
# User's Manual

## for those administering the

# Learning and Study Strategies Inventory

**Second Edition**

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**Learning and Study Strategies Inventory**
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# PART 1: OVERVIEW OF THE LASSI

## WHAT IS THE LASSI AND WHAT DOES IT MEASURE?

The Learning and Study Strategies Inventory (LASSI) is a 10-scale, 80-item assessment of students' awareness about and use of learning and study strategies related to **skill**, **will** and **self-regulation** components of strategic learning. The focus is on both covert and overt thoughts, behaviors, attitudes, motivations and beliefs that relate to successful learning in post-secondary educational and training settings **and** that can be altered through educational interventions. Research has repeatedly demonstrated that these factors contribute significantly to success in college and that they can be learned or enhanced through educational interventions such as learning strategies and study skills courses.

The LASSI is both **diagnostic** and **prescriptive**. The LASSI provides standardized scores (percentile score equivalents) and national norms for ten different scales (there is no total score reported because this is a diagnostic instrument). It provides students with a diagnosis of their strengths and weaknesses, compared to other college students, in the areas covered by the ten scales, and it is prescriptive in that it provides feedback about areas where students may be weak and need to improve their knowledge, skills, attitudes, motivations and beliefs.

## HOW CAN THE LASSI BE USED?

The LASSI is designed to be used as:

(1) A screening measure to help students develop greater awareness of their learning and studying strengths and weaknesses;

(2) A diagnostic measure to help identify areas in which students could benefit most from educational interventions;

(3) A basis for planning individual prescriptions for both remediation and enrichment;

(4) A means for instructors to use for examining individual students' scores and class trends to help them decide where to place the greatest emphasis for assignments, projects, individual logs, journals, portfolios and other class activities;

(5) A pre-post achievement measure for students participating in programs or courses focusing on learning strategies and study skills;

(6) An evaluation tool to assess the degree of success of intervention courses or programs; and

(7) An advising/counseling tool for college orientation programs, advisors, developmental education programs, learning assistance programs, and learning centers.

## INTRODUCTION TO THE LASSI SCALES

There are eight items on each of the ten scales of the LASSI. These scales are: Anxiety, Attitude, Concentration, Information Processing, Motivation, Selecting Main Ideas, Self Testing, Study Aids, Test Strategies, and Time Management.

Each of these scales is primarily related to one of three of the components of strategic learning: **skill**, **will** and **self-regulation**. The conceptual framework of strategic learning underlies each of these components, so there is some overlap and interaction among and within the components and individual scales. However, strategic learners need to know about each of these categories and about how to use information and skills in each of these categories. They also need to know how to pick and choose among the various elements in each category to help them reach specific learning goals and objectives.

### SKILL COMPONENT OF STRATEGIC LEARNING

The LASSI scales related to the skill component of strategic learning are: **Information Process-**

**ing, Selecting Main Ideas, and Test Strategies**. These scales examine students' learning strategies, skills and thought processes related to identifying, acquiring and constructing meaning for important new information, ideas and procedures, and how they prepare for and demonstrate their new knowledge on tests or other evaluative procedures.

The **Information Processing Scale** assesses how well students' can use imagery, verbal elaboration, organization strategies, and reasoning skills as learning strategies to help learn new information and skills and to build bridges between what they already know and what they are trying to learn and remember.

> Do students try to summarize or paraphrase their class reading assignments?
>
> Do they try to relate what is being presented in class to their prior knowledge?

The **Selecting Main Ideas Scale** assesses students' skill at identifying important information for further study from less important information and supporting details.

> Can students identify the key points in a lecture?
>
> Can they decide what is important to underline in a textbook?

The **Test Strategies Scale** assesses students' use of both test preparation and test taking strategies.

> Do students know how to study for tests in different types of courses?
>
> Do they review their answers to essay questions?

## THE WILL COMPONENT OF STRATEGIC LEARNING

The LASSI scales related to the will component of strategic learning are: **Anxiety**, **Attitude**, and **Motivation**. These scales measure the degree to which students worry about their academic performance, their receptivity to learning new information, their attitudes and interest in college, their diligence, self-discipline, and willingness to exert the effort necessary to successfully complete academic requirements.

The **Anxiety Scale** assesses the degree to which students worry about school and their academic performance.

> Do students worry so much that it is hard for them to concentrate?
>
> Are they easily discouraged by low grades?

The **Attitude Scale** assesses students' attitudes and interests in college and achieving academic success.

> How clear are students about their own educational goals?
>
> Is school really important or worthwhile to them?

The **Motivation Scale** assesses students' diligence, self-discipline, and willingness to exert the effort necessary to successfully complete academic requirements.

> Do students stay up-to-date in class assignments?
>
> Do they easily "give up" in difficult classes?

## THE SELF-REGULATION COMPONENT OF STRATEGIC LEARNING

The LASSI scales related to the self-regulation component of strategic learning are: **Concentration, Self-Testing, Study Aids,** and **Time Management**. These scales measure how students manage, or self-regulate and control, the whole learning process through using their time effectively, focusing their attention and maintaining their concentration over time, checking to see if they have met the learning demands for a class, an assignment or a test, and using study supports such as review sessions, tutors or special features of a textbook.

The **Concentration Scale** assesses students' ability to direct and maintain their attention on academic tasks.

Are students easily distracted?

Can they direct their attention to school tasks?

The **Self Testing Scale** assesses students' use of reviewing and comprehension monitoring techniques to determine their level of understanding of the information or task to be learned.

Do the students review before a test?

Do they stop periodically while reading to review the content?

The **Study Aids Scale** assesses students' use of support techniques, materials or resources to help them learn and remember new information.

Do students complete practice exercises?

Do they create or use organizational aids?

The **Time Management Scale** assesses students' use of time management principles for academic tasks.

Are students well organized?

Do they anticipate scheduling problems?

Sample items for each scale are included in Part 3: Description of the Individual LASSI Scales.

Coefficient Alphas for the scales range from a low of .73 to a high of. 89.

# PART 2: ADMINISTRATION AND SCORING

The LASSI is designed to simplify administration and scoring as much as possible without losing power or diagnostic information. To help achieve this goal, it uses a self-report format and does not require any special administration procedures, such as specially trained personnel. The directions are included on the front of each printed booklet so it can be used in both individual and group settings. The Web-administered version presents the same directions to each user. The LASSI, 2nd edition is not a timed measure but most students complete it in approximately 15-20 minutes. Self-scoring the print version takes approximately 10 minutes. However, if the Web-administered version of the LASSI is used, then the scoring will be completed online and the scoring reports will be computer-generated. The LASSI uses a self-report format and does not require any special administration procedures. In fact, it has a simple scoring scheme that can be used by students to compute their own scale scores right on the print version of the instrument, making it easier to use in settings where scoring is prohibitively time consuming, too expensive or where computers are not available in sufficient numbers, such as student orientation programs, academic courses, and learning centers.

For each of the 80 items on the LASSI, students are requested to darken the letter that corresponds to how well the statement describes them. For example, darkening the letter **a** for an item would indicate that the statement is **not at all typical** of the student, while darkening the letter **e** would indicate that the statement is **very much typical** of the student. Students are also cautioned to respond according to how well the statements reflect their behaviors or thinking processes and not how they think they should respond or how others would respond.

