



Research Briefs from Institutional Research**Examination of the Motivated Strategies for Learning
Questionnaire (MSLQ) for Use on Accuplacer**

Purpose: The purpose of this brief is to examine the possibility of incorporating one or more of the MSLQ measurement scales into Accuplacer's educational background measures. Numerous research has indicated that motivation is strongly related to academic achievement. As a result, the MSLQ provides the opportunity to identify aspects of student motivation that may lead to Crafton student success. The MSLQ was chosen as a possibility because it can be used in a wide-range of courses and educational settings as long as the test is used to improve the learning of students and the reliability information is examined in relation to the study.

Limitations: A drawback of the MSLQ is that even though the MSLQ has the potential for examining the reliability and validity information for diverse groups, this doesn't appear to have occurred. The studies were normed on a mostly Caucasian population (Pintrich, Smith, Garcia, & McKeachie, 1993), and even a study specifically focusing on African Americans did not provide any reliability or validity data (Green, 2000). Additionally, many of the studies reviewed here have changed the MSLQ and have not used it in its original format. This is not a sound practice, especially given that one of the strengths of the MSLQ is the theoretical work in establishing construct validity.

Furthermore, the best use of the MSLQ involves the administration of the MSLQ to students in a course by an Instructor or on a larger scale involving more courses. However, the MSLQ has been adapted by other researchers to be used in different educational settings.

Background: Criterion-related validity was examined by Pintrich et al. (1993) by examining the predictive validity of the MSLQ on final course grades. The validity coefficient used by Pintrich et al. is the Pearson r correlation coefficient. Eleven out of the fifteen MSLQ subscale measures were found to statistically significantly correlate with final course grades. The strongest predictors of final course grade appeared to be self-efficacy for learning and performance ($r = .41$) and meta-cognitive self-regulation ($r = .30$). Self-efficacy accounted for 17% of the variance in final grade and meta-cognition accounted for 9% of the variance. According to Cohen (1998), an r from .30 to .49 is considered to be a medium effect.

Examples of Prior Use: First, Bandalos, Finney, and Geske (2003) used the MSLQ to measure the use of cognitive strategies, self-regulation in study behaviors, and self-efficacy in a statistics course. The goal of the research was to develop a model of achievement in an introductory to statistics course. In using three of the sub-scales in the MSLQ, Bandalos et al. actually modified all three based on the results in their study. In relation to the MSLQ, self-efficacy and deep processing were found to directly affect achievement in the introductory to statistics course (Bandalos et al., 2003). Deep processing was developed by Bandalos et al., and was a combination of the elaboration and self-regulation learning strategy scales on the MSLQ.

Next, Green (2000) used the MSLQ to identify the degree to which African American college students perceive their motivation for academic achievement. The MSLQ was administered to one lower division course with twenty-nine African American students and one upper division psychology course with thirty-two African American students. Unfortunately, the MSLQ items were not tested for internal consistency for these populations. A qualitative analysis was conducted, and Green concluded qualitatively that intrinsic and extrinsic goal orientations and self-efficacy all effect the perceived motivation of African American students for academic achievement.

Third, McKeachie, Lin, & Middleton (2004) examined the hypothesis that some students who scored low on test anxiety were actually highly anxious. The research examined students who scored low on test anxiety and also scored similar to high anxiety students on the test. McKeachie et al. also attempted to identify if any other areas measured by the MSLQ were different for low anxious students who scored similarly to high anxious students on the test. The low-anxious students who also scored low on graded tests were also more likely to be low in organization and elaboration strategies, self-efficacy, task value, and intrinsic motivation for learning.

Finally, McKenzie, Gow, and Shweitzer (2004) examined characteristics of first-year Australian college students that predicted academic success in that first year. McKenzie et al. used five MSLQ motivational scales (i.e. self-efficacy, control of learning beliefs, intrinsic and extrinsic goal orientation, and task value), five MSLQ learning strategy scales (i.e. elaboration, organization, meta-cognitive self-regulation, time-management, and effort regulation), and past academic performance to test a structural equation model predicting first-year academic performance. The learning strategies were found to be a predictor of academic performance and both intrinsic and extrinsic goals were found to positively influence the use of learning strategies.

