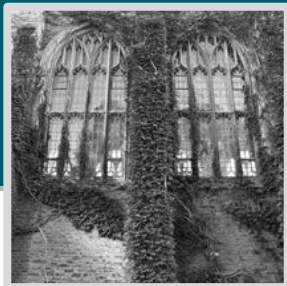


Student Interest Assessment Handbook

Prepared by Hanover Research for Minnesota State Colleges and Universities



INTRODUCTION

PURPOSE OF THIS HANDBOOK

This *Student Interest Assessment Handbook* is designed to aid in the assessment of new and existing program viability and in the review of student interest in existing programs. The *Handbook* contains a variety of indicators to demonstrate projected student interest in programs.

Note that, while the aim of the *Handbook* is to foster use of more robust and standardized measures for demonstrating student interest, collection of these data may also serve other valuable purposes. For instance, data collected through the assessments detailed in this guide may also serve to inform future marketing strategies.

INTENDED USERS AND ROLES

The *Handbook* will be of use primarily to administrators and program planners, but also to anyone else involved in the planning of new programs or the review of existing programs. Assessing student interest can be difficult and time consuming, and may involve multiple personnel on any given campus. Some types of analysis may be most appropriately handled by those with specialized skills and resources, such as institutional researchers.

ANALYSIS AND ORIENTATION

The indicators collected in this *Handbook* represent only initial data sources. In most cases, they will require subsequent analysis, interpretation, and conclusions to be useful in gauging student interest in programs. Data provided by these indicators are descriptive of “what” and sometimes “when.” Users should reflect critically to explain “why” before making program-related decisions.

For instance, in examining enrollment or completions data, upward trends can signal increasing student interest in a discipline. Low or declining enrollment or completions levels may indicate a need to consolidate programs or signal an inopportune time to start a new program, or may suggest an increased risk of unnecessary program duplication.

In the development of new programs, data on student interest should be obtained upstream, or early in the process. Evidence of weak student interest may be a reason to abandon further development of a new program proposal; alternatively, some indicators may suggest other, viable disciplines for new program development.

DEVELOPMENT OF THIS HANDBOOK

This *Handbook* is a work in progress, and methods described here will need continuous review and revision. In particular, indicators included in the *Handbook* have not necessarily been tested for their effectiveness, and other, potentially useful indicators have been omitted in this version of the *Handbook* pending further development or review.

As institutions use this *Handbook*, they are encouraged to share their experiences with specific indicators with each other and with the System office. As experience with the *Handbook* grows, some indicators may be eliminated due to a lack of utility, while others grow in popularity. Further, users may wish to propose new indicators for development and inclusion in future versions of the *Handbook*; such proposals should be directed to the System office.

Finally, powerful new data systems will open new information opportunities: SLEDS (Statewide Longitudinal Education Data System) managed by the Office of Higher Education under oversight of MnIT (Minnesota Information Technology) connects multiple data sources (K-12, higher education and employment) at a person-record level of detail. LMIwise, scheduled to launch in June 2014 from the System academic programs website, will provide state-level employment data, including occupational projections and occupation-to-program matching that should be more effective than the national CIP-to-SOC crosswalk in assessing student interest.

RECOMMENDATIONS FOR PROGRAM PLANNERS

COMPETITION

There are many factors to keep in mind that impact program interest and students' perceptions of programs. Program planners must consider, for example, whether or not there are other similar programs currently on the market – that is, how much competition there is for students they hope to attract. While multiple institutions offering similar programs may indicate a high level of student interest in such programs, this situation may also be a symptom of a saturated market. Relatedly, program planners must consider whether or not the best way to serve the targeted student population is to offer new, unique programs or to focus on the extension, reduction or relocation of existing programs.

SIZE AND DENSITY

The size and density of the pool of potential students also needs to be taken into consideration when planning academic programs. A large and dense pool of students offers the most flexibility, since it indicates that there are many potential students with easy access to the program. The size and density of the prospective student pool may differ substantially from program to program. For instance, the prospective student pool for a specific, liberal arts-focused degree may be smaller – and much different in terms of demographic composition – than the potential audience for a technical program. When evaluating the potential size and density of the prospective student pool, institutions should

consider the demographics of the target area as well as labor market indicators – i.e., if proposing a technical certificate geared toward employed professionals, institutions should consider how many professionals are working in the field in the geographic area of interest.

OCCUPATIONAL APPEAL

Another important aspect of student interest is occupational appeal. Will jobs available to program graduates be attractive? There might be real discrepancy between labor market demand for a profession and students' interest in following it. If, for example, a profession requires long training, it may be less attractive than one requiring less. A profession's potential earnings, working conditions, location and how it is perceived by others are also important factors driving student interest. Thus, even if labor market data indicate a need for programs training individuals for a certain profession, such programs may in fact attract few students if the profession itself is unappealing. While labor market data are useful, they are not conclusive, and must always be considered together with other indicators of student interest.

COLLABORATION

In general, program planners should always keep the broader program planning context in mind, as it is expressed in the "Charting the Future" strategic framework. A key element of this strategic framework is cross-institutional cooperation and collaboration and the minimization of unnecessary program duplication within the System. Administrators must seek to optimize the MnSCU System, rather than simply promoting their own institutions.

OTHER CONSIDERATIONS

To produce the greatest benefit for the whole System, program planners must consider whether their priority should be in the production of new programs or in a review and strengthening of existing programs. They must, moreover, ensure that their facilities are capable of handling new programs, and that their institutions have the capacity for supporting them in the long term. Finally, planners must ensure the success of new programs by conducting "upstream" research on interest in programs – that is, planners must conduct strategic market research to guide the identification and development of viable programming.

SHORT- AND LONG-TERM APPROACHES

Indicators in this *Handbook* are designed to facilitate upstream research or forecasting of student interest. Note, however, that there are different strategies for conducting such research. On the one hand, program planners could conduct rapid response or quick turnaround research, in which they consult easily accessible sources, such as federal, state, and institutional databases. While such rapid research is often fruitful and necessary, longer-term approaches may offer stronger evidence of student interest, providing institutions have the time. Such approaches might combine some rapid research with a longer trial and testing period. After making an initial determination of a program's viability

through rapid research (e.g., analysis of enrollment or completions), for example, an institution could begin to offer one or two courses in the new subject area and monitor student reactions and interest. These courses could be either for-credit or hourly, as appropriate. After a period of one to three years, a final, well-informed decision could be made on the expansion and implementation of the program. Such an approach has the benefits of thoroughly testing a new program, and makes up for any gaps in the data that might make forecasting student interest difficult.

INDICATOR TYPES AND SOURCES

USE OF INDICATORS

Indicators in this *Handbook* are primarily intended for evaluating student interest in specific programs, but some are also useful for general environmental scanning, and may reveal information about broad trends within disciplines or within specific geographic regions.

When evaluating student interest in specific programs, institutions should use a variety of indicators in sufficient quantity to build a reasonable level of assurance in the student interest data. It may be that two or three indicators will be adequate. In other situations, due to the nature of the program or data, additional indicators will be desirable.

In selecting indicators to use, institutions should note that some of the described indicators have not yet been fully developed, and would need to be built by a college, university or the System office. Further, indicators vary in complexity. More complex indicators are more difficult to execute or may require a higher level of expertise (e.g., may need to be delegated to an IR staff member) for appropriate execution. There are multiple sources of data for some indicators. While some of these data sources may be easy to access and use, others may require specialized expertise.

PROGRAM TYPE

It is important to note that the usefulness of individual indicators varies depending on the type of program forecasting undertaken. Some indicators may be more appropriate to one type of program than to another. For example, employer needs surveys and hourly course enrollments are useful indicators for programs geared toward workforce development, but not for liberal arts programs, and degree completion trends are useful indicators for award programs, but not for hourly courses. The descriptions of indicator types at the end of this introductory section will help program developers to choose indicators most applicable to their proposed program types.

IPEDS

Four indicators use the national [IPEDS Data Center website](#). In general, extracting data from IPEDS follows a series of five steps, outlined below. More specific directions, where necessary, can be found in the entries for specific indicators in the body of the *Handbook*.

