essential to the domain" was asked at the end of each item and the raters were asked to choose "Yes" or "No" (the formula is available in the appendix). A criterion of 80% was fixed for this study. Out of the 32 items, 31 items fulfilled the conditions of percentage agreement. Due to the low number of judges in this study, percentage agreement can easily fluctuate, and therefore any decisions regarding the deletion of items should not be reached on the basis of this calculation alone. Having worked out all the methods of descriptive analysis, quantitative analysis was carried out.

The *content validity index (CVI)* for each individual item (Lynn, 1986) is the percentage of judges that rated the item as 3 or 4 (based on the rating scale of 1 to 4 where 4 represents an excellent fit. The CVI is expressed in terms of percentage. Polit, Beck and Owen (2007) observed that the CVI value of 1.00 was acceptable for panels of three or four experts whereas 0.80 was considered acceptable for a panel of 5 members. The CVI for this study was fixed at 0.80 or 80%. Out of the 32 items, 24 items met the criteria laid down for the study.

In the following step, *Content Validity Ratio (CVR)* was examined. CVR values range from -1 to +1. Negative values indicate that less than half of the experts rated an item as essential. Positive values indicate that more than half of the experts rated an item as essential. The number was equal to zero when half of the judges rated the item as essential. (Lawshe, 1975). In order to calculate

the CVR, the question “Is the item essential to the domain?” was put into the item content rating review form for the judges who had to answer the question with “Yes” or “No”. The minimum CVR for each item to be considered as acceptable was .75 for a one-tailed test at the 95% confidence level if a minimum of 8 judges were used for the study (Lawshe, 1975).

The content validity coefficient  $VI_k$  (Aiken, 1985) was examined next. The closer the coefficient was to 1, the higher content validity an item had. To determine whether the calculated coefficient was significant, a comparison was made with a table of the Aiken’s (1985:134) Right-Tail Probabilities (p) for Selected Values of the Validity Coefficient (V). The right-tail probability value of validity coefficient  $VI_k$  (Aiken, 1985, p.134) was found from the table for eight experts, with four rating categories. These significant values were  $V = .75$ ,  $p = .40$  for eight raters. A total of 25 items met the standards of content validity under the Content Validity Co-efficient method. After all the calculations were done, the results for each item under all the methods were summarized. It was decided that the items meeting the criteria of less than 4 methods (66.67% agreement) should be removed. Finally, 27 items met the criteria of four methods fixed for this study and it was decided to delete six items that did not meet the set criteria.

### 3. FINDINGS

The results from the panel of experts yielded the following results. Almost all 32 items fulfilled the median criteria of 2.75 fixed for the study. With respect to item ambiguity, out of the total 32 items 8 were highly ambiguous. With respect of percentage agreement, 31 items fulfilled the conditions of the percentage agreement. A total of 23 items fulfilled the condition of CVI, 30 items fulfilled the conditions of CVR and 24 items met the conditions of content validity coefficient. After all the calculations were done, the results for each item under all the methods were then summarized (Appendix II).

It was decided that the items meeting the criteria of less than 4 methods (66.67% agreement) will be deleted from the study. In the final analysis, 26 items fulfilled the criteria of meeting at least four out of the six methods (66.67% agreement). Six items (3B, 3D, 8C, 9, 12, and 13) were marked up for deletion as they failed to meet the set criteria. Four experts suggested minor revisions regarding the clarity or wording of the items, and those revisions were incorporated into the instrument.

#### **4. LIMITATIONS OF THE STUDY**

A serious limitation is that the expert ratings are too subjective and hence pose a serious threat to validity. However, others may argue that ratings are given by experienced experts from the fields that are trained to be objective in their assessments. Another limitation is that it is very difficult to pinpoint a source of error in the ratings. Since it is not possible to generate feedback from experts in a consensus-building meeting, errors may always be a matter of speculation. Some of the potential errors could be due to individual factors like lack of motivation / fatigue, lack of clarity of the rating task, scoring errors complexity in administration procedures (Goodwin, 2001). Other possible sources include different philosophical orientations, strict/lenient tendencies and subjective bias. The key to overcoming these limitations is to make appropriate and representative selection of experts to ensure their careful assessment (Rubio at al, 2003).

