

Assessment Cycle 2019 – 2020

Institutional Research

Office of Institutional Effectiveness and Human Resources

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Northwestern Mission. Northwestern State University is a responsive, student-oriented institution that is committed to the creation, dissemination, and acquisition of knowledge through teaching, research, and service. The University maintains as its highest priority excellence in teaching in graduate and undergraduate programs. Northwestern State University prepares its students to become productive members of society and promotes economic development and improvements in the quality of life of the citizens in its region.

The **Office of Institutional Effectiveness and Human Resources** is a responsive administrative service and support unit that provides University leaders with information to be used in strategic planning and evidence-based decision-making and human resource programs and services. The Office assesses, collects, analyzes, reports, and disseminates data on behalf of the University and supports all University units in assessment-based improvement efforts. Reporting of information is in accordance with Southern Association of Colleges and Schools (SACS) and federal and state regulations. The Office develops and delivers innovative human resource programs and services designed to support the mission of the University, including its core services and competencies such as staffing, employee relations, organizational and employee development, risk management, compensation and benefits, human resource information management, and regulatory compliance.

Within the **Office of Institutional Effectiveness and Human Resources**, the **Office of Institutional Research (OIR)** focuses on the analysis and provision of data to both internal and external constituents for the purposes of decision-making, accreditation, academic research, strategic planning, grant proposal and post-award reporting, as well as mandated governmental reporting. Strong ties with NSU's Office of Information Technology ensure that OIR continues to exploit the latest tools, data structures and methods to provide leadership and customer service in NSU's data analysis function. Strong ties with NSU's Internal Auditor allow OIR to:

- analyze and provide data that is properly processed through University-approved methods
- work with the auditor and functional departments to address deficiencies in those methods to promote data integrity
- assist in designing enhanced methods to allow the most accurate and effective data sources for analysis and decision-making.

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Methodology: The assessment process includes:

- (1) Data from assessment tools (direct & indirect and quantitative & qualitative) are collected and returned to the executive director;
- (2) The executive director will analyze the data to determine whether the applicable outcomes are met:
- (3) Results from the assessment will be discussed with the appropriate staff;
- (4) Individual meetings will be held with staff as required (show cause);
- (5) The executive director, in consultation with the staff and senior leadership, will determine proposed changes to measurable outcomes, assessment tools for the next assessment period and, where needed, service changes.

Institutional Research (OIR)

Service Outcomes:

SO 1. Provide expertise and support for strategic planning, assessment, program design, and continuous improvement.
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Measure 1.1. One hundred percent (100%) (a) data validation and (b) dissemination of census data comparison and summary reports at each census date. The OIR regularly interprets, validates, and manages student and program assessment data at predetermined intervals to facilitate organizational planning and program design. Data validation ensures compliance with federal and state reports such as Institutional Post-secondary Educational Data System (IPEDS), accreditation report requirements, and various Board of Regents reports to facilitate organizational planning and development.

Finding. Target Met.

Analysis. In 2018-2019, the target was met.

Based on the analysis of the 2018-2019 results, OIR worked with Admissions and Internal Auditor to isolate data conditions related to SSPS reporting and BoR Admissions and Placement policy that need to be validated as a matter of process.

As a result, in 2019-2020, validation criteria were further refined during discussions with Admissions, Internal Auditor and OIR in Spring 2020. OIR worked with Information Services Team (IST) to develop a series of validation reports which can be run at any time or on a scheduled basis to allow Admissions, Registrar and Graduate School to identify invalid or non-conforming conditions and remedy them prior to

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reporting cycles. OIR requested that Admissions, Registrar, and Grad School use these tools to ensure that validations are completed in an ongoing and timely manner. This has reduced the last-minute rush to correct data errors at critical reporting times. This validated data forms a stable foundation for reliable analysis.

Leveraging the analysis of the 2018-2019 results, OIR began defining a data mart to replace the file extract process, which currently forms the basis of the reports referenced in Measure 1.1. Any data mart requires “clean” data to promote trust in the reporting and query results. This clean data does not come from a single exercise but from:

- a set of policies and procedures implemented within the departments who are primarily responsible for the maintenance of each type of data
- a consistent structure for data governance at the enterprise level.

