

Studies of Diversity & Multiculturalism

James Madison University

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This document summarizes studies conducted by faculty and graduate students in the Center for Assessment and Research Studies for the purposes of exploring: (a) the attitudes, feelings, behaviors, beliefs, and thought process of JMU students as they relate to diversity and multiculturalism and (b) the psychometric properties of instruments used to measure such characteristics.

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Section 1. Cross-Cultural Adaptability Inventory

1.1.1. STUDY 1

Instrument: Cross-Cultural Adaptability Inventory (CCAI)

Instrument availability: Commercially-available from NCS Pearson; Cost: Manual \$25, for 100-249 individual instruments, \$4.75 per instrument

What instrument measures: "...helps individuals gain insight into their likely ability to adjust to a new culture and environment and the potential stressors that lie ahead."

Scores: Four subscale scores:

1. Perceptual Acuity: "...extent to which person pays attention to and accurately perceives various aspects of their environment"
2. Emotional Resilience: "...degree to which an individual can rebound from and react positively to new experiences"
3. Flexibility/Openness: "...extent to which a person enjoys the different ways of thinking and behaving that are typically encountered in the cross-cultural experience."
4. Personal Autonomy: "...extent to which an individual has evolved a personal system of values and beliefs and at the same time respects others and their value systems."

Sample: Random sample of 709 JMU students with 45-70 credit hours (Spring Assessment Day, February 2005?)

Purpose of Study and Results: A confirmatory factor analytic study to examine whether the four-factor model implied by the instrument's creators fit the data. Davis and Finney did not find support for the four-factor model proposed for the instrument. They also did not find an interpretable factor structure using exploratory techniques.

JMU contact: Sara Finney (finneysj@jmu.edu)

Reference: Davis, S.L., & Finney, S. J. (2006). A factor analytic study of the Cross-Cultural Adaptability Inventory. *Educational and Psychological Measurement, 66*(2), 318-330.

Section 2. Miville-Guzman Universality-Diversity Scale

2.1. INFORMATION COMMON TO STUDIES 2-7

Instrument: Miville-Guzman Universality-Diversity Scale (MGUDS)

Instrument Availability: Non-commercially available; Miville, M.L., Gelso, C. J., Pannu, R., Lui, W., Touradji, P., Holloway, P., & Fuertes, J. (1999). Appreciating similarities and valuing differences: The Miville-Guzman Universality-Diversity Scale. *Journal of Counseling Psychology, 46*, 291-307. & Fuertes, J. N., Miville, M. L., Mohr, J. J., Sedlacek, W. E., & Gretchen, D. (2000). Factor structure and short form of the Miville-Guzman Universality-Diversity Scale. *Measurement and Evaluation in Counseling and Development, 33*, 157-169. **What instrument measures:** universal-diverse orientation (UDO), which is defined by the Miville et al. (1999) as "an attitude of awareness and acceptance of both the similarities and differences among people" (p. 291)

Scores: A total score and 3 subscale scores: Diversity of Contact, Relativistic Appreciation of Oneself and Others, and Sense of Connection. These three subscales were created to measure the behavioral, cognitive, and emotional components of UDO, respectively.

2.1.1. STUDY 2

Sample: A random sample of 1,176 incoming freshmen (Fall Assessment Day, August 2006)

Purpose of Study & Results: The failure of validity studies to find strong support for the models advocated by the M-GUDS' creators led to the use of exploratory factor analysis to identify alternative models. An acceptable factor solution was not found, indicating that the conceptualization of UDO and its measurement need to be carefully reconsidered.

JMU contact: Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A., & Cotten, M. R. (under review). An exploratory factor analysis of the Miville-Guzman Universality-Diversity Scale. *Measurement and Evaluation in Counseling and Development*.

2.1.2. STUDIES 3 & 4

Sample: The Lau (2006) sample consisted of 2,798 incoming freshmen in 2005. This sample completed the measure during summer orientation and was randomly divided into two subsamples. The Lau, Finney and Meyer (2007) study utilized a random sample of 726 second semester sophomores (Assessment Day 2006) and a random sample of 1453 incoming freshmen (Assessment Day 2006).

