



Using Blackboard Goals, Outcomes, and EAC to Support Data Informed Decision-Making with ImprovE, an Innovative IE Process

San Jacinto College

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Dr. Rashmi Chhetri, Manager, Program Effectiveness

Dr. Michelle Selk, Manager, Program Effectiveness

ImprovE Team



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[Washington](#)
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Agenda



Join Poll

Blackboard Goals

Aligning Assessments to Goals

Real-time Reports with EAC Visual Data

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ImprovE, a New Institutional Methodology

ImprovE Insights

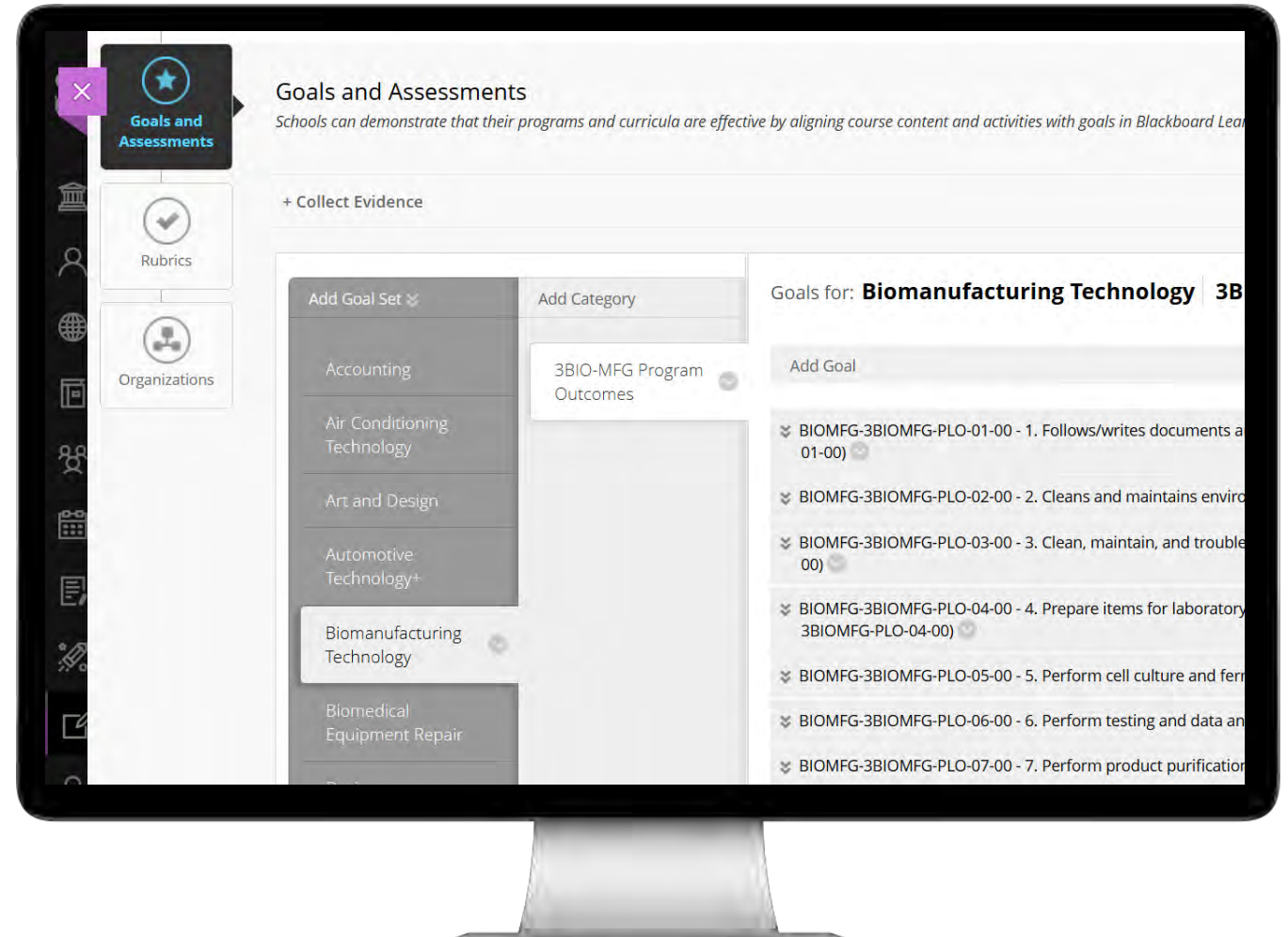
Accreditation Takes a Backseat

Blackboard Goals



Blackboard Goals


- ALL instructional pathways have program learning outcomes.
- ALL are available in Bb Goals, 99 discrete pathways.
- Select programmatic accreditation standards are available in Bb Goals:
 - NAEYC 2020
 - ADN NCSBN Client Needs
 - LVN NCSBN Client Needs





Bb Goals “Wishlist”

- Entry of Goals is *manual*.
- Data integration is needed to efficiently manage goals; *faculty are asking for course learning outcomes to be available as well*.
- APIs are available but read-only. Phillip Berger commented, “Opening this to align with what is possible for other APIs through learn [sic] (Create, Patch, Delete) would be greatly appreciated, especially as we consider adopting the newly released Blackboard Mastery.”


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Data Integration to Manage Goals

Current Limitation: Goals can only be managed/maintained/updated through manual entry. This is extremely time consuming and presents challenges in the accuracy of entry given the number of opportunities for error.


Proposed Solution: Create a mechanism in the data integration for initial creation, version control and automated enforcement.

Use Case(s): (1) Our institution has 90+ courses. We maintain program learning outcomes in the Goals area by manual entry. The process is time consuming and does not always ensure data reliability. We want to better ensure data reliability by having Course Learning Outcomes available as well, with 1000+ courses in...

| | |
|------------|---|
| Status | Future consideration |
| Product | Blackboard |
| Categories | Mastery learning Outcomes Assessment |
| Created by | Chris Duke |
| Created on | Oct 28, 2024 |

RELATED IDEAS

Ability for AI tools to collect additional course data from an external source like a...