- **Preliminary – Function:** Select a function. For many indicators, “View Trend for One Variable” may be sufficient and will be relatively easy to use. “Download Custom Data Files” offers more versatility for manipulating data, and some users may prefer to use this function for some or all IPEDS indicators.
- **Preliminary – Data:** After choosing a function, you will be prompted to choose a data set to work with. In most cases, the default setting to use Provisional Release Data, and “final release data” for additional years, will be sufficient.
- **Select Institutions:** Institutions can be selected individually by name, or by defining a group by some institutional characteristic. For instance, to choose all institutions in Minnesota, choose: By Groups → EZ Group → Special characteristics → State or other Jurisdiction. More nuanced groups may be defined by choosing institutions “By Variables.” When at least one institution has been selected, IPEDS will prompt you to continue to the next step.
- **Select Variables:** This will determine the type of data extracted (e.g., enrollments, completions). Depending on the function you selected in the first preliminary step, the interface for selecting variables may differ slightly. In most cases, you will need to choose a year or years for each variable, which will determine the years for which your data are extracted. Also note that certain variables may not be available for all years. After choosing the year(s), you will also need to select any variable-specific sub-variables (e.g., for completions, the first or second major, the award level, the CIP codes). The system will prompt you to complete missing sub-variables for any variables you have selected before allowing you to continue to the next step.
- **Output:** Again depending on the function you selected in the first preliminary step, the interface and options for downloading the final data may differ slightly. In general, a CSV file will be the most efficient way for basic users to extract and view data. Data may also be outputted for use in SAS, SPSS, and STATA.

TIP: Make a note of your selection decisions in IPEDS. When you prepare your conclusions, it will be necessary to describe any choices you made for state, sector, institutional category, and so on.

While most users should find that they are able to successfully and effectively navigate the system without a detailed set of instructions, a wealth of information, hints, tips, and insights are provided in an [IPEDS Data Center User Manual](#) to focus your time and efforts more productively. Some users may find that browsing is a better way to learn from the IPEDS Data Center User Manual than reading straight through it. This will depend largely on the extent and goals of usage, as well as on your past experience with other NCES software applications.

As you use the IPEDS Data Center, be aware that some variables may not be available for all data years. The distance learning designation variable (“number of programs offered via distance education”), for example, is a more recent addition to the IPEDS data collection.

INDICATOR VALIDITY AND CONFIDENCE LEVEL

It is important to note that, due to the wide variety of program planning uses the indicators may be employed for, it is impractical to utilize one standardized scale for assessing their validity. The indicators’ usefulness and the amount of confidence that can be placed in them vary depending on the context in which they are used, as well as which other indicators – and how many other indicators – are used in conjunction with each. Attention must always be paid to the limitations described for each indicator. In order to achieve the most trustworthy and accurate predictions, program planners should employ a variety of indicators relevant to their proposed programs. The consensus of multiple indicators will allow planners to achieve the highest level of confidence in forecasting student interest.

LEADING AND LAGGING INDICATORS

While some indicators are essentially predictive of future trends, others describe past trends from which conclusions about future student interest can be extrapolated.

Leading indicators are those that change prior to changes in the market, and can be used to predict future changes. Leading indicators do not rely on predicting patterns from past data. Leading indicators are often reliable indicators in the short term, but may not be so in the long term. An employer needs assessment is an example of a leading indicator.

Lagging indicators are those that change *after* changes in the market. Lagging indicators are less useful than leading indicators for predicting short-term future trends, but are usually better indicators of a long-term trend. Lagging indicators can be extrapolated from to predict future trends – e.g., if enrollments for a particular program have seen consistent growth over four years then, all else being equal, continued growth may be expected. As lagging indicators do not take into account current or future changes to the market, predictions based upon them may prove invalid if unexpected changes occur.

For the best results in predicting future program needs or viability, a mix of leading and lagging indicators should be used.

INDICATOR CATEGORIES

Indicators in this *Handbook* are designated by a (#), which shows which of five categories the indicator belongs to. The categories reflect the type of data on which the indicators are based:

- (1) Indicators based on student participation, departmental, and institutional data** include indicators such as program enrollments, program completions, program inventories, and enrollment projections. These indicators vary in their specificity and

validity depending on the quality of the data they are drawn from. In general, these are lagging indicators, as future trends must be inferred from past data. These indicators include many that are easily accessible through federal, state, and System databases. Some indicators that rely on MnSCU system databases may require the help of an IR strategist for access.

- (2) Indicators from survey data** rely on surveys administered to stakeholders, such as current and prospective students, graduates and alumni, and employers. Surveys can be very useful, since they can be focused on a particular target audience and seek data unavailable through other channels. However, surveys may require a longer timeframe before they produce actionable data, and can be significantly more expensive than using other indicators. Contact lists sometimes have to be purchased from third party vendors, and surveys often have to be administered through paid survey hosting sites. The survey-based indicators in this *Handbook* do not contain detailed directions for administering surveys, since each survey must conform to a unique set of parameters based on an institution's objectives and targeted respondent population. However, guides for crafting successful surveys are readily available through common survey platform providers, such as [Qualtrics](#), [Survey Monkey](#) and [Survey Gizmo](#).
- (3) Indicators based on inquiries and analytics data** are drawn from website analytics and student inquiries. These indicators can be useful supplements to others, and can help to identify strengths and weaknesses of programs, but are not typically useful as stand-alone indicators. Some query data must be purchased from third party vendors, and data from student inquiries can take a significant amount of time to obtain and analyze.
- (4) Indicators based on high school, admissions, and demographics data** are concerned with the make-up of the student body. These indicators are generally on the weaker side in terms of validity, since there are many reasons for each student to choose what program or courses to follow, and the interests and intentions of high school seniors and first-year college students are notoriously variable. Also, these indicators are typically more difficult to access than most. Their value is more appropriate for projecting total institution enrollment.
- (5) A variety of other indicators** do not fall into the above categories. Indicators classified as "other" are typically of limited stand-alone utility due to their scope and the need to creatively deduce conclusions from the limited amount of data they present. These indicators are useful primarily as supplements.

HOW TO USE THIS HANDBOOK

STEP 1: PURPOSE

First, determine your purpose. While this *Handbook* can be useful for many purposes, the Launch Pad, below, groups indicators by their usefulness for six specific purposes, defined as follows:

- **Degrees:** This includes planning for long diplomas, two- and four-year degrees, and graduate level degrees.
- **Diplomas & Certificates:** This includes planning for diplomas and certificates up to one-year and short diplomas.
- **Non-credit Training:** This includes planning for non-credit training options.
- **Future Trends:** This includes scanning for future areas of interest and identifying trends.
- **Existing Programs:** This includes planning for the expansion or contraction of existing programs.
- **Service Area:** This includes planning to compete in a service area, such as through competitor profiling.

These purposes will help guide you to relevant indicators. Do not be overly concerned that your choice of purpose (and timeframe or resources) will limit your options, as each indicator has been placed under all relevant purposes.

STEP 2: TIMEFRAME

Next, determine the timeframe of the research: whether it must be finished within a short or long time span. Existing data sources, such as federal IPEDS enrollment, are readily available and have been associated with a short timeframe. Some of the most powerful indicators, such as surveys, can only be completed within a longer time period.

STEP 3: RESOURCES

Next, determine the scope of available research funds. While many indicators contained in this *Handbook* are freely available, some, such as web analytics and surveys, may require the services of a paid third party, and others may require the purchase of data sets.

STEP 4: LAUNCH PAD

From the [Launch Pad](#), the indicators cataloged in this *Handbook* can be sorted according to purpose, duration, or resources, as well as by whether data for that indicator are available through IPEDS. Clicking on an individual indicator will then take you to its full entry within the body of the *Handbook*.

To sort the Launch Pad by purpose, timeframe, or resources, place your cursor anywhere on the table. From the Table Tools menu, select:

Layout → Data → Sort

A dialog window will prompt you to choose the variables you wish to sort the indicators by.

An alphabetical listing of all indicators in the *Handbook* may be found in the [Alphabetical Directory of Indicators](#) at the end of the document.

