Enhancing institutional research capacity in the midst of a pandemic: A system approach

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Abstract
This article outlines the impacts of COVID-19 on higher education and provides a contextual assessment of how higher education systems can provide support to institutions and stakeholders through a formulated planning process which helps identify, plan, and achieve strategic goals in response to fluctuating priorities.

The Coronavirus Pandemic interrupted many of the functions higher education provides and required members of the higher education community to think differently about how we provide educational services to students, while allowing faculty and staff to work effectively given varying restrictions. This article will discuss several strategies to enhance institutional analysis and inform strategies from a system perspective. While the examples provided herein can, and often do, occur at an individual institution, the purpose of a system office lends itself well with the coordination required to develop and implement an approach for multiple institutions. Three areas of focus for this article are analyzing enrollments, expanding employee data collection, and providing professional development. Each area will be discussed within the context of a formulated planning process with the following steps: (1) identify a concern, (2) set a goal, (3) form a plan, (4) act, and (5) follow-up.

THE CORONAVIRUS PANDEMIC AND HIGHER EDUCATION

The Coronavirus Pandemic has impacted almost every aspect of society, and higher education has not been immune. Institutions have had to drastically adjust many of their activities and services within the classroom and beyond. In their final report on fall enrollment, the National Student Clearinghouse (2021) estimates a −2.5% decline in overall enrollment across all sectors. Hardest hit is the public 2-year sector (−10.1%), while the public 4-year and private non-profit 4-year sectors remained relatively flat overall at +0.2% and −0.1%, respectively. The private for-profit 4-year sector exhibited a +5.3% increase from fall 2019 to fall 2020. An analysis of changes in enrollment statuses from spring 2019 to spring 2020 reveals similar proportions of students reducing their credit load, or withdrawing from institutions across institutional sectors which is attributed to the accommodations made by the U. S. Department of Education (Office of Postsecondary Education, 2020).
COVID-19’s impact on faculty have garnered national attention. Shifts in online learning are evident in a report by Course Hero (2020) where 74% \((n = 570)\) of faculty respondents cited significant stress related to the transition to new modes of teaching. Since March 2020, the highest levels of stress reported occurred in the March/April 2020 time period and in the mid-to-late fall (October/November). Forty percent of faculty reported considering leaving academia altogether as a result of challenges faced due to COVID-19.

Institutional staff have witnessed layoffs, furloughs, and hiring freezes amidst the adjustments made to campus operations. In July 2020, The Chronicle of Higher Education reported 224 colleges laid off or furloughed 51,793 workers as a direct result of COVID-19. In January 2021, the Kansas Board of Regents voted to allow for emergency employee terminations and suspensions with tenured professors included (Flaherty, 2021). Continuous fiscal stress on institutions due to a reduction of tuition and/or state revenues have caused institutions to react, thus increasing anxiety amongst all staff.

In addition to financial stress on employees, institutions have reduced spending across other budgetary areas (Whitford, 2020). While limiting travel expenditures is a logical response during a pandemic, reductions in professional development spending limit employees’ abilities to learn and grow in their profession. While several organizations offered virtual conferences and workshops as a response to the continued demands for professional development (Fortner, 2020; North East Association for Institutional Research, 2020; Southern Association for Institutional Research, 2020), the decrease of professional development funds available to spend on these activities may limit institutional researchers’ abilities to participate.

HIGHER EDUCATION SYSTEMS

Higher education systems exist to fulfill a number of duties on behalf of the institutions which they represent. These organizations may be statewide or institution specific. System offices provide an additional level of oversight between the institution and state government. Typical responsibilities include budget setting, institutional policies, coordinating degree program approvals and review, and advocating to the state legislature (Eckel & King, 2004).

In addition, many higher education system offices manage and maintain a postsecondary unit record system of data. These data systems provide states and system offices with vital information to make data-informed decisions concerning fiscal, structural, and policy issues. The State Higher Education Executive Offices Association (2018) found more than half of responding organizations use a unit record data system for generating reports and statistics (96%), decision-making (91%), research (91%), cross-sector collaboration (e.g., K-12, 89%), policymaking (82%), external reporting (82%), and consumer information for prospective students (59%).