The LASSI yields ten individual scale scores, one for each of the ten scales. No total score is computed because this is a diagnostic instrument. These scale scores can then be compared numerically or graphically to the norms provided or to local norms or cut-off scores developed by an institution or program. The data provided with the LASSI includes percentile score equiva-

lents. Based on a student's scale scores, either in relation to the national norms included with the instrument or to a percentile cut-off score (the 75th percentile being a common cut-off used on many campuses), prescriptions can then be made. For example, if a student scores poorly on the **Test Strategies** Scale, he/she should be advised to concentrate at least part of his/her efforts on learning more about how to prepare for and take tests. A low score on the **Anxiety** Scale indicates a difficulty with focusing attention on task-relevant thoughts and behaviors rather than on fears and concerns about failure and incompetence. The student doing poorly on this scale would need to learn more about dealing with irrational thoughts and negative self-talk. She or he would have to learn how to cope with anxiety-arousing stimuli and take more responsibility for the direction of her or his own thinking processes.

Each printed LASSI assessment contains the following parts: 1) An introduction to the inventory; 2) an explanation of how to complete the LASSI; 3) the inventory items; 4) a summary of the students responses coded by scale (on pressure-sensitive paper for the print version); 5) scoring directions; 6) scoring summary sheets; and, 7) information about interpreting individual scale scores. The introduction to the LASSI is on the front page, the directions for taking the LASSI are on the second page. Pages 3 - 7 contain the LASSI items. Page 9 is the pressure sensitive page where student responses are recorded and keyed to the appropriate scale using a 3-letter code (e.g., SMI represents the **Selecting Main Ideas** Scale). This pressure-sensitive page is used to record students' scale scores on Page 11 (Page 12 uses pressure sensitive paper to make a copy of students' scale scores for the administrator). Pages 11 and 12 also include a graph students can use to record and compare their scores, brief descriptions of each scale, and an explanation of how to interpret scale scores in relation to national norms or two cut-off scores.

The Web version of the LASSI contains the following parts: 1) An introduction to the inventory; 2) an explanation of how to complete the LASSI; 3) the inventory items; and, 4) information about interpreting individual scale scores. All scoring, reporting and graphics are generated automatically by the computer and provided to the student (a copy can also be provided to the administrator).

If the LASSI is to be self-scored, students must use the data recorded on Page 9 and the scoring directions on Page 11. On Page 9, they must add the item responses for each scale. Each item is numbered and keyed with a 3-letter code to indicate the appropriate scale. Responses on these sheets appear as numbers rather than letters. It should also be noted that approximately half of the items are numbered from 1 to 5 while the other half are numbered from 5 to 1. This is because some items are stated in a positive direction (such as item number 9, "I try to identify potential test questions when reviewing my class material,") while others are stated in a negative direction (such as item number 49, "I find it hard to pay attention during lectures."). Students must then add the numbers for the items on each scale (8 numbers ranging from 1 to 5) and place them in the appropriate places on the bottom of Page 9 of the LASSI booklet. To get a better overall view of their performance, these total scale scores can then be placed on the graph on Page 11 of the booklet. This graph uses the national norms for each scale to transform the raw scores into percentiles so that relative performance in different areas can be assessed.

Using the graph on Page 11 students can see how their answers compare to the answers of the norm groups. The graph is also marked off at the 75th and 50th percentiles to facilitate advising and counseling. Students who score above the 75th percentile often do not need to work on the strategies or skills for that scale. Students who score between the 75th and the 50th percentile on any scale should consider improving the relevant learning and study skills to optimize their academic performance. Students who score below the 50th percentile usually need to improve their relevant knowledge and skills to increase their chances of succeeding in a post-secondary setting. It should also be noted that these cut-offs could be modified depending on the local setting or the development of local norms. A copy of the national norms used to

create the graph can be found in Table 1 of this user's manual. The data in Table 1 represent the percent of students in the norm group that fall at or below a given raw score for each scale.

## SUMMARY OF SCORING INSTRUCTIONS

1. After completing all 80 LASSI items, turn to Page 9 to add up the score for each of the 10 scales (the minimum possible is 8 and the maximum possible is 40).

2. The 3-letter codes at the top of each column on Page 9 indicate the scale code for that set of items. For example, items 29, 61, 35, 69, 43, 72, 46, and 78 all provide information about your anxiety (ANX). Each of your responses is marked on the right-hand side of the page. Each response is connected by a horizontal line to a box on the left-hand side of the page. Enter the number you circled for each statement in its associated box.

3. When you have filled in all of the boxes, add each of the 10 columns of numbers and place the totals in the spaces on the bottom left of the page, just above the 3-letter codes.

4. To produce a profile of your learning and study strategies, turn to Page 11. Each column is labeled with a 3-letter code representing one of the ten LASSI scales. Find your score on the scale directly above each scale code and circle this number. Do this for each scale. For example, if your ATT score was 32, find the number 32 just above the ATT scale code and circle the 32. If you cannot find your exact score, circle the next lowest number.

5. When you have finished circling your scores for all ten LASSI scales on the chart, connect the dots to see your LASSI profile.

6. The columns on the far left and far right of the chart show percentiles. To find your percentile rank for each of the ten scales compared to a national norm group of college students, locate the number in the left or right column in the row where you circled your score for each LASSI scale. For example, if you circled 32 in the MOT (Motivation) column, a 50 is in the left column for that row. This means that your responses are in the 50th percentile of the national norms for the Motivation Scale — 50% of the college students participating in the norming sample scored at or below your score.

7. To compare a student's profile with the national norms for the LASSI, you can also look at the two rows marked with double lines. If any of the circles in a profile are above the lower double line, the student's responses are above the 50th percentile. If they are above the upper double line, they are above the 75th percentile. A copy of the norms can be found in Table 26 in Appendix E.

# PART 3: DESCRIPTION OF THE INDIVIDUAL LASSI SCALES

## ANXIETY

Current conceptions of anxiety emphasize the interactive effects of our own thought processes, beliefs, and emotions and how they affect academic performance. Cognitive worry, a major component of anxiety, is manifested in negative self-referent statements. These negative thoughts, beliefs and feelings about one's abilities, intelligence, future, interactions with others, or likelihood of success, divert a student's attention away from the task at hand, such as studying or taking a test. If a student is worried that he will not have the time to finish a test, then he is just making matters worse by taking even more time away to worry about his performance. This type of self-defeating behavior often sabotages a student's efforts. If students are tense, anxious, or fearful about studying or performing in academic situations, this will divert their attention away from the academic task and inward to self-criticism or irrational fears.

Students' scores on this scale measure how tense or concerned they are when approaching academic tasks. Students who score low on this measure (indicating high anxiety) need to learn techniques for coping with anxiety and reducing worry so that they can focus on the task at hand and not on their anxiety. Many very capable students are often incapable of demonstrating their true level of knowledge and skill because they are paralyzed or distracted by debilitating anxiety. In fact, helping some students learn how to reduce their anxiety is sufficient for helping them to improve their performance. Once these attentional blocks are removed, many students show large increases in performance.