As a result, in 2019-20 OIR’s census-date file extract process continued throughout this cycle. As a first step toward forming a data mart, OIR had previously designed and implemented consolidated files for student enrollment data. These files are assembled using the traditional census-data file extracts. Unlike our traditional census-date files, the records in these consolidated files cross academic terms. These consolidated files are being used in current reporting.

In parallel, initial file structures for a student enrollment data mart have been submitted to IST.

Decision. Based on the analysis of the 2019-20 results, in 2020-2021, OIR will continue to work with IST to scope and develop the data mart using an iterative prototyping method. Data governance is key to the successful deployment of such a data mart. OIR will spearhead the development of an enterprise-wide data governance team with the intent of clearly defining key data elements, data values and meanings, data and table maintenance policies, and training tools to ensure smooth implementation of policies.

Once the data mart begins to take shape, IR will drive initiatives for departmental-level reporting to be accomplished by the users themselves. Limited self-service reporting should be viewed as a 2020-21 goal.

Measure 1.2. – One hundred percent (100%) completion of federal and state reports. The University consistently utilizes historical enrollment, retention, and completion data to analyze performance trends and develop forecasts to assist leadership with strategic and operational planning decisions. The OIR contributes data for the University Strategic Plan and University Operating Plan on an annual basis utilizing enrollment, retention, and graduation rate data. The University submits enrollment, finance, facilities, human resource, financial aid, library, graduate and completer data reports each semester and annually to the Louisiana Board of Regents and IPEDS. The information submitted is reviewed at the system level to ensure data accuracy and to monitor compliance with and the attainment of state and system level goals and objectives. Additional reports of significance include the Statewide Student

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Profile System, the Facilities and Utilization Report, Louisiana Performance Accountability reports, and the Board of Regents Strategic and Operational Plans.

Finding. Target met.

Analysis. In 2018-2019, the target was met.

Based on the analysis of the 2018-2019 results, OIR ran several preliminary IPEDS HR reports from Banner in July and December to identify any potential issues and allow time for correction before the April 2020 submission. In January 2020, the report was run and all errors were corrected by HR staff on the same day. Updated procedures and cross-checks within the HR department along with this readily available monitoring report has helped to improve the data quality.

(Historical context: Based on the analysis of the 2017-2018 results, Human Resources updated its processes so that personnel data would be maintained in Banner in such a way to automatically generate IPEDS HR reporting with minimal intervention.)

As a result, in 2019-2020, OIR automatically generated data for the IPEDS HR survey submittal using Banner's IPEDS HR. This was possible due to the work that has been done by Controller, Position Control and HR to cleanup and streamline data related to SOC codes and employee position classes.

In addition, OIR worked with IST and Facilities to develop specifications and assist in testing a replacement system for the old Facilities Records system. This replacement was developed by IST and loaded with properly formatted data. The replacement is also designed to generate the Board of Regents Facilities and Space Utilization report according to specifications.

As a result, in 2019-2020, after successful completion of the October 2019 submission, OIR handed over responsibility for the BoR Facilities and Space Utilization report to the Facilities Director.

Lastly, based on the analysis of the 2018-2019 results, OIR investigated processes for maintaining Faculty Department and Terminal degree data in Banner. The faculty department is maintained in Banner under SIAINST. Faculty degree information and designation as Terminal Degree is not maintained in Banner.

Instead this information is manually recorded at the Provost's office. It is updated only to the degree that a Faculty member or Department Head provides an update. TaskStream was a software tool previously used for Faculty activity tracking and faculty planning/review. As such, credentials were stored in this database. However, TaskStream has recently been replaced by Interfolio. In any case, it is not clear how or if a tool like this might be a proper repository for faculty credentials, given that NSU has an enterprise-level database designed for this purpose.

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At this time OIR maintains a local table with Faculty degree information but the accuracy of that data and its maintenance has not been established as a procedure or policy.

As a result, in 2019-2020, OIR determined that there is not currently and electronically available “source of truth” for Faculty credentials.