Recommendation: In reviewing the literature presented above there are four possible scales that might work extremely well for use with Crafton Hills College students in Accuplacer: self-efficacy, intrinsic and/or extrinsic motivation, and meta-cognitive self-regulation. First, meta-cognitive self-regulation measures the ability of students to control and monitor their own cognition (Garcia-Duncan & McKeachie, 2005; Garcia & Pintrich, 1995; Pintrich et al., 1993). The coefficient alpha of the measurement scale was .79 (see Table 1). However, a drawback to using the meta-cognition measurement scale is that it consists of 12 questions, which is a lot to ask students to complete when they are already answering 36 educational background questions.

Table 1

Internal Reliability Coefficients for the MSLQ

MSLQ Scales	Number of Items	Coefficient Alpha
Motivation Scales		
Intrinsic Goal Orientation	4	.74
Extrinsic Goal Orientation	4	.62
Task Value	6	.90
Control of Learning Beliefs	4	.68
Self-Efficacy for learning & performance	8	.93
Test Anxiety	5	.80
Learning Strategy Scales		
Rehearsal	4	.69
Elaboration	6	.75
Organization	4	.64
Critical thinking	5	.80
Metacognitive self-regulation	12	.79
Time and Study Environment Management	8	.76
Effort Regulation	4	.69
Peer Learning	3	.76
Help-Seeking	4	.52

Note. The motivational and learning strategies coefficient alphas were taken from the Pintrich et al. (1993) study.

Next, the self-efficacy scale measures a student’s expectancy of success and their judgment of their own ability (Garcia-Duncan & McKeachie, 2005; Garcia & Pintrich, 1995; Pintrich et al., 1993). The coefficient alpha of the measurement scale was .93. Research indicates that self-efficacy does effect

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academic achievement (Bandalos et al., 2003; Green, 2000; McKeachie et al., 2004; Pintrich et al., 1993).

Finally, students who score high on the intrinsic goal orientation are motivated to learn the material because learning the material provides its own rewards (Garcia-Duncan & McKeachie, 2005; Garcia & Pintrich, 1995; Pintrich et al., 1993). On the other hand, students with an extrinsic orientation are motivated to do well because of the rewards attached to societal expectations like earning good grades. The coefficient alphas for the intrinsic and extrinsic orientation were .74 and .62 respectively. The intrinsic motivation scale appears to be a better predictor of academic achievement than the extrinsic orientation measure (McKeachie et al., 2004).

After reviewing the literature and the length of each measurement scale it appears that the self-efficacy measure may be the best option for Crafton students. Specifically, self-efficacy has consistently been shown to predict academic achievement (Bandalos et al., 2003; Pintrich et al., 1993). In addition, research has also indicated that self-efficacy can be positively influenced by the institution (Hofer & Yu, 2003). Moreover, the coefficient alpha is extremely reliable at .93.

To help in choosing the most appropriate measurement scale, Table 2 on the following page contains the original statement on the MSLQ followed by the suggested transformation for the self-efficacy, and the intrinsic and the extrinsic measurement scales.

Table 2

Original and Suggested Statement Transformations for the MSLQ Self-Efficacy, and Intrinsic and Extrinsic Motivation Scales.

MSLQ Scale	Original Statement	Suggested Transformation
Self-Efficacy	<p>5. I believe I will receive an excellent grade in class.</p> <p>6. I'm certain I can understand the most difficult material presented in the readings for the course.</p> <p>12. I'm confident I can learn the basic concepts taught in this course.</p> <p>15. I'm confident I can understand the most complex material presented by the instructor in this course.</p> <p>20. I'm confident I can do an excellent job on the assignments and tests in this course.</p> <p>21. I expect to do well in this class.</p> <p>29. I'm certain I can master the skills being taught in this class.</p> <p>31. Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.</p>	<p>I believe I will receive excellent grades in the classes that I take at Crafton.</p> <p>I'm certain I can understand the most difficult material presented in the courses at Crafton.</p> <p>I'm confident I can learn the basic concepts taught in the courses at Crafton.</p> <p>I'm confident I can understand the most complex material presented by the instructors at Crafton.</p> <p>I'm confident I can do an excellent job on the assignments and tests in the courses at Crafton.</p> <p>I expect to do well in the courses that I take at Crafton.</p> <p>I'm certain I can master the skills being taught in the courses at Crafton.</p> <p>Considering that some of the courses and teachers are more difficult than others, I think I will still do well in the courses here.</p>
Intrinsic Motivation	<p>1. In a class like this, I prefer course material that really challenges me so I can learn new things.</p> <p>16. In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.</p> <p>22. The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.</p> <p>24. When I have the opportunity in this class, I choose course assignments that I can learn from even if they don't guarantee a good grade.</p>	<p>In classes, I prefer course material that really challenges me so I can learn new things.</p> <p>In classes, I prefer course material that arouses my curiosity, even if it is difficult to learn.</p> <p>The most satisfying thing for me in a course is trying to understand the content as thoroughly as possible.</p> <p>When I have the opportunity in a course, I choose course assignments that I can learn from even if they don't guarantee a good grade.</p>
Extrinsic Motivation	<p>7. Getting a good grade in this class is the most satisfying thing for me right now.</p> <p>11. The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.</p> <p>13. If I can, I want to get better grades in this class than most of the other students.</p> <p>30. I want to do well in this class because it is important to show my ability to my family, friends, employer, or others.</p>	<p>Getting good grades in the courses I take at Crafton is the most satisfying thing for me right now.</p> <p>The most important thing for me right now is achieving a high overall grade point average, so my main concern in the courses I take at Crafton is getting a good grade.</p> <p>If I can, I want to get better grades in the classes that I take at Crafton than most of the other students.</p> <p>I want to do well in the classes that I take at Crafton because it is important to show my ability to my family, friends, employer, or others.</p>