Coefficient Alpha = .87

Sample Items:

When I am studying, worrying about doing poorly in a course interferes with my concentration.

I feel very panicky when I take an important test.

## ATTITUDE

Students' general attitudes toward school and their general motivation for succeeding in school have a great impact on their diligence when studying, particularly in autonomous situations in which they must study on their own. If the relationships between school and life goals (academic, personal, social and work-related goals) are not clear, then it is difficult to maintain a mind-set that promotes good work habits, concentration, and attention to school and its related tasks.

Students' scores on this scale measure their general attitudes and motivation for succeeding in school and performing the tasks related to school success. Students who score low on this measure need to work on higher-level goal setting and reassess how school fits into their future. If school is not seen as relevant to the student's life goals and attitudes, then it will be difficult, if not impossible, to generate the level of motivation needed to help take responsibility for one's own learning and for helping to manage one's own study activities.

Coefficient Alpha = .77

Sample Items:

I do not care about getting a general education, I just want to get a good job.

I only study the subjects I like.

## CONCENTRATION

Concentration helps students to focus their attention on school-related activities, such as studying and listening in class, rather than on distracting thoughts, emotions, feelings, or situations. People have a limited capacity to process what is going on around them and in their own thoughts; if they are distracted, there will be less capacity to focus on the task at hand. For students this means that distractions, or anything else that interferes with concentration, will divert attention away from school-related tasks.

Students' scores on this scale measure their abilities to concentrate and direct their attention to school and school-related tasks, including study activities. Students who score high on this measure are effective at focusing their attention and maintaining a high level of concentration. Students who score low on this measure are less successful at focusing their attention on the task at hand by eliminating interfering thoughts, emotions, feelings, and situations. They need to learn techniques to enhance concentration and to set priorities so that they can attend to school as well as to their other responsibilities. Learning techniques for focusing attention and maintaining concentration helps students implement effective learning strategies and can make learning and studying both more effective and more efficient.

Coefficient Alpha = .86

Sample Items:

My mind wanders a lot when I study.

If I get distracted during class, I am able to refocus my attention.

## INFORMATION PROCESSING

Meaningful learning is enhanced by the use of elaboration and organization strategies. These strategies help to build bridges between what a student knows and what he or she is trying to learn and remember. Using what we already know, that is, our prior knowledge, experiences, attitudes, beliefs, and reasoning skills to help make meaning out of new information is critical to success in educational and training settings. The difference between an expert and a novice is not just the amount of knowledge they possess but also, and perhaps even more important, the way that knowledge is acquired and organized. It is the difference between storing one thousand folders by throwing them in the middle of a room versus storing them by some meaningful organization in filing cabinets.

Students' scores on this scale measure how well they can create imaginal and verbal elaborations and organizational schemes to foster understanding and recall. Students who score low on this measure need to learn methods that they can use to help add meaning and organization to what they are trying to learn. These methods range from simple paraphrasing and summarizing to creating analogies, the use of application, creating organizational schemes and outlining, and the use of synthesis, inferential, and analytic reasoning skills. A student who does not have a repertoire of these strategies and skills will find it difficult to incorporate new knowledge and understanding in such a way that acquisition and recall will be effective, often despite the large amount of time spent studying. The effectiveness and efficiency of both autonomous and classroom learning are facilitated by the use of information processing strategies.

Coefficient Alpha = .84

Sample Items:

To help me remember new principles we are learning in class, I practice applying them.

I try to find relationships between what I am learning and what I already know.

## MOTIVATION

The Attitude Scale measures students' general attitudes toward school and their general motivation for succeeding in school. However, although general attitudes and motivation levels are important, so is a student's motivation to perform the specific tasks related to achievement. The degree to which students accept responsibility for studying and for their performance is reflected in the everyday behaviors they exhibit related to school and school tasks. These behaviors include reading the textbook, preparing for class, finishing assignments on time, and being diligent in studying, even if the topic is not particularly interesting to them (or even trying to figure out ways to make it more interesting).

Students' scores on this scale measure the degree to which they accept responsibility for performing the specific tasks related to school success. Students who score low on this measure need to work on goal setting, perhaps at the more global levels assessed on the Attitude Scale, but certainly at the more specific level of individual tasks and assignments. Accepting more responsibility for studying and achievement outcomes requires that students learn to attribute much of what happens to them in school to their own efforts rather than to outside forces such as luck or poor teachers, or to uncontrollable forces such as innate ability. Accepting more responsibility and attributing success to one's efforts results in more effective studying and school performance.

Coefficient Alpha = .84

Sample Items:

When work is difficult I either give up or study only the easy parts.

I set goals for the grades I want in my classes.

## SELECTING MAIN IDEAS

Effective and efficient studying requires that the student be able to select the important material for in-depth attention. Most lectures, discussions, and textbooks contain redundant material, extra examples, and many supporting details to help explain what is being taught or presented. A major school task involves separating the important from the unimportant or simply didactic information that does not have to be remembered. If a student cannot select the critical information, then the learning task becomes complicated by the huge amount of material the individual is trying to acquire. Lacking this skill also increases the likelihood that the student will not have enough time to study everything that must be covered.

Students' scores on this scale measure their skills at selecting important information to concentrate on for further study in classroom, lecture or autonomous learning situations. Students who score low on this measure need to learn more about how to identify important information so that they can focus their attention and information processing strategies on appropriate material.

Coefficient Alpha = .89

Sample Items:

I have difficulty identifying the important points in my reading.

When studying, I seem to get lost in the details and miss the important information.

## SELF TESTING

Reviewing and testing one's level of understanding are important for knowledge acquisition and comprehension monitoring. These strategies both support and contribute to meaningful learning and effective performance. Without them learning could be incomplete or errors might persist undetected. Reviewing and self testing also contribute to knowledge consolidation and integration across topics. Using mental reviews, going over class notes and the text, thinking up potential questions to guide reading or help prepare for an exam are all important methods for checking understanding, consolidating new knowledge, integrating related information (both from what is being learned and from what is already known), and identifying if additional studying must be done.

Students' scores on this scale measure their awareness of the importance of self testing and reviewing and the degree to which they use these methods. Students who score low on this measure need to learn more about the importance of self testing as well as specific methods for reviewing school material and monitoring their comprehension. These methods include structured reviews of large amounts of material; mental reviews of individual study segments; asking questions before, during, and after reading, studying, or going to class; trying to use new information in novel ways; trying to apply a principle or method; and using a systematic approach to study.

Coefficient Alpha = .84

Sample Items:

I stop periodically while reading and mentally go over or review what was said.

To check my understanding, I make up possible test questions and try to answer them.

## STUDY AIDS

Students need to know how to create their own study aids and how to use those created by others. For example, textbook authors or publishers will often use headings, special type, white space, special markings, summaries, and statements of objectives to help students learn from their materials. Many also provide Web sites or other supplementary materials to help students learn the material. However, unless students know how to recognize and use these hints and aids, they will not benefit from them. It is also important for students to know how to generate their own study aids by methods such as the creation of diagrams, text marking, creating charts or summary sheets, and underlining. There are other supplementary activities that also support and enhance meaningful learning such as attending group review sessions, going to the instructor during office hours, searching for related material on the Web, forming study groups, or comparing notes with other students to check for accuracy or completeness.