An assessment of system office support for campuses (Gagliardi & Wellman, 2015) found that only 14% of campus respondents rated high or very high the degree to which system IR offices provide professional development and training support to campus IR teams. This finding provides an opportunity to expand a system IR office’s scope to support campus-level IR in the development of skills needed to support campus decision-making (Table 1).

Postsecondary system offices and state agencies are in a unique position with a broad array of institutional data and an opportunity to develop and provide just-in-time professional development that can be further used to understand and work through disruptions within higher education institutions.
TABLE 1  System IR office support to campus IR offices

| Topic                                                   | High or very high (%) | Low or very low (%) |
|---------------------------------------------------------|-----------------------|---------------------|
| IPEDS reporting                                          | 53                    | 31                  |
| Reports mandated by state government                     | 47                    | 25                  |
| Benchmarking across campuses within the system           | 45                    | 23                  |
| Display of mandatory disclosures                         | 25                    | 56                  |
| Coordination of membership in national projects          | 23                    | 60                  |
| Web displayed analytics                                  | 20                    | 58                  |
| System wide software purchasing/licensing                | 18                    | 63                  |
| Budget for national data collections                     | 17                    | 63                  |
| Benchmarking across campuses outside the system          | 15                    | 62                  |
| Enrollment projections/pipeline studies                  | 15                    | 66                  |
| Professional development/training                        | 14                    | 63                  |
| Market review/economic impact studies                    | 8                     | 71                  |

Note: Adapted from Assessing and Improving the Institutional Research Function in Public University Systems, by Gagliardi & Wellman, 2015.

FIGURE 1  A formulated planning process

A FORMULATED PLANNING PROCESS

COVID-19 has created numerous questions that IR/IE professionals have not had to answer previously. While some questions are familiar, additional details requested due to the pandemic may require us to rethink our approach and methodology. Responding to revised and/or new needs and demands of constituents requires a thoughtful process in order to ensure quality and consistency. A formulated planning process (see Figure 1) can guide someone from start to finish by providing natural steps for pausing and evaluating the process and progress.

A first step in this process is to work with others to identify the concerns that need to be addressed. Issues could also arise from a supervisor, colleague, or outside the organization/institution. Once a concern is initially identified, the IR/IE team should work through the issue to ensure it is clear to all involved what the question is that needs to be answered.
Next, set a goal to address the issue and/or solve the problem. While some may overlook this step and jump straight into “form a plan,” goal setting is important as it helps to clarify outcomes.

Forming a plan should be driven by the issue and related goals. A plan should also be communicated to drive expectations for those involved and the recipients of your work. Next, you should act on your plan and ensure anyone involved is working toward the goals that were set. This step includes providing the outcome to the requestor(s) in the manner which they wish to receive it. The last step in this cycle is to follow-up with the recipients of the product, the colleagues whom you worked with to achieve the goal, as well as yourself to ensure the process, product, and the outcomes were achieved as intended.

Higher education systems are positioned to identify opportunities and challenges within member institutions, provide guidance and resources, and coordinate the necessary actions to resolve or respond accordingly (Gearhart et al., 2018). System coordination can occur through group purchasing power, degree articulation, and consistent policy formation. In addition to these benefits, systems with coordinated data collections can provide a holistic view of the postsecondary landscape for member institutions (Whitfield et al., 2019).

The formulated planning process will be extrapolated using several brief examples of the recent pandemic’s impact on shifting data demands in higher education. Each example is presented as a separate case study with the steps noted in parentheses and follow-up considerations presented afterward.

**ENROLLMENT ANALYSIS**

Student enrollment is one of the most important metrics collected within a postsecondary unit record data system. While examining enrollment within one institution is meaningful, it may not expose broader trends that are occurring within a state or system that can be examined when tracking students together. In late February and early March, when many institutions shifted to remote learning and work environments, institutional leaders were already considering the impact on future enrollment. The following case studies present three scenarios around enrollment analysis during the Coronavirus Pandemic and how a system office could assist.