#### **5. FUTURE DIRECTIONS AND CONCLUSIONS**

It would be interesting to conduct studies using qualitative analysis to obtain content validity evidence for the Training and Development Capacity Building Scale (TDCBS). Interview, focus group discussions can be held and open-ended feedback can be collected to establish content validity evidence. The content validity study that includes qualitative, quantitative and descriptive analyses can make the instrument of a good test with strong psychometric properties. It is to be noted that this research only provides one type of validity evidence (content validity) for this potential measure. Content validity evidence is unitary and multiple evidence should be collected for a test (Mesick, 1991). Hence, additional research is needed to gather other validity evidence such as construct validity and criterion-related validity evidence. In addition to validity evidence, reliability evidence such as test-retest reliability and internal consistency of the items should also be obtained. Validity evidence can be continuously collected along with examining reliability issues while performing pilot studies.

Content validity marks a crucial phase in the selection and administration of an instrument. The two-step method used in this study, consisting of a developmental stage and a judgment-quantification stage, called for a comprehensive literature review, item creation, and agreement from a specific number of experts about the items' and the entire instrument's validity.

Eight experts were asked to identify omitted areas and to suggest areas for improvement, and these revisions were made. The process used to determine content validity gave the TDCB Scale consistency, rigor, and structure. The outcome of this study supports the content validity of the Training and Development Capacity Building Scale (TDCBS) as a tool for assessing the capacity of the training and development cycle.

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**UTVRĐIVANJE I IZVJEŠTAVANJE O VALIDNOSTI NOVE MJERNE SKALE  
ZA KAPACITET OBUKE I RAZVOJA KADROVA**

**Sažetak**

Obuka i razvoj kadrova od ključnog su interesa za suvremene organizacije. Pažnja koja se obraća ovoj problematici je djelovala na značajan broj analiza, dijagnostičkih i preskriptivnih radova znanstvenika iz područja organizacije, ali i praktičara te autora iz područja popularnog menadžmenta. Međutim, pažljivija analiza postojeće literature iz područja obuke i razvoja kadrova pokazuje da su se dosadašnja istraživanja usmjeravala na individualne faze ciklusa obuke. Nedostajao je cjeloviti instrument, koji bi se usmjerio na procjenu svih faza ciklusa obuke. Ovaj nedostatak u literaturi je bio poticaj za razvoj mjerne skale kapaciteta obuke i razvoja. Kada se razvija novi mjerni instrument, potrebno je njegovo psihometrijsko testiranje, a prvi je korak analizirati validnost njegova sadržaja. Zbog toga je, u ovom radu, odlučeno utvrditi i izvijestiti o empirijskim dokazima validnosti za novu mjernu skalu.

## APPENDIX I

### A) Inter-judge agreement (Judges' Discrepancy from the Median - JDM).

The formula to represent the inter-judge agreement is :

$$JDM_j = \sum_{K=1}^K |x_{kj} - Md_k|,$$

where  $X_{kj}$  is judge's rating on subscale K and  $Md_k$  is the median of item k (Rogers, 2010).

### B) Descriptive method

#### a) *Median*

If **n is odd** then Median ( $M$ ) = value of  $((n + 1)/2)^{th}$  item term.

If **n is even** then Median ( $M$ ) = value of  
[[ $(n)/2$ ]<sup>th</sup> item term +  $((n)/2 + 1)^{th}$  item term]/2

#### b) *Item ambiguity* is calculated using the formula:

$$R_k = x_{kjh} - x_{kjl},$$

where  $x_{kjh}$  is the items highest rating and  $x_{kjl}$  is the lowest rating (Rogers, 2010).

#### c) *Percent agreement* = (No. of judges rated "YES"/ total no. of judges) X 100

*Content Validity Index: CVI* = (No of judges who rated 3 or 4 / Total no. of Judges).

The CVI is expressed in percentage.

*Content Validity Ratio: CVR<sub>i</sub>* =  $(n_e - N/2) / N/2$  (Lawshe, 1975).

$CVR_i$  is the value of CVR for the  $i^{th}$  item,  $n_e$  is the number of experts indicated that the item is essential and N is the number of experts on the panel. CVR values range from -1 to +1.

