

RESEARCH

IN
DEVELOPMENTAL
EDUCATION



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Barbara J. Calderwood, Coeditors*

Published by Appalachian State University

Volume 22, Issue 2, 2008

Affective Assessment for Developmental Students, Part 2

By Patti Levine-Brown, Barbara S. Bonham, D. Patrick Saxon, and Hunter R. Boylan

In the last issue of *Research in Developmental Education*, the authors discussed the potential for affective assessment of developmental student characteristics to complement the cognitive assessment of basic skills that is already prevalent in the field. A list of instruments appropriate for measuring student learning strategies, attitudes, and study skills was provided. A review of these instruments, as well as cost and ordering information, was also included.

Affective assessment can offer college advisors some insight into a student's motivation, attitude, autonomy, or anxiety about his or her upcoming college learning experience (Saxon, Levine-Brown, & Boylan, 2008). It is argued that these factors may be as important to student success as academic skills and preparation (Sedlacek, 2004). Various assessment instruments and/or combinations of instruments can assist college administrators in understanding students. Consequently, interventions and experiences can be devised and tailored to target varying student needs for academic and personal development. These interventions may apply courses and support services for the benefit of the student in a more efficient and effective manner.

The categories of affective and cognitive instrumentation, however, also include a wide variety of instruments designed to assess specific categories of cognition or to measure various student attributes and characteristics. These instruments may also have a role in developmental education. The authors have, therefore, decided to provide an additional annotated list of instruments that they also consider relevant when working with adult and developmental students. The instruments reviewed in Part 2 fall into the categories of

- (a) critical thinking and reasoning skills assessments,
- (b) learning preferences and styles inventories,
- (c) readiness and risk inventories, and
- (d) adult learner surveys.

First, a general discussion of these categories is in order. Then specific instruments, contact information, and descriptions follow.

Categories of Affective Assessment

Critical Thinking and Reasoning Skills

Critical thinking centers on how people determine what they believe. It also assumes that a person's thoughts are both logical and insightful. Much of the research on critical thinking points to the fact that it is an intellectually disciplined process and the development of this process is a lifelong endeavor (Paul & Scriven, 2007). Such affective characteristics as fair-mindedness and intellectual integrity are important to foster in students. Today's college student preparing for the workforce must be willing to go beyond the minimum in terms of solving problems and making decisions. They must not only be willing and able to make informed, fair-minded, judgments in contexts of relative uncertainty about what to believe and what to do in a wide variety of situations but also be willing and able to critique intelligently and amend judiciously the methods, conceptualizations, contexts, evidence, and standards applied in any given problem situation (Facione, Giancarlo, Facione, & Gainen, 1995; Kitchener & King, 1994). Critical thinking inventories measure these attributes of students in a variety of ways.

Learning Preferences and Styles

A surge of research related to learning styles emerged in the 1970s. Learning style relates to an individual's general inclination toward receiving and processing new information. Because individuals may favor a particular way of learning new information, it is helpful for them to be aware of their learning style. Identifying and understanding these preferences are key factors in helping students become aware of how they

learn best (Felder & Brent, 2005). This information can also assist teachers in the planning of group and individualized instruction (Diaz & Carnal, 1999). Although it is possible to identify common elements in the learning process, the process is dynamic and varies at the individual level. There is also some evidence to suggest that learning preferences can change as one encounters new life and educational experiences. Furthermore, Grasha (2002) and Dowdall (1991) have argued that particular instructional methods might encourage students to adopt certain learning styles.

The variety of processing approaches at an individual level results in students developing a personal way or style of learning. It is generally accepted that there is no such thing as a "good" learning style or a "bad" learning style. Success usually comes with many different learning styles.

Student Readiness and Risk

Readiness for college generally implies that students have the combination of personal and intellectual attributes that will enable them to perform successfully in the postsecondary environment. Conley (2007), describes the college-ready student as one who can "understand what is expected in a college course, can cope with the content knowledge that is presented, and can take away from the course the key intellectual lessons and dispositions the course was designed to convey and develop" (p. 5). Readiness may also refer to the extent to which a student understands how colleges and universities work, how to navigate within their structure, and how the system of postsecondary rewards and expectations operates. In order to seek ways of preventing various factors from hindering the success of these students, many institutions in higher education now administer instruments that identify the readiness of college students.

