

CHANGING MINDSETS: MEASURING MANAGERS' LEARNING VERSATILITY IN MEXICAN ENTREPRENEURS

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Abstract

When firm's environment becomes highly dynamic, the administrative heritage i. e., norms, values and practices that a firm poses, might turn into a liability if it does not fit with the new external conditions (Bartlett and Beamish, 2011; Dixon & Day 2007; Hernandez Mogollon, Cepeda Carreón, Cegarra Navarro, Leal Millán, 2010). The organizational and individual change required to adapt to a new context is an important task that managers and entrepreneurs encounter when facing highly dynamic environmental conditions. However, changing the norms, values and management practices learned over time is not an easy task. We argue that in a dynamic market environment, managers and entrepreneurs that are versatile learners will have more possibilities to change its mindset and as a result fit the new conditions in their environment. The objective of this paper is to develop and test an instrument to diagnose the learning flexibility of Mexican entrepreneurs as an initial step towards organizational change. After a revision of the literature, we selected, translated and adapted the Learning Tactics Inventory (LTI) instrument as a scale to measure versatile learning in Mexico. Our main results suggest that cultural and cognitive aspects need to be considered for the use of this instrument in non-speaking countries.

Key words. Entrepreneurship, Learning, Mindset



CHANGING MINDSETS: MEASURING MANAGERS' LEARNING VERSATILITY IN MEXICAN ENTREPRENEURS

Firms accumulate knowledge and experience over time starting from its initial entrepreneurial form to its mature stage. This accumulation is reflected on firm's norms, values and management practices that define and shape companies' decisions (Dixon & Day, 2007). While the accumulation of knowledge and experiences is clearly an advantage for firms, as learning curves facilitates operations and decision making, it can also be a disadvantage. When firm's environment becomes highly dynamic, the administrative heritage i. e., norms, values and practices that a firm poses, might turn into a liability if it does not fit with the new external conditions (Bartlett and Beamish, 2011; Dixon & Day 2007; Hernandez Mogollon, Cepeda Carreón, Cegarra Navarro, Leal Millán, 2010).

As a result, the organizational and individual change required to adapt to a new context is an important task that managers and entrepreneurs encounter when facing highly dynamic environmental conditions. However, changing the norms, values and management practices learned over time is not an easy task. How can organizations change the established norms, values and practices rooted in employees? How can a manager change its own mindset to the new circumstances? How can an entrepreneur adapt to an increasingly changing environment? These are the questions that we address in this paper. We argue that in a dynamic market environment, managers and entrepreneurs that are versatile learners will have more possibilities to change its mindset.

Accordingly, the objective of this paper would be to develop an instrument to diagnose the learning flexibility of Mexican entrepreneurs as an initial step towards organizational change. After a revision of the literature, we selected, translated and adapted the Learning Tactics Inventory (LTI) instrument as an adequate scale to measure versatile learning. The paper is structured as follows in the next section we present a revision of the literature in organizational change and entrepreneurship. Later, we explain the methodology used to translate and adapt the LTI instrument along with a description of the pre-test process. Later on, we document both, the preliminary and the final instrument along with the various tests performed in order to further test its reliability (convergent and discriminant), model fit, among others. Then we offer the results of the present research and finally we provide our conclusions along with some general reflections and future research lines.

Literature Review

Mindset at organizational and individual level

Manager's mental models both facilitate and limit the attention and interpretation of information about changes in the firm's context (Barr, Stimpert & Huff, 1992). A mental model is defined as "a representation or simplification of an individual view of the world, including their knowledge beliefs and experiences" (Cope, 2003, p. 433). As a result, a manager's mental model or mindset is crucial to promote the translation of information from the environment into organizational change. For example, Barr et al., (1992) argues that organizational renewal requires managers to change their mental models to promote the



changes necessary to adapt to the changes in the environment. They further argue that the inability or delay to do this is associated with organizational decline.

It is important to clarify here the similarities and distinction between the individual and organizational levels of mindset. For example, in the entrepreneurial literature, at the individual/cognitive level, mindset is used to recognize those who act more entrepreneurially, while at the organizational level, the equivalence concept is firm culture (Shepherd, 2009). Also, in the learning literature the terminology used in explaining how individuals learn is often used also to explain how organizations learn (Cope, 2003). As a result, some of the research presented in this section will consider the individual level analysis i.e. mindset while others will consider the organizational level i.e. culture. However, the distinction between individual and organizational level will always be specified.

There have been several attempts to deal with changing the organizational culture and the individual mindset. Akgun & Byrne (2006) argue that in order to change organizational beliefs, norms, values, procedures and routines a firm has to “unlearn” its organizational memory. Also, Schimmel & Muntslag (2009) argue that those organizational practices that are no longer effective and represent a barrier to change should be eliminated. Specifically, Akgun & Byrne (2006) constructed an instrument of 46 items with 8 variables oriented to measure team unlearning. For six of the construct dimension they selected a scale of different authors. As a result, the final instrument was the result of combination/adaptation of 6 different instruments. The authors reported results from exploratory and confirmatory factor analysis with varimax rotation as well as individual correlation analysis for each item.

Also, Hernández Mogollón et al., (2010) measure the individual’s mental models for decision making in changing environments. They construct a 17-item questionnaire with 3 variables. The first and third variable open-mindedness and innovation respectively, were adapted from instruments used in different research studies. The second variable, cultural barriers, was constructed from the literature review and an expert panel. They reported individual item reliability with all items above .707. Also, they present at the construct level Cronbach alpha superior of .70.