LAUNCH PAD

Category #	Indicator	IPEDS	Resources	Duration	Degrees	Diplomas & Certificates	Non-Credit Training	Future Trends	Existing Programs	Service Area
(1)	Program Enrollments	YES	low	short	X	X	X	X	X	X
(1)	Related Course/Program Waiting Lists		low	short	X	X	X		X	
(1)	Course Enrollments		low	short	X	X	X	X	X	X
(1)	Program Completions	YES	low	short	X	X		X	X	X
(1)	Program Inventory	YES	low	short	X	X		X	X	X
(2)	Current Student Surveys		high	long	X	X	X	X	X	
(2)	Employee Needs Surveys		high	long	X	X	X	X	X	
(2)	Employer Needs Surveys		high	long	X	X	X	X	X	
(2)	Entering Student Surveys		high	long	X	X	X		X	
(2)	Prospective Student Surveys		high	long	X	X	X	X	X	
(2)	Recent Graduate and Alumni Surveys		high	long	X	X	X		X	
(2)	High School Counselor Surveys		high	long	X	X		X	X	
(2)	High School Student Surveys		high	long	X	X		X	X	
(2)	Undeclared Student Surveys		high	long	X				X	
(3)	Student/Prospective Student Inquiries		medium	short	X	X	X	X	X	
(3)	Attendance at Information Sessions		low	short	X	X	X	X	X	
(3)	Website Analytics		low	long	X	X	X	X	X	
(4)	Diversity: Appeal of Program Types	YES	medium	long	X	X		X	X	
(4)	Incoming Class Profiles		medium	long	X				X	
(4)	Student Migration		medium	long	X				X	X
(5)	Workforce Center Assessments		medium	long	X	X	X	X	X	
(5)	Employment/Licensure Regulations		low	long	X	X	X	X	X	
(5)	Published Reports on Emerging Markets		low	long				X		
(5)	Student Clubs		low	short				X	X	

INDICATORS FROM STUDENT PARTICIPATION, DEPARTMENTAL, AND INSTITUTIONAL DATA (1)

PROGRAM ENROLLMENTS (1)

Description and uses:

Program-level enrollment trends help to illustrate interest in specific academic majors by award level and location. By analyzing trends in enrollment at various levels for equivalent and similar programs, institutions can gauge student interest.

For this indicator, IPEDS collects enrollment data at general levels (undergraduate and graduate) in a limited number of broad program categories, as defined by CIP code:

- 13.0000-Education
- 14.0000-Engineering
- 26.0000-Biological Sciences/Life Sciences
- 27.0000-Mathematics
- 40.0000-Physical Sciences
- 52.0000-Business Management and Administrative Services

Note that enrollment data for these categories can be segmented by level (undergraduate, graduate) or program type (degree-seeking, non-degree seeking). Thus, this indicator may be useful for evaluating student interest in non-degree programs as well. Finally, IPEDS data are also available for enrollments in first-professional degree programs in law, dentistry, and medicine.

Additional information on MnSCU program enrollments may be obtained through relevant MnSCU System databases and institutional records, if available. Enrollment data from non-MnSCU institutions may also be available on an as-needed basis, if requested directly from those institutions.

Directions:

This indicator will be selected in the “Select Variables” stage of the IPEDS data extraction procedure [outlined in the Introduction](#). Depending on the function selected (e.g., “Download Custom Data Files”), the interface may be slightly different, but this indicator will typically be found under “Enrollment” and then “Major Field of Study.” When using “Download Custom Data Files,” for instance, the indicator will be selected as follows for each “Available Year(s)” desired:

Enrollments → Major field of study, race/ethnicity, gender, attendance status, and level of student → Enrollment by selected majors → Major field of study

Note that this variable must also be delimited by student demographic. For most purposes, the “Grand Total” category will be most appropriate.

TIP: Some institutions can skew a data set, and may need to be adjusted or eliminated. For instance, for-profit or online institutions like Capella, Walden, or Phoenix may report data for nationwide operations, rather than a specific state or region.

Limitations:

Note that IPEDS program-level enrollment data are imprecise, since the database groups many majors into broad categories. As such, enrollment data gives an initial sense of general trends in a broad field of study. Interest for particular programs can be better assessed using a more granular level of data. IPEDS degree program *completions* data may be a more useful indicator in most cases, since these data are reported at the level of individual programs (six-digit CIPs). Also, it is important to keep in mind that many students delay declaring a major until late in their progress, which may make enrollment counts from System and IPEDS databases misleading or difficult to obtain in some cases.

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CREDIT/HOURLY COURSE ENROLLMENTS (1)

Description and uses:

By analyzing credit course enrollment trends by CIP or course-prefix, institutions can assess student interest at a more granular level than with program enrollments. In particular, course enrollment trends may enable institutions to understand what type of curricular material is in high demand *within* the larger context of a program or field of study. In addition to course enrollments, the data for this indicator may be used to inventory course offerings, which can provide an overview of the subjects students are currently interested in.

Participation in non-credit courses, professional development, and customized training can indicate need for additional programming in a certain field. Such offerings are often taken by people currently employed in the workforce who need additional training, or by unemployed or underemployed individuals who wish to increase their qualifications. Employers often contract with institutions to offer non-credit courses to their employees. By tracking the number of enrollments in non-credit courses, institutions can gain an idea of what courses, programs, or training are in high demand in a particular area or industry.

Data on course enrollments in both credit and hourly courses can be found through MnSCU system databases or through institutional records. When considering which courses to

include in an examination, program planners should consider which classes are most relevant/reflective of prospective interest in the proposed program.

Directions:

MnSCU courses are coded with a 6-digit CIP code which can be used in identifying specific courses and analyzing enrollment. However, an important caveat is that CIPs were developed for use with programs and are not always precise when applied to courses. Data on course offerings and enrollments across the MnSCU System are available to institution staff using EPM 11. EPM 11 is an Enterprise Performance Management tool that provides access to System data. Users are required to complete an access request form and obtain a user name and password. Information and instructions on accessing EPM 11 is available on the [MnSCU website](#).

Within EPM 11, in a folder labeled “Curriculum and Courses CU,” is a set of queries labeled “CT COU System Information.” These queries allow users to see what courses have been offered at institutions across the System. The information only includes data that are considered to be public information. Data are available for Fall 2009 through the current term. Available data elements include:

- The institution at which the course is offered
- Year and term offered
- Department
- Course number
- Course name
- Credits or hours
- CIP code
- Total enrollment

Limitations:

Course enrollment trends may be driven by more factors than student interest in a particular field of study. Students often decide which courses to take based upon personal factors, as well as the reputation of the teacher and the opinions of other students. Non-elective courses within a major are less subject to these additional factors. More popular general education course enrollment or particular restricted-elective courses within a major (or within particular program-emphases) may indicate high or increasing student interest.

Non-credit courses typically are not attractive to the traditional student cohort. The number and kind of such courses offered tends to vary much more than the for-credit curriculum. However, large enrollment numbers for some non-credit courses may indicate growth in a particular field or industry, and provide a target for future research.

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PROGRAM COMPLETIONS (1)

Description and uses:

Program completions trends can enable program planners to assess student interest in a specific subject area with a high level of confidence. Completions data can capture both initial student interest and student persistence through a program, because an award must be conferred in order to be counted in this metric.

TIP: In IPEDS, you may wish to include additional variables, such as city or ZIP code, to help filter and organize your final data set.

Completion trends also allow institutions a higher-level view of the field in question by quantifying the influx of graduates with particular kinds of training into the field. IPEDS is the primary source of data on U.S. degree completion trends.