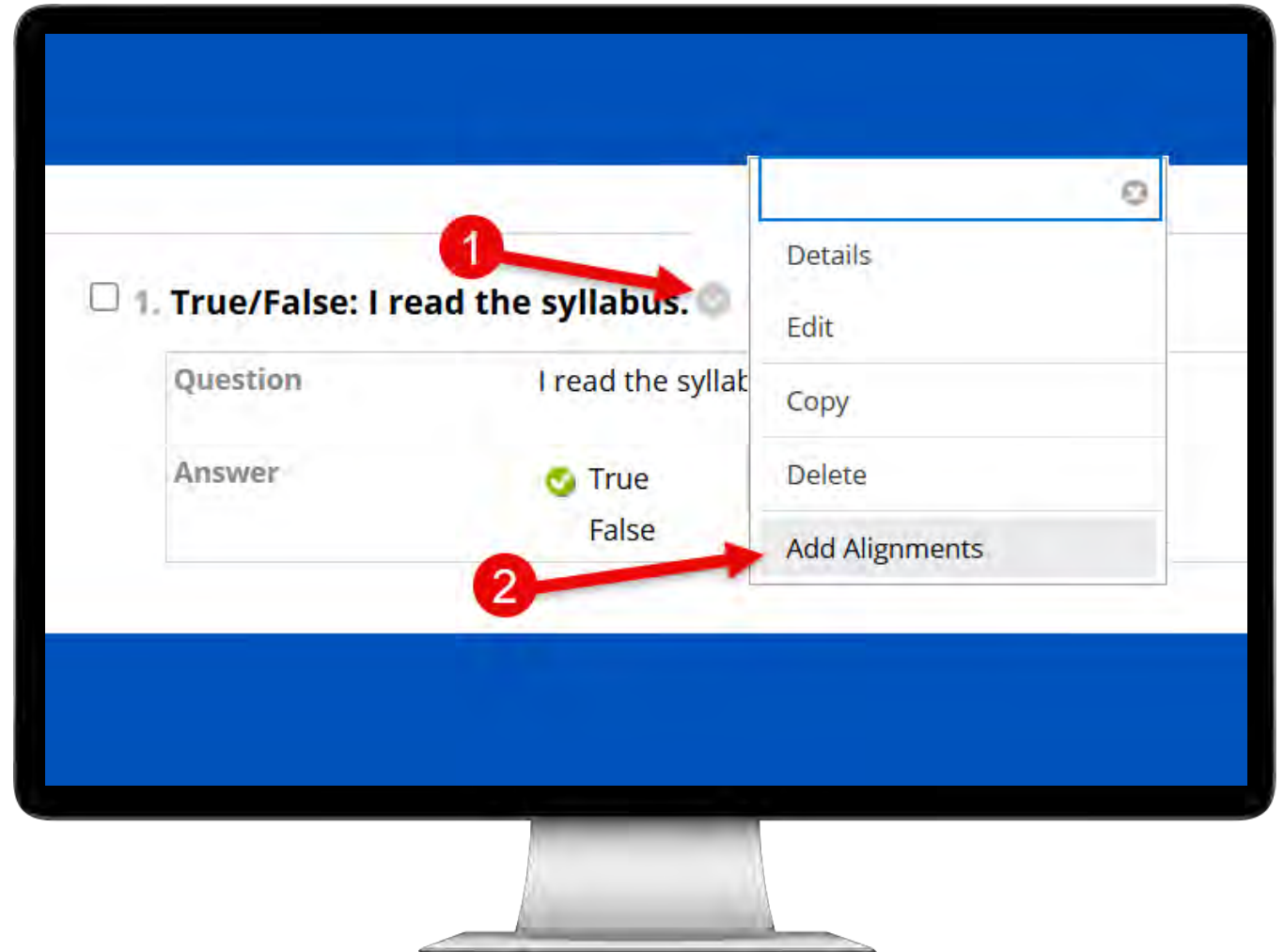
<http://bit.ly/4lM0RC9>

Aligning Assessments to Goals



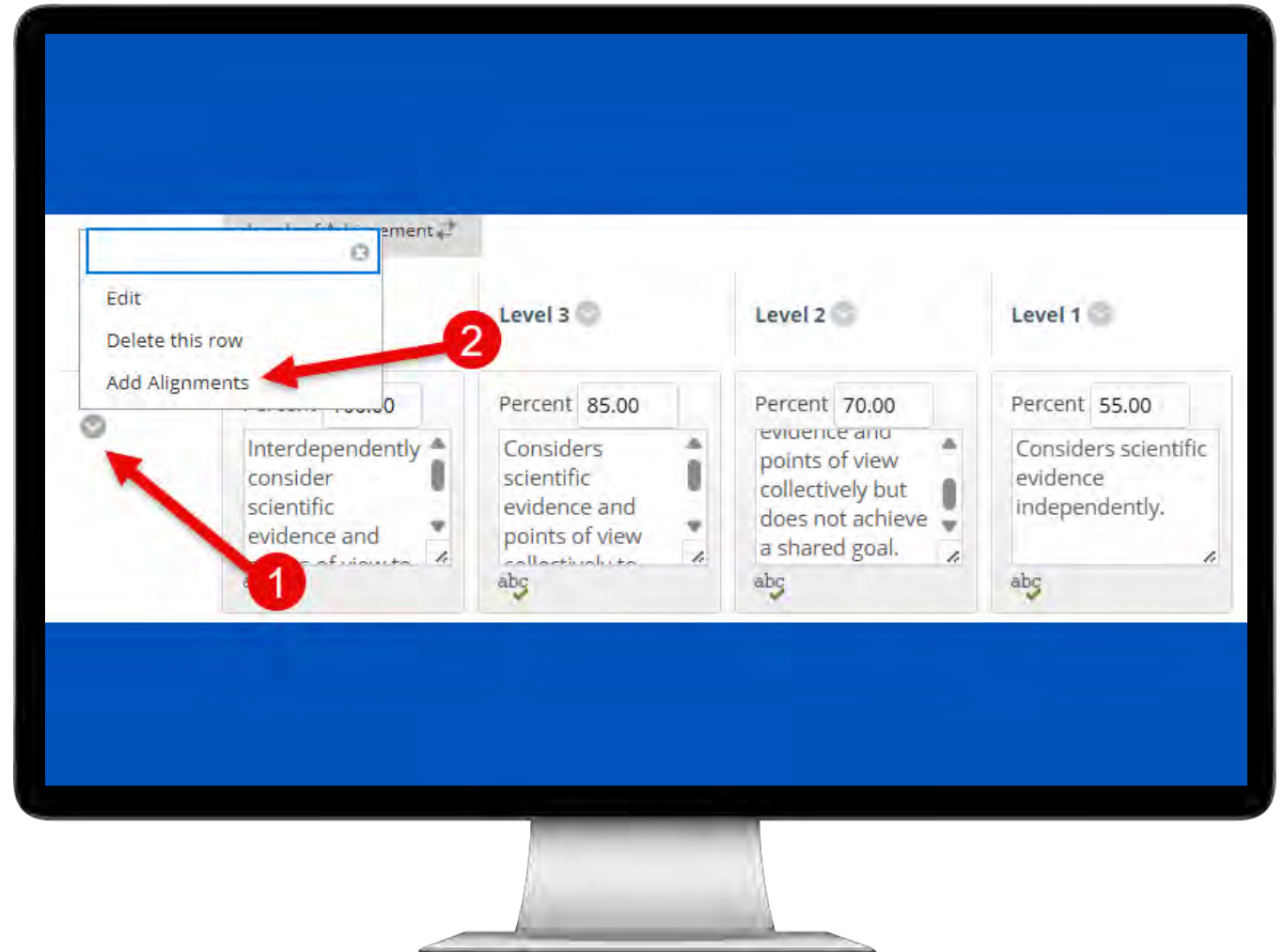
Align Test Question to Goal

- Implementation began in 2018 with Nursing programs.
- EAC Visual Data Item Analysis Report meets program and accreditation needs.
- More on that to come . . .



Align Rubric Row to Goal

- First broader implementation began with 2019 QEP focused on Critical Thinking.
- EAC Visual Data Rubric and Goals Reports met assessment and accreditation needs.
- More on that to come . . .





