

The Developmental Advising Inventory: A New Approach to Academic Advising

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The Developmental Advising Inventory is based on the premise that academic and faculty advisors have an important role in extending the human development mission of the college. The inventory contains 135 value-biased items addressing nine dimensions of development: Intellectual, Life Planning, Social, Physical, Emotional, Sexual, Cultural, Spiritual, and Political. This article discusses the theoretical and research foundations of the instrument. However, emphasis is given to applications in such academically related settings as (a) faculty advising, (b) advising centers, (c) general education classes, (d) learning centers, (e) peer advising, and (f) major field advising. The development of the Developmental Advising Inventory was supported by a 1988 grant from the NACADA Research Committee.

Students who know how to set goals based on a big picture of their development are more likely to make **meaningful** connections between their in- and out-of-class experiences. Boyer (1987) reported in a Carnegie Foundation study that one of the major weaknesses in American undergraduate education is the gap between academics and campus life. Discovering ways to build bridges—to make **connections**—is a significant challenge for academic advisors.

The *Developmental Advising Inventory* (DAI) is an assessment tool designed to encourage educational bridges between the student and learning resources on campus. Specifically, the DAI provides a systematic method for helping young adult students assess the developmental tasks for this period in their life span. Young adulthood is often defined as ages 18-40, although middle-adult tasks begin to emerge in one's mid-30s. Experience with the DAI has shown that the nine general themes (i.e., dimensions) of **development** are useful with many nontraditional students who are older but still in the young adult range. Although the specific task areas within those dimensions are focused more on the traditional young adult student (aged 18-24), reentry students sometimes find that they too have some unfinished business in their development. Once **they** discover which

developmental goals to pursue, the bridge building between academic objectives and campus life resources begins.

In addition to providing a holistic assessment of student development, the DAI is also a helpful tool in identifying areas that may be obstacles to academic success. Students who are struggling academically or underachieving do not always seek the assistance they need. Therefore, informed faculty advisors are in a key position to support student persistence and retention when they understand the importance of developmental issues. Gaining confidence in how and when to use assessment methodologies such as the DAI should be an important component of faculty development programs focused on student success.

Finally, how does developmental advising with the DAI fit into academic advising programs as they evolve on a particular campus? Frank (1988) reported a model based on a nationwide survey showing the patterns and sequence of changes that occur in college advising programs. The four stages of the model are Increasing Access, Upgrading Services, Coordinating Programs, and Enabling Advisors. The DAI relates directly to all but the first stage. For example, the optical scan scoring sheet allows for developmental profiles of target groups as a way to upgrade services in Stage 2. Stage 3 (Coordinating Programs) emphasizes collaboration with orientation programs and other units on campus where developmental advising is promoted. And Stage 4 (Enabling Advisors) shows the need for better resources and new techniques that help advisors advise more effectively.

Research and Development

A summary of the development of the DAI will be outlined in this section. Discussion will also be given to validity and reliability estimates resulting from statistical applications. The seven vectors of young adult development outlined by Chickering (1969) provided the primary theoretical foundation for the DAI. Chickering's

theory and model were formulated from an extensive review of the literature on human development, as well as a five-year experimental study of traditional undergraduates at thirteen liberal arts colleges during the mid- to late 1960s. Since its publication, Chickering himself has suggested modifications. For example, he indicated that *anxiety* and *depression* needed to be added to the vector on Managing Emotions (Chickering, 1988). He also stated that more emphasis needs to be given to the importance of *interdependence* on the Autonomy vector.

Subsequent research has shown this vector model to have some limitations in the areas of gender. The ethic of care and concern formulated by Gilligan (1982) and the affective component of learning articulated by Belenky, Clinchy, Goldberger, and Tarule (1986) are principles from research in women's studies that had an impact on the DAI. More than fifteen percent of the items can be traced to the influence of their research. Examples of specific items include: "making successful decisions based on what my heart tells me" (i.e., intuitive problem-solving); "looking for ways to help others experiencing difficulty"; and "being a careful listener and observer." Probably the most obvious impact on the inventory was the Sexual dimension, which contains a strong component of gender-related issues.

Evaluation of the instrument was also conducted by 12 minority educators including applications in several institutions with large minority populations. Again, literature in minority studies was consulted (American Council on Education, 1988). Items such as making independent career decisions were modified due largely to Hispanic values where family discussions are an integral part of career decision-making. An item addressing the environment and nature on the Spiritual dimension was also included due to the influence of Native American culture. However, ethnic studies and experience affected the model itself more than individual items. The Cultural dimension is primarily a reflection of developmental and educational issues relating to diversity. Ironically, the arts turned out to be associated with this dimension as well.

Finally, one dimension of the DAI was not directly the result of young adult theory. The Political dimension emerged more from the influence of Lewin's field theory (1976) where development is the result of *person/environment* interaction. Similarly, identity theorists recognize the mutual relationship between self-

acceptance and acceptance of others. The assessment issue here is that contemporary instruments often focus on intrapsychic aspects of development. On the other hand, the DAI presumes that students will improve their development on the first eight dimensions as they move beyond self to an interplay with society and its human systems reflected by the Political dimension. This dimension might also be considered the "citizenship" or "leadership" scale.

In summary, Chickering's research and theory of young adult development provided the overall framework for the DAI. Even with its limitations, the vector model is still considered by many to be the most comprehensive approach to young adult development. Incomplete or missing features were augmented in areas relating to women and minorities, as well as to the environment and leadership. The nine-dimensional model of the DAI was adapted from a Michigan State University programming graphic. The primary research question facing the researchers was whether or not such a model could be justified on the basis of developmental theory, statistical evidence, and the experience of veteran educators.

Samples and Procedure

The construction of the *Developmental Advising Inventory* covered a two-and-one-half-year period beginning in the fall of 1986 in the Academic Development Program at Washington State University. This program offered learning resources to any student in the university but especially targeted high risk students. Samples during this Pilot Phase included 24 third-semester probationers in a special tutorial class. The following summer, 20 academic faculty in a representative cross-section of disciplines also reviewed the instrument with a special focus on the dimensions most closely related to their disciplines. The emphasis in these early efforts was primarily to develop the item pool, check the content validity of the items, and test for face validity. Subsequently, an early version of the DAI was submitted to the NACADA Research Committee, which awarded one of its first research grants to support the continued development of the instrument.