Directions:

This indicator will be selected in the “Select Variables” stage of the IPEDS data extraction procedure [outlined in the Introduction](#). Depending on the function selected (e.g., “Download Custom Data Files”), the interface may be slightly different, but this indicator will typically be found under “Completions” and then “Awards/degrees conferred by program.” When using “Download Custom Data Files,” for instance, the indicator will be selected as follows for each “Available Year(s)” desired:

Completions → Awards/degrees conferred by program (CIP), award level, race/ethnicity, and gender → Completions, awards and degrees by 6-digit CIP code

The completions variable must be delimited by student demographic. For most purposes, the “Grand Total” category will be most appropriate. In addition, you will be prompted to define your data by three sub-variables:

- **First or Second Major:** Generally, selecting first majors only is sufficient, as most programs report relatively small numbers of second majors. However, you may wish to select second majors as well to obtain the most comprehensive results.
- **CIP Code:** You may choose a program or programs by two-, four-, or six-digit CIP code. Six-digit codes will produce the closest match to an individual major field of study. Note that the CIP system underwent some changes in 2010, resulting in the launch of new codes and the reorganization or elimination of others. When determining which CIP codes to use for years prior to 2010, you may need to reference the [CIP 2000-2010 crosswalk](#), which provides an inventory of changes to the system.
- **Award Level Code:** This allows the data to be limited to specific awards or degrees (e.g., bachelor’s degree, post-baccalaureate certificate). You may wish to choose

multiple award levels to gain a sense of which is the most common or appropriate for a particular field. Note that this sub-variable allows this indicator to be used for non-degree programs (e.g., certificates) as well as degrees.

As a reference for choosing the appropriate Award Level Code, the following table maps MnSCU credentials to the appropriate IPEDS category. Note, however, that non-MnSCU institutions may follow different classification systems when reporting data to IPEDS. For instance, some institutions might classify professionally-oriented doctorates such as the DNP under the IPEDS category of “Doctor’s degree – professional practice.” Thus, multiple variables and sub-variables may need to be included in a given data set to provide the most comprehensive analysis possible.

Mapping IPEDS/MnSCU Award Levels

IPEDS	MnSCU
Degrees	
Associate’s degree	AA, AS, AFA, or AAS
Bachelor’s degree	BA or BS
Master’s degree	MA or MS
Doctor’s degree – research/scholarship	DBA, PsyD, DNP, EDD
Doctor’s degree – professional practice	n/a
Doctor’s degree – other	n/a
Certificates	
Award of less than 1 academic year	Undergraduate certificate of 9 to 30 credits
Award of at least 1 but less than 2 academic years	Diploma: 31-59 credits
Award of at least 2 but less than 4 academic years	Diploma: 60 or more credits
Post-baccalaureate certificate	Graduate certificate
Post-master’s certificate	May include education specialist degree

Limitations:

Completions data are very useful for illustrating trends in student interest over time, but these data are a lagging indicator. IPEDS data, while comprehensive and useful on a broad level, have limitations. Most notably, institutions are able to classify their programs under CIP codes as they see fit—although program descriptions for each CIP code exist, there is no single standard by which degree programs are judged. Thus, individual institutions may classify equivalent degree programs under different CIP codes. Further, as with all IPEDS data, some institutions can skew the data and may need to be adjusted or eliminated from the data set. For instance, for-profit or online institutions such as Capella, Walden, or Phoenix may report completions for their nationwide operations, rather than a specific state or region, and would need to be excluded from state-specific data sets to provide the most accurate assessment.

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PROGRAM INVENTORY (1)

Description and uses:

Program inventories provide a general view of student interest in programs in a given field of study. Except for programs that are about to be closed, the presence of program offerings can signal initial evidence of student enrollment and the need for further research. High program counts can also indicate possible market saturation, especially if numerous institutions in an area offer equivalent or similar programs. Program inventories may signal opportunities for collaboration and are especially useful as supplements to completions and enrollment trend analyses, to obtain a sense of competition as well as supply and demand for a given program.

Directions:

Program inventories at the national, regional, state, and institutional levels can be constructed by using completions data from IPEDS. The number of institutions reporting completions in the most recent year should correspond closely to the number of programs in operation. To download completions data, see the [Directions](#) for Program Completions.

For MnSCU institutions, an inventory reporting system is available on the [academic programs](#) website (click on “Inventory and GoMN”).

Limitations:

Since IPEDS uses standardized terminology to describe programs while institutions use a variety of terms, individual institutions may classify equivalent programs under different CIP codes. Thus, it is sometimes necessary to expand the field of variables to make sure that all related programs are accounted for. Program inventory data can also be obtained through manual scans of institutional websites and through institutional records.

It is important to note that a program inventory is not a strong, high-confidence indicator unless coupled with other indicators, especially program enrollment. A program inventory is most useful in providing a contextual overview of the competitive field to inform interpretations of more granular trends in enrollments or completions.

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RELATED COURSE/PROGRAM WAITING LISTS (1)

Description and uses:

Waiting lists for similar programs, or for courses related to the proposed program, offer a powerful means of identifying areas of unmet student interest. Waiting lists may be considered at the institutional level or at a broader System level, if relevant data are available through MnSCU databases and institutional records.

Directions: Course waitlist information for your institution is available in the ISRS student record system that can be queried by institutional research staff.

Limitations:

The most important consideration when using course or program waiting lists is proper data cleaning (i.e., de-duplication). Note that the number of students on a given waiting list does not necessarily *directly* correspond to the size of the prospective student pool, but does offer a useful gauge of the general level of unmet student interest.

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INDICATORS FROM SURVEY DATA (2)

The steps for developing and implementing a survey will vary widely based on the nature of the existing or proposed program and the survey purpose; as such, this section does not provide specific step-by-step directions for survey development and administration, but instead addresses associated strengths and limitations more broadly. Program planners should keep considerations of appropriate sample size in mind when developing and administering surveys. A useful sample size calculator is provided by [Raosoft](#).

Institutional research staff are in a good position to assist with the general development and implementation of surveys and also to help ensure that the survey administration is coordinated with other surveys that may be used within the college or university.

ENTERING STUDENT SURVEYS (2)

Description and uses:

Data from student entrance surveys can be used to broadly determine interests of students making the transition from high school to a college or university. These data can also indicate why students selected certain institutions; students may suggest that they chose the institution for a specific program or department.

Limitations:

Student surveys can be a very useful tool for gaining information not otherwise available; however, every survey has a limited number of respondents, and thus what is reported in a particular survey may not be generalizable to a larger population. Entering student surveys are more useful for identifying what existing programs drew students than for identifying what possible new programs would attract students. However, such surveys could include specific questions about the attractiveness of any proposed programs.

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PROSPECTIVE STUDENT SURVEYS (2)

Description and uses:

Institutions can survey prospective students to gauge interest in programs. At the graduate level, institutions may purchase GRE registrant contact information from the [Educational Testing Service \(ETS\)](#) to develop a sample; at the undergraduate level, contact data may be more difficult to obtain, as The College Board prohibits use of its search service for surveying. Institutions may use information collected via student inquiries or purchase a sample through a national or local panel vendor.

Limitations:

Undergraduate level data are difficult to obtain, and surveys of potential students may see low response rates. Also, it may be difficult to target a specific set of potential students, depending on the nature of the proposed program.

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*UNDECLARED STUDENT SURVEYS (2)***Description and uses:**

Surveys of students who have not yet declared a major can provide valuable information about student interests and student receptivity to programs or majors. Students who have switched out of a program or department can indicate why their interests changed and what their academic/professional plans are.

Limitations:

Students can be undeclared or switch programs for a variety of reasons, not all of which may be relevant to existing or proposed programs. Over time, such surveys can be refined to target particular students and include optimal questions and response options.

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*CURRENT STUDENT SURVEYS (2)***Description and uses:**

Surveys of students currently enrolled in related courses, similar programs, or in the department that would house a new program can provide information on what drives student interest in these courses/programs/departments as well as the level of interest in new programs. Such surveys can also identify areas in which students would like to see growth or expansion, or areas of programs that students see as needing improvement. In such a survey, students can also be asked how likely they are to change their major.

Limitations:

Information obtained through current student surveys is more useful for assessing the strengths and weaknesses of *existing* offerings than it is for determining the need for or interest in a potential new offering. Questions on student interest in a new program or course could be included in such a survey, however.

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*RECENT GRADUATE AND ALUMNI SURVEYS (2)***Description and uses:**

Data from surveys of recent graduates and other alumni can serve several important functions. These data can indicate graduates' levels of satisfaction with their program of study, areas in which their program could be improved or expanded, and rates of

employment. Employment rates can indicate whether or not a particular department or program is successfully preparing its students to enter the labor market.