Decisions: Based on the analysis of the 2019-20 results, in 2020-2021 OIR will work with the Provost’s office, Human Resources, and others as needed to ensure that Faculty degree information is updated in appropriate data structures according to standard procedures, including verification processes.

SO 2. Develop, provide, and maintain timely and accurate institutional data to internal and external audiences.
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Measure 2.1. – One hundred percent (100%) of data source files will be documented for federal and state reports to enable responsiveness to all inquiries, requests and audits. Complete any audits with no substantial findings. The OIR ensures accuracy, consistency, and timeliness among federal, state, and internal reports (IPEDS, Louisiana Board of Regents, Louisiana Performance and Accountability System, and internal assessment reports) through data validation protocols and audit and balancing of state and federal standardized reports. The Louisiana Legislative Auditors, (the independent audit body for the state of Louisiana), has the authority to audit as they deem appropriate to verify data accuracy.

Finding. Target met.

Analysis. In 2018-2019 the target was met.

Based on the analysis of the 2018-2019 results OIR determined that the process to extract HS GPAs from STS needed to be run at a time closer to the actual report submission. This decision was based on the outcome of the Board of Regents audit of Fall 2018 enrollment data. During this audit, an observation of several mismatches of HS GPA existed between our Banner data (used for SSPS submission) and STS data. While this did not factor into the Admissions decisions for those students and the differences were tenths and hundredths of points, NSU took steps to address the observation.

As a result, in 2019-2020, OIR delayed the STS extract until January 2020 (with SSPS due date originally scheduled for 1/17/20). Nevertheless, there were still students with missing data. As pertains to SSPS, NSU, along with other schools, is caught in a data gap and must determine how to resolve it.

- Not all SSPS-required data student transcript elements are stored in STS.

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- STS purges student records 5 years after high school graduation.
- High schools have been instructed by the Board of Regents to direct colleges/universities to STS to obtain high school transcript information.
- Timeliness of data load into STS by high schools varies throughout the state.
- Responsiveness to Admissions Office requests to high schools for transcript information (for students whose information is not available in STS) is unpredictable.
- Data which is (1) not available thru STS, (2) may not be provided by high schools/applicants, but (3) is required by SSPS includes:
 - Math and English HS GPAs
 - Transcript data for students who graduated 5 or more years ago but are not yet 25 (and thereby exempted from the requirement)

Entering Freshmen under the age of 25 with incomplete data must be coded as “Exceptions”.

Decision. Based on the analysis of the 2019-2020 results, in 2020-2021 OIR will document the situation for consideration at the ULS Collaborative Data Governance team meeting. Discussion by this group of IR directors and analysts may result in escalation to Board of Regents as an issue. OIR anticipates that Fall 2020 entering freshman data may be even less complete than in prior years due to the impact of the COVID measures on high schools’ data submissions to STS.

Measure 2.2. – One hundred percent (100%) compliance with Board of Regents’ modifications to report specifications. The OIR consistently reviews data collection and reporting processes to identify relationships among reports and across departments to synchronize data reporting and to validate accuracy employing different data extraction and reporting methods in compliance with reporting standards as established by the Louisiana Board of Regents. Report procedures exist for all major state reports that are compiled by the OIR, however, the Board of Regents often issues modifications to specifications for the required reports. The Office of Institutional Research will implement continuous improvement processes to continuously revise reporting methods to comply with Board of Regents reporting specification revisions.

Findings. Target met.

Analysis. In 2018-2019 the target was met.

Based on the analysis of the 2018-2019 results, OIR planned to incorporate modifications to reporting instructions and syntaxes when necessitated by Board reporting changes.

In 2018-2019 the BoR made changes to some reporting:

- Space Utilization – no changes to specifications

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- Completers – no changes to specifications
- FADS – no changes to specifications
- SSPS – English and Math Placement test types and scores are now required for Prep students. HS Math, English and Regents Core GPAs are now required for first-time, home-schooled students. New degree level code of 15 added for Undergrad certificate. New test types were added for Prep student reporting.

SSPS changes and logic updates have been incorporated into the instruction set via Tableau Prep Builder flows. This tool, acquired during the year, has allowed processes to be more self-documenting within the tool itself. Existing SQL syntaxes may be incorporated, thereby eliminating the need for rewriting file extracts (until such time as the data mart is developed).

