

Running head: ONLINE TASK VALUE AND SELF-EFFICACY SCALE

Final Report: Development and Initial Validation  
of the Online Learning Task Value and Self-Efficacy Scale

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The Online Learning Task Value and Self-Efficacy Scale (OLTVSES) is a self-report instrument designed to measure students' attitudes toward self-paced, online learning. The purpose of this report is to describe the development and initial validation procedures used to create the OLTVSES. To achieve this objective, the report includes the following sections: (1) a description of the study objectives and a statement of the problem; (2) a brief review of the literature describing the factors measured by the OLTVSES; (3) an overview of the process used to create the subscale items and a summary of the content validation methodology and results; (4) a description of the sample and data collection procedures; (5) a description of the exploratory factor analysis (EFA) and reliability procedures, including results and justifications for all critical decisions made during these procedures; (6) a description of the resulting scale, including subscale names and verbal descriptions of their content, estimates of internal reliability, means and standard deviations of each subscale, and correlations among each subscale; and (7) an overview of study limitations, implications, and suggestions for future research.

### Purpose of the Study

The purpose of the present study is to develop a quantitative self-report measure of perceived task value and self-efficacy, and to investigate reliability and validity evidence for the instrument. Investigations of this kind are particularly important because task value and self-efficacy have been shown to be significant predictors of students' cognitive engagement and academic achievement in traditional school settings (Pintrich, 1999; Schunk & Zimmerman, 1998). Furthermore, recent research has suggested that these motivational constructs may be even more critical in predicting student success in online, distance learning situations (Bandura, 1997; Zimmerman & Tsikalas, 2005). Given that survey research hinges on the legitimacy of the

measurement tools themselves, studying such instruments further informs the field. The ultimate goal of the present study, then, is to produce a psychometrically sound instrument that researchers can use to make valid empirical inferences.

### Statement of the Problem

With the rapid expansion of Internet-based technologies, online learning has emerged as a viable alternative to traditional classroom instruction (Moore, 2003; Tallent-Runnels et al., 2006). As a subset of a much larger form of instruction – distance education – online learning has become the format-of-choice for numerous institutions eager to provide students with the opportunity and convenience of learning from a distance (Moore & Kearsley, 2005; Simonson, Smaldino, Albright, & Zvacek, 2003). A recent survey of businesses by the American Society of Training and Development found the percentage of companies using computer-delivered training increased from 8% to 24% in 2003, with more than half of the computer-delivered courses offered online (Sugrue & Kim, 2004). Similarly, the Department of Defense, spending more than \$17 billion annually on military schools for almost three million personnel, recently committed to transforming almost 80% of its classroom training to computer-supported distance learning (United States General Accounting Office, 2003). Finally, institutions of higher education have joined the online learning frenzy. Waits and Lewis (2003) found that in academic year 2000-2001, 89% of public, four-year institutions offered distance education courses, with the majority (90%) of these institutions reporting that they offered online courses using asynchronous computer-based technologies.

The recent growth in online learning has resulted in a major shift in education and training from an instructor-centered to a learner-centered focus (Dillon & Greene, 2003; Gunawardena & McIsaac, 1996). With this shift has come the suggestion that, in the absence of

an ever-present instructor, students learning at a distance must take greater responsibility for the management and control of their own learning (Kearsley, 2000; King, Young, Drivere-Richmond, & Schrader, 2001; Schunk & Zimmerman, 1998). As Moore and Kearsley (2005) so aptly stated in their extensive book on distance education, “Students frequently do not understand that they must take a large degree of responsibility for their learning in a distance education course and not wait for the instructor or tutor to push them” (p. 178). In light of these concerns, a number of researchers have argued that online students, to an even greater extent than traditional learners, require well-developed self-regulated learning (SRL) skills to guide their cognition and behavior (Bandura, 1997; Zimmerman & Tsikalas, 2005).

Self-regulated learning has been defined as, “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features of the environment” (Pintrich, 2000, p. 453). Self-regulated learners are generally characterized as active participants who efficiently control their own learning experiences in many different ways, including establishing a productive work environment and using resources effectively; organizing and rehearsing information to be learned; and holding positive beliefs about their capabilities, the value of learning, and the factors that influence learning (Schunk & Zimmerman, 1994, 1998).

While most SRL theorists acknowledge the influence of motivation on self-regulation, Pintrich’s (2000, 2003) model stresses the importance of motivation in all phases of self-regulation. Pintrich and his colleagues have demonstrated that effective and non-effective self-regulated learners differ in several motivational processes. Specifically, their research suggests that the extent to which learners find a task interesting, important, and valuable relates positively

to their use of SRL strategies (Pintrich & De Groot, 1990; Pintrich & Schunk, 2002; Zimmerman & Bandura, 1994). Similarly, Wigfield (1994) reported that achievement values appear to relate to students' choices about whether or not to become cognitively engaged in a learning task. Likewise, in a study of how college students comprehend text materials, Schiefele (1992) found that students who were interested in the materials processed them more deeply and used more elaborate learning strategies while reading than did less interested students. In short, research findings suggest that students who view a learning task as valuable are more likely to use adaptive SRL strategies that result in superior learning outcomes (Pintrich, 1999).

Self-efficacy is another important motivational construct that has been shown to predict students' use of SRL strategies, as well as their overall academic achievement. According to Schunk (2005), "self-regulated learners are more self-efficacious for learning than are students with poorer self-regulatory skills; the former believe that they can use their self-regulatory skills to help them learn" (p. 87). For example, in a study of middle school students, Pintrich and De Groot (1990) found that students' self-efficacy beliefs were positively related to their cognitive engagement and academic performance. In a more recent study of college students in an online course, Lynch (2003) found that students' efficacy beliefs were among the best predictors of academic achievement, as measured by final course grades. Finally, results from a recent meta-analysis of more than 100 empirical studies conducted over the last 20 years found that of nine commonly researched psychosocial constructs, academic self-efficacy was the strongest single predictor of college students' academic achievement and performance (Robbins et al., 2004).

Taken together, much of the research on self-regulation has suggested that perceived task value and self-efficacy beliefs are important motivational characteristics that affect the extent to which students regulate their own learning and, ultimately, achieve academic success.

Furthermore, many scholars believe that students' motivational attributes and SRL skills may be even more critical when learning occurs in highly autonomous, online learning situations. The purpose of the present study is to develop a psychometrically sound self-report instrument that can be used to measure military and civilian students' perceived task value and self-efficacy for learning with self-paced, online courseware.<sup>1</sup>

### Measuring Task Value and Self-Efficacy

Prior to development of the OLTVSES, a literature review was conducted to determine if suitable instruments already existed that could be used to measure perceived task value and self-efficacy for learning with self-paced, online courseware.