Rubric “Wishlist”

- Functionality in Learn allowed saving and exporting any rubric to a .zip file. That could be imported into any other course.
- This is how we completed college-wide assessment related to Oral Communication and Critical Thinking.

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Save / Share / Export Rubrics

Rubrics are an essential part of marking and more and more are being required by accrediting bodies for outcomes assessment and marking quality.

The need to be able to save, export or share rubrics is becoming essential. We can now copy from one course to another (if you have access to both) which is a step forward.

But there is still no way to save or export a rubric from Blackboard.

Why do we need this?

1. it's a great starting point for a new colleague to visit their site. Often these people don't have access to copy rubrics to copy into their course, then they have to complete the copy.
2. accrediting bodies are asking for rubrics now that it can be shared externally.

RELATED IDEAS

- Provide means for direct export/import of tests, rubrics, etc.
- Ability to export graded assignments and rubrics.


Status: Future consideration

Product: [Blackboard](#)

Categories: [Assignments and tests](#)

Created by: Lauren Hives

Created on: Sep 6, 2022



<http://bit.ly/478pFQc>

Goal type: All Types

Browse Criteria

View Reset to Default

Source

- System

Goal Set Type

- All Set Types
- Academic
- General Education
- Health Science
- Institutional Learning Outcomes
- Technical

Goal Set

- All Goal Sets
- Accounting
- Air Conditioning Technology
- Art and Design
- Automotive Technology+
- Biomanufacturing Technology
- Biomedical Equipment Repair
- Business


| GOAL | GOAL SET |
|---|------------------|
| <input type="checkbox"/> NATSCI-2NATSCI-PLO-01-00 - NATSCI-2NATSCI-PLO-01-00: Collect, organize, and evaluate relevant data from credible sources to draw logical conclusions. | Natural Sciences |
| <input type="checkbox"/> NATSCI-2NATSCI-PLO-02-00 - NATSCI-2NATSCI-PLO-02-00: Communicate scientific principles, experiments, or investigations in written, oral and/or visual formats. | Natural Sciences |
| <input type="checkbox"/> NATSCI-2NATSCI-PLO-03-00 - NATSCI-2NATSCI-PLO-03-00: Utilize quantitative and empirical skills to analyze and explain natural science phenomena. | Natural Sciences |
| <input checked="" type="checkbox"/> NATSCI-2NATSCI-PLO-04-00 - NATSCI-2NATSCI-PLO-04-00: Interdependently consider scientific evidence and points of view to achieve a shared goal. | Natural Sciences |
| <input type="checkbox"/> NATSCI-2NATSCI-PLO-05-00 - NATSCI-2NATSCI-PLO-05-00: Develop investigative skills based on scientific evidence to make ethical decisions. | Natural Sciences |
| <input type="checkbox"/> NATSCI-2NATSCI-PLO-06-00 - NATSCI-2NATSCI-PLO-06-00: Apply scientific reasoning and principles to real world situations to make informed decisions. | Natural Sciences |
| <input type="checkbox"/> NATSCI-2NATSCI-PLO-07-00 - NATSCI-2NATSCI-PLO-07-00: Explain, describe, or identify scientific knowledge and content. | Natural Sciences |


Alignment, Goal Selection

- Organized alphabetically by Goal Set which corresponds to program/discipline.
- Goal Alignments persist through course copy.

Goals Alignment “Wishlist”

- Alignment is a binary checkbox.
- Want to indicate the *phase of assessment* at point of alignment.
- Current workaround is to create goals *in triplicate*, one for each phase.
- Differentiating summative assessment from formative or diagnostic in reports is an absolute necessity. *EAC will be able to filter reports by phase once the data are available in the system.*


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Status Future consideration

Product Blackboard

Categories Mastery Learning

Created by Chris Duke

Created on May 3, 2023

RELATED IDEAS


- EAC Reporting Issue for LTI Tool Assessment Alignments
- Goals & Alignment - Instructor Reports
- Add Goals to Rubrics Before, During, After Grading
- Course Coverage Reports Include Rubric Aligned Goals
- Ability to be able to align goals to questions in bulk

Differentiate phases of assessment when aligning goals, e.g., diagnostic, formative, summative

Current Limitation: Alignment of an outcome is a binary check-box: On/Off. The limitation is that we are finding is that not all alignments are equal. Faculty are wanting to align multiple instances of assessing a particular outcome so that they can leverage the goals reports throughout a course: early in the term, middle of the term, and end of the term. That allows them to evaluate student progress across the learning cycle with respect to the program outcomes (goals). However, the system cannot discern between diagnostic, formative, or summative assessment, so our IE team, our faculty, our program directors and department chairs are faced with confounded reports that include assessment results from across all phases of instruction.

Proposed Solution: Add an option in the system configuratio “Alignments” and (b) add the number, order, and text of optio down when aligning an assessment item (test question or rul current, binary check-box).

Use case: Our institution would turn on Tiered Alignments an apply. That’s the language we have used internally for quite : diagnostic/baseline, formative, summative. When aligning as which phase of assessment. The EAC goals reports will then assessment. Faculty during a course may focus more on diaç directors focused on student success in the program will foc