Students' scores on this scale measure their ability to use or create study aids that support and increase meaningful learning and retention. Students who score low on this scale may need to learn more about the types of study aids provided in educational materials and classes and how they can create their own aids. Using and creating study aids improves both the effectiveness and the efficiency of learning.

Coefficient Alpha = .73

Sample Items:

I try to find a study partner or study group for each of my classes.

My underlining is helpful when I review text material.

## TEST STRATEGIES

Effective test performance depends on both preparation strategies and test-taking strategies. A student needs to know how to prepare for the type of performance that will be required and how to maximize that performance. Test preparation includes knowing about the type of test they will be taking. For example, is it going to be a short-answer or a multiple-choice exam? Will performance require simple recall or will concepts, principles, and ideas need to be applied? Test preparation also includes knowing about methods for studying and learning the material in a way that will facilitate remembering the mateiral and using it at a later time. Test-taking strategies include knowing about the characteristics of tests and test items, and how to create an effective test-taking plan.

Students' scores on this scale measure their use of test-taking and test preparation strategies. Students who score low on this measure may need to learn more about how to prepare for tests, how to create a plan of attack for taking a test, the characteristics of different types of tests and test items, and how to reason through to an answer. Often, students' performance on a test is not an accurate indicator of what they have learned. Knowing about test-taking and test-preparation strategies and how to use them helps students target their study activities, set up useful study goals, implement an effective study plan, and demonstrate their knowledge and skill acquisition so it can be accurately evaluated.

Coefficient Alpha = .80

Sample Items:

I have difficulty adapting my studying to different types of courses.

I review my answers on essay tests to make sure I have made and supported my main points.

## TIME MANAGEMENT

Managing time effectively is an important self-regulation strategy for learning. Most students have various demands on their time; only by creating realistic schedules and using them can they fit in everything. Creating and using schedules also encourages students to take more responsibility for their own behavior. It requires some knowledge about themselves as students and learners. What are their best and worst times of day? Which subjects are easier or harder for them? What are their preferences for learning methods? This type of knowledge and self awareness helps students to create workable schedules, and perhaps even more important, it helps students to create the motivation to use them.

Students' scores on this scale measure the degree to which they create and use schedules. Students who score low on this scale may need to learn about how to create a schedule and how to deal with distractions, competing goals, and procrastination. Accepting more responsibility for studying and achievement outcomes requires that students set realistic school goals and create plans that will facilitate goal achievement. Effective time management enhances these activities.

Coefficient Alpha = .85

Sample Items:

I find it hard to stick to a study schedule.

I set aside more time to study the subjects that are difficult for me.

# PART 4: THE DEVELOPMENT OF THE LASSI, 1ST EDITION

The developmental work that led to the creation of the LASSI began twenty-two years ago as part of the Cognitive Learning Strategies Project at the University of Texas at Austin. In response to the increasing numbers of academically under-prepared students entering post-secondary educational and training settings, many institutions were creating programs to address student deficiencies. However, one of the major problem areas in this field related to assessment. The successful implementation of a learning and study strategies course or program requires a reliable and valid means for measuring students' deficits and progress. In addition, an accurate diagnosis of entry-level skills could be used to create individualized prescriptions for improvement and subsequent assessments as well as to provide a basis for evaluating the effectiveness of the course or program.

## EARLY DEVELOPMENTAL ACTIVITIES

The first few years of work focused on data gathering. In addition, an analysis was made of existing published and experimental instruments and inventories. We found that the topics encompassed by the terms "study skills" and "learning strategies" varied considerably among researchers, practitioners, and assessment measures. Since there was no consensus concerning definitional components, the initial phases of this work involved an attempt to create a categorical scheme. To assist in this work, we conducted a survey project to examine the contents of study skills books, manuals, and programs. Input was also gathered from a series of experts in the area.

## DEVELOPMENT OF AN ITEM POOL

Using the data gathered in the first series of studies, an initial item pool was created. This pool of 645 items was drawn from all of the sources used in the early developmental stage. Using a tentative categorical scheme that was developed, expert judges sorted the items.

During the process of sorting the items, two major problems were identified: first, many items were close duplicates; and second, a number of items fit into more than one category (e.g., time management as a test-taking strategy). The first problem was resolved by eliminating duplicate items and the second was left to be addressed after the initial pilot tests when the categorical scheme could be revised based on both the descriptive and correlational data collected. In addition, items that did not directly deal with study practices (e.g., items about personality characteristics) and items whose content concerned an aspect of behavior or experience that could not be altered and, therefore, could not be a target for remediation (e.g., "My parents read to me as a child.") were eliminated. Specialists in tests and measurements rewrote items that were confusing, compound items (those containing more than one question or statement in the same item), and poorly worded items.

As a result of these selection processes, the pool of potential items was reduced to 291. Although the LASSI currently uses a Likert-type scale, these initial pilot items were converted to a true-false format. Approximately half of the items were worded positively and half were worded negatively.

## PILOT TESTING

A preliminary pilot test was conducted to evaluate the administration procedures and to begin collecting psychometric data about the items. Different groups of students completed approximately one third of the items (to reduce the burden of testing for any one individual), a measure of social desirability and a questionnaire about the items and administration procedures. A subset of this population was also interviewed.

The measure of social desirability was used to determine the degree of relationship between responses to individual items and the subject's desire to be socially acceptable. This response bias can be a major problem for self-report instruments. The post-experimental questionnaire was used to gather information from the students about perceived difficulties, problem questions, and suggested modifications and improvements.

Based on an analysis of this data set and its relation to other student data such as Scholastic Aptitude Test scores, grade-point average, and high school rank, a number of changes were made. First, the format was changed to a Likert-type measure. Second, wording and phrasing changes were made on a number of items. Finally, items correlating above .50 with the measure of social desirability were eliminated. In addition, confusing or unclear items were rewritten or eliminated.

In addition to eliminating items from the potential pool, a number of new items were added. The sources of these new items included: a survey of current research literature in cognitive psychology, responses from students on the post-experimental questionnaire, suggestions from practitioners, and student responses on the Learning Activities Questionnaire, a precursor of the LASSI developed as part of the project.

Two content matter specialists and two psychometricians then examined this new pool of items independently. A revised set of 14 categories containing at least 7 items for each category was created. This version of the LASSI had 149 items.

A second pilot test was conducted to evaluate the administration procedures and to examine the properties of the items on the revised instrument. The descriptive data collected and the student comments made during the feedback portion of the administration sessions were used to establish criteria for selecting items for the field test version of the LASSI. This version of the LASSI had 130 items. In addition, a preliminary study of test-retest reliability (with a 3- to 4-week interval) was conducted. A test-retest correlation of .88 was computed for the total instrument.

## SCALE CONSTRUCTION

A series of field tests was conducted over a 2-year period. During this period the number of items was reduced from 130 to 90, and 10 scales measuring clusters of learning strategies, study skills, attitudes and beliefs were developed. These clusters were identified by groups of experts and refined using psychometric data, such as Coefficient Alpha, for each potential scale. In addition, preliminary norms were developed using the Fall 1982 incoming freshman class at a small private college in the eastern United States (with a representative student body). A total of 850 students participated, with complete data available for 780 students.