Numerous socioeconomic and demographic studies have revealed factors that are attached to what American colleges and universities consider high-risk students. Students who fall into the category of high risk may include minorities, females, low-income, and disabled individuals (Adelman, 2006; Cross, 1976). High-risk students have a major impact on institutions of higher education, specifically with regard to attrition. Student attrition affects patterns of funding, planning for facilities, and the long-term academic curricula of institutions of higher education (Jones & Watson, 1990).

Adult Learners

The existence of a number of barriers to college success that adult learners encounter has given rise to the development of surveys to help college leaders understand whether or not their adult students are satisfied with their educational experience. Many barriers, inside and outside of the classroom, have been identified for adult learners. They may include the inability to obtain financial aid, poor financial planning, socioeconomic status, lack of persistence or motivation, lack of support from significant others, weak academic background, poor study skills, poor stress management, lack of adequate counseling and advising services, and lack of flexible class scheduling (Timarong, Temaungil, & Sukrad, 2002). Assessments designed to extract information from adult learners can assist institutions in targeting areas in need of development.

Instruments to Assess Critical Thinking and Reasoning Skills

The California Critical Thinking Disposition Inventory (CCTDI)
Authors: Facione, P., and Facione, N.
Publisher: The California Academic Press
217 LaCruz Avenue, Millbrae, CA 94030
Telephone: 650-697-5628
www.insightassessment.com

Price: Test booklets are sold in bundles that range from \$180 to \$580 depending on quantity. Costs for online tests begin at \$7 per use for the first 1000. Test manuals are \$45.

The CCTDI is a 75-item attitudinal measure that is used widely with college and university students in all program areas. It may apply to many types of learners including community college students, traditional undergraduates, professional school masters and doctoral students, adult learners, continuing education students, college-prep high school students, and working professionals. The test focuses on seven disposition scales that include open-mindedness, analyticity, cognitive maturity, truth-seeking, systematicity, inquisitiveness, and self-confidence. These scales are helpful for gathering data on an individual's critical thinking dispositional profile. The CCTDI has been used for learning outcomes assessment; academic advising; program evaluation; professional development; training; psychological research; and in application, admissions, and personnel evaluation processes. Construct and content validity, item discrimination, factor analysis, frequencies and percentile norms, convergent and divergent validity, and test-retest reliability studies have been conducted on this instrument. Web and paper and pencil versions of the test are available, and it can be administered timed (15 to 20 minutes) or untimed.

California Critical Thinking Test: College Level (CCTST)

Author: Facione, P.

Publisher: The California Academic Press

217 LaCruz Avenue, Millbrae, CA 94030

Telephone: 650-697-5628

www.insightassessment.com

Price: Specimen kits are available for \$45. There is a one-time setup fee of \$175 that covers a Client Site Administrator Account and the first 25 tests.

The CCTST is a multiple-choice exam designed to determine a person's ability to analyze arguments, evaluate reasoning, analyze data listed in charts and diagrams, and determine legitimacy or validity of deductive (general to specific thinking) and inductive (specific to broader more generalized thinking) arguments. Some issues covered include logic, ethics, and pedagogy, as well as questions of evidential and epistemological support. It is purported to have a number of strengths including clear instructions. It is intended for college-level students and can be administered timed (45 minutes) or untimed.

Cornell Critical Thinking Test (CCTT)

Authors: Ennis, R., Millman, J., and Tomko, T.

Publisher: The Critical Thinking Company (formerly Midwest Publications)

PO Box 1610, Seaside, CA 93955

Telephone: 800-458-4849

www.criticalthinking.com/series/055/index_c.html

Price: A 50-test license is \$159.99. An online version is \$9.99 per test.

The CCTT, Level X is designed for grades 4-14. The test includes multiple-choice sections on induction, credibility, observation, deduction, and assumption identification. Level Z is also designed for college students and adults but can be used with students from grade 10 and up. The test includes sections on induction, credibility, prediction and experimental planning, fallacies, deduction, definition, and assumption identification. It can be administered in a timed (50 minutes) or untimed format.

Watson-Glaser Critical Thinking Appraisal (WGCTA)

Authors: Watson, G., and Glaser, E.