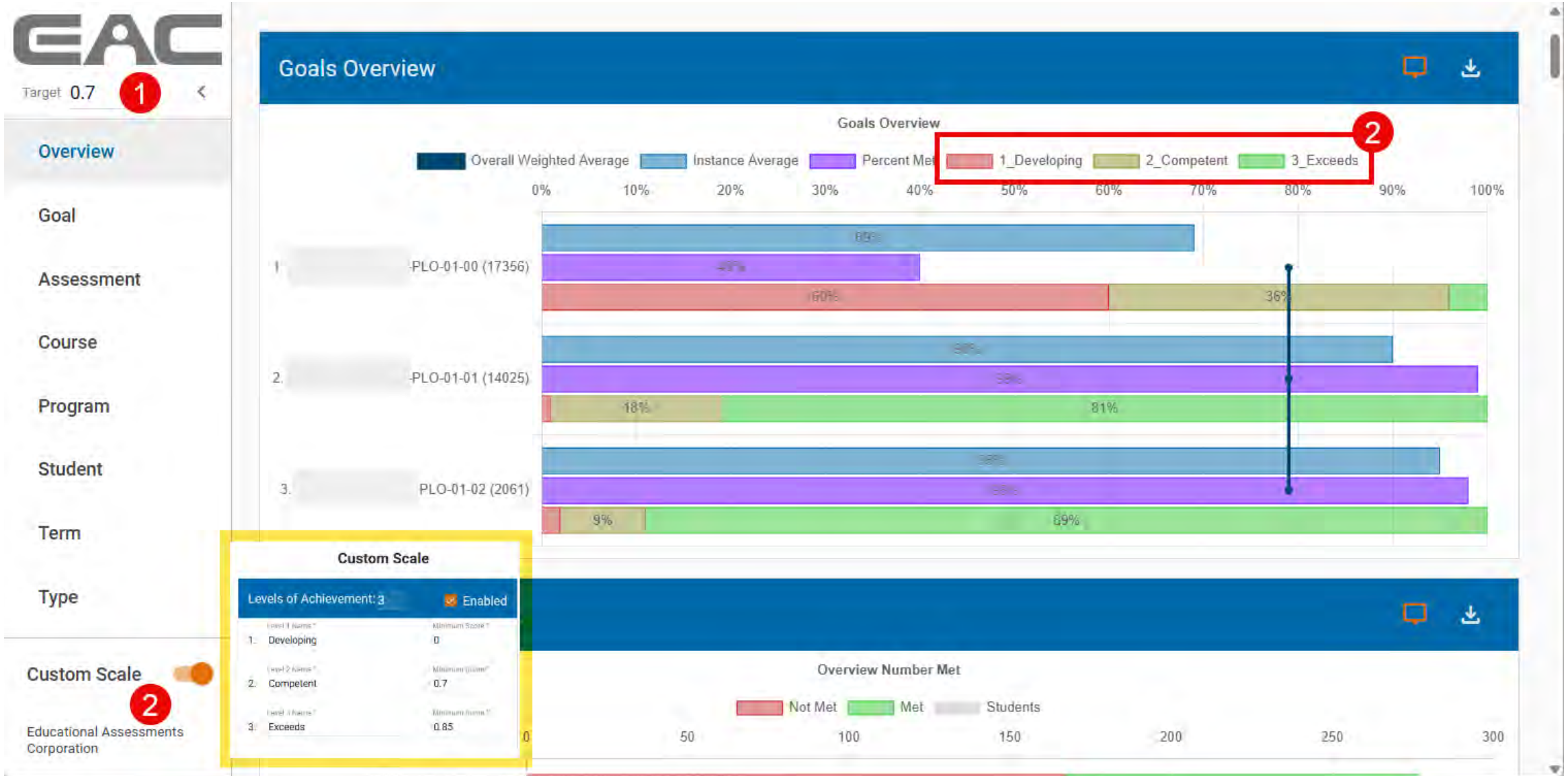


<http://bit.ly/4lRVTUv>

Real-time Reports with EAC Visual Data




Goals Report, College-wide





Test Report, Flexible Scope



Final Exam (12/2/2024 - 7/29/2025)

Downloads: STANDARD, SUMMARY, FULL, CURRENT


Item Analysis

Jump To 1 DI 27

| No. | Title | Question | P-Value | Point Biserial | Cronbach Del | DI (27) |
|-----|--------------------------|--|---------|----------------|--------------|---------|
| 39 | Missing the questions Ti | stands for: | 0.95 | 0.25 | NA | 0.14 |
| 40 | Missing the questions Ti | All of the following are examples of radiation: the sun, microwaves, and radiofrequency. | 0.85 | -0.02 | NA | 0.03 |

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Rubric Report, Flexible Scope

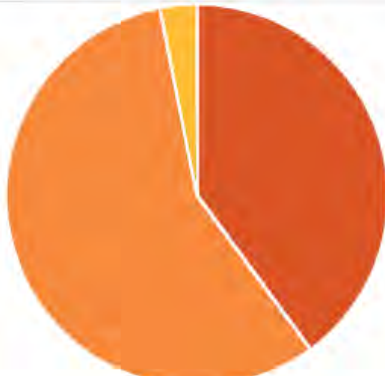



Downloads
Target 0.6

STANDARD
 SUMMARY
 FULL
 CURRENT

Student Semester Clinical Evaluation (2024-09-23 - 2025-07-29)

Details
Jump To

| No | Row | Average | Levels Of Achievement | Distribution |
|----|---|---------|--|---|
| 19 | 6a. Clinical Ability: Student properly interprets phy | 0.87 | <ul style="list-style-type: none"> ■ 205 (39.9%) Always meets performance star ■ 293 (57.0%) Often meets performance stand ■ 16 (3.1%) Sometimes meets performance st ■ 0 (0.0%) Seldom meets performance standa ■ 0 (0.0%) Never meets performance standard |  |
| 20 | 6b. Clinical Ability: Student correctly evaluates ima | 0.83 | <ul style="list-style-type: none"> ■ 96 (18.7%) Always meets performance stanc ■ 410 (79.8%) Often meets performance stand ■ 8 (1.6%) Sometimes meets performance sta ■ 0 (0.0%) Seldom meets performance standa |  |

- + Courses Included
- + Summary Statistics
- + Row Analysis
- + Student Rows
- **Details**
- + Goals Summary
- + Student Goals

- Levels Of Achievement
- Goals Manager

ImprovE, a new institutional methodology



Method-to-Culture Alignment

Effectiveness Methods

circa 1998

- Annual or semester cycle
- Program-level accountability
- College/program-wide
- Quantitative data
- Excel-based
- SACSCOC-centered

Institutional Culture

2022 following 15+ years of influences

- Continuous, day-to-day, just-in-time
- Individual accountability
- Varying scope/scale
- Mixed methods
- Database-driven
- Faculty/innovation-centered
- Plan-Do-Check-Act



Improve

INSTITUTIONAL EFFECTIVENESS

Faculty share their expertise



Faculty give students opportunity to perform



Faculty assess student performance



Our most valuable knowledge asset

Faculty devise and implement improvements



Faculty evaluate the effect of the improvement



Faculty document & reflect on learning and improvement process



“Faculty Development” approach to Assessment

ImprovE

- Focuses on pedagogy and classroom assessment
- (Includes but) does not focus exclusively on quantitative data analysis
- Leverages faculty professional judgement and expertise in the classroom as qualitative data
- Create spaces for faculty to discuss teaching and learning and continuous improvement, e.g., College Community Day panels

David Eubanks

Assistant Vice President
at Furman University

LinkedIn: <http://bit.ly/3HbYRE5>

“Accreditation + Assessment: What went wrong?”

Continuous Improvement Summit
February 2025 @ Embry-Riddle
Aeronautical University

<http://bit.ly/3Uzkdhl>

| Information | |
|------------------|--|
| Plan Title/Name: | Include keywords that make the report easily located through search. |
| Award Code: | (Instructional Only) e.g., 1COMM or 2COSCI or 3WLD; may include multiple Awards. |
| Discipline/ | e.g., "English" or "Welding" or Business Management"; or, for support services, "Student |

| Relevant Goals, Priorities, or Measures |
|---|
| <i>(Click the links and read College definitions & professional standards for each outcome before alignment)</i> <i>(Only select alignments that are applicable to the extent that this report would be a relevant artifact)</i> |
| College Goals: |
| <input type="checkbox"/> Break Barriers <input type="checkbox"/> Optimize Systems <input type="checkbox"/> Leverage Partnerships <input type="checkbox"/> Demonstrate Belonging |