During the fall and spring terms of the 1987-1988 academic year, applications of a preliminary edition were given to students in Residence Life and Housing at Washington State University with samples of 442 (Phase I)

and 352 (Phase 11) respectively. The final field-testing sample (**Phase III**) occurred in 1988-1989, with a combined sample of 1551 students representing eighteen colleges and universities: Two thirds of all these institutions were in Washington and Idaho, and one third were in California, Georgia, Texas, Illinois, and Oklahoma. These institutions included six public universities, two public colleges, three private universities, three private colleges, and four community colleges.

Field-testing coordinators at these institutions were permitted to gather their samples in non-random fashion because the data were not intended for generalization to other populations. The three primary sources were (a) student development classes, (b) residential living groups, and (c) academic advising/learning centers. The majority of the student participants were of traditional ages (18-24), even though coordinators included older young adults (35+). As expected, most of the nontraditional students came from the community colleges. Minority and international students were targeted at a black college in Georgia, a liberal arts college in California, and a community college in Washington. Although the percentages of women and men varied substantially among institutions, the overall distribution generally favored women 2:1. The Phase III (N = 1551) sample was approximately 60% women and 40% men.

Reliability and Validity

The internal consistency method of estimating reliability from a single testing was selected using the Spearman-Brown split-half technique (McNemar, 1969). This method assesses the

consistency of responses by comparing odd/even numbered items. The test-retest method was considered less appropriate because the educational function of the DAI is to evoke change between test-retest events. Reliability coefficients for Phase I (N = 442) were insufficient. But Phase 11 (N = 352) and Phase III (N = 1551) were satisfactory and very similar (see Table 1). Phase III estimates for all dimensions ranged from a low of .82 (Intellectual) to a high of .87 (Political, Cultural, and Spiritual).

Three types of validity were addressed in the development of the DAI: face, content, and construct validity. A variety of routine methods were used to determine if the DAI actually measured what it was designed to measure— young adult development. Establishing face validity was fairly simple. Verbal and written evaluations from a series of student, faculty, and staff groups consistently supported the means-to-end format of the instrument. For example, written or telephone assessments were conducted with field-testing coordinators in the six institutions outside the Pacific Northwest region. Group interviews in three locations were held with field-testing coordinators in Pullman and Seattle, Washington, for institutions close to those sites. The informal and open-ended interviews were structured around four primary areas: (a) clarity and format, (b) administration and scoring, (c) limitations, and (d) benefits of the DAI. Field-testing coordinators shared observations from their students and staff who were involved in the academic advising and student affairs applications.

Qualitative analysis of the information from these workshop sessions showed some student resistance centered on particular aspects of the inventory, especially if students had little inter-

TABLE 1
Internal Consistency Reliability Coefficients

Dimension	Phase I (N=442)	Phase II (N=352)	Phase III (N=1551)
Intellectual	.72	.84	.82
Life Planning	.72	.84	.85
Social	.71	.81	.86
Physical	.69	.85	.85
Emotional	.75	.86	.86
Sexual	.59	.79	.85
Cultural	.52	.86	.87
Spiritual	.45	.83	.87
Political	.48	.88	.87

est in developmental issues for themselves. Some of their concerns were (a) the 45-60 minutes needed to complete the instrument, (b) the forced-choice rating scale that did not include a neutral option such as Do Not Know or Does Not Apply, and (c) the assumption that being well rounded is an appropriate goal for each student.

There was strong support from coordinators for the human development ideals upon which the inventory was based and a consensus that the DAI could be useful in meeting specific developmental objectives. However, some coordinators were discouraged about the prospects of academic advisors using a holistic assessment approach. Their concerns were based on advisor beliefs that (a) advising is a poorly rewarded function for tenure track faculty, and the additional time spent with students could not be justified in terms of career security; (b) counseling-related activities were not an appropriate role for advisors; and (c) advisors were uncomfortable with particular dimensions of the instrument (e.g., Physical, Emotional, Sexual, and Spiritual). It was a recognition of their comfort with the Intellectual, the Life Planning, and to a lesser extent, the Social dimensions that the face validity of the DAI increased for advisors. The workshop produced recommendations for a more selective and complementary (rather than a holistic) use of the DAI by academic advisors, as well as student service staff whose programs and functions were closely related to particular dimensions of development.

In general, the workshop sessions resulted in numerous recommendations for improving the instrument. For example, earlier versions of the inventory contained a **High/Low** rating option on the Satisfaction column. Feedback indicated that a change to a **Yes/No** rating option would be easier to understand and consistent with the **Yes/No** option on the Discussion column. The Discussion column itself provided a method to encourage self-disclosure in shy, suspicious, or hostile students while at the same time ensuring privacy. Such features in the format of the DAI not only helped to confirm face validity but also increased the confidence of coordinators that the content of the inventory could reasonably be expected to assess development.

Factor analysis procedures (Kerlinger & Pedhazur, 1973) and response distributions were the primary statistical methods used in Phases I-III to establish the *content validity* of the items. Items were discarded that did not conform well

to theory. They were also discarded if they failed to discriminate for all levels of development (i.e., low-to-high as measured by the Strongly Disagree-to-Strongly Agree rating scale). Items were kept, but modified and improved with more explicit or stronger language, when they either conformed well to theory or showed a broad response distribution. These distributions were compared for a sample in the Northwest and Midwest to check for regional variations. No differences were prominent. Differences in response patterns between men and women were also evaluated, and some items were subsequently revised. It was important for items to meet both theoretical and statistical criteria to be finally selected. Factor analysis contributed to content validity by matching items with their appropriate dimension on the basis of factor loadings. High factor loadings (i.e., .60 or above) on a single dimension resulted in an obvious choice to retain the item on that dimension. Rarely was an item not placed on the scale in which it loaded the highest. Items with similar loadings on more than one dimension required references to the Chickering-based theoretical framework to determine item placement. Only a few items were retained, and improved, with factor loadings less than .40. Factor loadings for each item are available in the *Advisor's Guide* to the DAI (Dickson, 1991).

Factor analysis was also used as a primary method for establishing *construct validity*—validating the model. Orthogonal varimax rotations were used to determine if this nine-dimensional wellness model was the most appropriate configuration using factor analysis procedures (Kim & Mueller, 1978). During Phase I and II, factor patterns with two to nine rotations (i.e., scales) were evaluated. In Phase II, one to twelve patterns were studied. The question here was to discover if the nine-dimensional model was justifiable or if other patterns were a more legitimate way to assess the developmental task areas. The six and seven factor patterns were also evaluated carefully because of Chickering's seven-vector theory, and the traditional wellness model with six scales. In the final analysis, the research question to be answered was: Are the nine dimensions defensible, based on developmental theory, statistical information, and practical experience? The judgment of the researchers and statistical consultants was that the nine-dimensional model could be adequately supported by the data.