Publisher: Psych-Corp with Performance Assessment Network (PAN)

11590 North Meridian Street, Suite 200, Carmel, IN 46032

Telephone: 877-449-8378

www.pantesting.com/products/PsychCorp/WGCTA.asp

Price: In order to receive price information individuals must register online.

The WGCTA is designed for subjects in grades 9 through adulthood. The multiple-choice assessment, widely used in the business world, contains reading passages that include statements, arguments, problems, and interpretations that measure how one draws inferences, thinks deductively, interprets information, recognizes assumptions, and evaluates arguments. It is comprised of 80 items that can be completed in 60 minutes. The short form is comprised of 40 items designed to be completed in 45 minutes. The WGCTA has a long history of use in educational and organizational settings. It is useful in determining an individual's ability to think critically, assessing if employees have improved their critical thinking from training and instructional programs, as well as for conducting research on the critical thinking construct. Harcourt Assessment provides over 40 norm groups for the WGCTA.

Instruments to Assess Learning Approaches and Preferences

Canfield Learning Styles Inventory (LSI)

Author: Canfield, A.

Publisher: Western Psychological Services

12031 Wilshire Boulevard, Los Angeles, CA 90025-1251

Telephone: 800-648-8857

www.wpspublish.com

Price: \$109.50 for 12 inventory booklets, copies of each form, and one manual.

The LSI is available in four forms and can be completed in 15 to 20 minutes. It allows students to classify themselves among a Learner Typology grid which enables administrators to identify groups of students who have similar learning styles. The LSI scores are used to classify students into one of nine learner types and have been standardized on more than 2,500 individuals. This self-report inventory is comprised of 30 items that give information in the following areas: preferred conditions for learning, areas of interest, modes of learning, and expectations for course grade.

Learning Styles Survey for College (DVC)

Author: Jester, C.

Publisher: Catherine Jester, Diablo Valley College

321 Golf Club Road, Pleasant Hill, CA 94523

Telephone: 510-685-1230

www.metamath.com/lswb/dvcllearn.htm

Price: Available at no charge on the Web.

The DVC is designed for educational uses only. This online guide, developed at Diablo Valley College, is targeted to help students become more successful. It includes a Learning Style Survey that will help students identify their learning style. It also includes learning strategies that are designed to help students study in a productive manner. The DVC identifies 3 learning style dimensions: visual, auditory, and tactile/kinesthetic. Because this instrument addresses sensory perceptions, there is no apparent evidence of reliability or validity. However, it is reported to make intuitive sense and therefore has some face validity.

4-MAT

Author: McCarthy, B.

Publisher: About Learning, Inc.

441 West Bonner Road, Wauconda, IL, 60084

Telephone: 800-822-4628

www.aboutlearning.com

Price: \$200 for a quantity of 25 or \$10 each for online assessments.

The 4MAT system is designed to assist schools, businesses, teachers, and trainers in learning styles assessment and instructional design that specifically accommodates various styles of learners. The 4MAT curriculum provides teachers with a way to address learner differences by organizing lessons and developing curriculum around the four key components of learning. By structuring material with experiential, abstract, applied, and creative strategies, content may be better understood.

Inventory of Classroom Style and Skills (INCLASS)

Authors: Miles, C., and Grummon, P.

Publisher: H&H Publishing Company, Inc.

1231 Kapp Drive, Clearwater, FL 33765-2116

Telephone: 800-366-4079

www.hhpublishing.com

Price: \$3.25 each for 1-99. Quantity discounts available.

INCLASS assesses student attitudes and behaviors related to academic learning. It is a self-assessment instrument designed to assess proficiency in seven areas of academic style and skills which affect student performance in the classroom. It examines studying, test taking, homework, and collaborative learning. It is a diagnostic and prescriptive instrument that gives teachers and counselors a framework for developing instruction and other tailored interventions. INCLASS is purported to be a statistically valid and reliable assessment.

Index of Learning Styles Questionnaire (ILS)

Authors (instrument development): Soloman, B., and Felder, R.

Authors (model formulation): Felder, R., and Silverman L.

Publisher: Barbara A. Soloman and Richard Felder

North Carolina State University, Raleigh, NC 27695-7905

www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html

Price: Available at no charge for noncommercial use by individuals or educators who wish to use it for teaching, advising, or research.