The System's Graduate Follow-Up Survey process can provide information on total and related employment rates by program. The survey also includes the name of the employer; however, completion of that survey element is optional and is an open-ended question, so responses are not entered in a consistent or structured way. System-level data summaries are not yet available, but data for your institution are available through your Institutional Research office.

Limitations:

Graduate and alumni surveys can help to identify areas for improvement or expansion in current offerings, but are less useful for demonstrating current or future interest in new programs. Surveys may include questions, for instance, about which types of programs alumni *wish* the institution had offered to better prepare them for the workforce; however, the findings of such a survey would not be directly translatable into future student interest.

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HIGH SCHOOL COUNSELOR SURVEYS (2)

Description and uses:

High school counselors can provide anecdotal evidence about student interests and high school programs—for example, STEM-intensive courses of study—that prime students to be interested in a particular field.

Limitations:

Information provided by high school counselors will necessarily be general, but has the advantage of being somewhat predictive of student interest beyond the self-reported interested of students themselves.

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HIGH SCHOOL STUDENT SURVEYS (2)

Description and uses:

Surveying high school students regarding their academic and professional interests can provide institutions with a general sense of how students perceive their educational goals and the connection between higher education and their professional goals. High school students' declared interests are highly mutable, and are unreliable as predictors of student interest in particular programs of study. Data from high school student interest surveys can, however, point to high-level trends that may be useful in combination with other metrics.

Limitations:

High school students' intentions are very subject to change, and are thus unreliable as concrete indicators of future trends. High school students are also a difficult population to

access via survey, insofar as most panel vendors do not include individuals under 18 in their panels. Institutions wishing to survey high school students may need to formalize an arrangement with high schools in their area.

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EMPLOYER NEEDS SURVEYS (2)

Description and uses:

Employer needs data, especially if reporting employees' need for additional training/certification, can point to potential student interest where other metrics are unable to capture trends in this regard. For example, an employer may report that employees repeatedly express a need for more training that the employer cannot supply.

In some situations, new or changed statutes or regulations may require existing employees to obtain additional training so that they can continue to practice in their profession. The survey should include specific questions regarding employer intent to financially support employees' additional training efforts, and any requirements for attendance or completion.

Limitations:

Employer needs assessments are often focused on the short term, since they are based on limitations of current employees. Also, while taking employer needs into account may help a program to produce more qualified graduates, adjusting programming to target employer needs has no direct effect on students' perception of, or interest in, a program unless a clearly identified unmet need is exposed. This indicator should always be used along with other, more direct sources of student interest data.

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EMPLOYEE NEEDS SURVEYS (2)

Description and uses:

Employees can speak to their needs for additional training or certification, as well as interest in related continuing education programs. Such data can usefully supplement other student interest data.

TIP: Employee needs surveys should ask respondents about their intentions to pursue training and the timeframe in which they would plan to enroll.

Limitations:

Employee needs are often focused on the short term. Employee surveys might help to make programs more beneficial to graduates (as they will be better prepared for the workplace), but adjusting programming to target employee needs has no direct effect on students' interest in a program unless a clearly identified unmet need is exposed. This indicator should always be used in conjunction with more direct indicators.

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INDICATORS BASED ON INQUIRIES AND ANALYTICS DATA (3)

WEBSITE ANALYTICS (3)

Description and uses:

Website analytics—in the forms of search analytics, traffic flow analytics, unique page views for related programs, etc.—enable both MnSCU, as a System, and individual institutions to track what users are searching for, how they are arriving at particular pages, and where they are looking for specific kinds of information. Additionally, analytics can provide demographic data about site users, such as the location from which they are searching. Although analytics cannot predict concrete student interest in programs—the motivations for searches are highly variable—this method provides a useful supplement to other forms of student interest data.

Website analytics tools such as Google Analytics can provide several types of data:

- *Search engine data:* Google Analytics can provide statistics about the terms keyed by users who have found your institution's or program's website from a search engine. Similarly, a custom search engine can be installed on an institution's website, and Google Analytics can be set up to capture and report the keywords users enter into this internal search engine.
- *Site usage data:* Google Analytics can provide statistics about pages viewed by users over a specified period of time. Depending on the type of page (e.g., static vs. dynamic), some additional coding may be required to allow Google Analytics to track usage of the institutional website.

Directions:

Analytic services can be obtained from vendors such as [Google Analytics](#). Free trend analyses of specific search terms (i.e., changes in the relative volume of searches for a given keyword or set of keywords over a period of time) are also available through [Google Trends](#).

Most applications of Google Analytics pose relatively small technical hurdles, but will require the dedication of an individual with an interest in analytics and the willingness to experiment with the tool to create the most effective setups. Some possible uses of Google Analytics and related tools include the following:

- **Organic and paid keyword search strings from major search engine sites:** Google Analytics provides statistics about the terms keyed by the users who have found your site from major search engines. These terms can be sorted and filtered in a variety of ways, but these filters are limited to the general types of data captured by Google, and not by data sets specific to an institution. For instance, you can match a specific keyword string to a city or a device (desktop, mobile phone, etc.) but not to

a program area category. Google offers about 50 data points that can be used to filter users by geography, technology (networks used, device used) and behavior (prior to and while on your site).

- **Google site search (internal to site):** The Google site search is a search engine that can be installed on an institution’s website. Users already on a site use this type of search engine to find specific information *within* the site. Google Analytics can be set up to capture and report the keywords entered by users of site-specific search engines in the same way that data is captured from the major search engines.
- **General site usage trends:** Depending on what type of technology is being used and how the specific site is built, Google Analytics can provide statistics about pages that are viewed by users over a specified period of time. For instance, if specific program pages are delivered to users as static HTML pages, Google will track all views (and other relevant data) for those pages. However, if program information is delivered via a dynamic search (i.e., custom search application), this tracking becomes more difficult. Google Analytics does not track document downloads natively, so if program information is stored in a PDF, that activity would need to be tracked by some other means. Custom code can be created so that an “event” is generated and tracked using Google Analytics.
- **Custom tracking using Javascript and Google Events:** Different setups can be used to generate analytics tracking for specific uses of a site that are not natively captured by Google Analytics scripts and cookies. One of these options is called “event” tracking. Event tracking requires a small bit of code to be added to specific links on a site, so that Google tracks a click on that link as an event. This method can be used for tracking referrals from an institution’s website to other sites. Labels in the custom code help to provide context for where the users was on the institution’s site and the location of the referring site. This same method can be used to find out how many users download a specific document (e.g., a PDF of a newsletter or a PDF or Word document with program information).
- **Custom tracking using PHP (or another scripting/programming language):** PHP code can be used to generate tracking events that Google Analytics can provide data about. These PHP tracking events are similar to those described above, but are not as clean and categorized for reporting purposes.

TIP: Website analytics often need to be interpreted for context. For instance, users may be searching for “information technology” services at the institution, rather than IT-related academic programs.

Google also provides aggregate navigation summaries to show referring pages and subsequent pages. This is useful for tracking trends; however, users should always consider real website use when interpreting this information. For instance, a link could open a new

browser window for a program page, thus triggering an event that indicates interest in that program, but a user could close that window and then move forward on the institutional site rather than leaving it. As such, there are many different scenarios that would be difficult to track cleanly.

Limitations:

Analytics cannot predict concrete interest in programs. Data are, however, very useful as a supplement, and can increase the confidence level of other indicators in some cases. For instance, if degree completions data indicate an upward trend in student interest in a given program, Google Trends data indicating an upward trend in *searches* for related key terms can serve to reinforce student interest if that program is growing.

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STUDENT/PROSPECTIVE STUDENT INQUIRIES (3)

Description and uses:

A running count of student and prospective student inquiries about specific program types/departments can help institutions understand what kinds of programs current and prospective students might like to enroll in. Data may be available through institutional or System records.

Directions: Campuses will need to develop their own methods or systems for formally keeping a tally of student inquiries over time.