#### *Perceived Task Value*

The most current research on the concept of perceived task value comes from expectancy-value theory and the work of Eccles and Wigfield (1995, 2002). These authors define task value in terms of four components: attainment value/importance, intrinsic interest value, extrinsic utility value, and cost. Attainment value (or, more simply, importance) is defined as the importance of doing well on a task, and is linked to the relevance of engaging in a task "for confirming or disconfirming salient aspects of one's self-schema" (Eccles & Wigfield, 2002, p. 119). Intrinsic interest is defined as the inherent enjoyment or pleasure one gets from engaging in an activity, or a person's subjective interest in the content of a task. Extrinsic utility value is defined as the usefulness of a task for individuals in terms of their short- and long-term goals, including academic and career goals. Finally, cost is conceptualized in terms of the negative aspects of participating in a task, as well as the amount of effort needed to succeed and the lost opportunities that may result. Of these four components of perceived task value, attainment,

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<sup>1</sup> Self-paced, online courseware is a specific type of online training in which learners use a web browser to access a course management system and complete web-based courses at their own pace. While completing these courses, students do not interact with an instructor or other students.

interest, and utility value are best thought of as “attracting characteristics that affect the positive valence of the task” (Eccles & Wigfield, 1995, p. 216).

Although the cost component of task value has not been researched as much empirically, the three positive components have received much attention. In a study of adolescents in grades 5 through 12, Eccles and Wigfield (1995) examined the dimensionality of a set of items measuring attainment, interest, and utility value and found them to be separable in both exploratory and confirmatory factor analysis. In a much earlier study, however, Parsons (1980) failed to find empirical distinctions between the three positive components of task value in EFA. Apparently, in this case, participants did not distinguish between these three theoretically separate constructs.

With the exception of the instrument developed by Eccles and Wigfield (1995), a review of the literature found very few scales designed to measure the three positive aspects of perceived task value as separate constructs. And while the instrument used by Eccles and Wigfield appears to have adequate psychometric properties, its domain specificity (mathematics) and brevity (the scale includes only seven items for measuring all three constructs) make the questionnaire undesirable for the present study.

#### *Self-Efficacy for Learning with Self-Paced, Online Courseware*

Since Bandura’s (1977) seminal article on the self-efficacy component of social cognitive theory, measures of self-efficacy have become ubiquitous in educational research. Bandura (1986) defined self-efficacy as, “People’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (p. 391). Bandura (1977) hypothesized that self-efficacy affects an individual’s choice of activities, effort, and persistence. People who have low self-efficacy for accomplishing a specific task may avoid it, while those who believe they are capable are likely to participate. Moreover, individuals who feel efficacious

are hypothesized to expend more effort and persist longer in the face of difficulties than those who are unsure of their capabilities (Bandura, 1997).

An important aspect of self-efficacy is its domain specificity. That is, people judge their capability depending on the particular domain of functioning (Bandura, in press). Personal efficacy, then, is not a general disposition void of context, but rather a self-judgment that is specific to the activity domain. As such, high self-efficacy in one domain does not necessarily indicate high efficacy in another. Therefore, to achieve predictive power, measures of perceived self-efficacy must be “tailored to domains of functioning and must represent gradations of task demands within those domains” (Bandura, 1997, p. 42).

The goal of the efficacy scale included in the OLTVSES is to assess the extent to which students feel confident they can learn effectively using self-paced, online courseware. A review of the literature failed to uncover any instruments designed to measure perceived self-efficacy for learning with self-paced, online courseware. However, the review did reveal a number of scales relating to self-efficacy for using online computer technologies, in general. For example Brown et al. (2003) developed a technology efficacy scale that included items associated with the use of various computer technologies in a synchronous, web-based learning environment. Unfortunately, this instrument was quite long, containing more than 35 items, and it did not address many of the capabilities required of learners in self-paced, online learning environments (e.g., logging in to a course management system, navigating through a computer-based course, and completing a course while dealing with the distractions of the work environment). Other authors (see, for example, Lynch, 2003; Miltiadou, 2001) have developed similar online technology efficacy scales, but again, these instruments were aimed at assessing efficacy for a slightly different domain of functioning (i.e., web-based learning environments that are

collaborative in nature and include access to an instructor and other students). Given the dearth of efficacy scales aimed specifically at self-paced, online learning, an original scale was developed in the present study.

#### Item Development and Content Validation Process

Based on the results of the literature review, initial items were developed for each subscale using the following process: (1) conceptual definitions were written for each construct (see Table 1); (2) approximately 10 items per construct were created based on the conceptual definitions; and (3) items were compared to similar scales in the literature and were edited to ensure all aspects of the construct had been covered.

Table 1

#### *Construct Categories and Conceptual Definitions for Each of the Four Subscales*

Construct Category	Conceptual Definition
I. Attainment Value/Importance	Attainment value (or, more simply, importance) is defined as the importance of doing well on a task in terms of one's self-schema and core personal values.
II. Intrinsic Interest Value	Intrinsic interest value is defined as the inherent enjoyment or pleasure one gets from engaging in an activity, or simply a person's subjective interest in the content of a task.
III. Extrinsic Utility Value	Extrinsic utility value is defined as the usefulness of a task in terms of one's short- and long-term goals, including academic and career goals.
IV. Self-Efficacy for Learning with Self-Paced, Online Courseware	Self-Efficacy for Learning with Self-Paced, Online Courseware is defined as an individual's confidence in his or her ability to successfully learn the material presented in a self-paced, online learning format.

Following initial item development, a content validation was completed on the draft items (DeVellis, 2003; McKenzie, Wood, Kotecki, Clark, & Brey, 1999). Six content experts were recruited to participate in the validation. Five were members of the Department of Educational Psychology at the University of Connecticut (one Associate Professor, one

Postdoctoral Fellow, and three graduate students), and the sixth content expert was an Instructional Designer with more than 25 years of experience developing training for the U.S. Navy.

Each content expert was provided with a detailed packet of information, including the 41 draft items (approximately 10 items per construct) and comprehensive instructions for completing the content validation. Content experts were given one week to finish the validation, which required them to review all items and perform the following four tasks: (1) identify the construct category into which each statement best fits, (2) indicate the certainty of their placement of the statement in the proper category, (3) indicate how relevant they felt each item was for the chosen category, and (4) rate how favorable each item was with respect to the chosen construct. Additionally, content experts were asked to recommend wording changes for any items they felt were unclear.