The ILS is a 44-question online assessment developed for use with college students and has only been validated for people of college age and older. This instrument is designed to assess preferences on four learning style dimensions: active-reflective, sensing-intuitive, visual-verbal, and sequential-global. Three studies have examined the independence, reliability, and construct validity of the four instrument scales. The authors concluded that the ILS meets standard acceptability criteria for instruments of its type. It provides an indication of possible strengths and tendencies or habits that might lead to difficulty in academic settings. It does not reflect a student's suitability or unsuitability for a particular subject, discipline, or profession. The ILS has been translated into several different languages and can be submitted and automatically scored on the Web.

Kolb Learning Styles Inventory (KLSI)

Author: Kolb, D. A.

Publisher: Hay Group (Hay Resources Direct)

116 Huntington Avenue, Boston, MA 02116

Telephone: 800-729-8074

www.haygroup.com/TL/

Price: \$15 per on-line assessment; \$105 per package of 10 self-scoring booklets.

The KLSI is a 12-item self-scored inventory based on Experiential Learning Theory which sets out four distinct learning preferences based on a four-stage learning cycle and a four-type definition of learning styles. The KLSI identifies preferred learning styles and explores their implications for problem solving, teamwork,

conflict resolution, communication at work or at home, and career preferences. This KLSI can be used for self-knowledge for individuals who want to understand and manage their learning preferences. It can also be used by educators to design learning events that appeal to all learning style preferences.

Myers Briggs Type Indicator (MBTI)

Authors: Briggs, K., and Myers, I.
Publisher: CPP, Inc., and Davies-Black Publishing
1055 Joaquin Road, 2nd Floor, Mountain View, CA 94043
Telephone: 800-624-1765
www.cpp.com/products/mbti/index.asp
Price: Over 200 type indicator packages, overviews, report forms, training handouts, resource guides, activity kits, DVDs and videos are available at varying prices.

The MBTI identifies 16 combinations of 4 dichotomous personality dimensions: extraversion-introversion, sensing-intuition, thinking-feeling, and judging-perceiving. The assessment is designed to improve individual and team performance, nurture and retain talent, develop leadership at an organization, reduce workplace conflict, and explore the world of work. It is recognized for exceeding the standards of psychological instruments in its reliability. Three categories of data are offered to address the validity of the instrument. These include the validity of the separate scales, the preference pairs as dichotomies, and the validity of whole types or combinations of preferences. It is recommended that the MBTI be administered by trained counselors. It is distributed around the world and is available in 21 languages.

The VARK Inventory (VARK)

Authors: Fleming, N.
Publisher: Neil Fleming
www.vark-learn.com
Price: There is no charge to use the VARK. Visit their Website for copyright permission.

The VARK identifies four learning style dimensions: visual (preference for learning is information through nonverbal depictions such as charts, graphs, symbols, and hierarchies), aural (preference for learning is hearing or auditory), read/write (preference for learning is written or displayed as words), and kinesthetic (preference for learning comes through experience and practice such as simulations). This instrument addresses sensory perceptions and can work toward establishing a dialogue on differences that may exist in the way an individual prefers to learn. However, the statistical properties are not sufficient for its use as a research tool.

Instruments to Identify Readiness and High-Risk Students

College Student Inventory (Form C) (CSI)

Authors: Noel, E., and Levitz, R.
Publisher: Noel-Levitz
2350 Oakdale Boulevard, Coralville, IA 52241
Telephone: 800-876-1117
www.noellevitz.com/Our+Services/Resources+for+adult+learning.htm
Price: \$2.00 for booklets ordered in increments of 25. Answer sheets are sold separately. Online survey access is \$7.25 per unit.

The CSI is a self-report motivational assessment that is designed to identify the strengths, needs, and attitudes of students. It provides educational institutions with information to enable staff to assess student dropout likelihood, receptiveness to institutional help, educational stress, and potential for academic difficulty. It features assessment items designed specifically for adult learners and can be administered online. Data from the CSI can be used to guide strategic planning, strengthen retention initiatives, meet accreditation requirements, identify strengths for institutional marketing, and gauge progress toward campus goals. The adult learner version of Form C contains 74 items and takes approximately 20 minutes to complete.