**Case study #1: Tracking enrollment**

Your board of trustees asks (1—Identify concerns) “how does enrollment look for the upcoming summer term?” Within a system office, this concern can be easy to resolve since the outcome is generally well defined and understood: enrollment by level (e.g., undergraduate, graduate, and high school). (2—Set a goal) You then ask your supervisor “what is the frequency this information should be collected?” After discussing further with colleagues and the supervisor, it is determined a weekly snapshot would suffice. Also, since credit hours enrolled represent tuition revenues, the attempted credit hours by level would be included. (3—Form a plan) While many system offices collect unit record data once per term, it is determined the institutions would not submit student-level data each week, but instead a simplified form is developed to collect aggregate enrollment by level and credit hours attempted by Friday at 12:00 p.m.

(4—Act) Each Friday the institutional representatives submit their data. The system office pairs this against the prior year’s official term enrollments to measure progress. It is noted after the first week that since institutions had not been tracking their own sum-
mer enrollment weekly in previous years, the amount of data for comparisons is limited. (5—Follow-up) This limitation is communicated by the system IR office to the system leadership and institutional leaders. As weeks pass, the summer term census dates draw near and the system IR office follows up with institutions to clarify any large changes to explain to the system leadership. After this process is completed, it is determined that the system will compile these data in the subsequent years since the continuous impacts of COVID-19 on enrollment may not be limited to 1 year or term.

Case study #1 considerations

In this example, a simple request of enrollment data quickly transformed to a process of compiling three levels of students within a specified timeframe on a weekly basis and being able to answer questions. How can your IR/IE office prepare for new demands and changes during times when stress levels are high?

Case study #2: Projecting enrollment

Institutions are preparing their fiscal year budgets and need to be prepared. Thinking about the upcoming year, the board of trustees (1—Identify concerns) request a presentation on enrollment projections for the upcoming fall term. In a typical year, fall-to-fall enrollment changes are less than $+/- 3\%$, but given the severity of COVID-19, a non-naive projection is necessary. (2—Set a goal) You discuss with your supervisor and determine that several projections be presented to provide increased confidence in the results. (3—Form a plan) The system office works closely with the IR/IE contacts at each institution along with the admissions teams to identify current enrollment compared to the prior year. The system office also contacts the state’s K-12 agency to request the number of high school seniors and high school graduates for the previous 5 years. (4—Act) Using the number of admitted students by level and entry status, high school graduates, and previously enrolled students, the system office constructs separate enrollment projections for each institution with varying differentials built-in to adjust as the fall semester gets closer. (5—Follow-up) The system office presents a summary of these results to the institutional IR/IE contacts and requests feedback prior to presenting to the system leadership and board.

Case study #2 considerations

In this example, both institutional and non-institutional data were collected and utilized to provide information that could have a broad impact on institutional planning. What other information is not held within an institution or system office that could be helpful for this or other requests?

Case study #3: Enrollment comparisons

The fall semester is underway and the board of trustees (1—Identify concerns) requests an update of fall enrollment for 2020 compared to fall 2019. While there are many ways to provide such an update, it is important to know where to focus. (2—Set a goal) You speak with your supervisor and decide to provide a high-level summary and also more detailed
information if they would like to access it. (3—Form a plan) You determine that placing tables and charts into a static presentation may result in numerous pages, which may be difficult to consume, and an interactive dashboard will be the most comprehensive way of presenting the data as well as the most efficient manner to compile it. (4—Act) You meet with the institutional IR/IE contacts to notify them of the board’s request and begin to compile the data. You research other uses of comparison data and determine that a dumbbell chart could provide year to year comparisons across a number of metrics\(^1\). (5—Follow-up) You meet with the institutional contacts and present a system-level summary to them and request their review. You present a one-page summary to the board highlighting the changes, referencing national, regional, and state-level data to provide context, and highlight a few specific findings of interest to the board.

**Case study #3 considerations**

In this example, much weight was placed on communicating data effectively through a verbal presentation, written summary, and an interactive dashboard. How would you evaluate the approaches to take in communicating data effectively across different mediums?

**FACULTY AND STAFF DATA**

As noted previously, the impacts of COVID-19 have directly impacted how employees in higher education work. An institution’s staff and faculty are needed to maintain consistency of operations, regardless of the method of delivery. The following case studies highlight the usage of employee and course-specific data.