Purpose of Studies & Results: Lau and colleagues used confirmatory factor analysis to explore whether the 3-factor structure proposed by the M-GUDS' creators fit data collected from college-student samples. Lau and colleagues used confirmatory factor analytic techniques, with careful attention paid to sample size, multicollinearity, outliers, normality and fit indices to further investigate the factor structure of the full-length M-GUDS. Lau (2006) administered the M-GUDS to two different samples with the items in their original order and Lau, Finney and Meyer (2007) administered the M-GUDS to two different samples with the items arranged in a random order. The studies by Lau and colleagues provided strong evidence *against* the internal validity of the M-GUDS' scores; acceptable fit was not obtained with either model in any of the four samples.

JMU contact: Abby Lau ([laur@jmu.edu](mailto:lauar@jmu.edu)) or Sara Finney (finneysj@jmu.edu)

References:

- Lau, A.R. (2006). *Validity study of the Miville-Guzman Universality-Diversity Scale*. Master's thesis, James Madison University, Harrisonburg, VA
- Lau, A. R., Finney, S.J. & Meyer, J. P. (2007, April). *Measuring Diversity Orientation: The Miville-Guzman Universality-Diversity Scale*. Poster presentation at the meeting of the American Educational Research Association, Chicago.

2.1.3. STUDY 5

Sample: 329 incoming freshmen completing the measure during summer orientation.

Purpose of Study & Results: Confirmatory factor analysis was used to explore whether the 3-factor structure proposed by the M-GUDS' creators would fit responses to the 15-item short form of the M-GUDS. A one-factor model did not fit the data, indicating that a total score should not be used with the 15-item short form. The three factor model, specifying that five items were associated with each UDO factor (Diversity of Contact, Relativistic Appreciation, Sense of Connection), fit the data. An additional 3-factor model, removing item 36 (an item written to measure Relativistic Appreciation but assigned to the Diversity of Contact factor), fit the data as well as the 15-item 3-factor model and yielded higher

subscale reliability. Although Lau and Finney advocate for the 14-item short form consisting of 3 subscales, the authors also advocate for further study of this short form, particular with item administered in random order.

JMU contact: Abby Lau (lauar@jmu.edu) or Sara Finney (finneysj@jmu.edu)

Reference: Lau, A. R., & Finney, S. J. (2006, May). *Measuring diversity orientation: The Miville-Guzman Universality-Diversity short form*. Poster presented at the annual meeting of the Association for Psychological Sciences, New York, NY.

2.1.4. STUDY 6

Scores: This study used the following subscales identified by Pastor & Cotten in their preliminary analyses for the paper (Study 2) currently under review:

# Items	Acronym	Subscale Description
3	KDSU	Knowing diverse others for the purpose of self-understanding
4	SIMDIF	Understanding others by finding out similarities/differences
3	ECSO	Comfort and ease with diversity in sexual orientation
4	ECED	Comfort and ease with racial diversity

Sample: A random sample of 441 incoming freshmen (Fall Assessment Day, August 2007)

Purpose of Study & Results: This study was executed for the purposes of Cluster 5 assessment in the Sociocultural Domain. The MGUDS was administered to examine what students' levels on the 4 subscales overall and to examine possible group differences in average subscale scores. On average, scores for all subscales are in the agreement range of the response scale, with the highest scores on the ECED subscale, followed by lower scores on the SIMDIF, ECSO, and KDSU subscales. Students appear to have a higher level of comfort with ethnic diversity than with sexual orientation diversity. The SIMDIF average indicates that students slightly/moderately agree that knowing the similarities and differences between themselves and others helps them understand someone. The KDSU average indicates that incoming freshmen agree slightly that knowing diverse others helps them better understand themselves. The scores on the four subscales are positively related to one another. The correlations are small in magnitude with the exceptions of the medium correlation between KDSU and SIMDIF ($r = .53$) and the medium correlation between ECED and ECSO ($r = .46$). The average scores on all four subscales are somewhat higher for the 28 incoming freshman who have already completed their sociocultural general education requirement. Although the scores are higher, the magnitude of the difference between the groups' average scores appears to be minor, with the exception of the KDSU difference (difference of .43 units on the response scale). The average scores on all four subscales are higher for females as opposed to males. The difference between males and females on the ESCO subscale is especially large (difference of .66 units on the response scale). All four average subscale scores are higher for the non-White students in comparison to White students. The differences are small in

magnitude, with the exception of the difference on the KDSU subscale (difference of .51 units on the response scale). **JMU contact:** Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A., & Shore, T. L. (2007). *Cluster 5 Assessment Report: Fall 2007 Freshmen Cohort*. Center for Assessment and Research Studies, James Madison University.