The Link Between Mindset and Learning

The process of learning is important for managers because allows the acquisition of new knowledge (Dixon & Day, 2007). Learning is also considered an important antecedent of firm innovation and performance (Calentone, Cavusgil & Zaho, 2002). However there are organizational barriers that impede individuals from learning (Hoag, Ritschard & Cooper et al., 2002; Mone, Mckinley & Barker, 1998; Schimmel & Muntslag, 2009). For example, in their study Hoag et al., (2002) found that some managers strongly believe that there were no reasons to change, that current practices were working well and the philosophy of “do not fix it if is not broken” applied perfectly. This particular managerial mindset can be a major liability for a firm to change since might not be able interpret the external information. Specifically, Hoag et al., reported 4 barriers for managers: 1) the idea of multiple unrelated objectives, 2) the inability to change internal systems, 3) the perception of incapacity to deal with external constrains and 4) the prioritization of the status quo.



Accordingly, the barriers to change need to be overcome if managers want to reshape and adapt to new circumstances. Cope (2003) highlights the importance on Higher Level Learning (HLL) to have the capacity to challenge and redefine the individual's mental model. HLL constitutes "the development of complex rules and associations regarding new actions...it has the ability to shape the behavior and actions of individuals when they are confronted with new experiences, situations and context" (Cope, 2003, p. 433). However, Cope also recognizes that there are still unresolved issues around the process of learning leading to HLL. This is where the learning flexibility might have a pivotal role on generating managerial mindset change.

In the learning literature it is possible to see that there is a consensus among the relationship between learning and reflection and how the latter is influenced by personal processes and characteristics of the individuals (their mindsets). And, there appears to be also certain consensus among how the learning versatility is affected by cognitive processes that can help the individuals to be more resilient about their environment. In this line there are several works applied to the context of management and managerial education (Dalton, Swigert, VanVelsor, Bunker & Wachholz, 1999; Peltier, Hay and Drago, 2005; Braun, 2004; Brown and Posner, 2001; Leung and Kember, 2003) and in general it is possible to find several constructs that have an effect on the learning capabilities of individuals about their contexts.

The learning versatility ergo, the individual's ability to challenge its mindset and adapt to the environment can be measured through the Learning Tactics Inventory (LTI). This instrument was developed by Dalton et al. (1999) who mention that individuals learn from experience and that the three key main factors that determine their ability to do it are the opportunity, the willingness to take the opportunity and the learning versatility. And, according to the authors, the strategies that define the learning versatility are determined by their education, upbringing, and life history. Being the learning versatility explained through the reflection strategies that individuals possess, such as: action, thinking, feeling and accessing to others. The person that is action-oriented believes that the best way to learn is by direct experience. Thinking-oriented individuals learn by reflecting on the past and envisioning future outcomes. Individuals that recognize their uncertainty and employs tactics to manage psychological discomfort are feeling-oriented. And, the people that seek advice, example, support or instruction have a tactic of accessing others.

The Entrepreneurial Mindset

In the entrepreneurial literature the concept of entrepreneurial mindset refers to "the ability to rapidly sense, act and mobilize, even in uncertain conditions" (Ireland, Hitt, Sirmon, 2003 p.967). This concept has been studied from different perspectives, for example, (Haynie, Shepherd, Mosakowski, & Earley, 2010) offer a theoretical framework that emphasizes the meta- cognitive processes in an entrepreneurial mindset. By meta-cognitive they refer to the degree of "control that the individual has over their own cognitions as a function of a differing ability (between individuals or within an individual over time or from training) to consider alternative cognitive strategies in light of a changing environment" (Haynie et al., 2010, p. 219). They highlight that constrains in the meta-



cognitive process creates the inability of individuals to change and adapt to particular environments.

At the organizational level, corporate entrepreneurship centers on re-energizing and improving how firms acquire new skills and capabilities (Hornsby, Kuratku & Zahra, 2002). In their empirical study, Hornsby et al., (2002) identified five internal organizational factors that influence middle managers to promote the level of organizational entrepreneurship. This five factors i.e. management support, work discretion/autonomy, rewards/reinforcement, time availability, and organizational boundaries, are guidelines to understand the motivational factors that influence a higher degree of entrepreneurial activity in organizations.

Interestingly, Shepherd (2009) makes a connection of entrepreneurial mindset at both the individual and the organizational level. In his work, he distinguishes between those individuals and organizations that act more entrepreneurially. In the former the literature focuses on the mindset while in the latter it does on the culture. He proposes the interconnection of this using the entrepreneurial spiral concept, which refers to an “enduring, deviation-amplifying relationship between the entrepreneurialness of the manager’s mindset and the organizational culture” (Shepherd, 2009, p. 60).

Methodology

The objective with the instrument is to map the entrepreneurs’ traits and disposition to appropriate new knowledge in order to adapt to a changing environment. This is possible through the measurement of their learning versatility. According to the Center for Creative Leadership the opportunity to learn, the willingness to take the opportunity and the learning versatility are the three key factors that influence the ability to learn from experience, being the last two factors endogenous to the individual. Because of the nature of our study and sample we focused on the last factor – the learning versatility - . The instrument developed to fulfill this objective was a translation and an adaptation from the Learning Tactics Inventory (LTI). The learning tactics inventory was developed by the Center for Creative Leadership as a tool used to identify learning behaviors and through these measuring the learning flexibility of the individuals. This instrument has been used in different research studies. For example, Posner (2009) have reported a Cronbach Alpha of .70, which is consistent with the parameters used in the field.

Adaptation, Adopting and Translation

The adaptation, adopting and translation process was done in three steps: first, there was an individual translation for the items done by each of the members of the team; secondly, a comparison was done among the members in order to determine if it was done correctly; and, finally a group session was carried away with three more researchers in order to assess the translation and the correct reading level for the profile of our target sample. During the third step, the revision was done in two phases: during the first one, the objective of the items was not revealed and after asking them their about the translation and what they understood, the objective was unveiled in order to assess if there was congruence between what we intended to ask and what was understood.