Content validation results were tallied and organized into a spreadsheet. Based on these results, the following general approach was used to select final items for each construct: (1) if an item was accurately categorized by less than 83% of the content raters (i.e., fewer than five out of six raters), the item was deleted, and (2) if the wording of an item was considered “too similar” to another item, mean scores for rater certainty, relevance, and favorability were reviewed and items with superior scores were selected. Appendix A presents a detailed account of item-by-item selection decisions for each construct category, as well as any wording changes.

#### *Attainment Value/Importance*

Content experts were provided with 10 items to rate in this category. In general, attainment value/importance caused the most confusion for content experts. Many experts recommended that these items be modified to specifically indicate importance to the *individual*,

vice importance for later use. In the end, four items were deleted, leaving six items to be piloted (see Appendix A, Table A1).

#### *Intrinsic Interest Value*

Content experts were provided with 10 items to rate in this category. In general, most experts selected the correct category for intrinsic interest value items. Only two items received a selection rate of less than 100%. However, many experts complained that items in this category were too similar in terms of their wording. Ultimately, four items were deleted, leaving six items to be piloted (see Appendix A, Table A2).

#### *Extrinsic Utility Value*

Content experts were provided with 11 items to rate in this category. In general, most content experts selected the correct category for extrinsic utility value items. Only three items received a selection rate of less than 83%. Ultimately, four items were deleted, leaving seven items to be piloted (see Appendix A, Table A3).

#### *Self-Efficacy for Learning with Self-Paced, Online Courseware*

Content experts were provided with 10 items to rate in the self-efficacy category, and all experts selected the correct category. Items were deleted based on wording similarities with other items, as well as expert recommendations. Ultimately, two items were deleted and one new item was added, leaving nine items to be piloted. The new item was added based on one expert's recommendation that the item addressed an important challenge specific to self-paced, online learning (see Appendix A, Table A4).

*Resulting Scale Based on the Content Validation*

The final pilot instrument included 28 items designed to measure the four hypothesized latent constructs (see Appendix B). A seven-point, Likert response scale was used for each item.

The response categories included were as follows:

completely disagree	disagree	tend to disagree	neutral	tend to agree	agree	completely agree
1	2	3	4	5	6	7

## Survey Sample and Timeline for Data Collection

Participants for this study consisted of a convenience sample from the Naval Operational Medicine Institute (NOMI), and authorization to conduct the survey was obtained by the Commanding Officer. Approximately 475 NOMI personnel were contacted via email by the command training officer and invited to participate in an anonymous, web-based survey concerning their experiences with self-paced, online learning. Following the initial email, two follow-up emails were sent during the second and third weeks of the data collection period. The follow-up emails served as reminders for individuals who failed to respond initially. Ultimately, however, completion of the survey was voluntary and no pressure was applied to those who did not comply.

A total of 204 individuals completed the survey (response rate = 43%). The sample included 150 men (74%) and 53 women (26%); 1 person did not report gender. The mean age of the participants was 39.0 years (SD = 9.3; range 22-69). Participants reported their military or civilian rank in terms of one of the following six categories: Junior Enlisted (E-1 to E-5;  $n = 31$ , 15%), Senior Enlisted (E-6 to E-9;  $n = 63$ , 31%), Warrant Officer (W-2 to W-5;  $n = 0$ ), Junior Officer (O-1 to O-4;  $n = 52$ , 26%), Senior Officer (O-5 to O-6;  $n = 21$ , 10%), and Civilian

(Government Service Employee;  $n = 33$ , 16%).<sup>2</sup> Participants reported a wide range of educational experience, including: High School/GED ( $n = 21$ , 10%), Some College ( $n = 51$ , 25%), 2-Year College ( $n = 24$ , 12%), 4-Year College (B.S./B.A.;  $n = 25$ , 12%), Masters Degree ( $n = 48$ , 24%), Doctoral Degree ( $n = 15$ , 7%), and Professional Degree (M.D./J.D.;  $n = 16$ , 8%).

### Results from the Exploratory Factor Analysis

#### *Exploratory Factor Analysis*

A principal axis factor analysis (PAF) with oblique rotation (Oblimin;  $\delta = 0$ ) was carried out on the 28 items from the OLTVSES using SPSS 13.0 (see factor analysis recommendations in Preacher and MacCallum, 2003). Oblique rotation methods allow for factors to be correlated, and the assumption was made that the four factors thought to be present in the OLTVSES might, in fact, correlate. Evaluation of the correlation matrix indicated that it was factorable: Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .928, which is “marvelous” ( $>.90$ ) according to Kasier’s criteria (Pett, Lackey, & Sullivan, 2003). Bartlett’s Test of Sphericity ( $\chi^2 = 4078.48$ ,  $df = 378$ ,  $p < .000$ ) was significant, indicating that the correlation matrix was not an identity matrix, and all measures of sampling adequacy were deemed sufficient (i.e.,  $>.60$ ; Pett et al., 2003).

The number of factors to extract was determined on the basis of several criteria, including parallel analysis, examination of the resulting scree plot, and eigenvalues greater than 1.0 (i.e., the K1 criterion; Hayton, Allen, & Scarpello, 2004). The parallel analysis, which compares mean eigenvalues from randomly generated data to the actual eigenvalues from the OLTVSES items, suggested that two factors should be retained.<sup>3</sup> Inspection of the scree plot, although subjective,

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<sup>2</sup> Enlisted personnel are non-management individuals with at least a high school diploma, and Officers are management personnel with at least a bachelor’s degree.

<sup>3</sup> Principle components analysis was used as the extraction technique in the parallel analysis (see recommendations in Hayton et al, 2004).

seemed to suggest two or three factors, while the K1 criterion suggested four initial factors. Based on these results, it was determined that three factors would be retained – a reasonable compromise considering the dangers of under-extracting and the tendency for the K1 criterion to over-extract (Hayton et al., 2004).<sup>4</sup>

The three initial factors extracted accounted for 57.8% of the total variance in the items. Inspection of the table of communalities revealed the majority of the items had high extracted communalities (i.e.,  $> .40$ ), which indicates that much of the common variance in the items can be explained by the three extracted factors (Pett et al., 2003). Only four items had low extracted communalities (i.e.,  $< .40$ ); items SE-2, SE-5, TV-5, and TV-18.