How pure are the dimensions? Practical ex-

TABLE 2
Factor Intercorrelations by Dimension (N= 1551)

	Intellectual	Life Planning	Social	Physical	Emotional	Sexual	Cultural	Spiritual	Political
Intellectual	1.0000	0.6098	0.4900	0.4270	0.5447	0.5020	0.5080	0.4448	0.4345
Life Planning		1.0000	0.5458	0.4092	0.4688	0.5136	0.4523	0.4085	0.4098
Social			1.0000	0.4693	0.5067	0.6245	0.5132	0.3988	0.3533
Physical				1.0000	0.4925	0.4276	0.3466	0.3372	0.3025
Emotional					1.0000	0.4733	0.3966	0.3440	0.3098
Sexual						1.0000	0.5219	0.3624	0.3320
Cultural							1.0000	0.5060	0.5509
Spiritual								1.0000	0.4725
Political									1.0000

perience with the model was consistent with Chickering's framework in showing that neither the nine dimensions nor the seven vectors were totally independent. In fact, Chickering's theory showed overlap in several vectors. For example, Achieving Competence (social) and Freeing Interpersonal Relationships overlapped, as did Autonomy (emotional) and Managing Emotions. Also, the Sexual dimension is an obvious combination of the Social and Physical dimensions, adding some gender-role components. The factor intercorrelations (see Table 2) support this conclusion. It is low intercorrelations that produce increased confidence that the dimensions are fairly distinct from each other. On the contrary, the Social and Sexual dimensions (.62), and the Intellectual and Life Planning dimensions (.61) showed fairly high correlations. This means that the dimensions within these pairs share some common characteristics. Overall, the coefficients spanned a moderate range from .30 to .62. A summary of the intercorrelations shows a breakdown by percent: 22% (.30s); 44% (40s); 28% (.50s) and 6% (.60s).

Several unexpected results surfaced from the item loadings on the various dimensions when nine scales were produced (see Table 3). The first variation from the model was the presence of items with high loadings from all dimensions producing an unidentified factor. When the common theme in all of these items was established, it appeared to be a "conscientious-responsible" characteristic that almost resembled an ethical leadership scale. With these data, one option was to expand the model by removing these high-loaded items to form a tenth scale. However, to do so would weaken the theoretical framework of the model, producing an inventory with nine similar scales and one dissimilar one—nine apples and one orange, so to speak. The alternative selected was to maintain

the nine-dimensional model and qualify the findings by noting that the existence of such a dominant interscale factor provided reason for further study. Perhaps the theme of taking ethical initiatives deserves an inventory all of its own.

Another unexpected result was that a substantial number of items from the Intellectual and Life Planning scales loaded together on a single scale. This indicates that there is a common theme connecting these dimensions. Apparently, the "thinking and learning" skills needed in the classroom are inseparable from the "decision-making and planning" skills needed for *career/lifestyle* issues. For example, the item on time management was included in the Intellectual scale because of its association with study skills programs. But it is equally relevant to career and leisure planning. In the final analysis, the Intellectual and Life Planning scales were separated largely due to the influence of Chickering's model, which includes both intellectual Competence and Clarifying Purpose (i.e., vocational and lifestyle issues) in separate vectors.

TABLE 3
Dimension Scores for Field-testing
Sample (N= 1551)

Dimension	Rank	Mean	SD
Sexual	1	47.41	6.19
Social	2	47.00	6.44
Life Planning	3	46.07	6.50
Physical	4	43.78	6.53
Cultural	5	43.13	7.00
Spiritual	6	43.01	7.08
Intellectual	7	43.00	5.83
Emotional	8	42.21	6.32
Political	9	39.90	7.13

A third outcome was the consistency of the loadings for two seemingly disparate parts of the Cultural dimension: fine arts and ethnic diversity. These had been defined as cultural due to common usage. Statistical support for this relationship required the researchers to speculate on underlying linkages. One rationale is that much of what is produced in music, theater, and literature is a reflection or extension of different ethnic experiences. Furthermore, there was a relatively high correlation between the Cultural and Political dimensions. The common bond between these dimensions might be an attitude of "openness and initiative" for becoming involved in new, and sometimes threatening, experiences.

Finally, a few comments should be made about a fourth type of validity not conducted in this research. Concurrent validity seeks to establish the degree to which an instrument is useful in conjunction with or distinct from other instruments measuring the same constructs. It appears that the DAI is now ready for concurrent validity estimates. Because it is based on multiple constructs (i.e., nine dimensions), it should be compared with instruments having similar dimensions totally. Or, the separate dimensions can be validated against other similar scales respectively. Caution also needs to be exercised in concurrent validity efforts to ascertain the impact of scales attempting to measure similar constructs but with different theoretical foundations.

Prenormative Data

Table 3 shows the rank order, mean scores, and standard deviations for the nine dimensions from the Phase III sample (N = 1551). A summary of the demographic subgroups within this sample (i.e., Gender, Minority Status, Type of Institution, Class, and Grade Point Average) is shown in Table 4.

Although the data from these samples might be considered representative of college students generally, a caution is offered regarding the use of this prenormative information based on self-reported assessment. Such data is usually interesting and has value as a point of departure. But making so-called national comparisons is of little value. Establishing local, primary group norms can be much more useful and legitimate in the process of designing interventions based on the group profile. National norms have even less value when working with individual ad-

visees. Local profiles based on item analysis, level of satisfaction, and particular demographic categories using the machine-scored answer sheet can be very useful. For example, a summary of scores for men and women from a partial sample in Phase III (n = 916) showed the same rank order for the top three dimensions respectively: Sexual, Social, and Life Planning. Similarly, Political, Emotional, Intellectual, and Cultural were among the lowest **rankings** for both men and women. These data suggest that the lowest dimensions appearing to affect academic **success—Intellectual and Emotional—**should receive priority attention from faculty, learning center staff, and counselors.

Description

There were a number of major influences on the construction of the DAI. As mentioned earlier, the theoretical framework for the inventory was Chickering's theory of young adult development (1969). Chickering's model contains seven vectors of development, which resulted from a comprehensive review of the literature and a five-year experimental study at thirteen colleges in the mid-1960s. Even with its limitations, many in higher education still consider his approach to be the best overall articulation of developmental issues for traditional college students. Now, over two decades later, research from the study of women and minorities, as well as learning related to the increasing number of older young adults in undergraduate programs (Cross, 1981), has had an impact on expanding the theoretical basis for the DAI. In the final analysis, the practical advantages of implementing a so-called wellness model provided both the rationale and the metaphor (i.e., the wheel) for designing an inventory that could be used by faculty, student affairs staff, and student paraprofessionals alike in their common focus on student development. The nine dimensions of this model are described below.