Team. When choosing the team, some metrics established by Harkness, Edwards, Braun & Johnson (2010) were considered such as the skills of the members, the language command, as well as ensuring an environment of cooperation and trust. The members of the team involved in the translation and adaptation process in the group phase have knowledge in managerial issues, they are native speakers of the target language (Mexican Spanish) and as well they are familiar with the use of academic and employment terminology in English and Spanish. Also, they know each other for over a year and have the same relevance among the team, ensuring this way that there was an even influence of the members during the process.

Translation. The source language of the LTI is the English and the target for this work was the Mexican Spanish. And the translation done for the first stage of the project was a close translation which according to Harkness et al. (2010) is about trying to remain close to the semantic import, the vocabulary, and the structure of the source text meeting the target language requirements regarding vocabulary, idiom, and sentence structure. This was done in order to ensure that the measurements are comparable with those of the original instrument. As described earlier, the procedure was done through splitting up the source text and an iterative procedure in the group discussion. The changes can be seen among the appendixes A and B.

Adaptation and adopting. Adopting an instrument means using it in its original form for a new target group while adaptation refers to changing it in order to be better understood by the respondents. Harkness et al. (2010) mention there is important to know whether questions validly and reliable measure what they are intended to measure. In order to fulfill this, the first part of the group session was performed without telling the member of the team the objective of the instrument or showing them the source text. We proceed to ask to the rest of the member what they understood and finally after disclaiming the original intention of the instrument we assessed jointly that through the translation the respondents could understand questions as they were intended to be understood (Harkness et al., 2010). In this phase, alterations to the translation were done considering the interpretation and adaption to the context.

Several “best practices” took place in the development of the instrument, such as: splitting up the text, close translation, team group and iteration. The first was in order to avoid certain translation biases and errors, the second one to ensure comparability of the measurements with the original instrument, the third and the fourth ones to overcome translation and adaption issues. Still, we remain with the limitation of not having the instrument pre-tested with subjects closer to our sample. We expect this to be done soon in order to ensure that the instrument is understood as intended.

The Instrument

The instrument is a questionnaire constructed by thirty-two items referring to the four main learning behaviors as latent variables (action-oriented learning, thinking-oriented learning, feeling-oriented learning, or by accessing to others) and by demographics that would help us control for individual and organizational characteristics. We maintained the original design and measurement scale –five point likert scales – because the instrument is used as-is conventionally in research projects. The recommendation of Harkness et al. (2010) about questioning the “pedigree of use” was taken. And, the amount of items per construct was



assessed according to the rule of thumb given by these authors, were in psychological instruments that are related to opinion and attitudinal research, often one or two questions can be enough per construct. In this instrument, we keep the amount of eight items per construct.

Type of questions. Our instrument is a structured questionnaire with close questions in order to maintain the standardization of the measure across the respondents. Also, as mentioned before, it is a well-developed and tested instrument, so there was no need to use open questions. The control variables and demographics added are either related to the individual or the organization and will be helpful in order to complement our research. The demographic questions were also places as closed-questions in order to simplify coding. The individual questions pertain to age, education, gender, and position in the enterprise. They were done in the following manner: age question responses were in categories in order to minimize refusal; education was disaggregated in six categories which included the option of no education completed in order to avoid the possibility that respondents could understand that more educations is better and might refuse to answer or inflate their response; the gender question was limited to female or male; and the position in the enterprise was limited to the three options in which we were interested.

Rating scales. A five point likert scale is employed for all the items. It is composed of a frequency stimulus that ranges from “I have almost never used this approach” to “I have almost always used this approach”. It is a bipolar scale where the sense of the both extremes is opposite. In the translation of the anchors the strength was accounted for by using adjectives like almost never or almost always, because Peterson (2000) mentions that the stronger the anchors the least likely respondents are to use the extreme categories. The categories are also balanced using a neutral response (sometimes) in the middle of the rating scale.

Instrument design. The questions maintain the original position from the instrument. Items are ordered sequentially related to each latent variable: action-oriented learning, thinking-oriented learning, feeling-oriented, and accessing to others. The position effect is diminished this way because as Peterson (2000) mentions this phenomenon occurs when certain answer alternatives are chosen more or less frequently because of their position. And, we believe that by having an even distribution of the latent variables this is minimized.

Respondent's information. Peterson (2000) mentions that the degree of directedness and the information of them towards the instrument is an important factor to assess the quality of the instrument. Due to the fact that we have not pretested the instrument with the target population during the translation and adaptations process we did not explained to the rest of the group what was going to be measured in order to evaluate the level of understanding of the instrument. Later, after explaining them the objective and the sample, we proceed to refine the translation and adaptation of terms. Due to the fact that the instrument measures attitudes and psychological cognitive processes there is no risk of having uninformed responses. The limitations could be the degree of understanding of the questions. And, the risk of educating the respondent is minimized through the instrument because there are not



right or wrong questions, and the existence of learning flexibility is when the respondents use three or more approaches to learning.

Pretesting the instrument. The instrument was pretested in order to assess its reliability through the measurement of the Cronbach's alpha. We used a sample of 15 persons from several ages and both genres with the filter of them being among the economically active population. The software used was SPSS and the reported alphas for the four learning orientations were of 0.686 for the Action dimension leaving 5 items, 0.869 for the thinking dimension with 8 items, 0.759 with the feeling orientation dimension with 3 items, and finally a 0.854 alpha for the access to others orientation with 5 items (see appendix C).

In summary, several measures were taken into account in order to overcome some of the limitations presented in adapting surveys. Some of these were: choosing a structured questionnaire with closed questions, even in the demographics; controlling the degree of directedness in the research group, and ensuring that the translation was clear and adapted to the Mexican respondent through the use of language. The effectiveness of this approach was assessed for reliability with the Cronbach's alpha measurement which better the initial reported results.