Several rules were used to determine the number of factors and individual items to be retained in the final solution: (1) factors needed to contain at least three items; (2) all pattern structure coefficients needed to be  $> |.50|$  on at least one factor; and (3) items with pattern structure coefficients  $\geq |.30|$  on more than one factor were dropped (see recommendations in Pett et al., 2003). The pattern and structure coefficients from the PAF analysis are displayed in Appendix C, Tables C1 and C2, respectively. The rotated pattern and structure coefficients were judged to have identical factor interpretations (i.e., all items had the strongest coefficients in the same factor in both rotated matrices), with the pattern matrix generating the most interpretable simple structure.

The first factor (extraction eigenvalue = 11.85) included 16 items: TV-1, TV-3, TV-4, TV-6 to TV-17, and TV-19. Although item TV-2 (*Understanding the material in this course was important to me*) loaded highly on Factor 1, it also loaded on Factor 3 and was therefore dropped from the final solution. The second factor (extraction eigenvalue = 3.52) included eight items:

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<sup>4</sup> Underestimating the number of factors to be initially retained can result in “loss of important information by ignoring a factor or combining it with another” (Hayton et al., 2004, p. 192). Generally speaking, specifying too few factors is considered a more serious problem than specifying too many factors (Pett et al., 2003).

SE-1 to SE-7 and SE-9. Although item SE-8 (*I am confident I can successfully navigate through a self-paced, online course*) loaded highly on Factor 2, it also loaded on Factor 3 and was therefore dropped from the final solution. The third factor (extraction eigenvalue = .83) had no items with pattern coefficients  $> |.50|$ , and, therefore, Factor 3 was dropped from the final solution. The correlation between the two remaining factors was .365.

#### Results from the Reliability Analysis

Following the factor analysis, negatively worded items were recoded, and an internal reliability analysis was completed on all items retained in Factors 1 and 2 using SPSS 13.0. The following procedure was used to analyze each subscale:

(1) The inter-item correlation matrix was inspected to determine if there was any redundancy between items. Items that were highly correlated ( $r > .70$ ) with more than four items were considered for deletion.

(2) The mean of the inter-item correlations was inspected and the standard deviation of the inter-item correlations was computed. In general, means that were  $\geq .30$  (ideally .40 to .70) were preferred, as was low variability in the inter-item correlations (as close to 0 as possible; preferably  $\leq .10$ ; Pett et al, 2003).

(3) The Item-Total Statistics table was inspected, with particular attention paid to the Corrected Item-Total Correlation column. In general, fairly high item-total correlations (in the vicinity of .40 to .75; Netemeyer, Bearden, & Sharma, 2003) were preferred, as was low variability across the item-total correlations.

(4) The Cronbach's Alpha if Item Deleted column was inspected to determine if deleting an item would provide a significant improvement in the internal reliability of the subscale scores.

*Subscale 1 – Task Value*

Based on the results of the PAF, a reliability analysis was run on the 16 items retained in the Task Value subscale. The Cronbach's alpha for these 16 items was .96. However, further inspection of the inter-item correlation matrix revealed some considerable redundancy in items TV-12 (*The material presented in this course is useful for me to know*) and TV-17 (*I enjoyed learning the material presented in this online course*). Each of these items was highly correlated ( $r > .70$ ) with four other items in the subscale. Therefore, these two items were deleted and the reliability analysis was run again on the remaining items. The inter-item correlation matrix for the resulting 14-item Task Value subscale can be found in Appendix D, Table D1. Overall, the subscale met the criteria described in the previous section (Cronbach's  $\alpha = .95$ ; see Table 2).

*Subscale 2 – Self-Efficacy for Learning with Self-Paced, Online Courseware*

Based on the results of the PAF, a reliability analysis was run on the eight items retained in the Self-Efficacy subscale. The Cronbach's alpha for these eight items was .88. However, further inspection of the inter-item correlation matrix revealed that item SE-2 (*I am confident I can successfully log in to an online course management system*) had low correlations ( $r < .40$ ) with four other items in the subscale. Inspection of the item-total correlation for the item confirmed this result. Therefore, item SE-2 was deleted and the reliability analysis was run again on the remaining items. The inter-item correlation matrix for the resulting seven-item Self-Efficacy subscale can be found in Appendix D, Table D2. Overall, the subscale met the criteria described in the previous section (Cronbach's  $\alpha = .89$ ; see Table 2).

Table 2

*Reliability Statistics for Each Subscale*

Subscale	# Items	Cronbach's Alpha	95% Confidence Interval		Mean Inter-Item Correlations	SD of Inter-Item Correlations
			Lower	Upper		
Task Value	14	.95	.94	.96	.58	.08
Self-Efficacy	7	.89	.86	.91	.54	.09

## Description of the Resulting Scale

*Item Retention Decisions*

A finalized list of the items retained in each of the two subscales is provided in Appendix E. To summarize, the following changes were made to the OLTVSES:

(1) Based on the PAF, items TV-2, TV-5, TV-18, and SE-8 were deleted from the scale. Items TV-2 and SE-8 had pattern structure coefficients  $\geq |.30|$  on multiple factors, indicating multi-dimensionality. In general, multi-dimensional items are undesirable in a scale, particularly when a summed score of the items will be used in various statistical analyses (e.g., analysis of variance and regression-based analysis; Netemeyer et al, 2003). Items TV-5 and TV-18 had low pattern structure coefficients (i.e., they were not  $> |.50|$  on at least one factor).<sup>5</sup>

(2) Based on the reliability analysis, items TV-12 and TV-17 were deleted from the Task Value subscale. These two items were highly correlated ( $r > .70$ ) with four other subscale items, indicating item redundancy. Deleting the items lowered the Cronbach's alpha slightly (from .96 to .95) and reduced the mean inter-item correlation (from .598 to .579). However, deleting the items also reduced some of the variation in the inter-item correlations (SD from .084 to .077).

<sup>5</sup> Item TV-18 had a pattern structure coefficient of  $-.502$  on Factor 1. Although this coefficient just met the retention criteria of  $> |.50|$ , the decision was made to delete the item because Factor 1 had so many items with strong factor loadings (i.e.,  $> |.64|$ ).

(3) Based on the reliability analysis, item SE-2 was deleted from the Self-Efficacy subscale. Correlations between this item and four others in the subscale were low ( $r < .40$ ). Deleting the item raised the Cronbach's alpha (from .88 to .89), increased the mean inter-item correlation (from .497 to .536), and reduced some of the variation in the inter-item correlations (SD from .118 to .089).

### *Subscale Scores*

Table 3 provides a summary of the two subscales that make up the OLVSES. These data are based on participant scores ( $n = 204$ ) on the items retained in accordance with the factor and reliability analyses described above.