Limitations:

It is difficult to gauge how serious a given student inquiry is. Insofar as possible, student inquiries should be categorized according to quality (e.g. serious request, prospective student exploration, etc.) and should be used in conjunction with other supplementary indicators.

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ATTENDANCE AT INFORMATION SESSIONS (3)

Description and uses:

Student attendance at information sessions, such as career fairs, can indicate a very broad level of exploratory interest in departments and programs. If attendance data for multiple years are available, trends can be discerned and compared across programs and departments.

Directions: Record student interest during information sessions, open houses and career fairs. Try to assess the extent of interest for each student who inquires about a program. Students who are willing to fill out a brief questionnaire to provide more information may have a higher level of interest, and will have given you a means to follow-up when recruiting students.

Limitations:

Data on information session attendance can only indicate broad trends, and should be used in conjunction with other indicators.

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INDICATORS BASED ON HIGH SCHOOL, ADMISSIONS, AND DEMOGRAPHICS DATA (4)

STUDENT MIGRATION (4)

Description and uses:

Using National Student Clearinghouse (NSC) data, as well as data from internal institutional records, institutions can track patterns of student movement in relation to the types of programs and departments in which they enroll. Institutions can examine the distances that students from particular regions travel to enroll in specific programs, including how far local high school students have to travel to enroll in an equivalent or similar program to the one under consideration. Student movement data can also point to trends in feeder streams by identifying regions and high schools that send high numbers of students to specific programs. Data are available through MnSCU System databases, institutional data, and the [NSC](#).

Directions:

NSC's services are available for paid subscribers. Subscribers who want to generate reports on a group of students send NSC Excel documents or flat files with the appropriate identifying information. All searches are conducted by NSC itself, which then sends a report to the requester.

Data on majors and tracking patterns in the changes in majors are available from the MnSCU System student record system, accessible by IR staff and through the System data warehouse table ODS.ST_MAJOR_YRTR. The data warehouse table includes the majors active in a given year/term of enrollment in credit courses. NSC data on currently and previously enrolled students are available using the system data warehouse table ODS.ST_CLEARINGHOUSE.

Limitations:

While student migration indicators are very useful in helping to determine the relative strength or popularity of a program and sources of students for a program, they should be used in conjunction with other indicators to produce a more comprehensive and accurate assessment. Migration data alone do not constitute a high-confidence indicator for predictive purposes.

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*INCOMING CLASS PROFILES (4)***Description and uses:**

Incoming class profiles enable institutions to understand trends in student interest for programs in particular fields of study, as indicated by students on their college entrance examinations. These data also provide institutions with detailed demographic information. Data are available through ACT and The College Board.

Directions:

Reports and data analyses can be obtained from the [ACT](#) and [The College Board](#). Reports for individual institutions and access to data must be purchased from the providers.

Limitations:

Class profiles can be useful for gaining an overview of student interests, intentions, and backgrounds. They are not in themselves sufficient indicators of student interest, however, since high school seniors' interests can change greatly between graduation and college, as can the interests and directions of college freshmen and sophomores.

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*DIVERSITY: APPEAL OF PROGRAM TYPES (4)***Description and uses:**

Segmented completions data can indicate whether or not certain program types appeal to certain demographic groups, such as traditionally underserved minorities, adult learners, or international students. These data can be especially useful if your institution hopes to attract specific types of students to a proposed or existing program. National level data are available from IPEDS, while institutional level data and data for the MnSCU System are available from IPEDS and institutional majors databases.

TIP: Completions data by demographic group can be downloaded at the same time as total completions data. Simply select the desired demographic groups in addition to "Grand Total."

Directions:

In IPEDS, this indicator will be selected in the "Select Variables" stage of the data extraction procedure [outlined in the Introduction](#). Depending on the function selected (e.g., "Download Custom Data Files"), the interface may be slightly different, but this indicator will typically be found under "Completions" and then "Awards/degrees conferred by program." When using "Download Custom Data Files," for instance, the indicator will be selected as follows for each "Available Year(s)" desired:

Completions → Awards/degrees conferred by program (CIP), award level, race/ethnicity, and gender → Completions, awards and degrees by 6-digit CIP code

Within this field, completions may be segmented according to race or gender (e.g., Asian men, Black or African American women). Select all relevant demographic groups. You may also wish to include “Grand Total” data to gain a sense of how large the field as a whole is.

In addition to student demographics, you will be prompted to define your data by three sub-variables:

- **First or Second Major:** Generally, selecting first majors only is sufficient, as most programs report relatively small numbers of second majors. However, you may wish to select second majors as well to obtain the most comprehensive results.
- **CIP Code:** You may choose a program or programs by two-, four-, or six-digit CIP code. Six-digit codes will produce the closest match to an individual major field of study. Note that the CIP system underwent some changes in 2010, resulting in the launch of new codes and the reorganization or elimination of others. When determining which CIP codes to use for years prior to 2010, you may need to reference the [CIP 2000-2010 crosswalk](#), which provides an inventory of changes to the system.
- **Award Level Code:** This allows the data to be limited to specific awards or degrees (e.g., bachelor’s degree, post-baccalaureate certificate). You may wish to choose multiple award levels to gain a sense of which is the most common or appropriate for a particular field. Note that this sub-variable allows this indicator to be used for non-degree programs (e.g., certificates) as well as degrees.

Limitations:

The appeal of different programs to different demographic groups is, at best, an indicator of a possible higher interest among such groups. This indicator should only be used in conjunction with other, stronger indicators of student interest, as new programs should be able to appeal to students from a wide variety of demographics in order to attract as many students as possible.

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OTHER INDICATORS (5)

PUBLISHED REPORTS ON EMERGING MARKETS (5)

Description and uses:

Reports and articles on emerging markets may indicate nascent trends in interest in training that will put students on the leading edge of the labor market or in industries poised for strong growth. Such reports can be found through the BLS, DEED, and manual scanning of news sources and periodicals.

Directions:

Consult [a variety of news releases from the Bureau of Labor Statistics](#), as well as economic highlights from the Minnesota [DEED](#). Your institution will also have e-subscriptions to various relevant publications, typically available through the campus library.

TIP: Specialized industry publications can often be found in subscription databases available through the campus library.

Limitations:

It may take a significant amount of time for emerging markets or economic trends to translate into increased student interest in certain programs. This indicator, while indirect and non-quantitative, does offer value where other sources lack relevant data. Though it is not always possible to 'get ahead of the curve,' emerging technologies often take hold – as occurred with wireless, mobile-device application programming, and green energy sources. Others, like nano-technology, may be high-cost, slow to expand, or more relevant for university research until the technology becomes widespread.

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EMPLOYMENT/LICENSURE REGULATIONS (5)

Description and uses:

Licensure regulations and training requirements may drive student interest in programs that enable them to advance in their field or continue to hold their current positions. Radical changes to regulations may cause a surge (or decline) in student interest in certain kinds of programs.

Directions:

Faculty members usually stay abreast of changing professional requirements. Look for news items on changes in licensure regulations or training requirements posted by the relevant agencies or organizations.

Limitations:

It may be difficult to predict in advance what, if any, effect regulation changes will have. In some cases, licensure changes spurred by state or federal legislation or similar factors may

not exert a substantive impact in the long term. Rather than signaling need for a new program, changed regulations are more likely to result in (1) an in-service course and/or (2) curricular changes applicable to future students.

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STUDENT CLUBS (5)

Description and uses:

The presence or formation of student clubs with specific foci—e.g., biomedical innovators and inventors—provide student populations to target with surveys/focus groups and may point to trends in student interest in new program types.

Directions:

Take an inventory of student clubs that are aligned with a potential program or discipline, including membership numbers, and keep track of new clubs.

Limitations:

Student clubs are seldom tied to a specific program, and interest in student clubs is driven by more than interest in related academic offerings.

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WORKFORCE CENTER ASSESSMENTS (5)

Description and uses:

Workforce centers may track client requests for education and training. They may also be in contact with employers and aware of education needs perceived by employers.