2.1.5. STUDY 7

Sample: A random sample of 841 second semester sophomores (Spring Assessment Day, August 2009)

Purpose of Study & Results: This study was executed for the purposes of Cluster 5 assessment in the Sociocultural Domain. The MGUDS was administered to examine what students' levels on the 4 subscales overall and to examine possible group differences in average subscale scores. This study also looked at change in universal-diverse orientation over time as many of the students tested as second semester sophomores also took this measure as incoming freshmen in August 2007. Particular attention was paid to whether the change in scores over time was different for students who had completed their Sociocultural Domain coursework compared to those who had not. As of 4/9/2009, the analyses for this study have yet to be completed.

JMU contact: Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A., & Shore, T. L. (2009). *Cluster 5 Assessment Report: Spring 2009 Sophomore Cohort*. Center for Assessment and Research Studies, James Madison University.

Section 3. Scale of Ethnocultural Empathy

3.1. INFORMATION COMMON TO STUDIES 8-9

Instrument: Scale of Ethnocultural Empathy (SEE)

Instrument Availability: Non-commercially available; Wang, Y.W., Davidson, M.M., Yakushko, O.F., Savoy, H.B., Tan, J.A., Bleier, J.K. (2003). The Scale of Ethnocultural Empathy: Development, validation, and reliability. *Journal of Counseling Psychology, 50*(2), 221-234.

What instrument measures: to measure Ethnocultural empathy, defined as "empathy directed toward people from racial and ethnic cultural groups who are different from one's own ethnocultural group" (Wang et al., pg. 221).

Scores: A total score and 4 subscale scores:

Subscale	Subscale Description
Empathetic Feeling and Expression	Concern about communicating prejudiced beliefs and emotional responses to the emotions and/or experiences of culturally different people
Empathetic Perspective Taking	Effort to understand the experiences and emotions of culturally different people

Acceptance of
Cultural Differences

Understanding, acceptance and valuing of differing cultural
traditions or customs

Empathetic
Awareness

Awareness or knowledge of the experiences of culturally different
people

3.1.1. STUDY 8

Sample: A random sample of 920 incoming freshmen (Fall Assessment Day August 2008)

Purpose of Study & Results: Confirmatory factor analysis of the SEE. Ten different models were fit to the data. These models were based on 1) the factor structure proposed by Wang et al., 2) Ridley and Lingle's (1996) theoretical model (upon which the SEE was based), 3) *a priori* modifications to the latter model based on item characteristics, 4) a one-factor model, and 5) additional models including negatively-worded item effects. The Wang et al. model with a negatively-worded item effect fit the data better than the other models and was championed. Significant concerns, however, still remain regarding the construct representation of ethnocultural empathy by the SEE.

JMU contact: Cliff Wigtil (wigtilcj@jmu.edu)

Reference: Wigtil, C. J. (2008). *Do You Feel What We Feel? A Confirmatory Factor Analysis of Wang et al.'s Scale of Ethnocultural Empathy*. Final project in PSYC 830: Structural Equation Modeling.

3.1.2. STUDY 9

Sample: A random sample of 943 incoming freshmen (Fall Assessment Day August 2008)

Purpose of Study & Results: This study was executed for the purposes of Cluster 5 assessment in the Sociocultural Domain. The SEE was administered to examine what students' levels on the 4 subscales overall and to examine possible group differences in average subscale scores. In the report, item means are examined and compared against the items means from a sample collected by Wang et al. (2003). Item and subscale means could range from a low of 1 to a high of 6. The average subscale scores range from a low of 3.36 for the EPT subscale to a high of 4.58 on the ACD subscale. The fact that the subscale averages are all between "somewhat disagree" and "agree" on the response scale indicate that the levels of Ethnocultural Empathy of incoming students are favorable for the most part. The relatively lower score on the EPT subscale indicates that incoming students have some trouble with Empathetic Perspective Taking. The scores on the four subscales are positively related to one another. The correlations are generally medium in magnitude (.34 - .57). JMU incoming freshman who have not completed their SC domain requirement have about the same levels of Ethnocultural Empathy as those who have completed the requirement. Female incoming freshmen have slightly higher Ethnocultural Empathy subscale averages scores than male incoming freshmen. All four average subscale scores are higher for the non-White students in comparison to the White students.