Table 3

### *Subscale Summary Statistics Based on Participant Scores*

Subscale Name	# Items	Cronbach's Alpha	Mean	Standard Deviation	Subscale Correlation
Task Value	14	.95	4.47	1.16	.361**
Self-Efficacy	7	.89	5.36	1.07	

\*\* Note: Correlation is significant at the .01 level (2-tailed).

## Discussion

The purpose of the present study was to create a quantitative self-report measure of perceived task value and self-efficacy, and to investigate reliability and validity evidence for the instrument. Based on a review of the literature, items were developed to measure four latent constructs: attainment value/importance, intrinsic interest value, extrinsic utility value, and self-efficacy for learning with self-paced, online courseware. The items created to assess the three value constructs were derived from expectancy-value theory (see Eccles and Wigfield, 1995, 2002); while the items created to assess self-efficacy beliefs were developed using the theoretical assumptions of social cognitive theory (see Bandura, 1977, 1986, 1997).

*Subscale Interpretations*

Results from the factor analysis did not confirm the conceived survey structure. Instead of four factors, as hypothesized, results from the EFA suggested only two interpretable factors: Task Value and Self-Efficacy for Learning with Self-Paced, Online Courseware. The 14 items that make up the Task Value subscale (see Appendix E) assess the respondent's belief that a self-paced, online learning task is valuable. High scores on this subscale indicate the person finds the learning task interesting, important, and useful. The seven items that make up the Self-Efficacy subscale (see Appendix E) assess the respondent's confidence in his/her ability to learn the material presented in a self-paced, online course. High scores on this subscale indicate the person is completely confident he/she can learn the material presented in a self-paced, online format.

*Relating the Present Study to Past Research*

In their previous work on expectancy-value theory, Eccles and Wigfield (1995, 2002) found that attainment, interest, and utility value were separable in both exploratory and confirmatory factor analysis. Results from the present study did not support this conclusion. Instead, these findings suggest that participants did not differentiate between the three theoretically distinct components of task value. That being said, results of the present study are consistent with much earlier research by Parsons (1980), who conducted an EFA and also found no empirical distinctions between the three positive components of task value.

Although factor analysis failed to confirm the hypothesized instrument structure, the resulting two-factor scale appears to have a reasonable factor structure and good internal reliability. As such, the ultimate goal of the present study was achieved; namely, to produce a psychometrically sound survey for measuring respondents' perceived task value and self-efficacy beliefs with respect to self-paced, online learning. Furthermore, it should be noted that measuring

perceived task value as a single construct is not without precedent. The Motivated Strategies for Learning Questionnaire (MSLQ), a popular research instrument for assessing numerous motivational constructs, also measures task value as one, higher-level construct (see Pintrich, Smith, Garcia, & McKeachie, 1991, 1993). Similar to the task value subscale developed in the present study, the MSLQ measures task value using items that address the three positive components of the latent construct (i.e., attainment, interest, and utility value).

#### *Limitations and Future Research*

One limitation of the present study is the relatively small sample size collected. Although there is very little agreement in the literature regarding adequate sample size for factor analysis, Comrey (1988) stated that a sample size of 200 is adequate in most cases of ordinary factor analysis that involve no more than 40 items. On the other hand, Nunnally (as cited in Pett et al., 2003) suggested at least 10 subjects per item. The subject to item ratio for this study was 7.3 to 1, falling short of the 10 to 1 recommendation. Future investigations into the reliability and factor validity of the OLVSES should aim to collect larger samples.

The next step in the development of the OLVSES is to collect another sample and conduct a confirmatory factor analysis (CFA). In the area of scale development, CFA is used to test whether or not a hypothesized factor model fits the data (Netemeyer et al., 2003). Confirmatory factor analysis differs from EFA in that the researcher can “constrain” certain parameters to predetermined values and “free” others, thereby allowing the analysis to derive estimates of these model parameters (Thompson, 2004). Using CFA, then, the two-factor solution suggested by the present study can be tested more explicitly, and the OLVSES can undergo further refinement, as deemed necessary.

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Appendix A

Content Validation Selection Decisions

Table A1

*Selection Decisions for the Attainment Value/Importance Construct*

**Attainment Value/Importance**

In general, attainment value/importance caused the most confusion for content raters. Many raters recommended that these items be modified to specifically indicate importance to the individual, vice importance for later use, which they felt implied utilit

	Original Item	*Selection %	Comments	Final Item	Decision
1	The amount of effort it took to complete this course was worthwhile for me.	33%	Low selection percentage.		DELETE
2	For me, completing this course was critical to my identity.	100%	Two raters said this item did not read right and recommended that it be rewritten.	Performing well in this course made me feel good about myself.	KEEP
3	I felt that doing well in this self-paced, online course was imperative.	83%		I felt that doing well in this self-paced, online course was imperative for me.	KEEP
4	Finishing this self-paced, online course was an important accomplishment.	83%	One rater recommended a wording change to cut down on the use of the word "important."	Finishing this online course gave me a sense of accomplishment.	KEEP
5	It was essential that I perform well in this course.	67%	Although selection percentage was low, one rater recommended a wording change to improve item.	It was personally important for me to perform well in this course.	KEEP
6	It was important for me to learn the material in this self-paced, online course.	83%		It was important for me to learn the material in this course.	KEEP
7	Overall, this self-paced, online course was worthless.	0%	Low selection percentage.		DELETE
8	The content of this course was aligned with who I am as an individual.	67%	Low selection percentage.		DELETE
9	The knowledge I gained by taking this course was completely worth the effort.	17%	Low selection percentage.		DELETE
10	Understanding the material in this course was important to me.	100%		Understanding the material in this course was important to me.	KEEP

\* Percentage of content raters who put the item in the correct category.