*Content validity coefficient.* The content validity coefficient (Aiken, 1985) is calculated using the formula:  $VI_k = S/[j(c-1)]$ , where S is the sum of  $S_j$ , ( $S_j = r_j - l_o$ );  $r_j$  is the rater j's rating, and  $l_o$  is the lowest validity category. The j in the  $VI_k$  formula is the total number of judges, and c is the number of rating categories.

APPENDIX II

SUMMARIZED RESULTS OF DESCRIPTIVE AND QUANTITATIVE ANALYSES

Items	Judge 1	Judge 2	Judge 3	Judge 4	Judge 5	Judge 6	Judge 7	Judge 8	Median	IA	PA	CVI	CVR	V <sub>ik</sub>	Decision to retain / delete the item
1	4	4	4	4	4	4	3	4	4	2	100%	100	1	0.95	Retain
2	4	4	4	4	4	4	4	4	4	1	100%	100	1	1	Retain
3A	4	4	4	4	4	3	4	4	4	2	100%	100	1	0.95	Retain
3B	4	2	1	4	4	2	2	4	3	4	87.5%	50	0.75	0.6	Delete
3C	4	2	2	4	4	3	4	4	4	3	87.5%	50	0.75	0.79	Retain
3D	4	3	1	4	4	3	3	4	4	4	75%	87.5	0.5	0.75	Delete
3E	4	2	2	4	4	3	3	4	4	3	87.5%	75	0.75	0.75	Retain
4	4	4	3	2	3	4	3	4	4	3	87.5%	87.5	0.75	0.75	Retain
5	4	4	4	3	4	4	3	4	4	2	87.5%	100	0.75	0.91	Retain
6	4	4	4	4	3	4	4	4	3.5	2	100%	100	1	0.95	Retain
7	4	3	3	3	4	4	1	4	4	4	100%	87.5	1	0.79	Retain
8A	4	4	4	4	4	4	2	4	4	3	100%	87.5	1	0.91	Retain
8B	4	4	4	4	4	4	2	4	4	3	100%	87.5	1	0.91	Retain
8C	4	2	1	4	4	1	2	4	4	4	87.5%	50	1	0.58	Delete
8D	4	3	1	4	4	3	2	4	3.5	4	100%	75	1	0.89	Retain
8E	4	3	3	4	4	4	2	4	3.5	3	100%	87.5	1	0.83	Retain
8F	4	4	3	4	4	3	2	4	4	3	100%	87.5	1	0.71	Retain
9	4	3	4	4	4	1	3	2	3.5	4	87.5%	75	1	0.71	Delete
10	4	3	3	2	4	2	3	4	3	3	100%	75	1	0.71	Retain
11	4	4	2	3	4	3	3	4	3.5	3	87.5%	87.5	1	0.79	Retain
12	2	3	4	3	4	1	3	4	3	4	100%	75	1	0.66	Delete
13	3	3	3	3	4	3	2	4	3	3	75%	87.5	0.5	0.71	Delete
14	3	3	3	3	4	3	2	4	3	3	87.5%	87.5	0.75	0.71	Retain
15	3	4	4	3	4	3	3	4	3.5	2	100%	100	1	0.83	Retain

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16A	3	4	4	3	4	4	4	4	3.5	2	100%	100	1	0.91	Retain
16B	3	4	4	3	4	4	4	2	4	3	100%	87.5	1	0.83	Retain
16C	3	4	4	3	4	4	4	2	4	3	87.5%	87.5	0.75	0.83	Retain
16D	3	3	4	3	4	4	4	2	4	3	100%	87.5	1	0.79	Retain
17A	4	4	4	4	4	3	4	3	4	2	100%	100	0.75	0.91	Retain
17B	4	3	4	4	4	3	2	3	4	3.5	87.5%	87.5	1	0.99	Retain
17C	4	3	3	4	4	4	2	3	3.5	3	87.5%	87.5	1	0.79	Retain
17D	4	4	1	4	4	3	4	3	3	4	87.5%	87.5	1	0.79	Retain

APPENDIX III

TRAINING AND DEVELOPMENT CAPACITY BUILDING SCALE QUESTIONNAIRE

Dear Sir /Madam,

we are conducting a survey on “Capacity building of training and development”. The survey focuses on identifying important areas for improving and strengthening training and development process. This study will hugely benefit the organizations that are keenly looking to identify, improve and strengthen vital areas of performance enhancement.

