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# TEST CRITIQUES

Volume X

**pro·ed**

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## LEARNING AND STUDY STRATEGIES INVENTORY

*Claire E. Weinstein, David R. Palmer, and Ann C. Schulte.  
Clearwater, Florida: H&H Publishing Company, Inc.*

### Introduction

The Learning and Study Strategies Inventory (LASSI; Weinstein, 1987) is a diagnostic instrument designed to assess a set of competencies (strategies and skills) students need to manage and monitor their own learning in a variety of contexts. The LASSI has been developed within a cognitive or educational psychology frame of reference, in which numerous definitions of learning styles and strategies have been proposed. Weinstein and MacDonald (1986) defined effective learning strategies as any cognitive, affective, or behavioral activity that facilitates encoding, storing, retrieving, or using knowledge. They also described knowledge acquisition, comprehension monitoring, active study strategies, and support strategies as four basic categories of the more general construct of learning strategy. However, there is no specific correspondence between this classification system and the constructs measured by the LASSI. Mayer's (1988) definition of learning strategies as behaviors intended to influence how the learner processes information is a good working definition for the focus of the LASSI items.

Claire E. Weinstein, Ph.D., principal developer of the LASSI, received her graduate degree in educational psychology from the University of Texas at Austin in 1975 with specialties in learning, learning theory, and cognitive psychology (American Psychological Association, 1989). The other two primary developers of the inventory, Ann C. Schulte, Ph.D., and David R. Palmer, Ph.D., have both been associated with the Cognitive Learning Strategies Project at the University of Texas at Austin. Schulte received her Ph.D. in educational psychology in 1983 from the University of Texas at Austin, at which time she joined the faculty in the School Psychology Program at the University of North Carolina at Chapel Hill. Her specialties include educational measurement and evaluation (APA, 1989). Palmer is employed at the University of Texas at Austin.

Weinstein (1987) indicates use of the LASSI can improve students' retention by providing information about their study patterns that can establish a meaningful and useful basis for remediation. She describes the LASSI as a useful counseling tool in orientation programs, developmental education programs, and learning assistance programs. It also can be used as a brief pre-post intervention achievement measure for students participating in counseling and educational programs.

Because the LASSI user's manual (Weinstein, 1987) is vague about many as-

About half of the items are stated negatively. Item content appears to overlap within scales (e.g., LASSI items 22 and 42) and between scales (e.g., LASSI items 1 and 29). This redundancy lengthens the time needed for test completion, and it may affect students' use of this instrument by stimulating factors such as boredom or fatigue.

#### **Practical Applications/Uses**

The LASSI can be used by a wide range of helping professionals, including secondary and post-secondary school educators, guidance counselors and student personnel workers, community mental health counselors, and counseling psychologists. It can be used to document change in the learner and examine the success of an intervention designed to improve learning abilities; to increase students' self awareness and responsibility for their own learning; and to provide diagnostic information needed in developing specific interventions. High school teachers and counselors can administer the LASSI-HS and discuss students' results individually or in small groups, to help them plan their transition and adjustment to high school. The college version can be used in a similar way to help high school seniors prepare for the transition to college or post-secondary training.

College personnel can administer and interpret LASSI results as part of a freshmen orientation program or other developmental outreach programs in the area of study skills, tutoring programs, course scheduling, or residence hall programming. Student services outreach offices might have the E-LASSI available for students who report academic difficulties. Learning centers and learning labs might make the instrument available as a diagnostic tool for students requesting help in learning to learn more effectively.

College counselors, career planning specialists, and community mental health counselors can use the LASSI as a self-exploration tool in individual and group counseling with displaced homemakers and other nontraditional, older students entering college or other post-secondary training programs. Greater numbers of academically underprepared students are enrolling in community colleges and universities, and university personnel want to increase their ability to meet these students' unique needs. The use of LASSI could help such individuals gain a stronger sense of responsibility and self-confidence about their abilities as learners. Learning style also can be described as a more general personality variable that may relate to the selection of an academic major, and, subsequently, a career choice (Green & Parker, 1989), so the exploratory use of LASSI may be useful in career-planning activities.