Measuring the Instrument

The final sample consisted of 110 surveys applied to entrepreneurs from Mexico. The survey was applied in two waves during a time frame of a month. The first wave was applied through Qualtrics and consisted of 63 responses. The second wave was applied with the same instrument but in a paper-based format and it consisted of 47 respondents. Due to the lack of control on the paper-based instrument there were only 96 final usable answers. The first group had an approximate proportion of 60%-40% respondents of each genre, while the second group had an 80%-20% approximate distribution. In order to assess the reliability and validity of the instrument as-is several tests were performed; due to its results other instruments were proposed in order to improve the final instrument.

Preliminary Instrument

The first model ran tested all the items and latent variables included in the source instrument. It consisted of four dimensions (Action, Thinking, Feeling and Access to Others) with eight items for each of them.

Reliability assessment. Peterson (1994) mentions that there is consensus that a scale should be valid, possess practical utility and be reliable. A reliable scale is that which yields consistent results and the degree of reliability demanded from an instrument depends on the function of the research purpose. One of the most widely used measures to do a reliability check is the Cronbach's alpha, which was developed by Cronbach (1951) that is an index of inter-item homogeneity. So, this measure was taken into account to assess the reliability of the items in the scale. According to DeVellis (2012) there are also alternative forms for assessing reliability and checking its failures. In the case of the mode of administration, 34% of the questionnaires were applied through a paper-based survey rather than using Qualtrics. Which, can also be a source of variance between groups and affect the reliability measures. In order to check for this issue we also performed an ANOVA test, treating each of the items in order to view how the sources of variation performed.



Cronbach's alpha test. The results of the complete model's Cronbach's alphas were the following: for Action orientation to learning 0.50, with 8 items; for the thinking orientation to learning 0.577, with 8 items; for the feeling orientation to learning 0.705, with 8 items; and for the access to other orientation a value of 0.795, with 8 items. Considering the threshold by Cronbach and Berstein (in Peterson, 1994) of 0.5- 0.7 the first two dimensions of learning oriented to action and thinking had reliability problems. When reviewing the data set, we found that we were facing some issues related to the way people was answering some of the questions, mainly through some of the control items, where answers given by respondents were in different directions though related to the same subject.

ANOVA test for source variation. When performing the ANOVA for the both groups, we found that there was no significant difference between both groups in the majority of the dimensions. These across-group differences were found in 28% of the items in the following form: in the Action dimension, one item (action3) was found to have a significant difference between groups of 0.002; in the thinking dimension, three items had this problem (think1, think2, think3) with differences of 0.037, 0.013, and 0.023; in the Feeling dimension four items (feeling3, feeling5, feelin7, feeling8) with differences of 0.041, 0.001, 0.003, 0.001; and finally one item (others 7) in the others dimension with a difference of 0.000. As it is possible to see the dimension that had more differences among groups was the feeling orientation to learning. Tough we found these differences; we decided to leave in some of these items because differences were found to be explained more by the demographics of the groups rather than just the administration of the instrument. This assertion was explained by Robinson and Clore (2002) who mention that on trait self-report scales there is a tendency to find sex differences in emotion that are congruent with stereotypes.

In conclusion, the instrument as-is with its four dimensions and all of the items was considered unreliable in the dimensions focused in action and thinking orientation to learning. Then we proceeded to treat it in order to keep developing a better instrument. And, although there were found some difference between groups, because of the dimension that had the majority of this variance, we could think, grounded on the literature about self-reporting of emotions, that this variance was more related to cultural traits rather than a source variance of the instrument, explained by the demographics of each group (the online-based vs the paper-based).

Validity assessment. DeVellis (2012) mentions that validity concerns with whether the variable is the underlying cause of item covariation in order to understand. The three main types of validity are content, criterion and construct validity, were the first one is related to the definition of the construct being examined, the second one to the empirical association of the scale with the construct, and the construct validity with the theoretical relationship. Due to the fact that this instrument is an adaptation from an instrument used in research and in consultancy, the objective of the adaptation's assessment was to examine that it maintained the criterion validity.

Estimators. The structural equation modeling measurement model was constructed and ran and it did not performed well. According to the regression weights not all of the estimators



performed well, and had several insignificant p-values. The standardized regression weights also had some issues not only by having low weights but also in some cases having a negative relationship towards the latent variable. As it is possible to see, the less problematic latent variables were the ones towards thinking, feelings and access to others learning orientations. There were also extremely high correlations among the items from the action orientation and the thinking orientations (1.365).

Model fit. The complete model as-is in the original instrument in English did not had a good fit in its Spanish version. According to Barrett (2007) when the Chi-square (CMIN) is significant the model is regarded as unacceptable some times, in this case it was significant with 0.000, because this measurement can be disregarded because it is sensitive to the number of parameters and sample size we also reviewed other indicators. The comparative fit index (CFI) was of 0.589 which according to the threshold presented by the author is a really weak model, and it refers to what extend the model of interest is better than the independence model. The incremental fit index (IFI) was of 0.608 and it is based on the difference of the chi-square of the independent and the target model considering its degrees of freedom. The Tucker Lewis index (TLI) was of 0.608 which mentions that is independent of the sample size but if the model is complex it could lower the values, the value is far from the threshold to approximate values of 0.90. And finally the root mean square error of approximation (RMSEA) was of 0.086 when values lower than 0.07 is the recommendation.