OIR also planned to spend at least one day per month on creation/update of instruction sets. This has been accomplished and is documented in the OIR monthly report submitted to the Executive Director.

Stronger file archival and packaging procedures are needed to reduce likelihood of OIR staff using outdated syntaxes, flows, and files. Versioning is not natively available in our systems and will need to be implemented procedurally.

As a result, in 2019-2020 OIR staff continued to update written instructions for report completion, to create OneNote documentation, and to create Tableau Prep Builder reusable flows. These flows provide a visual, executable representation of the report creation steps. In most instances, all report creation steps cannot be automated but many of them can.

OIR investigated methods for file archival and packaging to minimize potential errors. Windows File Explorer allows the folder view to be expanded to add a Notes column; however, this option is not available for every file type being used. SPSS allows internal documentation of a .sav file, but the user must open the file under SPSS to see the Notes. At this time no feasible method has been identified outside the established Folder structure under OIR's secured drive.

Decision. Based on the analysis of the 2019-2020 results, in 2020-2021 OIR will continue to investigate other means for documenting and versioning. As a stop-gap measure, OIR will establish stronger naming conventions for files and folders. OIR will also extend the Work Order tracking sheet to include a column with the folder location of the completed request.

OIR will also extend deliverables to include Source references, applicable filters and any applicable SQL snippets that may be helpful in recreating the data.

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SO 3. Conduct project-based research and analyses.

Measure 3.1 – Eighty percent (80%) overall completion of requests for ad hoc data reports and surveys. One hundred percent (100%) completion of all requests for ad hoc and recurring data requests related to accreditation, planning and compliance. The OIR compiles, analyzes and reports student and program data in a timely and accurate manner to assist departments with new program initiatives, grant applications, compliance/accreditation, recruiting, and other strategic and planning initiatives as appropriate.

Finding. Target met.

	Accred	DeptRsch	GovRpt	Planning	StudRsch	Survey	Grant	Other
2019-20	39	33	49	77	14	20	7	8
2018-19	19	30	27	54	8	14	2	10

Analysis. In 2018-2019 the target was met.

Based on the analysis of the 2018-2019 results, OIR continued to work with IST to implement data mart and Tableau dashboard creation. The FactBook was recreated in Tableau. However, licensing constraints and potential data security issues caused OIR to put the Tableau deployment initiative on the backburner for a time. Tableau continued to be used internally to respond to surveys, adhoc requests, and other reporting requirements.

As a result, in 2019-2020, OIR began testing PowerBI as an alternative platform for dashboard development since user licensing was not an issue. We found it to be more difficult to understand and use than Tableau and lacking in the tools for data prep that we found in Tableau Prep.

NSU OIR proposed a joint dashboard development project with ULS and other system institutions in February 2020. Plans and prototypes were put in place during March and April. In May 2020 ULS signed a system-wide Tableau license package to begin July 1, 2020. Development and demonstration of various enrollment, completer and other student success dashboards has been underway throughout the system utilizing trial development licenses.

Also, based on the analysis of the 2018-2019 results OIR participated in meetings with IST, Recruiting, Student Affairs, and other departments about implementing Recruit CRM from Ellucian. This tool would eliminate the manual reporting of Applicant and Inquiry data and allow the departments immediate access to the most up-to-date data.

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Implementation of this Banner extension would allow OIR to focus on the data mart initiative and analytics for better-informed decision making.

As a result, in 2019-2020, OIR began to plan for cutover of several standard bi-weekly and bi-monthly reports to the CRM. However, the level of executive commitment to adopting this tool waned with no project champion.

Also based on the analysis of the 2018-2019 results, “funnel” dashboard functionality was presented to the Recruiting Director and selected recruiters for comment, but this functionality has not been rolled out due to security, mobile data access and software licensing issues. These issues as well as the demonstrated functionality can be addressed by Ellucian’s Recruit CRM which was under consideration by NSU. While this is the preferred alternative for maintainability, consistency and system integration, OIR recognizes that we may need to return to the original design using Tableau.