Dimensions

Intellectual

The Intellectual spoke involves two task areas: Learning and Thinking Skills. Learning skills focus on styles and strategies for learning that include effective oral and written communication. Thinking skills focus on ways to discover and evaluate information. This task also

TABLE 4
Demographic Characteristics of the Field-testing Sample (N= 1551)*

Variable	Frequency	Percent
GENDER	(916)	
Male	362	39.5
Female	554	60.5
MINORITY	(725)	
American-Alaskan Native	13	1.8
Asian-Pacific Islander	41	5.7
Black	137	18.9
Hispanic	19	2.6
White	515	71.0
INSTITUTIONAL TYPE	(609)	
Community College	146	24.0
Private College	15	2.5
Private University	206	33.8
Public College	45	7.4
Public University	197	32.3
CLASS	(602)	
Freshman	283	47.0
Sophomore	143	23.8
Junior	119	19.8
Senior	53	8.8
Graduate	4	0.7
GPA	(555)	
Probation	50	9.0
2.00 - 2.99	169	30.5
3.00 - 3.49	168	30.3
3.50 - 3.99	157	28.3
4.00	11	2.0

*Demographic information is incomplete and differs for each variable as shown.

includes analyzing complex problems to arrive at practical and creative solutions. The purpose of these tasks is to encourage academic success and excitement in becoming a self-directed learner. Intellectual development means that there is a curiosity about the world and how knowledge can improve the quality of life.

Life Planning

The Life Planning spoke involves two task areas: ***Career and Lifestyle Choices***. The career task involves decisions regarding education, **major/**field, and occupational alternatives that are realistically connected to abilities, opportunities, and dual-career family issues. The lifestyle task is concerned with the important relationship between personal life and work life values. It includes using leisure time to participate in campus activities and selecting academic electives

that will add richness to the life experience. The person who is well developed in this dimension recognizes the benefits of study, work, and play and balances them effectively.

Social

The Social spoke involves two task areas: ***Friendships and Intimacy***. The friendship task includes a variety of situations from meeting strangers comfortably to developing a social network that is fun and supportive. It includes the ability to be spontaneous and warm in social interactions. Development in this dimension involves respecting the rights of others. The intimacy task involves deeper relationships where trust and loyalty are important qualities. In social intimacy there is respect for the need to be alone or with a crowd. It involves communication without speaking. Although intimacy strives

for harmony in relationships, it recognizes that disagreements are inevitable and need not disrupt friendships.

Physical

The Physical spoke involves three task areas: **Nutrition, Exercise and Rest, and Health Care**. The nutrition task focuses on food knowledge and behavior that is enjoyable and reduces the risk of disease. It is also concerned with avoiding the dangers of tobacco, alcohol, and substance abuse. Balancing rest and exercise are important factors in developing strength and endurance. Being physically healthy means that health care principles are practiced to ensure that the body is functioning optimally. It also involves the appropriate use of health care systems and facilities. A consistently high level of physical energy is one indication of physical well-being.

Emotional

The Emotional spoke involves two task areas: **Expression of Feeling and Emotional Autonomy**. Emotional development begins with a **self-evaluation** regarding four basic emotions: fear (anxiety), anger (frustration), depression (sadness), and joy (celebration). The expression-of-feeling task involves sensitivity and skill in expressing these emotions appropriately. The task of emotional autonomy is building a sense of confidence that one does not need continual reassurance, affection, and approval. There is also an increased willingness to risk loss of friends and status if there are compelling principles or interests. Dealing with stress and creating psychological energy are important aspects of emotional development.

Sexual

The Sexual spoke involves three task areas: **Appearance, Gender, and Sexuality**. This dimension is a key to identity development for young adults. The appearance task includes learning to improve physical appearance as a primary way to build self-acceptance and self-esteem. The gender task focuses on personal competence and potential. It replaces power-oriented assumptions about men and women with behavior that is supportive of the opposite sex in work and social settings. Mature sexuality looks beyond media images and stereotypes to include

inner qualities and beauty. It also involves intimate relationships where behavior is responsible at both the emotional and physical level.

Cultural

The Cultural spoke involves two distinct but related task areas: **Aesthetics and Tolerance**. The aesthetic task includes enjoyment of a wide variety of experiences in the liberal and performing arts. Involvement can be in appreciating creative works or performing them. Development in this dimension results in an awareness of the unique relationship between the arts and cultures. The tolerance task also requires the ability to suspend judgment while learning to understand differences of all types. Acceptance of individuals with a diversity of lifestyles, religion, and ethnic backgrounds is essential.

Spiritual

The Spiritual spoke involves two task areas: **Values Development and Behavioral Integrity**. The heart of this dimension is the search for meaning in life. Values development ranges from simple questions of right and wrong to complex questions of life and death. It involves moving from rules and traditions to a set of principles that guide personal behavior and learning to make important ethical and moral decisions. Sorting out important basic values can take place in either a philosophical or religious setting. Behavioral integrity means that there is an increasing consistency between beliefs and action. Finding peace and joy in daily activities and a confident view of the future are hallmarks of this dimension.

Political

The Political spoke involves two task areas: **Learning the System and Leadership**. This dimension begins with a basic understanding of personal rights and responsibilities at both the local and national level. Learning the system requires a practical knowledge of legal and legislative systems. It also includes learning to successfully negotiate organizational values and procedures without becoming cynical. Leadership and service are the ultimate expression of being aware of current events and empowered enough to help solve problems in the community. Political development is a recognition that interdependence is a necessary value in modern society.

Format

The three-part format of the DAI directs the student's response to each of the items. Two examples show the format pattern. The first item illustrates a "thinking task," and the second illustrates a "learning task" on the Intellectual dimension (see Figure 1).

The **Development** section shows the level of accomplishment by providing four rating options: Strongly Disagree (Rarely) = 1; Disagree (Sometimes) = 2; Agree (Often) = 3; and Strongly Agree (Usually) = 4. The ratings can be circled directly on the inventory or marked appropriately on an optically scanned scoring sheet. Systems with large numbers of students participating will prefer machine scoring because data collection and analysis are enhanced. As there are fifteen items for each dimension, the lowest possible score is fifteen and the highest is sixty. Students can chart their summary score on the Developmental Scoring Wheel (see Figure 2). The arrows extending beyond the rim of the wheel imply that total development exceeds the maximum score possible when growth is viewed as a lifelong, beyond-the-campus learning venture.