Discriminant and convergent validity for the first model. Bagozzi (1981) defines discriminant validity as the extent to which a concept differs from other concepts, whereas convergent validity refers to the degree to which multiple attempts to measure the same concept with different methods are in agreement. In order to determine the convergent and discriminant validity for the complete model, several tests where performed according to Hair, Black, Babin and Anderson (2009). The authors state the following rules of thumb when it comes to testing construct validity (convergent and discriminant):

1. Standardized loading estimates should be .5 or higher, and ideally .7 or higher.
2. Average variance extracted (AVE) should be .5 or greater to suggest adequate convergent validity.
3. Construct reliability (CR) should be .7 or higher to indicate adequate convergence or internal consistency.
4. VE estimates for two factors also should be greater than the square of the correlation

Consequently, we tested the first rule with all the standardized loadings estimates of the model. The results where polarized between Action and Thinking items where none could reach the .5 score whereas Feeling and Others' items most of them did.

Furthermore, we tested the AVE for each construct and found that on the one hand, consistent with the previously addressed reliability problems and correlations, both Action and Thinking dimensions suffered from a very low AVE, 0.071 and 0.156 respectively. On the other hand, the other two dimensions namely Feeling and Other, also presented low AVES, 0.259 and 0.363 respectively (Fornell & Larcker, 1981). Finally, for concluding our convergent validity tests, we performed also the construct reliability according to the formula:



$$CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$$

The resulting CR for the dimensions where: 0.23 for Action, 0.57 for Thinking, 0.711 for Feeling, and 0.81 for Others. According to Hair et al. (2009, p. 687) a CR score of “.7 suggest a good reliability” consequently only two of the constructs passed the test, whereas two remain with low convergent reliability (Fornell & Larcker, 1981). For testing the discriminant (divergent) reliability, we computed the correlations the constructs and following Anderson and Gerbing (1988) we compared the minimum AVE between two constructs with the product of the squared correlations and found that none of the constructs passed the test. Thus leading us to believe that there is no discriminant validity in the first model.

Final Instrument

The final version of the instrument consists of 18 items and 3 dimensions. The decision of the elimination of a dimension was twofold. First, considering all 8 items the Cronbach's alpha was consistently low for the acting dimension (.509) even after maximizing the number of items of this dimension. Also, as explained in the last section, there was a high correlation between Acting and Thinking causing a poor model fit and divergent and convergent validity. Accordingly, Appendix D presents the structural model for the final version and results for overall fitness in Appendixes.

Cronbach's alpha test. The final dimensions where Act-Thinking, Feeling and Action. Three items from the Action dimensions proved to be correlated with the Thinking dimension giving an improved alpha of .694. The Feeling orientation: 0.653 with 4 items and the Access to other orientation a value of 0.821, with 6 items. Considering the threshold by Cronbach and Berstein (in Peterson, 1994) of 0.5- 0.7 all three dimensions of learning have accepted values.

Estimators. The regression weights improved from the previous version and most of the standardized estimators were above 0.40. However, the model presents again a high correlation between Thinking and Feeling with a 1.003. This suggests that these dimensions might be measuring the same construct.

Model fit. In comparison with the previous instrument, overall model fit improved (see Appendix F). The comparative fit index (CFI) improved from 0.589 to 0.899 marginally acceptable according to the threshold of 0.90. The incremental fit index (IFI) improved as well from 0.608 to .904. The Tucker Lewis index (TLI) changed to 0.883 also near the 0.90 accepted score. Finally, the root mean square error of approximation (RMSEA) decreased from 0.086 to 0.057 reaching the 0.07 recommendations.

Discriminant and convergent validity for the final instrument. For the final instrument we followed the same test as in the first for assessing both validities. In this final version the standardized loadings estimates test resulted in the following number of items above the cut-off point of .5: for each dimension: Act-Thinking: 3 out of the 10 but with the



remaining 7 items having more than .4. For both Feeling and Other dimensions, all the items were above .5.

While the standardized loadings estimates improved, the AVEs remained low for both Act-Thinking and Feeling with 0.222 and 0.327 respectively, while Others improved to .447 (Fornell & Larcker, 1981). The obtained CRs were the following: 0.694 for Act-Thinking, 0.658 for feeling and 0.826 for others. This represents a significant improvement compared to the first instrument, where Action and Think remained with low scores of CR, whereas in the latter, by unifying both dimensions the CR improved to a point to become acceptable (Fornell & Larcker, 1981). Finally discriminant reliability was tested and the result was still not satisfactory, due to the fact that squared correlations remained higher than the minimum AVEs (Anderson & Gerbing, 1988).

Conclusion and Future Lines

The change required to adapt to a new context is an important task that managers and entrepreneurs encounter when facing highly dynamic environmental conditions. However, changing the norm's values and management practices learned over time is not an easy task because mental models may limit the attention and interpretation of information about changes in the firm's context. Accordingly, it is important to understand how learning aids in the adaptation process of managers and entrepreneurs in developing countries to effectively change and fit the new context. Moreover we consider the present research, a starting point for the assessment of the cross-cultural validity of the instrument, due to the fact the original version of this instrument serves as a consulting tool applied to managers and entrepreneurs in organizations.

Also, the main contribution of this instrument is to deliver an adaptation of the learning tactics inventory for Mexico. Specifically, the improved Cronbach alpha, achieving a reliability measure that ranges from 0.65 – 0.82, from those reported by Posner (2009) in his study. Also, we think that this will help to continue the research related to entrepreneurship in developing countries by means of the intellectual capital formation. Some of the future research, we suggest should be focused on deepening and testing the mechanisms through which people adapt to their environment and learn in order to understand entrepreneurial mindsets. Also this has practical implications when designing training programs for the organization personnel or in business courses.