Table A2

*Selection Decisions for the Intrinsic Interest Value Construct*

<b>Intrinsic Interest Value</b>		In general, most content raters selected the correct category for intrinsic interest value items. Only two items received a selection rate of less than 100%. However, many raters complained that items in this category were too similar in terms of their wo			
	<b>Original Item</b>	<b>*Selection %</b>	<b>Comments</b>	<b>Final Item</b>	<b>Decision</b>
1	This self-paced, online course included many interesting activities.	83%		This self-paced, online course included many interesting activities.	<b>KEEP</b>
2	I think what I learned in this course was interesting.	100%	This item is very similar to item 5, and item 5 is written using slightly stronger language. Additionally, the mean favorability score for item 5 is higher.		<b>DELETE</b>
3	This online course was very boring.	100%	This item's favorability rating is 2.0 and will reverse coded.	This online course was very boring. (reverse coded)	<b>KEEP</b>
4	I enjoyed learning the material presented in this online course.	100%		I enjoyed learning the material presented in this online course.	<b>KEEP</b>
5	I was very interested in the content of this course.	100%		I was very interested in the content of this course.	<b>KEEP</b>
6	In general, I enjoyed working through the material in this self-paced, online course.	100%	This item is very similar to item 4, and item 4 is more concisely written.		<b>DELETE</b>
7	Overall, I was very interested in the material presented in this online course.	100%	This item is very similar to item 5, and item 5 is more concisely written. The two items have similar content validation ratings.		<b>DELETE</b>
8	I liked the subject matter of this course.	100%		I liked the subject matter of this course.	<b>KEEP</b>
9	This course held my attention.	<b>67%</b>	Low selection percentage. One rater felt the item was not applicable to the construct.		<b>DELETE</b>
10	I really liked completing this self-paced, online course.	100%		I really <b>enjoyed</b> completing this self-paced, online course.	<b>KEEP</b>

\* Percentage of content raters who put the item in the correct category.

Table A3

*Selection Decisions for the Extrinsic Utility Value Construct*

<b>Extrinsic Utility Value</b>		In general, most content raters selected the correct category for extrinsic utility value items. Only three items received a selection rate of less than 83%.			
	<b>Original Item</b>	<b>*Selection %</b>	<b>Comments</b>	<b>Final Item</b>	<b>Decision</b>
1	Completing this course moved me closer to attaining my career goals.	100%		Completing this course moved me closer to attaining my career goals.	<b>KEEP</b>
2	I am a more valuable member of the Navy team because of this course.	50%	Low selection percentage.		<b>DELETE</b>
3	What I learned in this course will come in handy later on.	67%	Low selection percentage.		<b>DELETE</b>
4	I am sure that I will use what I learned in this self-paced, online course.	100%	This item is very similar to item 6, and item 6 has a slightly higher mean relevance score.		<b>DELETE</b>
5	I will be able to use what I learned in this course in my job.	83%		I will be able to use what I learned in this course in my job.	<b>KEEP</b>
6	In the long run, I will be able to use what I learned in this course.	100%		In the long run, I will be able to use what I learned in this course.	<b>KEEP</b>
7	The information I learned in this course has very little use in my daily life.	100%	This item's favorability rating is 2.3 and will reverse coded.	The information I learned in this course has very little use in my daily life. (reverse coded)	<b>KEEP</b>
8	The knowledge I gained by taking this course can be applied in many different situations.	100%		The knowledge I gained by taking this course can be applied in many different situations.	<b>KEEP</b>
9	The material presented in this course is useful for me to know.	100%		The material presented in this course is useful for me to know.	<b>KEEP</b>
10	This course provided a great deal of practical information.	83%		This course provided a great deal of practical information.	<b>KEEP</b>
11	What I learned in this self-paced, online course is valuable in my daily life.	67%	Low selection percentage.		<b>DELETE</b>

\* Percentage of content raters who put the item in the correct category.

Table A4

*Selection Decisions for the Self-Efficacy Construct*

<b>Self-Efficacy for Learning with Self-Paced, Online Courseware</b>		All content raters selected the correct category for self-efficacy for learning with self-paced, online courseware. Items were deleted based on wording similarities with other items, as well as rater recommendations.			
	<b>Original Item</b>	<b>*Selection %</b>	<b>Comments</b>	<b>Final Item</b>	<b>Decision</b>
1	Even in the face of technical difficulties, I am certain I can learn the material presented in a self-paced, online course.	100%		Even in the face of technical difficulties, I am certain I can learn the material presented in an online course.	<b>KEEP</b>
2	I am certain I can understand the most difficult material presented in a self-paced, online course.	100%		I am certain I can understand the most difficult material presented in a self-paced, online course.	<b>KEEP</b>
3	I am confident I can successfully log in to an online course management system.	100%		I am confident I can successfully log in to an online course management system.	<b>KEEP</b>
4	I can perform well in a self-paced, online learning course.	100%		I can perform well in a self-paced, online course.	<b>KEEP</b>
5	I can deal with most difficulties that I encounter when learning online.	100%	This item is very similar to item 1, and item 1 has slightly better mean relevance and mean favorability scores.		<b>DELETE</b>
6	I am confident I can learn without the presence of an instructor or other classmates to assist.	100%	Two raters considered this item to be double-barreled; it has been slightly modified.	I am confident I can learn without the presence of an instructor to assist <b>me</b> .	<b>KEEP</b>
7	I often have difficulties when trying to learn online.	100%	This item is very similar to item 10, and item 10 is more specific to "comprehension difficulties" which appears to be more closely related with <i>learning</i> online. The two items have very similar content validation ratings.		<b>DELETE</b>
8	I am confident I can do an outstanding job on the activities in a self-paced, online course.	100%		I am confident I can do an outstanding job on the activities in a self-paced, online course.	<b>KEEP</b>
9	I am confident I can successfully navigate through a self-paced, online learning course.	100%		I am confident I can successfully navigate through a self-paced, online course.	<b>KEEP</b>
10	I find it difficult to comprehend information presented in a self-paced, online course.	100%	This item's favorability rating is 2.6 and will reverse coded. Also, one rater said this item's wording did not read right.	I find it difficult to comprehend information presented in a self-paced, online <b>learning format</b> . (reverse coded)	<b>KEEP</b>
11	<b>New Item</b>	N/A	One rater recommended the addition of another item that addresses an important challenge specific to the task.	<b>Even with distractions at work, I am confident I can learn material presented online.</b>	<b>KEEP</b>

\* Percentage of content raters who put the item in the correct category.