Table 3

Suggested Question Format for Each Question of the Self-Efficacy Measurement Scale.

Name	Question	Not at all true of me						Very true of me
SE1	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>I believe I will receive excellent grades in the classes that I take at Crafton.</p>	1	2	3	4	5	6	7
SE2	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>I'm certain I can understand the most difficult material presented in the courses at Crafton.</p>	1	2	3	4	5	6	7
SE3	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>I'm confident I can learn the basic concepts taught in the courses at Crafton.</p>	1	2	3	4	5	6	7
SE4	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose</p>	1	2	3	4	5	6	7

	<p>1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>I'm confident I can understand the most complex material presented by the instructors at Crafton.</p>							
SE5	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>I'm confident I can do an excellent job on the assignments and tests in the courses at Crafton.</p>	1	2	3	4	5	6	7
SE6	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>I expect to do well in the courses that I take at Crafton.</p>	1	2	3	4	5	6	7
SE7	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>I'm certain I can master the skills being taught in the courses at Crafton.</p>	1	2	3	4	5	6	7
SE8	<p>The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a</p>	1	2	3	4	5	6	7

	<p>statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.</p> <p>Considering that some of the courses and some of the teachers are more difficult than others, I still think I have the skills to do well in the courses here.</p>								
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Table 4

Example of How the Questions Appear in Accuplacer

The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

I believe I will receive excellent grades in the classes that I take at Crafton.

-  **A** 1 - Not at all true of me
-  **B** 2
-  **C** 3
-  **D** 4
-  **E** 5
-  **F** 6
-  **G** 7 - Very true of me

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The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

I'm certain I can understand the most difficult material presented in the courses at Crafton.

- A** 1 - Not at all true of me
- B** 2
- C** 3
- D** 4
- E** 5
- F** 6
- G** 7 - Very true of me

The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

I'm confident I can learn the basic concepts taught in the courses at Crafton.

- A** 1 - Not at all true of me
- B** 2
- C** 3
- D** 4
- E** 5
- F** 6
- G** 7 - Very true of me

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The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

I'm confident I can understand the most complex material presented by the instructors at Crafton.

- A** 1 - Not at all true of me
- B** 2
- C** 3
- D** 4
- E** 5
- F** 6
- G** 7 - Very true of me

The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

I'm confident I can do an excellent job on the assignments and tests in the courses at Crafton.

- A** 1 - Not at all true of me
- B** 2
- C** 3
- D** 4
- E** 5
- F** 6
- G** 7 - Very true of me

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The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

I expect to do well in the courses that I take at Crafton.

- A** 1 - Not at all true of me
- B** 2
- C** 3
- D** 4
- E** 5
- F** 6
- G** 7 - Very true of me

The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

I'm certain I can master the skills being taught in the courses at Crafton.

- A** 1 - Not at all true of me
- B** 2
- C** 3
- D** 4
- E** 5
- F** 6
- G** 7 - Very true of me

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The following question asks about your attitude about taking courses at Crafton College. Remember there is no right or wrong answer, just answer as accurately as possible. Use the scale to answer the question. If you think the statement below is very true of you, choose 7; if a statement is not at all true of you, choose 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

Considering that some of the courses and some of the teachers are more difficult than others, I still think I have the skills to do well in the courses here.

- A** 1 - Not at all true of me
- B** 2
- C** 3
- D** 4
- E** 5
- F** 6
- G** 7 - Very true of me

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