JMU contact: Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A., Shore, T. L., & Cotten, M. R. (2008). *Cluster 5 Assessment Report: Fall 2008 Freshmen Cohort*. Center for Assessment and Research Studies, James Madison University.

Section 4. Munroe Multicultural Attitude Scale Questionnaire

4.1. INFORMATION COMMON TO STUDIES 10-12

Instrument: Munroe Multicultural Attitude Scale Questionnaire (MASQUE)

Instrument Availability: Non-commercially available; Munroe, A., & Pearson, C. (2006). The Munroe Multicultural Attitude Scale Questionnaire, *Educational and Psychological Measurement*, 66, 819-834.

What instrument measures: The MASQUE was created to measure multicultural attitudes. **Scores:** A total score and 3 subscale scores: (1) a knowledge subscale, assessing the extent to which one knows about multicultural issues, (2) a care subscale, assessing the extent to which one cares about multicultural issues, and (3) an act subscale, assessing the extent to which one acts to solve multicultural problems.

4.1.1. STUDY 10

Sample: Study A sample → random sample of 480 incoming freshmen (Fall Assessment Day 2007); Study B sample → random sample of over 800 second semester sophomores (Spring Assessment Day 2009).

Purpose of Study & Results: The Shore 2008 study (which used Sample A) utilized confirmatory factor analysis to determine whether the MASQUE authors' proposed 3-factor model fit the data. Shore's results did not support the fit of the 3-factor model nor a 1-factor model. Shore is continuing this research in 2009. She proposes to use exploratory factor analysis with Sample A to examine if other plausible factor models exist for the data. She also proposes to fit the authors' proposed 3-factor model, the 1-factor model and the resulting model from the exploratory factor analysis (if interpretable) to the Sample B data using confirmatory factor analytic techniques. As of 4/9/2009, the analyses for this study have yet to be completed.

JMU contact: Tamara Shore (shoretl@jmu.edu)

References: Shore, T. L. (2009). *Peeking behind the MASQUE: A psychometric evaluation of the Munroe Multicultural Attitude Scale Questionnaire*. Master's thesis, James Madison University, Harrisonburg, VA

Shore, T. L. (2008). *Peeking behind the MASQUE: A confirmatory factor analysis of the Munroe Multicultural Attitude Scale Questionnaire*. Final project in PSYC 830: Structural Equation Modeling.

4.1.2. STUDY 11

Sample: Random sample of 301 incoming freshmen (Assessment Day Fall07)

Purpose of Study & Results: This study was executed for the purposes of Cluster 5 assessment in the Sociocultural Domain. On average, subscale scores are in the agreement range of the response scale, with higher scores on the knowledge scale and relatively lower scores on the care and act scales. Students appear to differ in the extent to which they know about, care about and act on multicultural issues. Specifically, they know more than they care and they care more than they act. There are little differences in the average response to the knowledge items indicating that incoming students' knowledge is similar for a variety of multicultural issues. There are differences in the average responses of incoming freshmen to the care items. Higher average responses are associated with the social and financial status items, while lower scores (that are still high relative to the 1-6 scale) are associated with

the ethnicity and race items. There are differences in the average responses of incoming freshmen to the act items, with higher average responses associated with the racism items and lower average responses associated with religious prejudice items. All three average subscale scores are higher for the 19 students who have already completed the requirement, although the differences between completers and non-completers are minor. All three average subscale scores are higher for female students than for the males. The differences between the average scores between the two groups are notable, particularly for the knowledge and care subscales. All three average subscale scores are higher for the 52 non-white students in comparison to the 248 White students. The differences between the average scores between the two groups are minor. Relative to the other subscales, the difference between the averages for the Act subscale is largest, although still fairly small in magnitude.