ImprovE Report

(2-page template)

| Data | |
|--|---|
| Data Reviewed: | List, describe, and analyze the qualitative or quantitative data that prompted the planned improvement. Include ONLY aggregated and summarized data; MUST explicitly OMIT Personally Identifiable Information (PII) per FERPA and other regulations. |
| Relevant Outcomes | |
| <i>(Click the links and read College definitions & professional standards for each outcome before alignment)</i> | |
| Program Outcomes: <i>(on-site or VPN required)</i> | Identify relevant Program Outcomes (includes general education for instructional programs) |
| Plan, Do, Check, Act | |
| Plan: | Include relationship of the plan to selected outcomes. Explain how the plan will be evaluated. |
| Do: | Explain any adjustments to the original Plan and the rationale for those changes. If there were no notable changes, "Plan implemented as described" is sufficient. |
| Check: | Compare the observed results to the original Data reviewed. Evaluate the success of the improvement based on the desired results in Plan. |
| Act: | Discuss potential next steps and implications of observed results. i.e., "What happens next?" |
| Resolution | |
| Nature of Result: | <input type="checkbox"/> Positive Result <input type="checkbox"/> Indifferent/Inconclusive Result <input type="checkbox"/> Negative Result |
| Next Steps: | <input type="checkbox"/> Do Not Repeat <input type="checkbox"/> Additional Iteration <input type="checkbox"/> Consider for Scale, Program-Specific <input type="checkbox"/> No Further Action <input type="checkbox"/> Maintain Practice <input type="checkbox"/> Consider for Scale, Program-Agnostic |

| <input type="checkbox"/> Persistence | <input type="checkbox"/> Student Loan Default Rate | <input type="checkbox"/> Licensure/Cert Rate |
|---|--|---|
| | <input type="checkbox"/> Average Student Debt | <input type="checkbox"/> Favorable Outcomes |
| Program Review: | | |
| <input type="checkbox"/> Program Purpose | <input type="checkbox"/> Access, Belonging, & Excellence | <input type="checkbox"/> Financial Resources |
| <input type="checkbox"/> Learning Outcome Success | <input type="checkbox"/> HR: Personnel Needs | <input type="checkbox"/> Technology & Learning Resources |
| <input type="checkbox"/> Operational Outcome Success | <input type="checkbox"/> HR: Development and Training | <input type="checkbox"/> Library Resources <i>(instructional only)</i> |
| <input type="checkbox"/> Assessment (Methodology) | <input type="checkbox"/> Communication and Collaboration | <input type="checkbox"/> Facilities and Infrastructure |
| <input type="checkbox"/> Needs Not Met <input type="checkbox"/> Nice to Have <input type="checkbox"/> Needs Met | | |
| Initiatives/Projects: | | |
| e.g., Mosaic Program or Open Educational Resources (OER) | | |
| Referenced Report(s) | | |
| <i>(List any report(s) that was a direct precedent, relevant resource, or important inspiration to this improvement; enter either the report ID(s) or paste in direct report link(s) from ImprovE Insights)</i> | | |
| e.g., 12345678901 or https://improve.sanjac.edu/index.html?uid=12345678901 | | |
| Unique ID (for IE Office Use Only): | | |
| Form Version: | 2.1.1 | |

All information required to understand the report MUST BE INCLUDED ABOVE in the body of the report.
 ----- END OF TEMPLATE, OPTIONAL ATTACHED/COPIED CONTENT FOLLOWS BELOW -----
 ----- THIS SUPPLEMENTAL CONTENT WILL NOT BE AVAILABLE FOR SEARCHING OR REPORTING. -----

ImprovE Report: Information

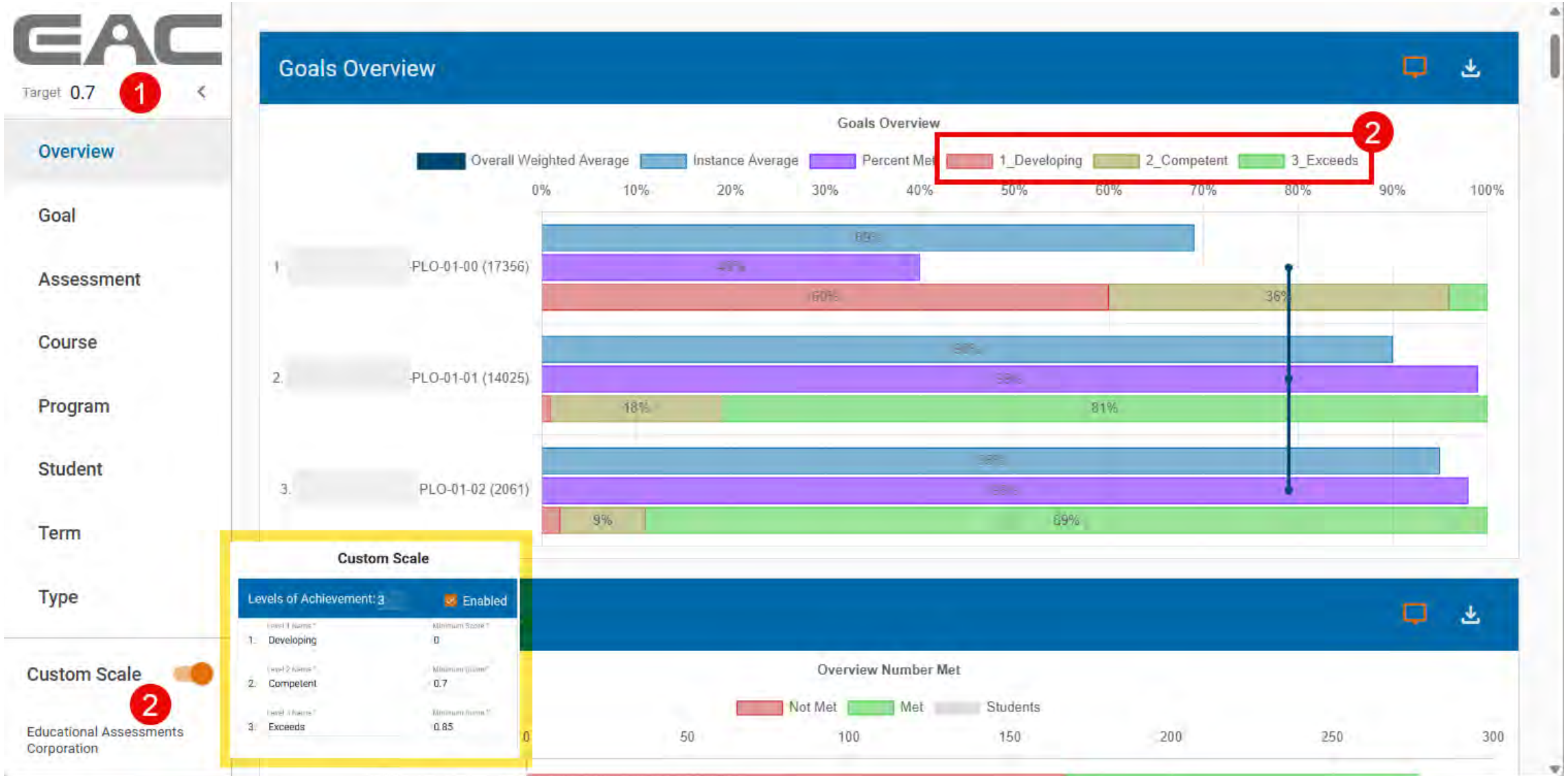
| Information | |
|-------------------------------------|---|
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| Award Code: | (Instructional Only) e.g., 1COMM or 2COSCI or 3WLD, may include multiple Awards. |
| Discipline/ Department: | e.g., "English" or "Welding" or Business Management"; or, for support services, "Student Services: Admissions" or "Fiscal Affairs: Facilities" or "Human Resources: OTD" |
| Participating Faculty/Employees: | Include work email addresses for all participants, e.g., "Jane.Doe@sjcd.edu" or "John Doe <john.doe@sjcd.edu>" or "Dean Doe (jeffrey.doe@uh.edu)" |
| Scope: | Choose an item. Relevant Campus(es): <input type="checkbox"/>C <input type="checkbox"/>N <input type="checkbox"/>S <input type="checkbox"/>G <input type="checkbox"/>M <input type="checkbox"/>O <input type="checkbox"/>D |
| Executive Summary (Abstract): | Written summary after completing all parts of an ImprovE report (Data-Outcomes-Plan-Do-Check-Act), recommended length of 100 words or less) |
| Status | |

- Collaborative, multiple participants or departments
- Scalable scope: individual classroom, multiple classrooms, program or campus-wide, college-wide.