Appendix B

Resulting Scale Based on the Content Validation

Attainment Value/Importance	% of raters selected
1. Understanding the material in this course was important to me.	100
2. It was personally important for me to perform well in this course.	67
3. I felt that doing well in this self-paced, online course was imperative for me.	83
4. It was important for me to learn the material in this course.	83
5. Finishing this online course gave me a sense of accomplishment.	83
6. Performing well in this course made me feel good about myself.	100
Intrinsic Interest Value	% of raters selected
1. I liked the subject matter of this course.	100
2. This online course was very boring. (reverse coded)	100
3. I really enjoyed completing this self-paced, online course.	100
4. I was very interested in the content of this course.	100
5. This self-paced, online course included many interesting activities.	83
6. I enjoyed learning the material presented in this online course.	100
Extrinsic Utility Value	% of raters selected
1. I will be able to use what I learned in this course in my job.	83
2. In the long run, I will be able to use what I learned in this course.	100
3. This course provided a great deal of practical information.	83
4. The material presented in this course is useful for me to know.	100
5. Completing this course moved me closer to attaining my career goals.	100
6. The knowledge I gained by taking this course can be applied in many different situations.	100
7. The information I learned in this course has very little use in my daily life. (reverse coded)	100
Self-Efficacy for Learning with Self-Paced, Online Courseware	% of raters selected
1. I can perform well in a self-paced, online course.	100
2. I am confident I can successfully log in to an online course management system.	100
3. Even in the face of technical difficulties, I am certain I can learn the material presented in an online course.	100
4. I am confident I can learn without the presence of an instructor to assist me.	100
5. I find it difficult to comprehend information presented in a self-paced, online learning format. (reverse coded)	100
6. I am confident I can do an outstanding job on the activities in a self-paced, online course.	100
7. I am certain I can understand the most difficult material presented in a self-paced, online course.	100
8. I am confident I can successfully navigate through a self-paced, online course.	100
9. Even with distractions at work, I am confident I can learn material presented online.	N/A

Appendix C

Pattern and Structure Matrices Generated from the PAF solution

Table C1

*Pattern matrix generated from the PAF solution with Oblimin rotation.*

	Pattern Matrix <sup>a</sup>		
	Factor		
	1	2	3
TV-10 I was very interested in the content of this course.	.914	-.127	
TV-12 The material presented in this course is useful for me to know.	.850		.256
TV-17 I enjoyed learning the material presented in this online course.	.844		-.124
TV-15 It was important for me to learn the material in this course.	.840		.234
TV-11 I felt that doing well in this self-paced, online course was imperative for me.	.792		-.135
TV-3 I will be able to use what I learned in this course in my job.	.777		.211
TV-16 The knowledge I gained by taking this course can be applied in many different situations.	.776		
TV-6 In the long run, I will be able to use what I learned in this course.	.774	.127	.181
TV-7 I really enjoyed completing this self-paced, online course.	.744	.127	-.231
TV-2 Understanding the material in this course was important to me.	.731		.325
TV-4 It was personally important for me to perform well in this course.	.731		
TV-13 Completing this course moved me closer to attaining my career goals.	.721		
TV-9 This course provided a great deal of practical information.	.708		
TV-19 Finishing this online course gave me a sense of accomplishment.	.694	.125	-.159
TV-8 Performing well in this course made me feel good about myself.	.679	.156	-.236
TV-14 This self-paced, online course included many interesting activities.	.672		-.246
TV-1 I liked the subject matter of this course.	.646		
TV-18 The information I learned in this course has very little use in my daily life. (REV)	-.502	.119	
TV-5 This online course was very boring. (REV)	-.370	-.196	.289
SE-6 I am confident I can do an outstanding job on the activities in a self-paced, online course.		.800	
SE-4 I am confident I can learn without the presence of an instructor to assist me.		.786	
SE-7 I am certain I can understand the most difficult material presented in a self-paced, online course.		.779	
SE-3 Even in the face of technical difficulties, I am certain I can learn the material presented in an online course.		.766	
SE-1 I can perform well in a self-paced, online course.		.765	
SE-9 Even with distractions at work, I am confident I can learn material presented online.		.679	-.156
SE-8 I am confident I can successfully navigate through a self-paced, online course.		.636	.351
SE-5 I find it difficult to comprehend information presented in a self-paced, online learning format. (REV)		-.569	.114
SE-2 I am confident I can successfully log in to an online course management system.	.118	.535	.191

Extraction Method: Principal Axis Factoring.  
 Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 4 iterations.

\*\*Note: Pattern coefficients < .10 are not reported.

Table C2

Structure matrix generated from the PAF solution with Oblimin rotation.

	Structure Matrix		
	Factor		
	1	2	3
TV-17 I enjoyed learning the material presented in this online course.	.871	.387	-.137
TV-10 I was very interested in the content of this course.	.868	.204	
TV-12 The material presented in this course is useful for me to know.	.847	.289	.249
TV-15 It was important for me to learn the material in this course.	.832	.272	.228
TV-6 In the long run, I will be able to use what I learned in this course.	.819	.396	.165
TV-7 I really enjoyed completing this self-paced, online course.	.792	.416	-.247
TV-3 I will be able to use what I learned in this course in my job.	.790	.307	.201
TV-11 I felt that doing well in this self-paced, online course was imperative for me.	.788	.285	-.141
TV-16 The knowledge I gained by taking this course can be applied in many different situations.	.749	.210	
TV-2 Understanding the material in this course was important to me.	.746	.292	.315
TV-4 It was personally important for me to perform well in this course.	.744	.301	
TV-19 Finishing this online course gave me a sense of accomplishment.	.740	.390	-.174
TV-8 Performing well in this course made me feel good about myself.	.737	.422	-.254
TV-9 This course provided a great deal of practical information.	.722	.299	
TV-14 This self-paced, online course included many interesting activities.	.707	.354	-.258
TV-13 Completing this course moved me closer to attaining my career goals.	.705	.223	
TV-1 I liked the subject matter of this course.	.657	.262	
TV-18 The information I learned in this course has very little use in my daily life. (REV)	-.459		
TV-5 This online course was very boring. (REV)	-.444	-.353	.307
SE-6 I am confident I can do an outstanding job on the activities in a self-paced, online course.	.359	.824	
SE-7 I am certain I can understand the most difficult material presented in a self-paced, online course.	.304	.791	-.125
SE-4 I am confident I can learn without the presence of an instructor to assist me.	.245	.768	
SE-3 Even in the face of technical difficulties, I am certain I can learn the material presented in an online course.	.239	.748	
SE-1 I can perform well in a self-paced, online course.	.212	.746	-.128
SE-9 Even with distractions at work, I am confident I can learn material presented online.	.337	.723	-.208
SE-8 I am confident I can successfully navigate through a self-paced, online course.	.303	.636	.302
SE-2 I am confident I can successfully log in to an online course management system.	.312	.564	.149
SE-5 I find it difficult to comprehend information presented in a self-paced, online learning format. (REV)	-.158	-.559	.157

Extraction Method: Principal Axis Factoring.  
 Rotation Method: Oblimin with Kaiser Normalization.