Readiness for Education at a Distance Indicator (READI)

Authors: Distance Education Consulting and Development Experts (DECADE) Consulting, LLC
Publisher: DECADE Consulting, LLC
P.O. Box 51, Montgomery, AL 36101-0051
Phone: 334-356-8399
www.readi.info
Price: Pricing is based on a scalable formula according to institution size, distance learning program size, and ability to pay. Contact the company for quotes.

READI is a Web-based diagnostic tool that assesses a student's potential for succeeding in an online learning environment. It utilizes a sequence of activities to measure whether students possess the traits needed for success in distance learning. Five assessment components are measured including reading comprehension, technical competency, individual attributes, preferred learning styles, and typing speed and accuracy. An external research firm conducted research on the relationship of READI scores, measures of academic success, and goodness of fit of distance education. Of the five constructs measured, the one that correlated best with academic success and goodness of fit was individual attributes. An immediate score and diagnostic interpretation of results are offered to the student and to their prospective school.

The College Success Factors Index (CSFI)

Authors: Hallberg, E., Hallberg, K., and Sauer, L.
Publishers: Wadsworth Cengage Learning
Cengage Learning, P.O. Box 6904 Florence, KY 41022
Telephone: 800-354-9706
www.csfi-wadsworth.com
Price: To get price information individuals must register online or call the publisher directly. Students can purchase access to the CSFI assessment online as a bundle item with any Wadsworth textbook.

The CSFI examines student characteristics that have been proven to correlate with college success. The 80-item self-scoring instrument is designed to assess a student's pattern of behavior and attitude in areas that affect student outcomes for success in higher education. These areas include responsibility versus control, competition, task precision, expectations, wellness, time management, college involvement, and family involvement. The reliability, coefficient alpha, and test-retest studies indicate coefficients of .91, which are acceptable levels. Validity coefficients ranged from -.30 to -.50, which are very desirable results for self-reporting instruments.

Student Adaptation to College Questionnaire (SACQ)

Authors: Baker, R., and Siryk, B.
Publisher: Western Psychological Services
12031 Wilshire Boulevard, Los Angeles, CA 90025-1251
Telephone: 800-648-8857
www.wpspublish.com
Price: \$98.50 for a kit that includes 25 hand-scored questionnaires and one manual. Quantity discounts are available.

The SACQ was developed to identify students who might benefit from remedial intervention. The 67-item self-report inventory was designed to assess overall adjustment to college by detecting problems, guiding intervention, and promoting retention. Some evidence from the literature states that the transition experience can vary according to the nature of the institution, the discipline area, and the characteristics of the students. Responses are given on a 9-point Likert scale and scores are generated on four aspects of adjustment: academic adjustment, social adjustment, personal-emotional adjustment, and attachment to the institution. The questionnaire has been standardized on more than 1,300 college freshmen and stratified by semester of attendance (first or second). It can be administered to individuals or groups in approximately 20 minutes.

Student Readiness Inventory (SRI)

Publisher: ACT
500 ACT Drive, P.O. Box 1008, Iowa City, IA 52243-0168
Telephone: 800-294-7027
www.act.org/sri/index.html
Price: \$100 for a package of 25 SRI Answer Folios.

The SRI is a 108-item measure of motivation, academic skills, and social engagement. It is comprised of 10 scales: academic discipline, general determination, goal striving, commitment to college, study skills, communication skills, social connection, social activity, academic self-confidence, and emotional control. The SRI is reported to be highly reliable and described as an identification and intervention tool for students who are at risk to drop out. Students may also use their scores to identify personality or skill characteristics that may be developed to increase their chances for college success.

Technology and Internet Assessment (TIA)

Author: Ealy, M.
Publisher: H&H Publishing Company, Inc.
1231 Kapp Drive, Clearwater, FL 33765-2116
Telephone: 800-366-4079
www.hhpublishing.com
Price: \$3.25 each for a quantity of 1 to 99 with quantity discounts available.

The TIA is a nationally normed, Web-administered, self-assessment designed to determine strengths and weaknesses in eight areas related to computer, Internet, and information skills that may present barriers for those seeking success in education. The eight areas include use of technology, specific computer skills, acquisition of technical knowledge, basic Internet knowledge, Internet information skills, adapting to technological change, impact of technology, and ethics in technology. The TIA may be administered online in about 20-30 minutes. Upon completion of the assessment by the student, a two page report is displayed listing the percentile scores for each scale along with suggestions for improving each area.