The scales were refined and thirty new items were created and added prior to another large-scale field test in 1984. Item analysis data were used to create the 77-item form of the LASSI. Norms were developed using a sample of 880 incoming freshman from a large southern university. Test-retest correlations (3-week intervals) were computed on a sample of 209 students from an introductory course in communications at the same school.

A number of different approaches were used to examine the validity of the LASSI. First, the scale scores were compared, where possible, to other tests or subscales measuring similar factors. Second, several of the scales were validated against performance measures. Finally, the LASSI was subjected to repeated tests of user

validity. Professors, advisors, developmental educators, counselors, and learning center specialists at more than 30 colleges and universities used the LASSI on a trial basis. They reported few, if any, administration problems and a high degree of usefulness in their settings.

We have also examined the usefulness of the LASSI as part of our own work on the Cognitive Learning Strategies Project. It has been used repeatedly in an undergraduate course in learning-to-learn that is a part of our real-world laboratory. This course is designed to help academically underprepared and educationally disadvantaged students who are either experiencing, or are predicted to experience, academic problems while attending college. Approximately 1,000 students per year enroll. This 3-credit elective course is taught in sections of about 30 each. The LASSI has been used to help diagnose individual student problems, to direct both remediation and enrichment activities, and to evaluate student progress and course components.

# PART 5: THE DEVELOPMENT OF THE LASSI, 2nd EDITION

The developmental work that led to the creation of the LASSI, 2nd Edition began 5 years ago as part of the Cognitive Learning Strategies Project at the University of Texas at Austin. The LASSI, 2nd Edition was developed to:

1. Update the LASSI and remove dated items, such as Item #72, "Often when studying I seem to get lost in details and 'can't see the forest for the trees'." The expression, "… can't see the forest for the trees," was commonly used in the 1980's when the LASSI was developed but is no longer familiar to many college students.

2. Incorporate current research findings in the areas of cognitive educational psychology, developmental education, higher education, instructional psychology and the psychology of learning. For example, a greater emphasis was placed on the metacognitive concepts of awareness, reflection and self-regulation.

3. Incorporate changes in educational practice and instruction in higher education. For example, the Study Aids scale was updated to reflect students' use of Web sites associated with their textbooks or courses.

4. Broaden the scope of some of the scales to increase the degree to which they sample the underlying domains. For example, the Concentration Scale samples more broadly from the domain of academic tasks required of a college student.

5. Create equal numbers of items for each scale. The Selecting Main Ideas Scale on the original LASSI contained only five items. Now all of the scales contain eight items.

6. Improve further the psychometric properties of the LASSI. For example, the lowest Coefficient Alpha for any scale on the LASSI, 2nd Edition, is now .73, and all but two scales are above .80.

7. Create national norms based on a more broad-based sample. The sample was drawn from twelve different institutions representing different geographical regions as well as university, community college, state college and technical institutions.

## EARLY DEVELOPMENTAL ACTIVITIES

The initial task in this project consisted of a series of interviews with professionals in both developmental education and educational psychology who either worked with or conducted research about students who were at-risk, or predicted to be at-risk, of academic failure or low performance in higher education settings, broadly defined. The data from these interviews helped us to identify criteria for the improvement of the LASSI, 1st Edition. In addition, feedback was also solicited from educational psychometricians with expertise in diagnostic/prescriptive assessments. Finally, a review of relevant research, related textbooks, and other learning assistance materials and Web sites was also conducted.

## DEVELOPMENT OF AN ITEM POOL

Using the data gathered during the early development activities, an initial item pool was created. This initial pool of 134 items consisted of 77 items drawn from the 1st edition of the LASSI and 57 items created for the 2nd edition to address the seven developmental goals listed above in the introduction to this section. This pool of items was then examined by a team of developmental educators and educational psychologists, and, as a result of their input, a number of modifications were made: the wording of some of the items was changed, several items were deleted and new items were created to replace the discarded ones. After a second review, the items were randomly sorted to create a pilot test version of the instrument.

## PILOT TESTING

The pilot test was administered to 2,400 entering students at a major university in the southwestern part of the United States. Students' Scholastic Aptitude Test (SAT) scores, if available, were also collected at this time. Achievement data were collected from these students in both the fall and spring semesters of 1998 and 1999. Based on an analysis of the students' LASSI item pool data set and its psychometric properties (including item/scale characteristics) and relation to other student data such as their SAT scores, grade-point averages, and high school rank, a number of changes were made. For example, some items were eliminated, some were modified, and work began on the development of additional items to strengthen further the scale definitions and psychometric properties.

A team of developmental educators, educational psychologists and educational psychometricians examined this new pool of 166 items (77 items from the LASSI, 1st Edition, 29 items from the pilot test version of the LASSI, 2nd Edition, and 60 new items written for the field test of the LASSI, 2nd Edition). After relatively minor wording revisions, a series of pilot tests were conducted with five groups of college students to examine the item characteristics and interpretation by students. This student feedback was the final step in preparing for the broad-based field test and norm development.

## FIELD TESTING AND NORM DEVELOPMENT

The field test and norming version of the LASSI, 2nd Edition contained extra items for each scale (only 80 of the 166 items field tested were needed for the final instrument. The field test/norming version was administered to 1,092 students from twelve different institutions representing different geographical regions as well as university, community college, state college and technical institutions. See Appendix A, Table 1 for a summary of the sample size by institution breakdown. See Appendix A, Tables 2-13 for breakdowns of the sample according to age, ethnicity, gender, and GPA, as well as the breakdowns across these categories.

Balancing both conceptual and psychometric analyses, ten scales of eight items each were developed using those items that best represented the breadth and depth of the conception under-

lying each scale and that provided the strongest psychometric properties for the scale. Summaries of the item statistics for each of the LASSI, 2nd Edition scales can be found in Appendix B, Tables 14-23. Appendix C, Table 24 presents scale statistics (mean, standard deviation and Coefficient Alpha) for each of the 10 scales. Appendix D, Table 25 lists the inter-scale correlations for all scales and Appendix E, Table 26 contains a listing of the norms for the LASSI, 2nd Edition.

## Appendix A: Descriptions of the Field Test and Norming Sample (Tables 1-13)

**Table 1**
Demographics of the LASSI Norming Sample
Sample Size by Type of Institution

| | Number of Schools | Number of Students |
|---|---|---|
| University | 3 | 201 |
| Community College | 5 | 495 |
| State College | 3 | 348 |
| Technical Institute | 1 | 48 |
| Total | 12 | 1,092 |

**Table 2**
Demographics of the LASSI Norming Sample
GPA by Gender

| GPA | Male | Female | Total |
|---|---|---|---|
| Below 2.0 | 6 | 20 | 26 |
| 2.0 - 2.5 | 70 | 76 | 146 |
| 2.5 - 3.0 | 120 | 182 | 302 |
| 3.0 - 3.5 | 131 | 260 | 391 |
| 3.5 - 4.0 | 50 | 177 | 227 |
| Total | 377 | 715 | 1,092 |