Directions:

Contact workforce centers for lists of client requests, and interview workforce center employees about perceived education needs. As an example, recent business layoffs or closures could create a need for retraining in selected fields. A new expedited undergraduate certificate program may be in order. See System [procedure 3.36.1](#) (part 5, subpart G; pending approval Spring 2014) regarding expedited undergraduate certificates.

Limitations:

Employer needs are often focused on the short term, since they are based on the limitations of current employees. Also, workforce centers tend to help place workers in lower paying jobs. Even if there is high demand for employees in these jobs, the low pay may make them unattractive to students.

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ALPHABETICAL DIRECTORY OF INDICATORS

INDICATOR (CATEGORY #)	IPEDS	RESOURCES	DURATION	DEGREES	DIPLOMAS & CERTIFICATES	NON-CREDIT TRAINING	FUTURE TRENDS	EXISTING PROGRAMS	SERVICE AREA
Attendance at Information Sessions (3)		Low	Short	X	X	X	X	X	
Course Enrollments (1)		Low	Short	X	X	X	X	X	X
Current Student Surveys (2)		High	Long	X	X	X	X	X	
Diversity: Appeal of Program Types (4)	YES	Medium	Long	X	X		X	X	
Employee Needs Surveys (2)		High	Long	X	X	X	X	X	
Employer Needs Surveys (2)		High	Long	X	X	X	X	X	
Employment/Licensure Regulations (5)		Low	Long	X	X	X	X	X	
Entering Student Surveys (2)		High	Long	X	X	X		X	
High School Counselor Surveys (2)		High	Long	X	X		X	X	
High School Student Surveys (2)		High	Long	X	X		X	X	
Incoming Class Profiles (4)		Medium	Long	X				X	
Program Completions (1)	YES	Low	Short	X	X		X	X	X
Program Enrollments (1)	YES	Low	Short	X	X	X	X	X	X
Program Inventory (1)	YES	Low	Short	X	X		X	X	X
Prospective Student Surveys (2)		High	Long	X	X	X	X	X	
Published Reports on Emerging Markets (5)		Low	Long				X		
Recent Graduate and Alumni Surveys (2)		High	Long	X	X	X		X	
Related Course/Program Waiting Lists (1)		Low	Short	X	X	X		X	
Student Clubs (5)		Low	Short				X	X	
Student Migration (4)		Medium	Long	X				X	X
Student/Prospective Student Inquiries (3)		Medium	Short	X	X	X	X	X	
Undeclared Student Surveys (2)		High	Long	X				X	
Website Analytics (3)		Low	Long	X	X	X	X	X	
Workforce Center Assessments (5)		Medium	Long	X	X	X	X	X	

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APPENDIX: LABOR MARKET INDICATORS

As discussed in the Introduction to this *Handbook*, [occupational appeal](#) can be a factor in determining student interest in a program. However, as also noted in the Introduction, labor market for a skill does not necessarily translate directly into student interest in related programs. As such, labor market indicators should be used only in a supporting role when evaluating student interest, for which reason they have been relegated to this Appendix rather than the main body of the *Handbook*.

However, indicators based on labor market data can provide an overall picture of predicted areas of strong economic development, which can be useful for long-term planning and for gauging the potential occupational appeal of specific programs for prospective students. Most labor market indicators are easy to access, and take little time to obtain.

This Appendix lists a number of basic indicators in order to assist institutions wishing to examine the labor market as part of a broader evaluation of student interest in a program, including federal and state employment data and job bank postings.

EMPLOYMENT PROJECTIONS

Description and uses:

An analysis of employment projections allows institutions to assess the outlook for relevant occupations when considering implementing new academic programs. Promising employment projections can point to student interest in fields expected to see strong growth. Employment projections can also point to regional labor market demand for workers with specific training, allowing institutions to customize programming to align with their local labor markets. National level employment projections are available through the Bureau of Labor Statistics (BLS). State and regional level employment projections are available through the Minnesota Department of Employment and Economic Development (DEED).

Directions:

For national employment projections, use BLS data.

- First, identify the Standard Occupational Classification (SOC) codes attached to the professions you are interested in through searching the [2010 SOC Major Groups](#). If your program aligns with a specific CIP code, the NCES offers a CIP-SOC crosswalk, available for download [here](#), which is useful in identifying relevant occupations.
- Once the SOC codes or profession names have been identified, navigate to the [BLS Employment Projections](#), and search by SOC code or job title. The BLS displays the number of jobs nationwide in 2012, a forecast for the number in 2022, the number of jobs that will be added or lost in that 10-year period, the percent change in the total number of jobs for the 10-year period, and the total number of job openings due to growth and replacement. (To find the number of job openings per year,

divide the total number of job openings by 10.) Any profession forecasting growth of over 11 percent is forecast to grow at a higher rate than the national average. The BLS also provides a guide to interpreting projections in its *Occupational Outlook Handbook*. To see this guide, scroll to the bottom of [this page](#).

For state employment projections, use DEED data.

- First, identify the Standard Occupational Classification (SOC) codes attached to the professions you are interested in through searching the [2010 SOC Major Groups](#). If your program aligns with a specific CIP code, the NCES offers a CIP-SOC crosswalk, available for download [here](#), which is useful in identifying relevant occupations.
- Once the SOC codes or profession names have been identified, navigate to the DEED [Employment Outlook](#) page.
- Select the link to use the Employment Outlook tool.
- On the next page, select a data set. Short term projections are up to one year in advance (2014 projections based on 2013 data, for example). Long term projections are from 2010 to 2020. Industry data give employment projections for an entire industry. These projections are not disaggregated by individual professions within industries.
- Under “Select an area” select Minnesota. On the next page you can narrow your results by SOC grouping, or simply select “View All Data.”
- On the following page, search for individual professions by SOC code or name. The data include 2010 estimated employment, 2020 projected employment, percent and numeric change in employment for the 10-year span, the projected number of total replacement job openings, and the projected number of total job openings. To find how many job openings are projected to be available each year, divide the total number of job openings by 10.

For regional employment projections, use DEED data.

- First, identify the Standard Occupational Classification (SOC) codes attached to the professions you are interested in through searching the [2010 SOC Major Groups](#). If your program aligns with a specific CIP code, the NCES offers a CIP-SOC crosswalk, available for download [here](#), which is useful in identifying relevant occupations.
- Once the SOC codes or profession names have been identified, navigate to the DEED [Employment Outlook](#) page.
- Select the link to the employment projections.
- On the next page, select a data set. Short term projections are up to one year in advance (2014 projections based on 2013 data, for example). Long term projections are from 2010 to 2020. Industry data give employment projections for an entire industry. These projections are not disaggregated by individual professions within industries.

- Under “Select an area” select the Minnesota planning area(s) of interest. (A map of the planning areas can be found on the “[Planning Areas](#)” page.) On the next page you can narrow your results by two-digit SOC code, or simply select “View All Data.”
- On the following page, search for individual professions by SOC code or name. The data include 2010 estimated employment, 2020 projected employment, percent and numeric change in employment for the 10-year span, the projected number of total replacement job openings, and the projected number of total job openings. To find how many job openings are projected to be available each year, divide the total number of job openings by 10.

Limitations:

While employment projections are useful for forecasting job and industry growth, it is important to note that there is a fundamental difference between industry demand and student interest. While most students usually consider job prospects, students’ interests may not align with industry needs, and thus programs designed to produce graduates to fill industry job openings may see a lack of student interest despite the labor market demand. Employment projections data should always be used in conjunction with other indicators that more specifically focus on student perceptions and interests. While national data may provide information about trends in particular industries, this information is unlikely to be relevant to a specific program offering in your service area.

*AVERAGE EDUCATIONAL ATTAINMENT FOR WORKERS IN RELATED OCCUPATIONS***Description and uses:**

This indicator is useful for helping to determine whether or not a proposed program is necessary, in professional terms, for prospective students. If the average educational attainment for an occupation is a bachelor’s degree and relatively few workers in that occupations hold master’s degrees, it may indicate that, while a master’s degree is a distinguishing qualification, master’s degrees are unnecessary in the field and that student interest could be low. Data on average educational attainment at the national level are available from the Bureau of Labor Statistics.