Appendix D

Inter-Item Correlation Matrices for the Task Value and Self-Efficacy Subscales

Table D1

*Inter-Item Correlation Matrix for the Task Value Subscale*

Inter-Item Correlation Matrix															
	TV-1 I liked the subject matter of this course.	TV-3 I will be able to use what I learned in this course in my job.	TV-4 It was personally important for me to perform well in this course.	TV-6 In the long run, I will be able to use what I learned in this course.	TV-7 I really enjoyed completing this self-paced, online course.	TV-8 Performing well in this course made me feel good about myself.	TV-9 This course provided a great deal of practical information.	TV-10 I was very interested in the content of this course.	TV-11 I felt that doing well in this self-paced, online course was imperative for me.	TV-13 Completing this course moved me closer to attaining my career goals.	TV-14 This self-paced, online course included many interesting activities.	TV-15 It was important for me to learn the material in this course.	TV-16 The knowledge I gained by taking this course can be applied in many different situations.	TV-19 Finishing this online course gave me a sense of accomplishment.	
TV-1 I liked the subject matter of this course.	1.000	.554	.530	.548	.582	.443	.471	.646	.378	.468	.442	.490	.454	.367	
TV-3 I will be able to use what I learned in this course in my job.	.554	1.000	.628	.755	.597	.545	.523	.648	.543	.542	.511	.678	.611	.504	
TV-4 It was personally important for me to perform well in this course.	.530	.628	1.000	.608	.615	.641	.494	.640	.676	.533	.473	.588	.448	.618	
TV-6 In the long run, I will be able to use what I learned in this course.	.548	.755	.608	1.000	.676	.544	.648	.690	.592	.503	.563	.694	.619	.557	
TV-7 I really enjoyed completing this self-paced, online course.	.582	.597	.615	.676	1.000	.673	.595	.693	.609	.546	.671	.556	.536	.559	
TV-8 Performing well in this course made me feel good about myself.	.443	.545	.641	.544	.673	1.000	.520	.566	.698	.556	.544	.541	.513	.743	
TV-9 This course provided a great deal of practical information.	.471	.523	.494	.648	.595	.520	1.000	.654	.574	.451	.538	.572	.625	.532	
TV-10 I was very interested in the content of this course.	.646	.648	.640	.690	.693	.566	.654	1.000	.687	.582	.586	.746	.639	.573	
TV-11 I felt that doing well in this self-paced, online course was imperative for me.	.378	.543	.676	.592	.609	.698	.574	.687	1.000	.559	.573	.702	.633	.699	
TV-13 Completing this course moved me closer to attaining my career goals.	.468	.542	.533	.503	.546	.556	.451	.582	.559	1.000	.571	.587	.595	.560	
TV-14 This self-paced, online course included many interesting activities.	.442	.511	.473	.563	.671	.544	.538	.586	.573	.571	1.000	.507	.579	.532	
TV-15 It was important for me to learn the material in this course.	.490	.678	.588	.694	.556	.541	.572	.746	.702	.587	.507	1.000	.621	.647	
TV-16 The knowledge I gained by taking this course can be applied in many different situations.	.454	.611	.448	.619	.536	.513	.625	.639	.633	.595	.579	.621	1.000	.537	
TV-19 Finishing this online course gave me a sense of accomplishment.	.367	.504	.618	.557	.559	.743	.532	.573	.699	.560	.532	.647	.537	1.000	

The covariance matrix is calculated and used in the analysis.

Table D2

*Inter-Item Correlation Matrix for the Self-Efficacy Subscale*

Inter-Item Correlation Matrix							
	SE-1 I can perform well in a self-paced, online course.	SE-3 Even in the face of technical difficulties, I am certain I can learn the material presented in an online course.	SE-4 I am confident I can learn without the presence of an instructor to assist me.	SE-5rev I find it difficult to comprehend information presented in a self-paced, online learning format. (REV)	SE-6 I am confident I can do an outstanding job on the activities in a self-paced, online course.	SE-7 I am certain I can understand the most difficult material presented in a self-paced, online course.	SE-9 Even with distractions at work, I am confident I can learn material presented online.
SE-1 I can perform well in a self-paced, online course.	1.000	.591	.538	.435	.641	.523	.487
SE-3 Even in the face of technical difficulties, I am certain I can learn the material presented in an online course.	.591	1.000	.588	.338	.533	.597	.538
SE-4 I am confident I can learn without the presence of an instructor to assist me.	.538	.588	1.000	.412	.624	.643	.579
SE-5rev I find it difficult to comprehend information presented in a self-paced, online learning format. (REV)	.435	.338	.412	1.000	.483	.436	.400
SE-6 I am confident I can do an outstanding job on the activities in a self-paced, online course.	.641	.533	.624	.483	1.000	.695	.549
SE-7 I am certain I can understand the most difficult material presented in a self-paced, online course.	.523	.597	.643	.436	.695	1.000	.622
SE-9 Even with distractions at work, I am confident I can learn material presented online.	.487	.538	.579	.400	.549	.622	1.000

The covariance matrix is calculated and used in the analysis.

Appendix E

Items Retained in the Final Subscales

**Task Value:**

- TV-1: I liked the subject matter of this course.
- TV-3: I will be able to use what I learned in this course in my job.
- TV-4: It was personally important for me to perform well in this course.
- TV-6: In the long run, I will be able to use what I learned in this course.
- TV-7: I really enjoyed completing this self-paced, online course.
- TV-8: Performing well in this course made me feel good about myself.
- TV-9: This course provided a great deal of practical information.
- TV-10: I was very interested in the content of this course.
- TV-11: I felt that doing well in this self-paced, online course was imperative for me.
- TV-13: Completing this course moved me closer to attaining my career goals.
- TV-14: This self-paced, online course included many interesting activities.
- TV-15: It was important for me to learn the material in this course.
- TV-16: The knowledge I gained by taking this course can be applied in many different situations.
- TV-19: Finishing this online course gave me a sense of accomplishment.

**Self-Efficacy for Learning with Self-Paced, Online Courseware:**

- SE-1: I can perform well in a self-paced, online course.
- SE-3: Even in the face of technical difficulties, I am certain I can learn the material presented in an online course.
- SE-4: I am confident I can learn without the presence of an instructor to assist me.
- SE-5: I find it difficult to comprehend information presented in a self-paced, online learning format. (Reverse Coded)
- SE-6: I am confident I can do an outstanding job on the activities in a self-paced, online course.
- SE-7: I am certain I can understand the most difficult material presented in a self-paced, online course.
- SE-9: Even with distractions at work, I am confident I can learn material presented online.