Staff development programs for secondary and post-secondary school educators might use the LASSI to teach participants more about what students learn and how they go about learning (Weinstein, 1987). Studies such as that of Clift, Ghatala, Naus, and Poole (1990) document the need for such training. Researchers generally distinguish between class-related processes or procedures and the cognitive strategies that facilitate task performance. Although the teachers reported awareness of study strategies, their descriptions of them focused mostly on teacher-directed activities rather than teaching students metacognitive strategies (i.e.,

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1). The teachers' definitions of initiation and control of the strategy to support continued use of the between theory and practice in cog-

employs a self-report format, it is or specially trained personnel. ally or in a group, generally in for students to hand score their scoring procedures are summarized individual LASSI items seem. The LASSI packet includes a forms that the user separates tion of the assessment. All three and self-interpreted.

ionless answer sheet and a provided items are reversed, and these raw scores are converted to d against summing the 10 scale

indicating a strategy or method r attitude and interest; SMI, for nformation. The items are fairly explanations for the categories d profile or the electronically is do provide the statement that re their scores to other college es that a LASSI user's manual is rovides the name, address, and nual, the prescriptions to help ements and slight elaborations SI developers require that any sionals must help students un-

" Information about the LASSI seems to consist of 880 entering uate information appears about c background, and geographic

-HS are available for Grades 9 ,616 high school students in a

The students are described in range of ethnic backgrounds, levels; a more specific descrip-

nated. The brochure also indi- types of reports: a graph of each

student's study strategies profile, a listing of the students with their percentile ranks on the 10 LASSI scales, and an alphabetical roster of the students who took the inventory. Only the graph of the student profile is available on the demonstration disk, which can be used for five administrations of the instrument.

Weinstein (1987) indicates that students who score above the 75th percentile compared to the norm group often do not need to work to improve their skills on that scale. She recommends that students who score between the 50th and 75th percentile should consider interventions to improve those learning and study skills. Students scoring below the 50th percentile may not succeed in an academic setting without improvements. These general recommendations do not take into account the wide range of demands on students in different environments, their general ability, or the amount of specific content knowledge that they already have about the particular learning situation.

#### Technical Aspects

The manual (Weinstein, 1987) inadequately summarizes the reliability of the LASSI. Coefficient alpha internal consistency reliabilities range from .68 for the Study Aids scale to .86 for the Time Management scale, with a median reliability of .81. All but the Study Aids scale have internal consistency reliabilities of .72 or higher. The sample from which these data were obtained is not clear. Reliability is as much a function of the sample as it is the instrument, so this oversight reduces the usefulness of these data.

Test-retest reliability was assessed for a 3-week interval using a sample of 209 students from an introductory communications course at a large Southern university (Weinstein, 1987). These values ranged from .72 for the Information Processing scale to .85 for the Time Management and Concentration scales. The median test-retest reliability was .795.

Eldredge (1990) reported the reliabilities for the LASSI-HS are inferred from the college version without sufficient detail, and that validity has not been established.

Olejnik and Nist (1992) reported internal consistency and 10-week retest reliability estimates for a sample of 264 first-quarter first-year college students enrolled in a developmental studies program. The mean SAT Verbal score of the sample was 389 (i.e., 1.1 standard deviations below the mean), indicating the students were low average when compared to the SAT normative sample. The investigators provided students with a 10-week period of instruction between test administrations. Olejnik and Nist reported alpha internal consistency coefficients that were slightly lower than those reported in the user's manual. Their test-retest reliabilities ranged from .37 (Study Aids) to .57 (Time Management), a full 25 points lower than those reported in the manual. However, the type of student investigated and the incorporation of the intervention may account for the discrepancy.