Surveys of Adult Learners

Adult Learner Needs Assessment Survey (ALNAS)

Publisher: ACT
500 ACT Drive, P.O. Box 1008, Iowa City, IA 52243-0168
Telephone: 800-294-7027
www.act.org/ess/fouryear.html
Price: \$18.20 per package of 25 surveys with quantity discounts available.

The ALNAS survey examines the perceived educational and personal needs of adult or prospective students. The survey is divided into five sections which include background information, educational plans and preferences, personal and educational needs, optional or additional question items, and a section that provides students an opportunity to express their opinions about the college. The questionnaire is untimed,

but it usually takes about 20-25 minutes to complete. The standard data report for the ALNAS provides user norms based on data from institutions that have used the survey. These reports enable comparisons with similar institutions nationwide.

Adult Student Priorities Survey (ASPS)

Author: Noel, E., and Levitz, R.

Publisher: Noel-Levitz

2350 Oakdale Boulevard, Coralville, IA 52241

Telephone: 800-876-1117

www.noellevitz.com/Our+Services/Resources+for+adult+learning.htm

Price: \$2.15 with quantity discounts available. Online surveys are charged at the benchmark rate based on the number of completed surveys.

The ASPS was developed to be administered to adults 25 and older. It provides information on what is important to adult students and their level of satisfaction in critical campus areas. Survey questions are appropriate for adult learners at either the undergraduate or graduate level and can be used alone or in combination with any Noel-Levitz satisfaction/priorities instrument. The data can be used to guide campus strategy and planning in the areas of recruitment, student success and retention, financial aid and fiscal management, and campus marketing. National benchmark data are available and other research resources are also supplied to institutions to help analyze enrollment trends. The instrument is available in paper and pencil and online formats.

Conclusion

One of the questions frequently asked of the National Center for Developmental Education is, "Which instrument should I use?" As readers of this series of articles will note, there are a substantial variety of instruments available to assess the cognitive and affective characteristics of developmental students. Each of these instruments measures a different aspect of students' skills, abilities, attitudes, preferences, and needs. The best instrument for any particular institution or program is the one that provides the type and amount of information that is most consistent with the institution's or program's philosophy and services.

An institution that provides only remedial courses for underprepared students and does not have a strong commitment to providing student support services does not need to measure anything other than whether or not a student places into remedial courses. An institution with a commitment to developing critical thinking skills, offering a variety of remedial and developmental courses, and providing a wide array of support services might need to assess students' critical thinking skills, basic cognitive skills, and affective characteristics.

The answer to the question, "What instrument should I use?" depends, therefore, upon the institution, its programs, its philosophy and values, and its services. The more comprehensive the institution or program's philosophy and the greater the variety of its courses and services, the more likely it is to apply and benefit from the use of a greater variety of assessment instruments. Beyond that, the faculty and staff using assessment data should review the technical information provided for each instrument being considered to determine if what the instrument measures is consistent with what the faculty and staff consider important. In short, the "best" instrument or set of instruments are those that are most consistent with what the institution or program values.

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Acknowledgement

Patti Levine-Brown is Professor of Communications and Faculty Codirector of the Quality Enhancement Plan at Florida Community College, Barbara S. Bonham is Senior Researcher at the National Center for Developmental Education, D. Patrick Saxon is Assistant Director of the National Center for Developmental Education, and Hunter R. Boylan is Director of the National Center for Developmental Education at Appalachian State University.

Research in Developmental Education is published four times per academic year.

Cooditors: D. Patrick Saxon and Barbara Calderwood
Managing Editor: Barbara Calderwood
Editorial Assistant: Denise de Ribert

Manuscripts, news items, and abstracts are accepted by the Editor, *RIDE*, National Center for Developmental Education, ASU Box 32098, Appalachian State University, Boone, NC 28608. Please visit www.ncde.appstate.edu.

Subscriptions are \$15.00 per year. North Carolina residents add \$1.05 sales tax; subscribers in foreign countries add \$4.00 per year shipping and pay by bank draft. Send subscriptions to: Managing Editor, *RIDE*, at the same address or call (828) 262-2876.

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