Directions:

The BLS presents the [average education and training](#) held by individuals aged 25 and over in different occupations, based on Census data. The BLS also specifies the [typical education level required for entry into a given profession](#), which may differ from the education level most commonly held by those actually employed in the occupation.

Limitations:

This indicator is very useful for one specific purpose only, that is, to determine what education level is most commonly held in a particular profession. Taken together with other indicators of student interest and labor market demand, this indicator can help to inform decisions on whether or not to offer a program at a specific credential level.

LOCATION QUOTIENT/AVERAGE ANNUAL SALARY (WAGE TRENDS)

Description and uses:

Wage trends can point to occupations that are increasingly desirable/less desirable according to wages paid. Increasing wage rates in certain fields may be accompanied by a shortage of qualified workers and increases in student interest in training in those areas.

The location quotient of a given area “is the ratio of the area concentration of occupational employment to the national average concentration.” A high location quotient in an area may correlate with high student interest in training. Data are available at the national and state levels from the BLS.

Directions:

To access these data:

- First determine the occupation name and SOC code by searching the [2010 SOC Major Groups](#).
- Next, navigate to the BLS “[May 2013 National Occupational Employment and Wage Estimates United States](#)” page.
- Select the relevant SOC code grouping.
- The resulting page will display all relevant professions’ national employment numbers, employment per 1,000 jobs, median and mean hourly wages, and mean annual wage.
- More detailed data are available for most professions. To access this data, click the relevant profession.
- The resulting page will list wage information and provide a series of illustrative maps of the United States. These maps include the following:
 - Employment by state
 - Location quotient by state
 - Annual mean wage by state
 - Employment by area
 - Location quotient by area
 - Annual mean wage by area

Limitations:

Location quotients indicate the percentage of the total number of individuals in a particular profession working in a particular state or area compared to a national level. Thus, a high location quotient does not necessarily directly correlate with a high number of job openings, but does indicate a comparatively larger critical mass relative to other areas around the nation.

For any one occupation, wage data may be slow to respond to market shortages or surpluses, and it is unlikely that small wage changes can be translated into quantifiable

estimates of future student interest. A better gauge is to compare wages across occupations to identify possible anomalies. Location quotient and wage data should always be employed together with other indicators of student interest and labor market demand.

JOB POSTINGS

Description and uses:

Job postings can provide a general sense of the kinds of occupations available to students who graduate with training in a given field. A high incidence and high variety of similar postings suggests a robust field in which trained workers are currently in demand. Data are available from job banks such as Indeed.com.

Directions:

On the job bank of your choice (such as [Indeed.com](http://www.indeed.com), [Monster](http://www.monster.com), or [CareerBuilder](http://www.careerbuilder.com)) search for keywords related to the profession in question. You can limit your search to a specific area. Some job banks, such as Indeed.com, also allow you to limit your search by time. In some cases, associated professional organizations may provide their own searchable job banks. Typically, users can filter job postings by educational level and experience.

Indeed.com also offers a “Trends” function. This function allows users to produce a visible line graph of the volume of job postings matching a search query over time.

- Navigate to <http://www.indeed.com/jobtrends>.
- Enter appropriate job titles or key words.
- The site will produce a graph showing the trends in the number of postings containing the search terms. The “absolute” scale shows the number of postings as a percentage of all job postings.
- To see the “relative” scale, click the “Relative” link above the graph. The relative scale is more useful for assessing trends, since it displays the percentage growth in matching job postings over time.

Limitations:

While job banks are a useful source of information, graphs and statistics generated from the sites necessarily contain a degree of imprecision, since they are based on key words and can in some cases produce results only marginally related to the field sought after. Also, the prevalence of job postings does not necessarily correlate with student interest, as students choose careers based on many factors along with high job availability.

Searching data on posting aggregators such as Indeed.com is most useful, and offers a higher level of predictive confidence, when a specific degree title is closely related to relevant jobs for the proposed program (e.g., most social work occupations requiring a master’s degree will contain the term “MSW”).

DEGREE COMPLETIONS PER JOB OPENING RATIO

Description and uses:

This ratio, which can be calculated using the NCES's CIP-SOC crosswalk, indicates the relative labor market competitiveness in a given field. If the ratio is high, with many completions per projected job opening, it suggests that recent graduates can expect strong competition for jobs. A low ratio, by contrast, suggests that there are more jobs and less competition for graduates. National data are available using IPEDS and BLS data, while state and regional level data are available using IPEDS and DEED data.

Directions:

To calculate the ratio of degree completions per job opening, divide the number of degree completions in a given year by the number of projected total job openings.

- First, determine the region you wish to find data for and the relevant data sources: national level data are available using IPEDS and BLS data, while state and regional level data are available using IPEDS and DEED data.
- Next, identify all relevant Classification of Instructional Program (CIP) codes using the [CIP 2010 search](#) function.
- Next, find all careers related to a particular degree or field of study by using the [CIP to SOC crosswalk](#). Download the crosswalk from the link.
- Search the crosswalk for the identified CIP codes and note all associated SOC codes.
- Find the number of completions following the directions for [program completions](#) in the main body of the *Handbook*.
- Find the number of projected job openings. Follow the directions for finding [employment projections](#) as described above, and then divide the total number of job openings by 10.
- Divide the total number of annual completions for a CIP code by the total number of job openings for all of the relevant SOC codes. Any result lower than 1 indicates that there are more projected job openings than current completions for the given field.

Limitations:

The limitations applying to degree completions indicators and employment projection indicators apply to this indicator as well. Institutions are able to classify their degrees as they see fit—although program descriptions for each CIP code exist, there is no single standard by which degree programs are judged. Thus, individual institutions may classify equivalent degree programs under different CIP codes. While employment projections are useful for forecasting job and industry growth, it is important to note that there is a difference between industry demand and student interest. Students' interests may not align with industry needs, and thus programs designed to produce graduates to fill industry job openings may see a lack of student interest despite the labor market demand. Employment projection data should always be used in conjunction with other indicators that more specifically focus on student perceptions and interests.

Additionally, program completers are not the only source of supply for an occupation. Consider the extent to which there may be under-employed workers, returning veterans, high-school graduates, individuals shifting from other jobs, and so on.

Finally, the completions-per-opening ratio assumes that students who complete their degrees within the geographic area of interest will remain in that area to pursue employment. As the indicator does not take graduate mobility (or, relatedly, the influx of graduates from other geographic areas into the local labor market) into account, the ratio should be used primarily as a means of assessing baseline trends, and not for drawing definitive conclusions on degree program supply and demand.

MEDIA DISCUSSION

Description and uses:

Media outlets such as *Forbes* and *U.S. News and World Report* frequently publish “Best/Worst”-type lists of occupations. By monitoring media and cultural perceptions of relevant fields, institutions can supplement their analyses of student interest. Occupations/degree programs that are celebrated may see a slight bump in terms of student interest; those that are maligned may see slight declines in interest.

Directions:

Perform periodic searches of media outlets for articles or posts mentioning a particular degree or profession.

Limitations:

Media outlets such as *Forbes* and *U.S. News and World Report* produce high level summaries that draw from data and perceptions at the national level. Thus, such assessments may not align with state or regional needs. While student interest may fluctuate only slightly in relation to such news sources, recall the boom-and-bust that began in the late 1990s in response to demand for internet and related IT workers. It is difficult to time an appropriate level of response.

MAJOR GOVERNMENT CONTRACTS/INDUSTRY INITIATIVES

Description and uses:

Government contracts and industry initiatives have the potential to spur employment growth. With increases in employment opportunities and growth, student interest in training in these fields may increase as well.

Directions:

Scan media outlets for news of government contracts or industry initiatives. Stay in touch with local government officials to ask about pending-new-business projects. DEED has an [e-newsletter and other publications](#), which address new business ventures in Minnesota. From a perspective of being an economic development partner in your community, you can also view the DEED website that contains substantial business-related information including creation of shovel-ready sites.

Limitations:

In isolation, government contracts and industry initiatives may not have a significant effect on increasing employment or student interest in particular programs unless hundreds of jobs are involved. Such evidence can be a supplement to other data sources.