ImprovE Report: Data and Outcomes

| Data | |
|--|---|
| Data Reviewed: | List, describe, and analyze the qualitative or quantitative data that prompted the planned improvement. Include ONLY aggregated and summarized data; MUST explicitly OMIT Personally Identifiable Information (PII) per FERPA and other regulations. |
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| <i>(Click the links and read College definitions & professional standards for each outcome before alignment)</i> | |
| Program Outcomes: <i>(on-site or VPN required)</i> | Identify relevant Program Outcomes (includes general education for instructional programs). |
| Plan, Do, Check, Act | |
| Plan: | Include a portion of the plan to select outcomes |

Goals Report, Flexible Scope



From David Eubanks Keynote @ Embry-Riddle CI Summit, February 2025

2023 Peer Reviewer Interviews

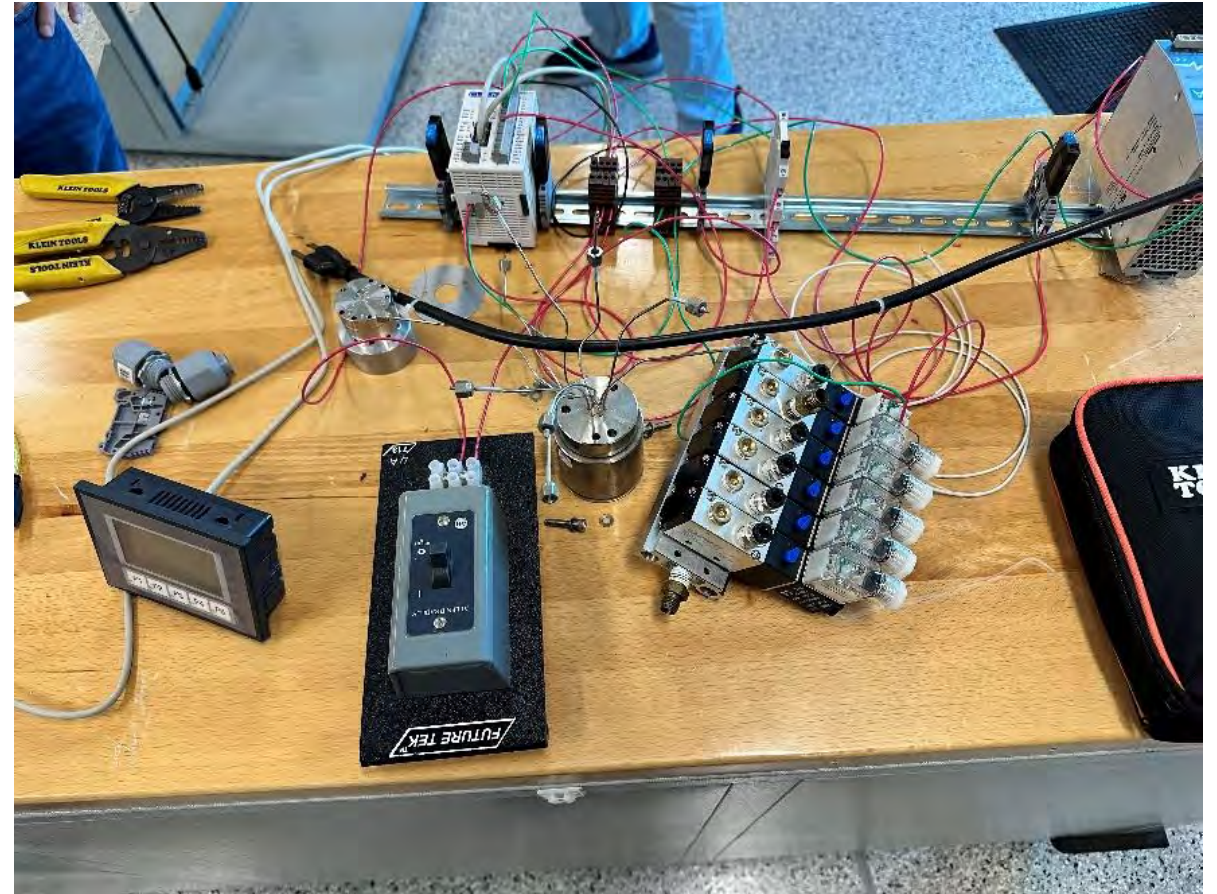
Q: Would the data typically used in a program report pass a rigorous test of data quality?

A: No, and it probably can't. At my institution they don't write assessment reports. We found that reports were just written for compliance, not meaning. Assessment is embedded into program review and is more narrative. No problems with HLC peer reviewers.

A: But faculty subjective knowledge is good enough.



Teaching with an “Exploded View” of a Programmable Logic Controller



ImprovE Report: Plan, Do, Check, Act

| Plan, Do, Check, Act | |
|----------------------|---|
| Plan: | Include relationship of the plan to selected outcomes. Explain how the plan will be evaluated. |
| Do: | Explain any adjustments to the original Plan and the rationale for those changes. If there were no notable changes, “Plan implemented as described” is sufficient. |
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| Nature of Result: | <input type="checkbox"/> Positive Result <input type="checkbox"/> Indifferent/Inconclusive Result <input type="checkbox"/> Negative Result |
| Next Steps: | <input type="checkbox"/> Do Not Repeat <input type="checkbox"/> Additional Iteration <input type="checkbox"/> Consider for Scale, Program-Specific <input type="checkbox"/> No Further Action <input type="checkbox"/> Maintain Practice <input type="checkbox"/> Consider for Scale, Program-Agnostic |

- *Check* (close the loop) is a much more natural part of the process.
- *Act* includes the nature of the result and next steps, e.g., “Consider for Scale”

Test Report, Flexible Scope

EAC

Final Exam (12/2/2024 - 7/29/2025)

Downloads: STANDARD, SUMMARY, FULL, CURRENT

Item Analysis


Jump To 1 DI 27

| No. | Title | Question | P-Value | Point Biserial | Cronbach Del | DI (27) |
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are all mo

Goals Manager 3

Rubric Report, Flexible Scope



☆ <

Student Semester Clinical Evaluation (2024-09-23 - 2025-07-29)