**Table 3**
Demographics of the LASSI Norming Sample
Ethnicity by Gender

| Ethnicity | Male | Female | Total |
|---|---|---|---|
| White, non-Hispanic | 235 | 474 | 709 |
| African-American | 58 | 95 | 153 |
| Hispanic | 54 | 95 | 149 |
| Asian or Pacific Islander | 7 | 9 | 16 |
| Other | 23 | 42 | 65 |
| Grand Total | 377 | 715 | 1,092 |

**Table 4**
Demographics of the LASSI Norming Sample
Age by Gender

| Age | Male | Female | Total |
|---|---|---|---|
| 17 or younger | 32 | 52 | 84 |
| 18-19 | 225 | 403 | 628 |
| 20-21 | 45 | 56 | 101 |
| 22-23 | 16 | 37 | 53 |
| 24-25 | 12 | 31 | 43 |
| 26 or older | 47 | 136 | 183 |
| Total | 377 | 715 | 1,092 |

**Table 5**
Demographics of the LASSI Norming Sample
Ethnicity by Age

| Ethnicity | 17 or younger | 18-19 | 20-21 | 22-23 | 24-25 | 26 or older | Total |
|---|---|---|---|---|---|---|---|
| White, non-Hispanic | 49 | 394 | 67 | 38 | 32 | 129 | 709 |
| African-American | 14 | 83 | 13 | 6 | 6 | 31 | 153 |
| Hispanic | 11 | 110 | 13 | 4 | 1 | 10 | 149 |
| Asian or Pacific Islander | 1 | 9 | 2 | 1 | 2 | 1 | 16 |
| Other | 9 | 32 | 6 | 4 | 2 | 12 | 65 |
| Total | 84 | 628 | 101 | 53 | 43 | 183 | 1,092 |

**Table 6**
Demographics of the LASSI Norming Sample
Ethnicity by GPA

| Ethnicity | Below 2.0 | 2.0 - 2.5 | 2.5 - 3.0 | 3.0 - 3.5 | 3.5 - 4.0 | Total |
|---|---|---|---|---|---|---|
| White, non-Hispanic | 15 | 75 | 167 | 264 | 188 | 709 |
| African-American | 7 | 40 | 63 | 36 | 7 | 153 |
| Hispanic | 1 | 21 | 45 | 62 | 20 | 149 |
| Asian or Pacific Islander | 1 | 2 | 4 | 6 | 3 | 16 |
| Other | 2 | 8 | 23 | 23 | 9 | 65 |
| Total | 146 | 302 | 391 | 227 | 26 | 1,092 |

**Table 7**
Demographics of the LASSI Norming Sample
GPA by Age

| Ethnicity | 17 or younger | 18-19 | 20-21 | 22-23 | 24-25 | 26 or older | Total |
|---|---|---|---|---|---|---|---|
| Below 2.0 | 1 | 9 | 5 | 2 | 5 | 4 | 26 |
| 2.0 - 2.5 | 7 | 80 | 22 | 13 | 8 | 16 | 146 |
| 2.5 - 3.0 | 26 | 177 | 27 | 16 | 8 | 48 | 302 |
| 3.0 - 3.5 | 35 | 237 | 32 | 16 | 9 | 62 | 391 |
| 3.5 - 4.0 | 15 | 125 | 15 | 6 | 13 | 53 | 227 |
| Grand Total | 84 | 628 | 101 | 53 | 43 | 183 | 1,092 |

**Table 8**
Demographics of the LASSI Norming Sample
Ethnicity by GPA — Males

| Ethnicity | Below 2.0 | 2.0 - 2.5 | 2.5 - 3.0 | 3.0 - 3.5 | 3.5 - 4.0 | Total |
|---|---|---|---|---|---|---|
| White, non-Hispanic | 4 | 42 | 67 | 83 | 39 | 235 |
| African-American | 1 | 17 | 21 | 19 | 0 | 58 |
| Hispanic | 0 | 6 | 19 | 22 | 7 | 54 |
| Asian or Pacific Islander | 1 | 1 | 2 | 2 | 1 | 7 |
| Other | 0 | 4 | 11 | 5 | 3 | 23 |
| Total | 6 | 70 | 120 | 131 | 50 | 377 |

**Table 9**
Demographics of the LASSI Norming Sample
Ethnicity by GPA — Females

| GPA | Below 2.0 | 2.0 - 2.5 | 2.5 - 3.0 | 3.0 - 3.5 | 3.5 - 4.0 | Total |
|---|---|---|---|---|---|---|
| White, non-Hispanic | 11 | 33 | 100 | 181 | 149 | 474 |
| African-American | 6 | 23 | 42 | 17 | 7 | 95 |
| Hispanic | 1 | 15 | 26 | 40 | 13 | 95 |
| Asian or Pacific Islander | 0 | 1 | 2 | 4 | 2 | 9 |
| Other | 2 | 4 | 12 | 18 | 6 | 42 |
| Total | 20 | 76 | 182 | 260 | 177 | 715 |

**Table 10**
Demographics of the LASSI Norming Sample
Age by GPA — Males

| Age | Below 2.0 | 2.0 - 2.5 | 2.5 - 3.0 | 3.0 - 3.5 | 3.5 - 4.0 | Total |
|---|---|---|---|---|---|---|
| 17 or younger | 0 | 4 | 10 | 14 | 4 | 32 |
| 18-19 | 2 | 43 | 78 | 73 | 29 | 225 |
| 20-21 | 2 | 10 | 13 | 17 | 3 | 45 |
| 22-23 | 1 | 6 | 6 | 3 | 0 | 16 |
| 24-25 | 1 | 3 | 2 | 2 | 4 | 12 |
| 26 or older | 0 | 4 | 11 | 22 | 10 | 47 |
| Total | 6 | 70 | 120 | 131 | 50 | 377 |

**Table 11**
Demographics of the LASSI Norming Sample
Age by GPA — Females

| Age | Below 2.0 | 2.0 - 2.5 | 2.5 - 3.0 | 3.0 - 3.5 | 3.5 - 4.0 | Total |
|---|---|---|---|---|---|---|
| 17 or younger | 1 | 3 | 16 | 21 | 11 | 52 |
| 18-19 | 7 | 37 | 99 | 164 | 96 | 403 |
| 20-21 | 3 | 12 | 14 | 15 | 12 | 56 |
| 22-23 | 1 | 7 | 10 | 13 | 6 | 37 |
| 24-25 | 4 | 5 | 6 | 7 | 9 | 31 |
| 26 or older | 4 | 12 | 37 | 40 | 43 | 136 |
| Total | 20 | 76 | 182 | 260 | 177 | 715 |

**Table 12**
Demographics of the LASSI Norming Sample
Ethnicity by Age — Males

| Ethnicity | 17 or younger | 18-19 | 20-21 | 22-23 | 24-25 | 26 or older | Total |
|---|---|---|---|---|---|---|---|
| White, non-Hispanic | 14 | 138 | 27 | 14 | 10 | 32 | 235 |
| African-American | 8 | 33 | 7 | 2 | 0 | 8 | 58 |
| Hispanic | 4 | 38 | 8 | 0 | 0 | 4 | 54 |
| Asian or Pacific Islander | 1 | 3 | 1 | 0 | 1 | 1 | 7 |
| Other | 5 | 13 | 2 | 0 | 1 | 2 | 23 |
| Total | 32 | 225 | 45 | 16 | 12 | 47 | 377 |