Instructions

1. Item rating – You need to rate the item on the scale of 1 to 4. ( 1 - No fit, 2 - May fit, 3 - Good Fit, 4 - Excellent Fit).
2. Suggested Ratings – You can re-word/correct the item / if you believe it needs to be changed.
3. Is the item well written? – Circle *Yes* or *No*.
4. Is the item essential to the domain /category? - Circle *Yes* or *No*.

Item#	Item	Item rating				Suggested item revisions	Is the item well explained?	Is the item essential to the domain?
		1	2	3	4			
1	Training needs are assessed at regular intervals.	1	2	3	4		Yes / No	Yes / No
2	Training programs are designed after considering the employees' needs and requirements of.	1	2	3	4		Yes / No	Yes / No
3	Training programs are identified based on:							
	a) Performance appraisal data	1	2	3	4		Yes / No	Yes / No
	b) Questionnaire survey	1	2	3	4		Yes / No	Yes / No
	c) Individual interviews	1	2	3	4		Yes / No	Yes / No
	d) Observation	1	2	3	4		Yes / No	Yes / No
e) Focus groups	1	2	3	4		Yes / No	Yes / No	
4	Employees in the organization participate in determining the type of training they need.	1	2	3	4		Yes / No	Yes / No
5	There is a process for assessing the organizations' immediate training needs and individual's development needs.	1	2	3	4		Yes / No	Yes / No
6	Training needs are identified at tripartite levels (organization, operation and individual)	1	2	3	4		Yes / No	Yes / No
7	Training program has a measurable goal.	1	2	3	4		Yes / No	Yes / No

8	Employees are trained using various methods such as:							
	a) On-the-job training	1	2	3	4		Yes / No	Yes / No
	b) Job rotation	1	2	3	4		Yes / No	Yes / No
	c) Role-playing	1	2	3	4		Yes / No	Yes / No
	d) Team training	1	2	3	4		Yes / No	Yes / No
	e) Classroom learning and self-paced learning	1	2	3	4		Yes / No	Yes / No
	f) Lectures and seminars	1	2	3	4		Yes / No	Yes / No
9	Training manual is prepared before the start of the program.	1	2	3	4		Yes / No	Yes / No
10	Training programs are customized according to the participants' needs .	1	2	3	4		Yes / No	Yes / No
11	Multiple departments / units / divisions are involved in the design and implementation of the training program.	1	2	3	4		Yes / No	Yes / No
12	Organization adopts innovation in training practices	1	2	3	4		Yes / No	Yes / No
13	Training programs are designed continuously on the basis of expert knowledge and best practice.	1	2	3	4		Yes / No	Yes / No
14	Organization uses result-based indicators to measure the extent of learning transferred from training to the job.	1	2	3	4		Yes / No	Yes / No
15	Organization uses continuous monitoring of implementation of learning from training programs.	1	2	3	4		Yes / No	Yes / No
16	Evaluation of training program is done to assess:							
	a) Usefulness of the training program	1	2	3	4		Yes / No	Yes / No
	b) Learning from the program	1	2	3	4		Yes / No	Yes / No
	c) Participants' performance on the job	1	2	3	4		Yes / No	Yes / No
	d) Business results	1	2	3	4		Yes / No	Yes / No
17	Effectiveness of the training program is evaluated by:							
	a) Doing post-training surveys	1	2	3	4		Yes / No	Yes / No
	b) Conducting follow-up needs assessment	1	2	3	4		Yes / No	Yes / No
	c) Monitoring metrics like scarp, errors, etc.	1	2	3	4		Yes / No	Yes / No
	d) Interviews	1	2	3	4		Yes / No	Yes / No

❖ If you were to group together the items you rated with 3 or 4, would these items fully represent the category of training and development? **Yes** **No**

1. If **NO**, please indicate what items should be added:
2. Additional comment