It is important to note that there is a difference between perceived scores and true scores. It is not uncommon for student self-evaluations to be unrealistic and result in scores that are inflated. This becomes an opportunity for the advisor (or peers) to ask insightful questions about what a high performance score actually looks like. Such reality checks increase self-assessment skills. They may also result in lowering scores to a "true" score level that could be the beginning of growth. Group support at this juncture is critical to self-esteem, as students tend to compare their scores or normative profiles.

The **Satisfaction** section allows students to indicate their level of satisfaction with the development ratings for each item; and, a satisfaction summary for each dimension is provided on the Developmental Scoring Wheel. The purpose of

this section is to aid students in sorting out their values and priorities. An informed choice, with awareness of consequences, allows the **value-biased** (i.e., it is generally "good" to get a high score) DAI to be effectively used within the developing values of the student. This Satisfaction section gives students some freedom to express their own values. It also reduces resistance resulting from the challenge presented by **low-rated** items. In other words, it allows them to express their initial feelings and say, "So what?" A teachable moment may occur when advisees are asked about the benefits or consequences of being satisfied with a low rating. This is the teaching function of advising. Students may not have considered the implications of poor skills in relation to their goals. Or, it simply may not seem to matter in the foreseeable future.

The **Discussion** section indicates whether students wish to discuss the development and satisfaction ratings with the advisor or someone else such as an instructor, peer, or counselor (Brown, 1979). This is one of the best features of the DAI because it encourages faculty to show an interest in the total student not only the academic side. It is an effective way to encourage conversation without being invasive because students are able to affirm their privacy simply by checking "No." There are several reasons why students might prefer not to discuss an item. It may be too sensitive and personal, especially when the advisor and student do not know each other well. Or the student may not think the advisor has expertise in that area, or the item may simply be a low priority at that time. Sometimes students later change their minds about what they are willing to discuss. In any case, the privacy of the student must be respected, and items checked "No" are generally skipped without comment. This column gives the relationship security for both parties and allows it to grow in an appropriate and comfortable way. In fact, it is not even necessary for the advisor to see or have a copy of the individual item scores. However, most students are **com-**

Sample Student Response Items

	Development				Satisfaction		Discussion	
	SD	D	A	SA	Yes	No	Yes	No
• I examine assumptions critically before drawing conclusions.	1	2	3	4	O	O	O	O
• I change my learning approach to fit the material or assignment.	1	2	3	4	□	□	□	□

Figure 1

Developmental Scoring Wheel

Instructions: Plot the value on each spoke which corresponds to your score for that dimension. Then connect the plotted points on each spoke with curved lines to see what your wheel looks like. The Yes-No boxes represent your satisfaction with the scores. This may help you decide which spokes you would like to improve.

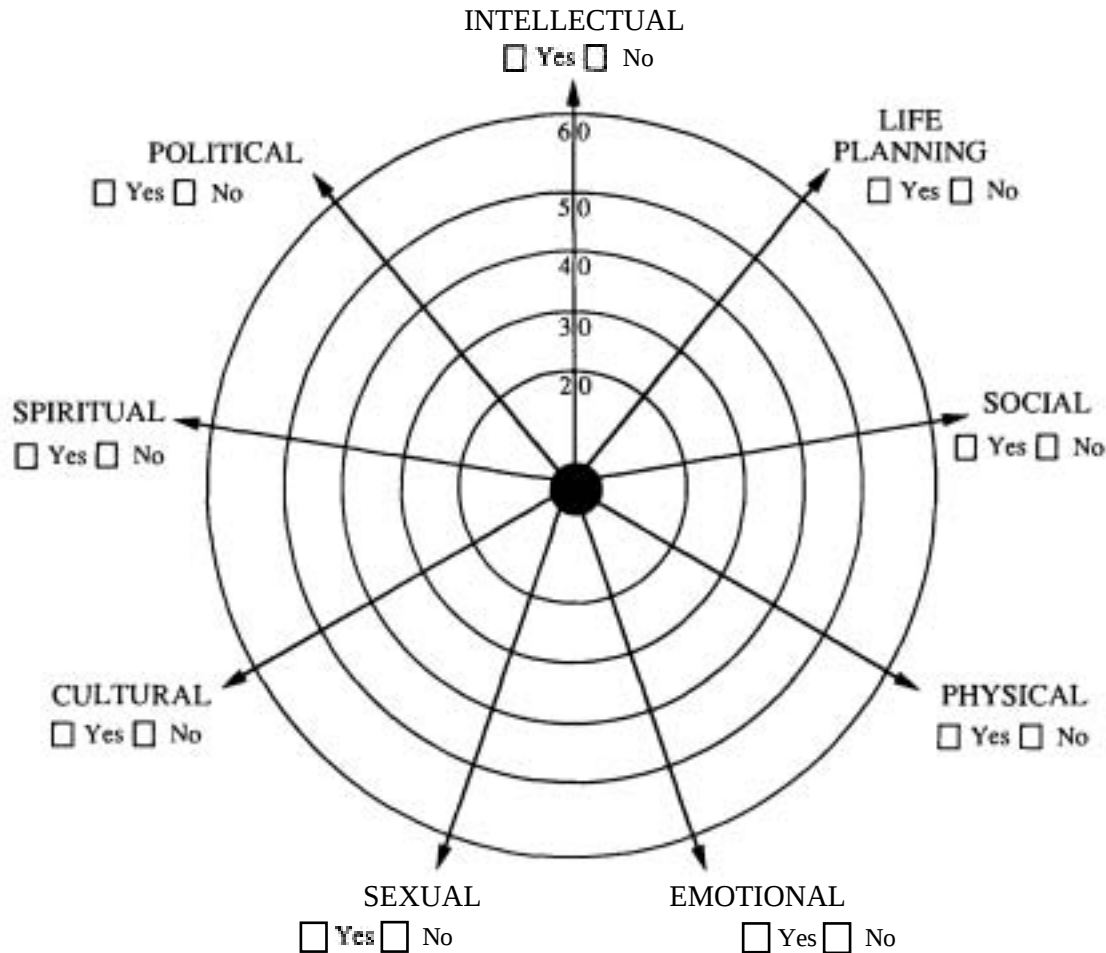


Figure 2

fortable discussing how well balanced their development wheel appears and will usually share the summary ratings charted on the Developmental Scoring Wheel.