**Table 13**
Demographics of the LASSI Norming Sample
Ethnicity by Age — Females

| Ethnicity | 17 or younger | 18-19 | 20-21 | 22-23 | 24-25 | 26 or older | Total |
|---|---|---|---|---|---|---|---|
| White, non-Hispanic | 35 | 256 | 40 | 24 | 22 | 97 | 474 |
| African-American | 6 | 50 | 6 | 4 | 6 | 23 | 95 |
| Hispanic | 7 | 72 | 5 | 4 | 1 | 6 | 95 |
| Asian or Pacific Islander | 0 | 6 | 1 | 1 | 1 | 0 | 9 |
| Other | 4 | 19 | 4 | 4 | 1 | 10 | 42 |
| Total | 52 | 403 | 56 | 37 | 31 | 136 | 715 |

## Appendix B: Summaries of the Item Statistics for Each LASSI, 2nd Edition Scale (Tables 14-23)

**Table 14**
Item Statistics for the **Anxiety** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 29 | 2.630 | 1.238 | 0.668 | 0.550 | 0.862 |
| 35 | 3.006 | 1.237 | 0.836 | 0.769 | 0.837 |
| 43 | 3.073 | 1.219 | 0.785 | 0.701 | 0.845 |
| 46 | 3.881 | 1.255 | 0.631 | 0.503 | 0.867 |
| 61 | 2.810 | 1.252 | 0.724 | 0.619 | 0.854 |
| 69 | 3.381 | 1.119 | 0.794 | 0.722 | 0.844 |
| 72 | 3.208 | 1.156 | 0.589 | 0.463 | 0.870 |
| 78 | 3.531 | 1.136 | 0.764 | 0.682 | 0.848 |

**Table 15**
Item Statistics for the **Attitude** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 6 | 3.220 | 0.962 | 0.487 | 0.289 | 0.781 |
| 17 | 4.120 | 0.853 | 0.641 | 0.499 | 0.742 |
| 36 | 4.229 | 0.901 | 0.660 | 0.514 | 0.739 |
| 41 | 4.396 | 0.909 | 0.690 | 0.551 | 0.732 |
| 48 | 4.287 | 0.916 | 0.629 | 0.472 | 0.747 |
| 51 | 3.897 | 0.886 | 0.685 | 0.550 | 0.733 |
| 70 | 4.773 | 0.655 | 0.527 | 0.403 | 0.758 |
| 76 | 4.494 | 0.806 | 0.656 | 0.527 | 0.738 |

**Table 16**
Item Statistics for the **Concentration** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 1 | 3.169 | 1.003 | 0.701 | 0.600 | 0.847 |
| 8 | 3.804 | 0.908 | 0.679 | 0.584 | 0.849 |
| 16 | 3.346 | 1.041 | 0.737 | 0.640 | 0.843 |
| 32 | 2.803 | 1.172 | 0.773 | 0.674 | 0.839 |
| 49 | 3.531 | 1.087 | 0.718 | 0.610 | 0.846 |
| 55 | 3.130 | 1.149 | 0.793 | 0.703 | 0.835 |
| 67 | 3.556 | 1.035 | 0.764 | 0.676 | 0.839 |
| 75 | 3.633 | 0.999 | 0.536 | 0.402 | 0.868 |

**Table 17**
Item Statistics for the **Information Processing** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 3 | 3.573 | 1.047 | 0.666 | 0.542 | 0.819 |
| 11 | 3.115 | 0.982 | 0.694 | 0.585 | 0.813 |
| 15 | 3.629 | 0.988 | 0.650 | 0.530 | 0.820 |
| 23 | 3.431 | 0.988 | 0.795 | 0.715 | 0.797 |
| 27 | 3.565 | 0.976 | 0.700 | 0.594 | 0.812 |
| 44 | 3.140 | 1.082 | 0.735 | 0.626 | 0.807 |
| 50 | 3.322 | 1.073 | 0.757 | 0.655 | 0.803 |
| 58 | 3.472 | 1.155 | 0.487 | 0.308 | 0.852 |

**Table 18**

Item Statistics for the **Motivation** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 14 | 4.030 | 1.029 | 0.744 | 0.636 | 0.811 |
| 22 | 3.786 | 0.951 | 0.563 | 0.422 | 0.838 |
| 30 | 3.787 | 0.947 | 0.710 | 0.603 | 0.816 |
| 39 | 3.869 | 0.913 | 0.705 | 0.601 | 0.817 |
| 42 | 3.913 | 1.027 | 0.685 | 0.560 | 0.822 |
| 56 | 4.075 | 0.944 | 0.774 | 0.686 | 0.806 |
| 65 | 4.169 | 0.858 | 0.611 | 0.494 | 0.829 |
| 80 | 3.557 | 1.066 | 0.695 | 0.567 | 0.821 |

**Table 19**

Item Statistics for the **Self Testing** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 9 | 3.341 | 1.079 | 0.659 | 0.541 | 0.829 |
| 18 | 2.924 | 1.110 | 0.714 | 0.606 | 0.821 |
| 25 | 3.048 | 1.137 | 0.747 | 0.646 | 0.816 |
| 33 | 3.311 | 1.107 | 0.550 | 0.406 | 0.846 |
| 37 | 3.071 | 1.111 | 0.696 | 0.583 | 0.824 |
| 47 | 3.121 | 1.098 | 0.732 | 0.630 | 0.818 |
| 60 | 2.763 | 1.165 | 0.718 | 0.605 | 0.821 |
| 74 | 2.952 | 1.101 | 0.707 | 0.599 | 0.822 |

**Table 20**

Item Statistics for the **Selecting Main Ideas** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 10 | 3.497 | 1.178 | 0.751 | 0.645 | 0.875 |
| 21 | 3.437 | 1.054 | 0.801 | 0.725 | 0.865 |
| 24 | 3.536 | 1.010 | 0.727 | 0.633 | 0.875 |
| 53 | 3.539 | 0.974 | 0.774 | 0.696 | 0.869 |
| 57 | 3.487 | 1.079 | 0.792 | 0.709 | 0.867 |
| 64 | 3.665 | 0.936 | 0.611 | 0.500 | 0.887 |
| 68 | 3.421 | 0.958 | 0.768 | 0.690 | 0.869 |
| 73 | 3.473 | 0.958 | 0.753 | 0.671 | 0.871 |

**Table 21**
Item Statistics for the **Study Aids** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 12 | 3.601 | 1.050 | 0.506 | 0.345 | 0.721 |
| 20 | 2.788 | 1.288 | 0.526 | 0.328 | 0.728 |
| 34 | 2.713 | 1.258 | 0.622 | 0.451 | 0.701 |
| 40 | 3.033 | 1.205 | 0.651 | 0.497 | 0.692 |
| 54 | 3.481 | 1.119 | 0.516 | 0.345 | 0.722 |
| 66 | 3.605 | 1.124 | 0.618 | 0.468 | 0.699 |
| 71 | 2.595 | 1.154 | 0.633 | 0.482 | 0.696 |
| 77 | 3.439 | 1.192 | 0.653 | 0.501 | 0.691 |