This instrument should be helpful to address several questions related to entrepreneurship, business doing in emerging economies and knowledge. Some of the future directions around entrepreneurship are related to the implications of learning flexibility and its relationship towards an entrepreneurial profile that help to understand better the strategies used when creating new businesses. It should also be helpful to assess the characteristics of entrepreneurs and to develop better strategies for their development. The latter is especially relevant for emerging economies due to findings of Zamora-Matute (2012) that show a significant relationship among entrepreneurship and intellectual capital formation in emergent countries. Particularly in developing countries, it can be a contribution in order to deliver an instrument capable to assess the learning tactics of people within this context and shape the formation or rapid growth business programs targeted for them. Studies related to the different cultural dimensions and how learning is achieved could also deepen the analysis and understanding of differences and similarities of entrepreneurs across countries.



The present instrument, although followed a thorough translation, adaptation and testing process, did not perform as well as expected in the number of dimensions. We consider that this occurred partly because of using a translation scale with an unknown validity when it comes to cultural differences may result in dimension confusion such as the one between Action and Thinking. Husted, Dozier, McMahon, and Kattan (1996) reinforce this idea by arguing that when using a translation scale with unknown validity for the comparison cultures inconsistent results may appear.

In validity there is the possibility to assess the known-groups validations for construct-criterion validity in the scale (DeVellis, 2012) were there is a demonstration that a scale can differentiate members of one group from another based on their scale scores. The purpose of this can be theory related and grading each of the respondents towards to which dimension they score more and comparing groups can do this.

We consider that future research should be performed in the development of more suited items related to the Action construct. One of the possible solutions would be through rephrasing the original items by incorporating the culture's cognitive process differences. Usunier (2011) further develops this idea arguing that language is rarely considered as a source of conceptual equivalence issues in the context of cross-cultural research. Moreover he stresses the importance of instruments comparability and adds that the use of instruments, which try to follow an *etic* approach, may not be generalizable to other linguistic contexts. Consequently, there is a need to create item equivalence based on linguistic cues (Usunier, 2011).



References

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103, 411 – 423.
- Akgün, A. E., Lynn, G. S., & Byrne, J. C. (2006). Antecedents and Consequences of Unlearning in New Product Development Teams. *Journal of Product Innovation Management*, 23(1), 73-88. doi:10.1111/j.1540-5885.2005.00182
- Bagozzi, R. P. (1981). An examination of the validity of two models of attitude. *Multivariate Behavioral Research*, 16, 323, 359.
- Barrett, P. (2007). Structural equation modelling: Adjudging model fit, *Personality and Individual Differences*, 42 (5), 815-824.
- Bartlett, C. A., & Beamish, P. W. (2011). *Transnational management: text, cases, and readings in cross-border management*. Boston : McGraw-Hill/Irwin.
- Barr, P. S., Stimpert, J. L., & Huff, A. S. (1992). Cognitive Change, Strategic Action, and Organizational Renewal. *Strategic Management Journal*, 13, 15-36.
- Braun, N. (2004). Critical thinking in the business curriculum. *Journal of Education for Business*, 79 (4), 232 – 238.
- Brown, L., Posner, B. (2001). Exploring the relationship between learning and leadership. *Leadership & Organization Development Journal*, 22 (5/6), 274- 282.
- Calentone, R. J., Cavusgil, T. S., & Zaho, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management*, 3(1), 515-524. doi:10.1016/S0019-8501(01)00203-6
- Cope, J. (2003). Entrepreneurial learning and critical reflection - Discontinuous events as triggers for 'higher-level' learning. *Management Learning*, 34(4), 429-450.
- Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16 (3), 297 – 335.
- Dalton, M., Swigert, S., VanVelsor, E., Bunker, K., Wachholz, J. (1999). The Learning Tactics Inventory. Center for Creative Leadership. North Carolina.
- DeVellis, Robert F. (2012). *Scale Development. Theory and Applications*. Third Edition. Sage Publications.
- Dixon, S. E., & Day, M. M. (2007). Leadership, Administrative Heritage and Absorptive Capacity. *Leadership and Organization Development Journal*, 28(8), 727-748.
- Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Hair, J.F., Black, W., Babin, B. J., & Anderson, R. (2009). *Multivariate data analysis*. (7th Ed.), Pearson-Prentice Hall, Upper Saddle River, NJ. ISBN-10: 0138132631
- Harkness, J. A., Edwards, B., Braun, M. and Johnson, T. P. (2010). *Survey Methods in Multicultural, Multinational, and Multiregional Contexts* (Wiley Series in Survey Methodology).
- Hernandez-Mogollon, R., Cepeda-Carrion, G., Cegarra-Navarro, J., & Leal-Millan, A. (2010). The role of cultural barriers in the relationship between open-mindedness and organizational innovation. *Journal of Organizational Change Management*, 23(4), 360-376.
- Hoag, B. G., Ritschard, H. V., & Cooper, C. L. (2002). Obstacles to effective organizational change: the underlying reasons. *Leadership and Organization Development Journal*, 23 236-15.