**Case study #4: Employee data**

While postsecondary employee data is required to be reported through the Integrated Postsecondary Education Data System, a unit record data file may or may not be collected within institutions or system offices. In the months leading up to the pandemic, you work with IR/IE and human resource offices to identify which variables would be reported to a system-level data system. The data file layout is published and each institution plans to begin submitting these data in fall 2020. Early in fall 2020, you reiterate with the institutions that the employee data will be submitted but (1—Identify concerns) questions arise about the staff that are on furlough or working remotely. (2—Set a goal) You speak with your supervisor about the utility of these types of data elements and determine that the data file could be expanded to include additional fields of interest. (3—Form a plan) You meet with the IR/IE and HR contacts to determine how to identify remote staff and workers on leave without pay. (4—Act) These are incorporated into the data dictionary and institutions submit their data\(^2\). (5—Follow-up) After data are collected, the data system provides a summary-level report for each institution to verify their information before finalizing.

**Case study #4 considerations**

In this example, data elements that may not have been considered before become very important to institutional and system staff within the current context. Definitions are
developed and discussed amongst institutions to ensure consistency. Is there a process within your system or institution to identify new data and develop definitions for use by stakeholders?

**PROFESSIONAL DEVELOPMENT**

Professional development is integral to providing the highest quality of work. It became clear during the onset of the pandemic that in-person conferences would not be feasible. The following case studies examine communicating remotely and cultivating topics of interest for IR/IE offices.

**Case study #5: Consistent communication**

(1—Identify concerns) In the weeks after going remote, the IR/IE offices within your system all seem to be having similar concerns about maintaining work processes. Additionally, they describe that working remotely has been challenging for a number of reasons. (2—Set a goal) After speaking with several contacts, you send an email asking if the group would like to meet more regularly (e.g., weekly) to discuss workload, difficulties, and other ideas to work through this transition. (3—Form a plan) You decide to formulate flexible agendas for these meetings and ask each person if there is a topic they would like to discuss. (4—Act) After the first few meetings, the group begins to look forward to this interaction with their colleagues and feels supported in their work now having a stronger connection to others. (5—Follow-up) Each week before ending the meeting, you ask each institution to give a brief institutional update and conduct direct outreach every other week to do a one-on-one check-in and offer assistance or guidance.

**Case study #5 considerations**

In this example, we recognize how simple communication and discussion of the work we do can create a sense of community during stressful times. Do you have a plan for staying in touch with institutional or external colleagues through shifting workload demands?

**Case study #6: Continuing education**

While working remotely you prepare several complex dashboards for an institution. (1—Identify concerns) In a conversation with the institution’s IR/IE contacts, they mention they would like to learn how to do similar work. (2—Set a goal) You think through exactly what would need to be communicated and the best method for doing so with a group of institutions. You find out two of your contacts work with this technology already. (3—Form a plan) You determine a series of 1-hour sessions to cover this topic would be sufficient to begin and you can record the webinars for later viewing by the participants. (4—Act) In a few short weeks, all IR/IE staff in the system have been trained with limited interruption to their work day in the development and considerations for producing data dashboards. (5—Follow-up) After this initial series, you ask if there are other topics of interest and the IR/IE contacts provide you with additional ideas.
**Case study #6 considerations**

In this example, it is important to remember that skillsets are diverse and we should continue to learn from each other. Do you have plan to recognize and invite colleagues to share their skills with others when resources for professional development are limited?

**CONCLUSION**

This article provides several examples of how system office IR functions can respond to concerns at a high level and provide support to institutions in periods of high stress and constant change. Each of the case studies presented are real-life examples summarized for the purpose of this article. External forces negatively impacting higher education are not new (e.g., the Great Recession), but the way we respond almost certainly requires we think in a different way. Systems of higher education provide supports to institutions while balancing consistency with institutional autonomy. As noted previously, system-level data functions have opportunities for growth in the areas which support is provided or not provided to campus-level IR/IE offices. Applying a formulated planning process can assist in the process of providing timely and useful information to assist institutions and stakeholders.

**NOTES**

1 For an example dashboard used for comparing fall enrollments see https://public.tableau.com/profile/asusystem#!/vizhome/Fall2019vsFall2020Enrollment/Dashboard1
2 For an example data dictionary file see https://www.asusystem.edu/offices/research/data-reporting/

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