Advising Applications

Faculty, staff, or peer advisors may find the DAI useful in many settings. The following academically related advising situations will be dis-

cussed: faculty advising, advising centers, general education classes, academic peer advising, learning centers, and major advising. Although nonacademic factors do impact upon academic persistence and success, applications in non-academic service areas are not addressed in this article. However, Figure 3 illustrates both types of DAI advising applications in a systems graphic where collaborative resources can be very helpful to student success. In fact, such inter-

Developmental Advising Applications of the DAI

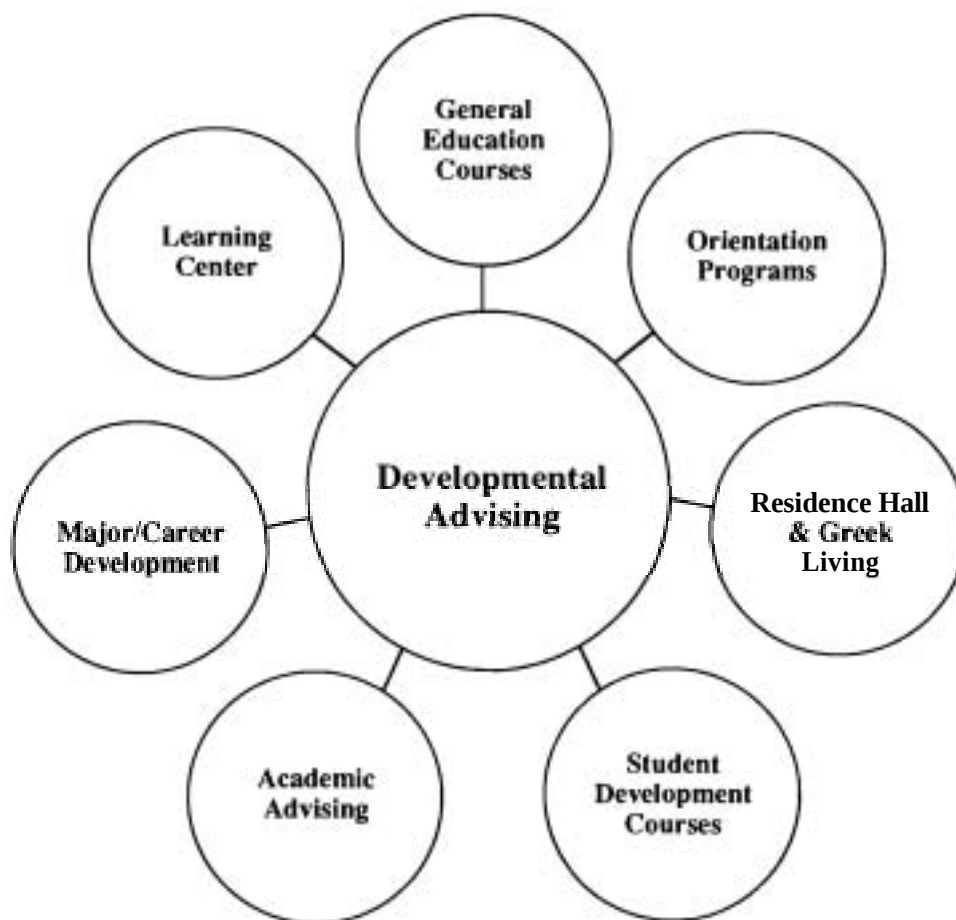


Figure 3

departmental or divisional applications highlight the collective benefits that can result when academic and student affairs staff work as educational partners. This is the bridge-building or bridge-crossing activity referred to earlier.

Faculty Advising

The Faculty Advising section is presented in two sections: issues that focus on faculty concerns and issues that relate to helping students. **Faculty Issues** Several obstacles inhibit faculty involvement in developmental advising with nondeclared majors within the traditional academic advising session that focuses on program and course selection usually at registration. In fact, the experience of DAI field-testing institu-

tions indicated that even student-centered faculty were often hard to sell on developmental advising. One of the problems is the mistaken assumption that every advising contact is supposed to be developmentally focused. Realistically, there isn't time for this to occur at every encounter, and there are clearly times when academic advising per se should be the primary agenda item.

However, faculty are more likely to participate if they share some of the ideas upon which the DAI was constructed. These ideas include the belief that (a) total development initiatives encourage lifelong learning attitudes, (b) collaboration of faculty and student affairs staff in connecting classroom with out-of-class experiences contributes to a student-centered learning

environment, (c) developmental advising is not counseling but a form of teaching, (d) developmental advising need not require substantial amounts of training or time, and (e) students can easily learn to become effective self-assessors.

Another obstacle is the conviction among many faculty that a developmental approach amounts to a type of unnecessary hand-holding similar to the perceived role of counselors. On the surface, the DAI contributes to this misconception because its structure implies that the advisor should be involved in all aspects of a student's development. Such is not the case. In fact, the first three dimensions of the DAI (Intellectual, Life Planning, and Social) were intentionally ordered because they represent the three dimensions that most faculty see as legitimate advising roles. Advisors also tend to be more comfortable in these areas, along with the dimensions directly related to their teaching disciplines. It may be appropriate for faculty to use *only* these first three dimensions when using the DAI on a regular basis. On campuses where the DAI is used in a systems approach illustrated by the circle graphic in Figure 3, attention is given to the remaining dimensions by various other service area staff and programs.

Student Issues A few additional observations regarding the Intellectual, Life Planning, and Social dimensions are warranted because both students and advisors have a special interest in them. The Intellectual spoke of the wheel addresses the "thinking and learning" task areas. These task areas and items are similar to the outcome objectives of many general education programs. Most undergraduate teaching faculty are expected to contribute to general education goals and lifelong learning objectives. The Life Planning dimension focuses on career and career-related lifestyle issues. These topics engage faculty as they advise students in their major fields. The Social spoke is the least "academic" of the first three dimensions, but its inclusion early in the inventory is based on the common experience of faculty as former students themselves. Usually faculty are able to identify with some of the social and friendship issues that can support or distract students in their studies. On this dimension, faculty respond simply as more experienced and mature social beings than as counselors.

Ironically, these same three dimensions are the ones that students are usually most concerned about when they arrive at college. Fre-

quently, their primary worries are "Will I succeed academically?" and "What will it take to do as well in college as in high school?" Most are also forced to face the issue of choosing a major, if for no other reason than everyone is asking, "What is your major?" Finally, making friends is a critical part of a smooth transition to college life. Social uncertainty and loneliness place newly arrived students at risk emotionally, create academic risks, and increase attrition.