**Table 22**
Item Statistics for the **Time Management** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 4 | 3.053 | 1.136 | 0.753 | 0.657 | 0.828 |
| 7 | 2.882 | 1.170 | 0.602 | 0.462 | 0.851 |
| 13 | 2.957 | 1.261 | 0.795 | 0.700 | 0.821 |
| 28 | 3.040 | 1.173 | 0.807 | 0.724 | 0.819 |
| 31 | 3.126 | 1.083 | 0.698 | 0.592 | 0.836 |
| 59 | 3.992 | 0.989 | 0.627 | 0.516 | 0.844 |
| 62 | 3.737 | 1.002 | 0.557 | 0.433 | 0.853 |
| 79 | 3.290 | 1.132 | 0.755 | 0.660 | 0.827 |

**Table 23**
Item Statistics for the **Test Strategies** Scale

| Item Number | Item Mean | Standard Deviation | Item-Total r | Item-Total r Excluding This Item | Coefficient Alpha Excluding This Item |
|---|---|---|---|---|---|
| 2 | 3.725 | 1.060 | 0.648 | 0.500 | 0.783 |
| 5 | 3.501 | 1.022 | 0.692 | 0.562 | 0.773 |
| 19 | 4.047 | 0.887 | 0.596 | 0.464 | 0.787 |
| 26 | 3.534 | 0.865 | 0.656 | 0.541 | 0.777 |
| 38 | 3.481 | 0.938 | 0.737 | 0.632 | 0.763 |
| 45 | 3.539 | 0.940 | 0.718 | 0.608 | 0.766 |
| 52 | 3.619 | 1.091 | 0.505 | 0.319 | 0.812 |
| 63 | 3.684 | 1.022 | 0.662 | 0.524 | 0.779 |

# Appendix C: Individual Scale Statistics (Table 24)

**Table 24**
Scale Statistics for the Final Version of Each Scale

| Scale Name | Scale Mean | Standard Deviation | Coefficient Alpha |
|---|---|---|---|
| Anxiety | 25.52 | 6.95 | .87 |
| Attitude | 33.41 | 4.29 | .77 |
| Concentration | 26.97 | 6.01 | .86 |
| Information Processing | 27.25 | 5.66 | .84 |
| Motivation | 31.19 | 5.32 | .84 |
| Self Testing | 24.53 | 6.15 | .84 |
| Selecting Main Ideas | 28.06 | 6.10 | .89 |
| Study Aids | 25.25 | 5.56 | .73 |
| Time Management | 26.08 | 6.30 | .85 |
| Test Strategies | 29.13 | 5.08 | .80 |

## Appendix D: Inter-Scale Correlations (Table 25)

**Table 25**
Scale Intercorrelations

| | Anxiety ANX | Attitude ATT | Concentration CON | Information Processing INP | Motivation MOT | Self Testing SFT | Selecting Main Ideas SMI | Study Aids STA | Time Management TMT | Test Strategies TST |
|---|---|---|---|---|---|---|---|---|---|---|
| Anxiety | 1.000 | | | | | | | | | |
| Attitude | 0.230 | 1.000 | | | | | | | | |
| Concentration | 0.424 | 0.547 | 1.000 | | | | | | | |
| Information Processing | 0.174 | 0.397 | 0.441 | 1.000 | | | | | | |
| Motivation | 0.212 | 0.661 | 0.579 | 0.504 | 1.000 | | | | | |
| Self Testing | 0.120 | 0.449 | 0.458 | 0.641 | 0.555 | 1.000 | 0.336 | | | |
| Selecting Main Ideas | 0.584 | 0.375 | 0.622 | 0.408 | 0.406 | | 1.000 | | | |
| Study Aids | 0.069 | 0.400 | 0.352 | 0.538 | 0.433 | 0.611 | 0.256 | 1.000 | | |
| Time Management | 0.243 | 0.535 | 0.670 | 0.419 | 0.610 | 0.570 | 0.386 | 0.444 | 1.000 | 0.449 |
| Test Strategies | 0.633 | 0.457 | 0.641 | 0.393 | 0.475 | 0.382 | 0.794 | 0.275 | | 1.000 |

# Appendix E: LASSI 2nd Edition Scale Norms (Table 26)

**Table 26**
National Norms for the LASSI, 2nd Edition

| Percentile Score | Anxiety ANX | Attitude ATT | Concentration CON | Information Processing INP | Motivation MOT | Self Testing SFT | Selecting Main Ideas SMI | Study Aids STA | Time Management TMT | Test Strategies TST | Percentile Score |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 99 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 38 | 40 | 40 | 99 |
| 95 | 37 | 39 | 37 | 38 | 39 | 36 | 38 | 35 | 37 | 38 | 95 |
| 90 | 35 | | 35 | 35 | 38 | 33 | 37 | 33 | 35 | 36 | 90 |
| 85 | 33 | 38 | 34 | 34 | 37 | 31 | 35 | 32 | 33 | 35 | 85 |
| 80 | 32 | 37 | 33 | 33 | 36 | 30 | 34 | 30 | 32 | 34 | 80 |
| 75 | 31 | | 32 | 31 | | 29 | 33 | 29 | 31 | 33 | 75 |
| 70 | 30 | 36 | 31 | 30 | 35 | 28 | 32 | | 30 | 32 | 70 |
| 65 | 29 | | 30 | | 34 | 27 | 31 | 28 | 29 | | 65 |
| 60 | 28 | 35 | 29 | 29 | 33 | 26 | 30 | 27 | 28 | 31 | 60 |
| 55 | 27 | | | 28 | | | 29 | 26 | 27 | 30 | 55 |
| 50 | 26 | 34 | 28 | 27 | 32 | 25 | | | | | 50 |
| 45 | 25 | | 27 | | 31 | 24 | 28 | 25 | 26 | 29 | 45 |
| 40 | 24 | 33 | 26 | 26 | | 23 | 27 | 24 | 25 | 28 | 40 |
| 35 | 23 | | 25 | 25 | 30 | 22 | 26 | | 24 | | 35 |
| 30 | 22 | 32 | 24 | 24 | 29 | | 25 | 23 | 23 | 27 | 30 |
| 25 | 21 | | 23 | | 28 | 21 | 24 | 22 | 22 | 26 | 25 |
| 20 | 20 | 31 | 22 | 23 | 27 | 20 | 23 | 21 | 21 | 25 | 20 |
| 15 | 18 | 30 | 21 | 22 | 26 | 19 | 22 | 20 | 20 | 24 | 15 |
| 10 | 17 | 28 | 19 | 21 | 24 | 17 | 21 | 19 | 18 | 23 | 10 |
| 05 | 14 | 26 | 17 | 19 | 22 | 15 | 18 | 17 | 16 | 21 | 05 |
| 01 | 10 | 21 | 13 | 15 | 18 | 12 | 13 | 13 | 12 | 18 | 01 |


# Learning and Study Strategies Inventory

2nd Edition



## User's Manual

This User's Manual includes a history of the instrument's development, a complete description of the ten scales included in the LASSI, 2nd Edition, a section on administration and scoring, results of pilot and field testing, scale statistics, norms, and the processes used in scale construction. In addition, it contains information to help create individual prescriptions for enhancing students' skills.

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