JMU contact: Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A., & Shore, T. L. (2007). *Cluster 5 Assessment Report: Fall 2007 Freshmen Cohort*. Center for Assessment and Research Studies, James Madison University.

4.1.3. STUDY 12

Sample: A random sample of 841 second semester sophomores (Spring Assessment Day, August 2009)

Purpose of Study & Results: This study was executed for the purposes of Cluster 5 assessment in the Sociocultural Domain. The MASQUE was administered to examine what students' levels on the 3 subscales overall and to examine possible group differences in average subscale scores. This study also looked at change in multicultural attitudes over time as many of the students tested as second semester sophomores also took this measure as incoming freshmen in August 2007. Particular attention was paid to whether the change in scores over time was different for students who had completed their Sociocultural Domain coursework compared to those who had not. As of 4/9/2009, the analyses for this study have yet to be completed.

JMU contact: Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A., & Shore, T. L. (2009). *Cluster 5 Assessment Report: Spring 2009 Sophomore Cohort*. Center for Assessment and Research Studies, James Madison University.

Section 5. Willingness to Consider Contradictory Evidence Scale

5.1.1. STUDY 13

Instrument: Willingness to Consider Contradictory Evidence Scale (WCCES)

Instrument Availability: Non-commercially available; The Willingness to Consider Contradictory Evidence Scale (WCCES) is a subset of 5 items from the Belief Formation Scale (see Study 14), which itself is a collection of ten items taken from the Actively Open-Minded Thinking Scale created by Sá, West, and Stanovich (1999) and Stanovich and West (1997).

What instrument measures: The WCCES is used to assess whether individuals are able to consider conflicting evidence and use such evidence to modify their beliefs, regardless of the nature of that belief. Higher scores indicate a willingness to consider conflicting evidence and lower scores indicate a reluctance to consider conflicting evidence.

Sample: EFA sample → 1013 incoming freshmen (Fall Assessment Day 2008)

Think-aloud sample→Less than 10 students collected via the psychological subject pool who are in the second semester of their freshmen year in Spring 2009.

Purpose of Study & Results: Many higher education institutions are interested in evaluating students' critical thinking skills. An important aspect of critical thinking ability is willingness to modify one's knowledge, opinions, or beliefs when presented with evidence that conflicts with one's pre-existing knowledge, opinions, or beliefs. This cognitive skill is considered essential to critical thought (Petersen, 2004) and is an important commodity in any academic discipline or content area. To the best of our knowledge, there is no assessment instrument designed to measure this specific aspect of critical thinking. In order to assess this trait, five different items were pooled from Sá, West, and Stanovich (1999) and Stanovich and West (1997) flexible thinking scales. These items were specifically selected to create the Willingness to Consider Contradictory Evidence Scale (WCCES) because they appeared to most clearly tap into a person's willingness to consider contradictory evidence. An exploratory factor analysis of the WCCES was conducted and led to the conclusion that these items could not be used to create a meaningful single score. Subsequently, qualitative data (using think-alouds and structured interviews) were collected to reveal the shortcomings of the scale. Suggestions for improving the current scale are made based on the quantitative and qualitative results.

JMU contact: Anna Zilberberg (zilberax@jmu.edu) or Dena Pastor (pastorda@jmu.edu)

Reference: Zilberberg, A. & Pastor, D. A. (in preparation). *A mixed methods investigation into the functionality of the Willingness to Consider Contradictory Evidence Scale (WCCES)*.

Section 6. Belief Formation Scale

6.1.1. STUDY 14

Instrument: Belief Formation Scale (BFS)

Instrument Availability: Non-commercially available; The Belief Formation Scale is a collection of ten items taken from the Actively Open-Minded Thinking Scale created by Sá, West, and Stanovich (1999) and Stanovich and West (1997).

Sá, W. C., West, R. F., & Stanovich, K. E. (1999). The domain specificity and generality of belief bias:

Searching for a generalizable critical thinking skill. *Journal of Educational Psychology, 91*, 497-510.

Stanovich, K. E., & West, R. F. (1997). Reasoning independently of prior belief and individual differences in actively open-minded thinking. *Journal of Educational Psychology, 89*, 342-357.