Weinstein (1987) reports using three different approaches to examine the validity of the LASSI. She indicated that an undefined number of professors, advisors, developmental educators, counselors, and learning center specialists who have used the LASSI on a trial basis provided testimonials. These opinions, however, do not constitute evidence of validity. Scale scores on the LASSI also have been compared to scores on other tests or subscales measuring similar factors. These

tests and subscales are not named, and no data are provided documenting these comparisons. Finally, some of the scales have been validated against unnamed performance measures. No evidence of validity is reported for the inventory beyond these general statements. In short, Weinstein (1987) essentially provides no evidence to substantiate the LASSI's validity.

The LASSI has enjoyed some research use despite the lack of demonstrated validity. Olejnik and Nist (1992) examined the instrument's factor structure using both exploratory and confirmatory factor analysis. They used two independent samples of college freshmen from a large Southeastern university ( $N = 264$ ;  $N = 143$ ). The first sample was used to estimate reliability and to identify the structural measurement model. The second was used to test the proposed model through confirmatory factor analysis. They reported that a three-factor solution provided the best fit to the measurement model. These factors, labeled Effort-Related Activities, Goal Orientation, and Cognitive Activities, were interrelated. The strongest relation occurred between the Effort-Related and Cognitive Activities factors; the Goal Orientation factor had a much weaker relation to the other two. Both the exploratory and confirmatory factor analyses indicated that the inventory is multidimensional, thus supporting Weinstein's view that a single index is inappropriate.

The LASSI also has been used in intervention studies, two of which are summarized here for purposes of illustration. McKeachie, Pintrich, and Lin (1985) evaluated introductory cognitive psychology courses designed to teach learning strategies to anxious students, minority students, and student athletes. The course was offered in the fall of 1982 with 113 students enrolling; in the winter semester, 80 students enrolled. Most were freshmen, about equally balanced across gender. The investigators obtained several self-report measures at the beginning and the end of the semester, including an early version of the LASSI and measures of test anxiety, need for cognition, locus of control, and expectancies for success and failure. They also collected GPAs in courses following the class. The investigators interpreted the modest correlation between scores on the LASSI posttest and later GPA (.38;  $p < .001$ ) as indicating a transfer of learning to subsequent courses. These results reveal little about the validity of the LASSI.

Nist, Mealey, Simpson, and Kroc (1990) investigated the cognitive and affective growth of regularly admitted and developmental study students and they evaluated LASSI's predictive utility by examining the subjects' grades in subsequent content area courses. The subjects were 71 regularly admitted students from the University of Arizona and 168 developmental study students from the University of Georgia. All subjects completed the LASSI as a pre- and posttest measure and participated in an 8-week study strategy instruction. Although the results indicated both cognitive and affective growth for both samples, the LASSI was predictive of GPA and class achievement only for the regularly admitted students. These authors concluded that more research is needed before the LASSI can be used with special at-risk populations.

### Critique

Conceptually the LASSI can be viewed as a diagnostic instrument or as a structured educational intervention. The authors emphasize the former, but it is

clear that using the instrument in that manner cannot be advocated yet. The LASSI may have face validity, but virtually no evidence of external validity is available. The manual makes brief reference to broad, vaguely described comparisons, but information is needed to document its reliability and its criterion-related and construct validity.

An alternative is to use the LASSI to stimulate student development rather than to measure student status. An earlier section of this review identified a number of potential uses for this inventory as a self-awareness instrument by a wide range of professionals. This reviewer believes that the LASSI taps important constructs that can help students organize information about themselves and improve their ability to cope in a wide range of academic and other post-secondary training environments. Individuals can interpret their scores in an idiographic manner to learn about their relative strengths and weaknesses, without giving any particular attention to norm group scores. However, potential users of the LASSI are cautioned to assess subjects' understanding of the items and the relevance of the instrument to their goals. Also, it is important to consider whether a ceiling effect would limit the usefulness of the instrument in differentiating the individual's relative strengths and weaknesses across the 10 scale scores.

On balance, however, it appears that the test developers' emphasis on practical application has taken precedence over their efforts to establish reliability and validity. Despite its potential, this reviewer cannot recommend use of the LASSI for purposes other than pure research until its reliability and validity have been established.

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