Academic advisors should take note that the Intellectual scale ranked seventh in self-perceived development with a mean score of only **43.00** out of a possible top score of **60.00**. Students ranked the Emotional dimension eighth with a score of **42.21**. Only an analysis of the items on the Emotional scale could confirm a direct relationship between emotions and academics. Nevertheless, emotional resilience is an essential skill for students who are making a major life transition from high school to college. A primary issue for faculty or professional advisors is to determine the strategies that they can employ to increase the emotional security of students facing perhaps their first major challenge to intellectual development. Learning to set goals and persist in achieving them (Life Planning dimension) is especially important when a student does not feel like doing so. Teaching students how to bounce back quickly from what feels like failure (Emotional dimension) and make effective adjustments in their learning styles (Intellectual dimension) is an important learning skill involving multiple dimensions. The support of friends (Social dimension) is another factor. This information should make a difference to advisors in assisting students during the critical first term. It also underscores the importance of collaborative efforts with other service areas such as orientation, residence life, and counseling.

In summary, the Intellectual, Life Planning, and Social dimensions of the DAI are probably the most appropriate limited-use themes for advisors of undeclared and general education students, especially in the early stages of an advisor-advisee relationship. Once it becomes apparent from poor grade performance or informal conversations that other dimensions need attention, simply asking students if they would like to explore other areas of the developmental wheel is important. The result may very well be to refer the student to an appropriate student service office on campus. For example, a reentry single mother may have difficulty

balancing her parent, worker, and student roles. Making connections with other students and staff at the Women's Resource Center could be the best action possible.

Advising Centers

In some colleges and universities, a small core of professional academic advisors are responsible for coordinating faculty advising and/or assisting new and undeclared students. The primary responsibilities of these advisors are typically to clarify general education requirements, to respond to scheduling and registration questions, and to encourage program planning that makes it easy for students to certify in a major field. These academic advisors are probably at the greatest disadvantage in developmental advising on an individual basis because of the large numbers of students they serve—sometimes hundreds.

Individual sessions with students in these centers usually leave only a few minutes to deal with developmental issues. The Life Planning dimension may be the single most legitimate avenue of approach because career planning is a natural extension of advising. Some colleges recognize this natural linkage by locating the Advising Center and the Career Services Center in close proximity so they can collaborate effectively.

However, advising centers are in a unique position to identify early warning signals with students who are underachieving. It is therefore important for these advisors to be aware of developmental advising strategies. A perceptive advisor may only need to ask, "How is your developmental wheel these days? Rolling smoothly? Some bumps? A flat tire?" Although there may not be time to pursue the responses in depth, a timely referral may be crucial. Those centers that limit their efforts to administrative functions and registration efforts are likely to contribute, by omission, to the numbers of students needing assistance in learning center programs as the year progresses.

In some institutions, an opportunity for developmental advising occurs when academic advisors are involved in orientation or teaching student development mini-courses such as University 101. Otherwise, probably the most practical way to address large numbers of students is in collaboration with the Office of Orientation. For example, students can be shown how to assess their development as young adults and set

goals based on this assessment during summer and fall orientation programs. Patrick et al. (1988) report that a comprehensive advising program in conjunction with a sustained orientation program through the freshman year can substantially increase the retention rate of high risk students.

Students might also be encouraged to take some general education courses based in part on their development as shown by summary scores on the DAI. The next section shows how the material in general education classes can be intentionally linked to such goals.

General Education Courses

The triangle-wheel graphic in Figure 4 provides a conceptual framework for viewing the collaborative relationship of academic affairs (i.e., General Education Curriculum) and student affairs (i.e., Student Development Curriculum) in contributing to the human development mission of the college (i.e., Total Student Development). Human development is offered as the common theme that adds coherence to the academic curriculum and the student affairs cocurriculum. Specifically, the nine spokes on the developmental wheel within the triangle represent areas of growth and learning for students. The wheel is dynamic and rotates daily according to student needs and activities.

A major assumption is that general education courses should go beyond the respective disciplines—for their own sake—and relate to life-long learning as symbolized by the spokes of development. Similarly, learning outside the classroom can do the same via educational programming and extra- or cocurricular activities. Knowledge from the classroom and application of knowledge outside the classroom complement each other in their focus on the goal of higher education—human development.

How can this be accomplished? One unique research model (Dickson, 1984) was awarded recognition by the president of the American College Personnel Association for its potential to integrate academic and student affairs efforts ("Academic and Student Affairs," 1989). This concept was recently piloted with 24 faculty in 18 disciplines at Washington State University. The purpose was to link units or topics of general education course outlines with activities outside the classroom to accomplish specific goals stimulated by DAI scores. Instructors assisted in this "developmental teaching" (or advising as

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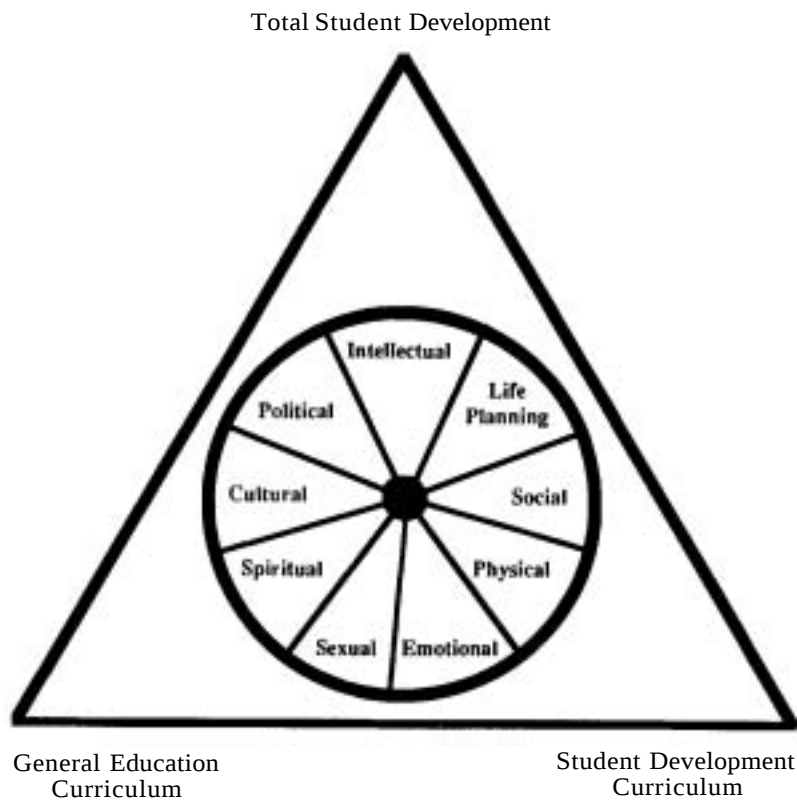


Figure 4

teaching) approach by indicating which dimensions were naturally, and most prominently, connected to the discipline. Students then had some options to target specific developmental objectives.