What instrument measures: Open-minded thinking is characterized as the ability to "evaluate arguments and evidence in a way that is not contaminated by one's prior beliefs" (Stanovich & West, 1997, p.342). The ten items that constitute the BFS were selected to capture several components of rational thought that are deemed essential for open-mindedness, One of these components is the ability to modify one's knowledge, opinions, or beliefs when presented with evidence that conflicts with one's pre-existing knowledge, opinions, or beliefs. The other component is measured by items from the Openness-Values facet of the Revised NEO Personality Inventory (Costa & McCrae, 1992), which is proposed to measure one's proclivity toward questioning traditional social, religious, and political values.

Sample: A random sample of ~1000 incoming freshmen (Fall Assessment Day August 2008)

Purpose of Study & Results: This study was executed for the purposes of Cluster 5 assessment in the Sociocultural Domain. Because goals 1 and 2 of the SC domain pertain to open-minded thinking as it applies to one's interactions with diverse others, the BFS was piloted on Assessment Day. Investigation

of the descriptive statistics and distributions of the responses to the ten items on the BFS revealed that, on average, students:

- somewhat agree in persevering in certain beliefs, despite conflicting evidence.
- somewhat agree to agree that evidence that conflicts with their beliefs should be taken into consideration.
- seem uncertain as to whether beliefs should *always be revised* in response to the conflicting evidence.
- tend to consider themselves broad-minded and tolerant of other people's lifestyles
- somewhat disagree that loyalty to one's ideals is *more important* than open-mindedness.
- disagree to somewhat disagree that letting them hear controversial speakers can only confuse and mislead them.
- disagree to somewhat disagree that we should look to our religious authorities for decisions on moral issues.
- *don't* believe that there is something wrong with a person if they do not know what they believe in by age 25.

JMU contact: Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A., Shore, T. L., & Cotten, M. R. (2008). *Cluster 5 Assessment Report: Fall 2008 Freshmen Cohort*. Center for Assessment and Research Studies, James Madison University.

Section 7. Sociocultural Thought Process Assessment

7.1.1. STUDY 15

Instrument: Sociocultural Thought Process Assessment (STPA)

Instrument Availability: Non-commercially available; Created by JMU faculty in Summer 2008 in an attempt to measure Goals 1 and 2 of the Sociocultural Domain of General Education.

What instrument measures: STPA was created to measure the level of reasoning that a student engages in when attempting to understand the behavior/perspective of an individual or a group.

Examinees are instructed to respond to each of eight open-ended items:

1. You are at a party with a bunch of new friends. When the subject of politics comes up you find out that one of your friends believes that a Black person could never really be qualified to be President of the United States. Why might your friend believe this?
2. While talking to a new friend about future careers, you find out that your friend doesn't believe he could ever stay at home, raising the kids. Your friend feels that if he did this, he would have no respect for himself at all. Why might your friend feel this way?
3. You've just moved into a dorm at JMU and are visiting with your new roommate. You find out that your roommate does not believe that same-sex marriage should be legalized in America. Why might your new roommate believe this?
4. Your friend's aunt and uncle have decided to home-school their children. Why might they have decided to do this?
5. You notice your roommate spends time every morning sitting quietly with eyes closed. What might your roommate be doing and why?
6. One of your co-workers has decided to become a vegetarian. Why might they have made this decision?
7. You become aware of a student group on campus that advocates for giving all ex-felons the right to vote. Why might this group be advocating for this?

8. While watching a news show, you learn about a group of citizens who believe that drugs should be legalized in small, controlled inner city areas. Why might these citizens hold this belief?

Sample: A random sample of 46 incoming freshmen (Fall Assessment Day August 2008)

Purpose of Study & Results: This study was executed for the purposes of Cluster 5 assessment in the Sociocultural Domain. Five faculty, each teaching a course in the SC domain, completed training on 4/3/09 as to how to score the responses on a 4-point scale (1=below basic, 2= basic, 3=developing, 4=proficient). Results are expected Summer 2009. This instrument will be administered to the same 46 students in Spring 2010 in order to examine changes in level of reasoning over time.

JMU contact: Dena Pastor (pastorda@jmu.edu)

Reference: Pastor, D. A (in preparation). *Fall 2008 Sociocultural Thought Process Assessment Results*. Center for Assessment and Research Studies, James Madison University.