- Hornsby, J., Kuratko, D., & Zahra, S. (2002). Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale. *Journal of Business Venturing*, 17, 253-273. doi:10.1016/S0883-9026(00)00059-8.
- Husted, B. W., Dozier, J. B., McMahon, J. T., & Kattan, M. W. 1996. The impact of cross-national carriers of business ethics on attitudes about questionable practices and form of moral reasoning. *Journal of International Business Studies*, 27(2): 391-411.
- Ireland, R.D., Hitt, M.A., Sirmon, D.G., (2003). A model of strategic entrepreneurship: the construct and its dimensions. *Journal of Management* 29, 963–990.
- Leung, D., Kember, D. (2003). The relationship between approaches to learning and reflection upon practice. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 23 (1), 61-71.
- Mone, M. A., McKinley, W., & Barker III, V. L. (1998). Organizational decline and innovation: a contingency framework. *Academy of Management Review*, 23(1), 115-132. doi:10.5465/AMR.1998.192965
- Peterson, R. (1994). A meta-analysis of Cronbach's coefficient alpha. *Journal of Consumer Research*, 21 (2), 381-392.
- Peterson, R. (2000). *Constructing Effective Questionnaires*. Sage Publications.
- Robinson, M., & Clore, G. (2002). Belief and feeling: evidence for an accessibility model of emotional self-report. *Psychological Bulletin*, 128 (6), 934-960.
- Shepherd, D. A., Patzelt, H., & Haynie, J. (2010). Entrepreneurial Spirals: Deviation-Amplifying Loops of an Entrepreneurial Mindset and Organizational Culture. *Entrepreneurship: Theory & Practice*, 34(1), 59-82. doi:10.1111/j.1540-6520.2009.00313.
- Schimmel, R., & Muntslag, D. R. (2009). Learning barriers: a framework for the examination of structural impediments to organizational change. *Human Resource Management*, 48(3), 399.
- Usunier, J. C. (2011). Language as a resource to assess cross-cultural equivalence in quantitative management research. *Journal of World Business*, 46, 314–319.
- Zamora-Matute, C. (2012). Antecedents of dynamic capabilities: The role of entrepreneurial orientation and intellectual capital. *EGADE Business School Doctoral Thesis*.



Appendix A
The Learning Tactics Inventory

DIRECTIONS: Think about times you have been faced with the challenge of an unfamiliar task or experience. Using the scale of 1 to 5 as defined below, circle the number that best indicates the extent to which each of the approaches listed has been characteristic of your behavior.

- | | |
|--|---|
| 1. I have almost never used this approach. | 4. I have often used this approach. |
| 2. I have rarely used this approach. | 5. I have almost always used this approach. |
| 3. I have sometimes used this approach. | |

When faced with an unfamiliar task or experience, I ...

- | | |
|--|-----------|
| 1. Briefly sketch out what I think needs to be done and do it. | 1 2 3 4 5 |
| 2. Read articles or books or go online to gain knowledge and background. | 1 2 3 4 5 |
| 3. Carefully consider how I feel. | 1 2 3 4 5 |
| 4. Bounce my hopes and fears off someone I trust. | 1 2 3 4 5 |
| 5. Am proactive in my approach, preferring to learn by trial and error. | 1 2 3 4 5 |
| 6. Ask myself how this is similar to other things I know. | 1 2 3 4 5 |
| 7. Confront myself on what I am worrying about. | 1 2 3 4 5 |
| 8. Seek advice from other people. | 1 2 3 4 5 |
| 9. Move ahead, letting my own experience be my guide. | 1 2 3 4 5 |
| 10. Imagine how different approaches might play out in the future. | 1 2 3 4 5 |
| 11. Confront myself if I am avoiding the challenge. | 1 2 3 4 5 |
| 12. Talk with my boss/peers/subordinates as idea generators. | 1 2 3 4 5 |
| 13. Immerse myself in the situation so that I can learn quickly. | 1 2 3 4 5 |
| 14. Construct a plan of action. | 1 2 3 4 5 |
| 15. Consider how others would or might feel. | 1 2 3 4 5 |
| 16. Get on-the-job tutoring from another person. | 1 2 3 4 5 |
| 17. Refuse to let a lack of information or input keep me from taking action. | 1 2 3 4 5 |
| 18. Reflect on a variety of possible approaches. | 1 2 3 4 5 |
| 19. Ask myself, "What am I learning?" | 1 2 3 4 5 |
| 20. Emulate the behavior of another person. | 1 2 3 4 5 |
| 21. Push to reach resolution despite hesitation on the part of others. | 1 2 3 4 5 |
| 22. Conceptualize what the ideal manager would do. | 1 2 3 4 5 |
| 23. Trust my feelings about what to do. | 1 2 3 4 5 |
| 24. Seek feedback from others to find out how I am doing. | 1 2 3 4 5 |
| 25. Commit myself (and others) to making something happen. | 1 2 3 4 5 |
| 26. Picture myself doing well. | 1 2 3 4 5 |
| 27. Record my feelings in a learning journal. | 1 2 3 4 5 |
| 28. Attend a course. | 1 2 3 4 5 |
| 29. Test out a few things that I have never done before. | 1 2 3 4 5 |
| 30. Mentally rehearse my actions before going into the situation. | 1 2 3 4 5 |
| 31. Acknowledge the impact of my feelings on what I decide to do. | 1 2 3 4 5 |
| 32. Talk to someone who has had the same experience. | 1 2 3 4 5 |



Appendix F
Pretested Version

INSTRUCCIONES: Piensa en aquellas veces que te has enfrentado con un reto, una tarea o una experiencia poco familiar. Usando la escala del 1 al 5 que se define a continuación, circula el número que refleja mejor la forma en la que abor das la situación con tu comportamiento.

- | | |
|---|-----------------------------------|
| 1. Casi nunca he usado este enfoque. | 4. Usualmente uso este enfoque. |
| 2. Raras veces he usado este enfoque. | 5. Casi siempre uso este enfoque. |
| 3. Algunas veces he usado este enfoque. | |

Cuando me enfrento con un trabajo o una experiencia poco familiar, yo...