For example, the instructor in Geology 101 indicates that the course has a direct application to the Physical (as well as the Political) dimension in terms of health in relation to the unit on hydrology. Students who have rated themselves low on items relating to "junk foods" may choose to do a personal or group project in which they daily replace their intake of caffeine drinks with *quality* water. Water science principles and specific regional or local information on the quality of ground and surface water then become integrated into the assignment. Stu-

dents who live downstream from factories located adjacent to rivers or in the vicinity of nuclear plants near underground reservoirs may be especially interested. Students from rural environments with shallow domestic wells located in run-off areas near farmers who use inorganic chemicals for fertilizer may also be motivated to assess the quality of their water supply. Comparisons of health and disease rates for people with various fluid intakes might also be included.

The premise here is twofold: (a) knowledge from the disciplines can have immediate benefits in meeting developmental needs, and (b) student interest in the discipline increases as it becomes personally relevant. Advising center staff are in an excellent position to identify

courses taught by instructors who share these values. As such, they may play a significant role in showing students how to use their academic resources in a personally meaningful way. Students who are unmotivated and drifting educationally are likely to benefit by using developmental criteria as a partial reason for course selection in addition to shopping for a major.

Peer Advising

Some institutions have responded to the impersonalization of advising by training academic peer advisors to serve as an extension of the Advising Center. Jane Parker, in the Student Advising and Learning Center at Washington State University, teaches such a course for academic credit. She estimates that approximately one third of the 3,000 freshmen students each year are assisted by 50 peer advisors trained each year. These student advisors become front-line sensors to emerging problems and, as such, represent a first line of prevention. Their traditional function is to communicate bulletin requirements, deadlines, registration procedures, etc. However, the more informal student-to-student contact makes it possible to assist their advisees on those dimensions of the DAI where faculty may not be consulted. Consider the following examples: the Social area ("This is not a friendly campus, and I'm thinking about joining my friends at the community college back home."); the Emotional area ("I feel like a number here, and it makes me angry!"); and the Sexual area ("The men on the faculty seem so authoritarian and intimidating.").

The academic peer advisors help to meet several important objectives: (a) personalizing the university, (b) increasing the effectiveness of advising centers in outreach efforts to living/learning environments, (c) acting as early warning systems to increase retention, (d) creating additional leadership opportunities for students where values for community service as future citizens can be developed, and (e) validating and implementing the human development aspect of the institutional mission from the advising center. Housing these academic peer advisors in residence halls along with other resident advisor staff is an excellent example of collaboration that supports the living/learning environment.

Learning Center

Increasing numbers of students are either electing to take advantage of the services

offered by teaching/learning centers or are being required to do so due to their deficiency status. Difficulty in handling the large numbers of students has led some colleges and universities to require that students on probation take credit courses with such titles as Academic Development 100 as a condition of readmittance. Martha McMillian, Director of Freshman Programs and Academic Services at Oklahoma State University, has conducted six such classes using the DAI with over 400 students during the 1989-1990 school year. These students are often hostile due to their belief that they do not need the information (or humiliation) such classes offer. They may or may not have college-level ability. Common characteristics of these students include (a) overinvolvement socially during the freshman year, (b) tendencies not to affiliate or bond socially or institutionally, (c) being survivors and "systems players" whose luck has run out, and (d) having underdeveloped reading and study skills. Their performance indicates that they are at risk. Consequently, Oklahoma State University has determined to act on its value that the greater the risk of student failure and attrition, the greater the justification for intrusive measures and experiences. Advisors in learning centers are in a position to play a key role with this growing population of students. Recent legislation in Texas requires all entering students to take placement exams in reading, writing, and mathematics. Students not meeting minimum scores must test out of these developmental courses before completing 60 credits, or they cannot continue to register. Removing obstacles to developmental education is another potential contribution of the DAI.

For example, students in these remediation courses are often resistant to help in the early stages of the class. Their interest in self-disclosure is minimal and their trust in teaching staff is often suspect, especially for minorities. However, students usually find it interesting to discuss their collective DAI profile. One method for minimizing resistance is to encourage small group sharing and goal setting by students who have similar scores on various DAI dimensions. Also, genuine patience and caring on the part of advisors/teachers is paramount in getting students to look at themselves in a developmental fashion. This attitude is often a critical factor in getting them to move beyond the simplistic view that all they have to do is "try a little harder." Building self-esteem and confidence, as well as

creating motivation to set goals and persist in achieving them, are primary benefits of the DAI materials. The *Student Guide* to the DAI is particularly useful in structured class settings (Dickson, 1989).

Major Advising

Another unexplored option for using the DAI is with majors. There is an assumption that each discipline and its corresponding major has its favorite spokes of development. In other words, development along some themes is more relevant to success and satisfaction in particular occupations. For example, allied health professionals generally would focus more on the physical, emotional, and sexual dimensions. Those in international studies might focus more on social, cultural, and political dimensions. Remember that this is a more narrow application of development for careers, rather than a broader emphasis for life.

Identifying the natural connections between development and careers can result from research by career development specialists and follow-up surveys with alumni. Faculty who have spent time working in the various fields they teach can provide additional insights. Passing this information on to newly certified majors in their sophomore or junior years could be very helpful in targeting specific competencies needed in successful entry-level job search strategies. Using senior students as peer advisors with the newly certified majors in upper division departmental seminars may be an effective way to strengthen the network of student support under faculty guidance.

Conclusions and Recommendations

The *Developmental Advising Inventory* is one of only a few comprehensive instruments available today for assessing young adult development. Students find that it is easy to understand and use. The format of the inventory contributes to building positive mentoring-type relationships with students and requires relatively little knowledge of developmental theory or expertise on the part of faculty to apply it in a variety of advising settings. As such it provides a framework for individual interventions and program strategies. The *Advisor's Guide* to the DAI offers many practical suggestions for implementation, as well as additional research information for those who need it (Dickson, 1989).

The DAI also offers a means of viewing value-added outcomes for students in institutions where human development is an integral part of the mission. Although the inventory itself conforms to acceptable psychometric standards for instrument design, its greatest benefit may be in the stimulus it provides for teaching students to develop accurate self-assessment skills. This skill is important in becoming an independent learner. Faculty and student affairs advisors who recognize the value of connecting developmental and academic objectives should find the DAI a helpful tool on either a limited-use or large-scale programmatic basis. Perhaps most importantly, it has the potential to make a major contribution toward reducing the gap between academic affairs and campus life in developing an integrated learning community.

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