Decision. Based on the analysis of the 2019-20 results, in 2020-2021 using the new Tableau licensing arrangements, OIR will deploy student success Tableau dashboards internally and externally. OIR will also publish the most current FactBook using Tableau as a platform.

OIR will also re-evaluate the current reporting process for Applicant and Inquiry data. There are several issues with this current method:

- Security/Privacy - Detailed student data is contained in spreadsheets which are emailed to a distribution list. This bypasses Oracle/Banner data security measures as soon as the data is extracted outside the database.
- Efficiency – Report creation process is resource intensive thereby limiting the timeliness of delivery to stakeholders.
- Accuracy – Updates applied to Banner data are not reflected in extracts until the next reporting period. In the case of the Inquiry report that may be up to a month.

Because of all these factors, during 2020-21 OIR will redesign Applicant, Inquiry and Projections reporting to allow a self-service reporting function driven directly by Banner data. Implementation will require adjustments in the Recruiting and Enrollment functions as well as assistance from IST. However, if Ellucian’s Recruit CRM finds a champion from the Student Experience to drive the acquisition, we will adjust plans in favor of that since it addresses all the issues outlined above.

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Comprehensive summary of key evidence of improvement based on analysis of results.

SO	Measure	Key Evidence
1	1.1	OIR provided initial data definitions and consolidated data structures to IST for development of data mart.
1	1.1	OIR and IST implemented an automated “validation” report through Argos to facilitate daily data correction by responsible departments, rather than just corrections directed by IR on a semester basis.
1	1.2	OIR generated the 2019-20 IPEDS HR survey response data directly from Banner.
1	1.2	OIR worked with IST and Facilities to hand over the BoR Facilities and Space Utilization report responsibility to Facilities Director.
1	1.2	OIR, Controller, and Position Control modified procedures to promote consistency between BoR EMPSAL data and IPEDS.
2	2.1	OIR modified procedures to delay timing for STS data extract for the preparation of SSPS files.
2	2.2	OIR developed 10 additional active-link instruction sets in OneNote. (Military ESO, IPEDS (2), Nursing (2), Common dataset, NC-SARA, Core survey, SSPS, FADS)
2	2.2	OIR developed self-documenting Tableau Prep flows for SSPS, Projections, Nursing cohorts and retention, Inquiry reporting, Distance Learning, Military ESO reporting, App to Enrollment Reconciliation, and many others.
2	2.2	OIR incorporated BoR reporting updates into existing processes.
3	3.1	OIR used data preparation software (Tableau Prep) to replicate and extend many manual reporting processes.
3	3.1	OIR published IR Request form on OIR website.
3	3.1	OIR Requests from 2019-20 have all been assigned a category and are reported monthly to Executive Director.
3	3.1	OIR developed Tableau reference tool “Live Completers” to simplify response to data requests about graduates by term, program, department, etc. by accessing Banner data directly.
3	3.1	OIR proposed joint ULS project for development of dashboard functionality using common data sources. Includes development of joint data governance committee for ULS.

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Plan of Action Moving Forward.

SO	Measure	Plan
1	1.1	Work with IST to scope & complete the initial population of census data mart and begin to adjust existing to procedures to access the new file structures.
1	1.1	Propose Data Governance function for the university and spearhead implementation if approved.
1	1.2	Work with Provost, HR and others as needed to develop a means for recording faculty credentials in Banner.
1	1.2	Work with IST, Controller, HR to develop a means for recording Faculty assignments by CRN and term in Banner to assist with Financial analytics of academic programs.
2	2.1	Document STS data issue and present to system-level Data Governance team for discussion. If warranted and requested by this team, participate in escalation of issue to Board of Regents.
2	2.2	Strengthen naming conventions and implement work order cross-reference to folder location of request source docs.
3	3.1	Redesign Applicant, Inquiry and other funnel reporting to allow self-service or work with IST to ensure functionality in the package if NSU decides to implement Recruit CRM.
3	3.1	Develop and deploy internal decision-making dashboards.
3	3.1	Develop and deploy public-facing student success dashboard.
3	3.1	Publish FactBook on Tableau platform for internal and public-facing access.