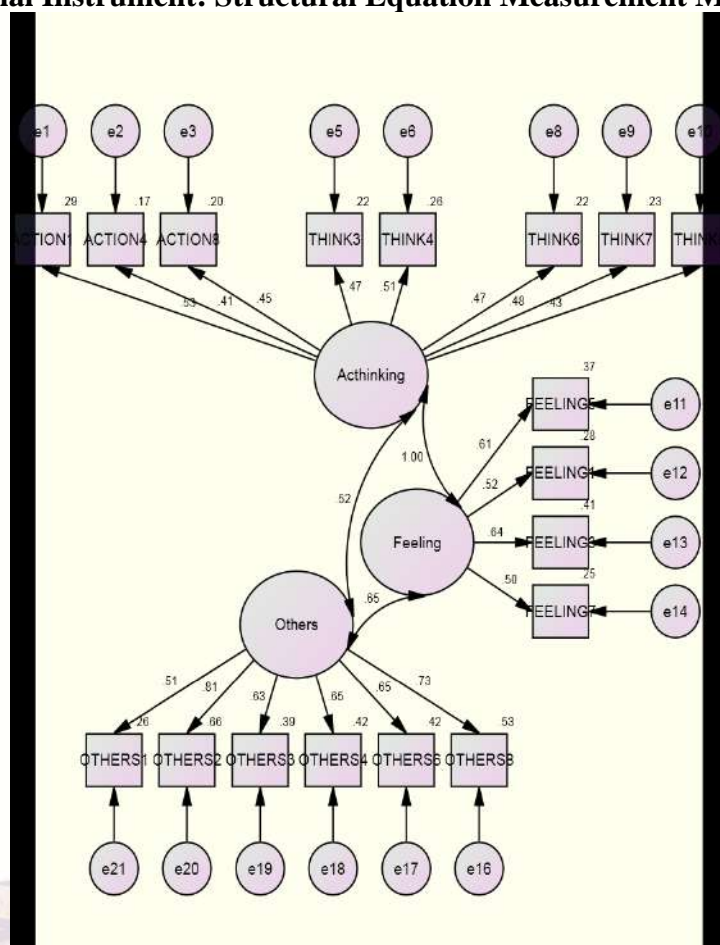
- | | |
|--|-------|
| 1. Resumo rápidamente lo que pienso hacer y lo hago. | 12345 |
| 2. Leo artículos o libros o navego en internet para tener conocimiento y contextualizar. | 12345 |
| 3. Comparto mis expectativas y preocupaciones a alguien en quien confío. | 12345 |
| 4. Comparo como la nueva experiencia es similar a otras que ya conozco. | 12345 |
| 5. Confronto lo que me preocupa. | 12345 |
| 6. Busco el consejo de otras personas. | 12345 |
| 7. Me guío por mi experiencia para continuar con lo que hago. | 12345 |
| 8. Imagino cómo diferentes alternativas pueden funcionar en el futuro. | 12345 |
| 9. Platico con mi jefe/colegas/subordinados para generar ideas. | 12345 |
| 10. Me involucro en la situación para poder aprender rápidamente. | 12345 |
| 11. Construyo un plan de acción. | 12345 |
| 12. Considero los sentimientos de los demás. | 12345 |
| 13. Consigo asesoría de otras personas relacionada con el trabajo o tarea a realizar. | 12345 |
| 14. Me rehúso a que la falta de información o recurso me impida actuar. | 12345 |
| 15. Reflexiono sobre distintas formas de hacer las cosas. | 12345 |
| 16. Tengo idea de lo que el administrador ideal debe hacer. | 12345 |
| 17. Considero detenidamente como me siento | 12345 |
| 18. Busco retroalimentación de otros para saber que tan bien hago las cosas. | 12345 |
| 19. Me imagino a mi mismo haciendo las cosas bien. | 12345 |
| 20. Intento algunas cosas que nunca he hecho. | 12345 |
| 21. Repaso mentalmente mis acciones antes de involucrarme en una situación. | 12345 |



Appendix C
Summarized Statistics

Learning Tactic	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Mean	Variance	Std. Deviation	N of Items
Action	0.686	0.717	19	11.286	3.35942	5
Thinking	0.869	0.873	31.2667	32.067	5.66274	8
Feelings	0.759	0.772	10.6	8.543	2.92282	3
Access to others	0.854	0.856	20	21.714	4.65986	5

Appendix D
Final Instrument: Structural Equation Measurement Model



Appendix E. Measurement Estimators

	Estimate	S.E.	C.R.	P	Label
ACTION1 <--- Acthinking	1.000				
ACTION4 <--- Acthinking	.572	.178	3.210	.001	par_1
ACTION8 <--- Acthinking	.792	.232	3.412	***	par_2
THINK3 <--- Acthinking	.644	.184	3.499	***	par_3
THINK4 <--- Acthinking	.902	.240	3.753	***	par_4
THINK6 <--- Acthinking	.834	.238	3.503	***	par_5
THINK7 <--- Acthinking	.844	.237	3.562	***	par_6
THINK8 <--- Acthinking	.708	.213	3.321	***	par_7
FEELING5 <--- Feeling	1.000				
FEELING1 <--- Feeling	.907	.213	4.267	***	par_8
FEELING3 <--- Feeling	.870	.175	4.985	***	par_9
FEELING7 <--- Feeling	.932	.229	4.073	***	par_10
OTHERS8 <--- Others	1.000				
OTHERS6 <--- Others	.907	.156	5.799	***	par_11
OTHERS4 <--- Others	.791	.136	5.811	***	par_12
OTHERS3 <--- Others	.840	.150	5.603	***	par_13
OTHERS2 <--- Others	1.076	.152	7.072	***	par_14
OTHERS1 <--- Others	.708	.154	4.599	***	par_15

Appendix F
Model Fit

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	39	173.382	132	.009	1.314
Saturated model	171	.000	0		
Independence model	18	561.266	153	.000	3.668

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.080	.839	.791	.647
Saturated model	.000	1.000		
Independence model	.259	.444	.379	.397

Baseline Comparisons

Model	IFI Delta2	TLI rho2	CFI
Default model	.904	.883	.899
Saturated model	1.000		1.000
Independence model	.000	.000	.000