Target 0.6

STANDARD
SUMMARY
FULL
CURRENT

Details
Jump To
↺ ↻ ↗ ⬇

| No | Row | Average | Levels Of Achievement | Distribution |
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- + Courses Included
- + Summary Statistics
- + Row Analysis
- + Student Rows
- **Details**
- + Goals Summary
- + Student Goals

- Levels Of Achievement
- Goals Manager

ImprovE Report: Maximize Knowledge Use

- Alignment to Goals, Priorities, Strategic Metrics, Program Review framework is simplified.
- “Initiatives/Projects” hashtags, e.g., #AlintheClassroom can be included.
- “Referenced Reports” for identifying the “reach” or “impact” of a report is possible.

| Relevant Goals, Priorities, or Measures | | | |
|---|--|---|--|
| <i>(Click the links and read College definitions & professional standards for each outcome before alignment)</i> | | | |
| <i>(Only select alignments that are applicable to the extent that this report would be a relevant artifact)</i> | | | |
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| <input type="checkbox"/> Break Barriers | <input type="checkbox"/> Optimize Systems | <input type="checkbox"/> Leverage Partnerships | <input type="checkbox"/> Demonstrate Belonging |
| <u>Annual Priorities:</u> | | | |
| <input type="checkbox"/> B1 Expand Access | <input type="checkbox"/> O1 Establish Pathways | <input type="checkbox"/> L1 Build Engaged Learning | <input type="checkbox"/> D1 Create Welcoming Culture |
| <input type="checkbox"/> B2 Connect Support | <input type="checkbox"/> O2 Student Success | <input type="checkbox"/> L2 Expand Community | <input type="checkbox"/> D2 Develop Employees |
| <input type="checkbox"/> B3 Grow Financial Aid | <input type="checkbox"/> O3 Data-Driven Improve | <input type="checkbox"/> L3 Cultivate Prosperity | <input type="checkbox"/> D3 Invest in Our People |
| <u>Student Success Strategic Measures:</u> | | | |
| Entering | Continuing | Completing | Achieving |
| <input type="checkbox"/> Admissions to Enroll Efficiency | <input type="checkbox"/> Pathways Consistency | <input type="checkbox"/> Degrees/Certs Awarded | <input type="checkbox"/> Transfer Rate |
| <input type="checkbox"/> Headcount (Unduplicated) | <input type="checkbox"/> Pathways Efficiency | <input type="checkbox"/> Degrees/Certs in Critical Fields | <input type="checkbox"/> Transferability |
| <input type="checkbox"/> Financial Aid Un/Met Need | <input type="checkbox"/> Pathways Velocity | <input type="checkbox"/> Graduation Rate: 2yr, 3yr, 4yr | <input type="checkbox"/> Completion After Transfer |
| <input type="checkbox"/> High School Capture Rate | <input type="checkbox"/> Student Success (A-C) | <input type="checkbox"/> Average Time to Completion | <input type="checkbox"/> Employment Rate |
| | <input type="checkbox"/> Retention Rate | <input type="checkbox"/> Semester Credit Hrs to Degree | <input type="checkbox"/> Earnings After Completion |
| | <input type="checkbox"/> Persistence | <input type="checkbox"/> Student Loan Default Rate | <input type="checkbox"/> Licensure/Cert Rate |
| | | <input type="checkbox"/> Average Student Debt | <input type="checkbox"/> Favorable Outcomes |
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| | <input type="checkbox"/> Needs Not Met | <input type="checkbox"/> Nice to Have | <input type="checkbox"/> Needs Met |
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| e.g., 12345678901 or https://improve.sanjac.edu/index.html?uid=12345678901 | | | |

Continuous Improvement Business Intelligence & Knowledge Management





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PROGRAM DIRECTORY

| [Academic](#) | [Health Science](#) | [Technical](#) | [Institutional](#) | [Academic Support](#) | [Administrative Support](#) | [Student Support](#) |

Academic

[Business AA \(1BUSINESS\)](#)

[Communications AA \(1COMM\)](#)

[Computer Science AS \(2COSCI\)](#)

[Criminal Justice AA \(1CRIMJUS\)](#)

[Education BAS \(BAS-EDU\)](#)

[Engineering AS \(2ENGINEER\)](#)

[IT-Web Application Dev AAS \(3IT-WBDV\)](#)

[Instrumentation AAS \(3INST\)](#)

[Instrumentation Tech ESC \(EINST\)](#)

[Maritime Transportation AAS \(3MARITIME\)](#)

[Massage Therapy Cert \(4MASG-THRP\)](#)

[Music-Recording AAS \(3MUS-RCRD\)](#)

[Nondestructive Testing AAS \(3INSP-NDT\)](#)

[Paralegal AAS \(3PARA-LGL\)](#)

[Pipefitting/Fabricator OC \(6PIPEFIT\)](#)

[Plumbing Technology, OC \(6PLMB\)](#)

[Process Tech Chem Techncn ESC \(EPROT-CT\)](#)

[Process Technology AAS \(3PROT\)](#)

[Real Estate AAS \(3REAL\)](#)

[Welding Tech AAS \(3WLD\)](#)


PROGRAM SUMMARY:

Natural Science AS (2NATSCI)

Innovations

 [Signature Assignment on Enzymes for BIOL 1306/1106](#)


David Lang, Katlynn Colquitt, Jose Rivera, Erica Taylor, Anton Solovyov, and Desiree Wilson

 [Natural Science Program Outcome Assessment – 2022-2023 Data](#)

Department Chairs Connie Gomez, Sharon Nelson, Lambrini Nicopoulos, Tyler Olivier, (PI) Faculty - Developed Or Review Questions In 2023 Paul Barron, (C) JohnFranklin Dzuryak (GP) Festus Fajuyigbe, (GP) Paul Goains, (N) Cecily Haley, (S) Bennie Jenkins, (N) Danielle McGrath, (GP) Tyler Olivier, (GP) Malcolm Sadler, (C) Faculty – Assessed Program Outcomes In This Study Chris Allen, (GP) Paul Barron, (C) Rama Damarwinasis, (S) Usha Devathosh, (GP) Ngoc Du, (C) JohnFranklin Dzuryak (GP) Jennifer Gernand, (S) Paul Goains

Exemplars

 [Improvement to the Physics I Free Fall Lab](#)
Andrew Whitley

 [Implementation of Class Scribe in Online Course to Improve Note-Taking Skills](#)
Natandra Gradney

 [Collaborative Grading for Instant Feedback from Instructors to Students](#)
Festus Fajuyigbe

 [Improve students understanding of A&P \(BIOL2301\) concepts.](#)
Archana Kumar

 [Free Fall Lab Experiment to Increase Student](#)

2. Communicate scientific principles, experiments, or investigations in written, oral and/or visual formats.
(NATSCI-2NATSCI-PLO-02-00)

12 weeks

Completed:

- 💡 [Signature Assignment on Enzymes for BIOL 1306/1106](#)
David Lang, Katlynn Colquitt, Jose Rivera, Erica Taylor, Anton Solovyov, and Desiree Wilson
- 💡 [Natural Science Program Outcome Assessment – 2022-2023 Data](#)
Department Chairs Connie Gomez, Sharon Nelson, Lambrini Nicopoulos, Tyler Olivier, (PI) Faculty - Developed Or Review Questions In 2023 Paul Barron, (C) JohnFranklin Dzuryak (GP) Festus Fajuyigbe, (GP) Paul Goains, (N) Cecily Haley, (S) Bennie Jenkins, (N) Danielle McGrath, (GP) Tyler Olivier, (GP) Malcolm Sadler, (C) Faculty – Assessed Program Outcomes In This Study Chris Allen, (GP) Paul Barron, (C) Rama Damarwinasis, (S) Usha Devathosh, (GP) Ngoc Du, (C) JohnFranklin Dzuryak (GP) Jennifer Gernand, (S) Paul Goains, (N) Bennie Jenkins, (N) Jennifer Ludlow, (C) Lewis Moore, (GP) Kristy Mueck, (GP) Sheema Nasir, (S) Robert Nieto, (GP) Jean Nono, (S) Jose Nunez, (S) Tyler Olivier, (GP) Valerie Santillan, (S) Faryal Shaukat, (S) Rodrigo Vinluan, and (C)
- [Flexible deadlines and equitable grading in science lab classes; skill assessments](#)
Liana Boop and Doug John

REPORT DETAILS

Teaching with an “Exploded View” of a Programmable Logic Controller Jonathan.Whitlock | Joseph.Zwiercan


Executive Summary:
Students were struggling with a critical plant operation. They were unable to explain what happened in the system . We purchase d the component parts necessary to construct an “exploded view” of a PLC . Students were better able to complete the assignment going from a 5% success rate to a 100% success rate.

Filename: [EINST_IP_MAY2024_ExplodedViewOfPLC.docx](#)

Progress Status:
Completed

End Date: 5/10/2024

Last Activity:
04/15/2025

 **Resolution:** Positive Result -- Consider for Scale, Program-Specific -- Maintain Practice -- Consider for Scale, Program-Agnostic

Relevant Goals, Priorities, or Measures

Annual Priorities:
Career and Workforce Pathways

College Goals:
Student Success

Program Review:
Learning Outcome Success

QEP Outcomes:
None

Student Success Strategic Measures:
None

| | |
|---|---|
| Instrumentation | |
| Jonathan.Whitlock@sjcd.edu Joseph.Zwiercan@sjcd.edu | |
| Individual Report | Relevant Campus(es): <input checked="" type="checkbox"/> C <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> G <input type="checkbox"/> M <input type="checkbox"/> D |
| Summary | Students were struggling with a critical plant operation. They were unable to explain what happened in the system. We purchased the component parts necessary to construct an "exploded view" of a PLC. Students were better able to complete the assignment going from a 5% success rate to a 100% success rate. |
| 1/15/2024 | |
| Approx.): | 5/10/2024 |
| Status: | Completed |

The students were working on the Continuous Emissions Monitoring System (CEMS). EPA regulates this at the plants, and this is of release of parts per billion (PPB) to the atmosphere. Plants must remain in compliance and not exceed the permitted value. This can result in fines &/or imprisonment. This is very critical to plant operations. Students were not grasping this concept. Working with them in the instrumentation lab, they were asked to make changes at a PLC panel and explain what happened in the system as a result. From my observations, all of the students were having difficulty explaining the inner workings of the PLC/ device/analyzer. They didn't comprehend how the readings were being gathered and recorded. More than 90% of the students struggled with the assignment.



| | | | |
|--|--|--|--------------------------------------|
| QEP Outcomes: <i>(for instructional only)</i> | <input type="checkbox"/> Explanation of Issues | <input type="checkbox"/> Influence of Context and Assumptions | <input type="checkbox"/> Conclusions |
| | <input type="checkbox"/> Evidence | <input type="checkbox"/> Perspectives and Complexities of Issues | |

Plan, Do, Check, Act

| | |
|--------|---|
| Plan: | The plan is to purchase the component parts necessary to construct an "exploded view" of a PLC. Students will engage program the system and then observe the effect of the programming on each component part. The intent is for students to more closely and more easily observe each component of the system. |
| Do: | Plan implemented as described. I did discover during the process that one component had not been included very explicitly in the course. The explanation and student experience with the mod bus component greatly improved their understanding of the system. |
| | |
| Check: | After implementing this instructional change, we repeated the original assignment. The number of students successfully explaining the changes in the system produced by changes at the panel increased from 5% to 100%. |
| Act: | Students will build this on a smaller scale as this was a light bulb moment for them. Content regarding the mod bus is being (or has been) added to all other relevant courses. This improvement to instruction will be maintained as part of the course in the future. |

MS

Resolution

| | | | |
|-------------------|---|--|--|
| Nature of Result: | <input checked="" type="checkbox"/> Positive Result | <input type="checkbox"/> Indifferent/Inconclusive Result | <input type="checkbox"/> Negative Result |
| Next Steps: | <input type="checkbox"/> Do Not Repeat | <input type="checkbox"/> Additional Iteration | <input checked="" type="checkbox"/> Consider for Scale, Program-Specific |
| | <input type="checkbox"/> No Further Action | <input checked="" type="checkbox"/> Maintain Practice | <input checked="" type="checkbox"/> Consider for Scale, Program-Agnostic |

Relevant Goals, Priorities, or Measures

EAC Visual Data – Natural Science, College-wide Analysis

- Collaborative report leveraged EAC to analyze exam data across multiple sections of six courses (2 BIOL, 2 CHEM, GEOL, PHYS)
- 20+ faculty and all department chairs engaged

Simple Text Search:




Search

Improve Insights






[Main Index](#) | [Exemplars Gallery](#) | [Innovations Inventory](#)

EXEMPLARS GALLERY

Exemplar: Full Report

-  [Assessing empirical and quantitative reasoning in Psychology](#)
Kelly Barnes
-  [Utilizing Cloud-Based Solutions to Streamline Travel Expenditure Reporting](#)
Andrea Dubois, Matthew Pinney, Amberly Dalton, and Nicole Lenderman
-  [Explaining Peer Review: An Interactive Approach](#)
Gregory Buchanan
-  [Personal Responsibility through Proper Planning](#)
Penny Oneal
-  [Using A.I. to Address Audience and Purpose](#)
Penny Oneal

Exemplar: Data Reviewed

-  [Efficacy of Flexible and Adaptive Learning within MATH 0342 Online Anytime](#)
Kelley Bennett
-  [PTA Utilization of Mock Therapy In-Service](#)
Susan Hinson and Mina Cauthen
-  [Intentional instructional and learning activity on the nursing judgement NLN category](#)
Kerri Hines and Monica Taylor
-  [Intentional instructional and learning activity on the Safety and Infection Control NCSBN category.](#)
Kerri Hines and Monica Taylor
-  [Intentional instructional and learning activity on the management of care NCSBN category.](#)

Simple Text Search:

Search




Improve Insights

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[Go to Support Services Innovations](#)

INSTRUCTIONAL INNOVATIONS INVENTORY

Program-Agnostic Instructional Innovations

-  [Enhance content retention and engagement with in-class games](#)
Nada Alnounou
-  [Integrating AI in Engineering Education for Enhanced Student Learning & Skill Development](#)
Orlando Taylor
-  [Improve General Knowledge in History](#)
Paul McRee

Program-Agnostic General Education Innovations

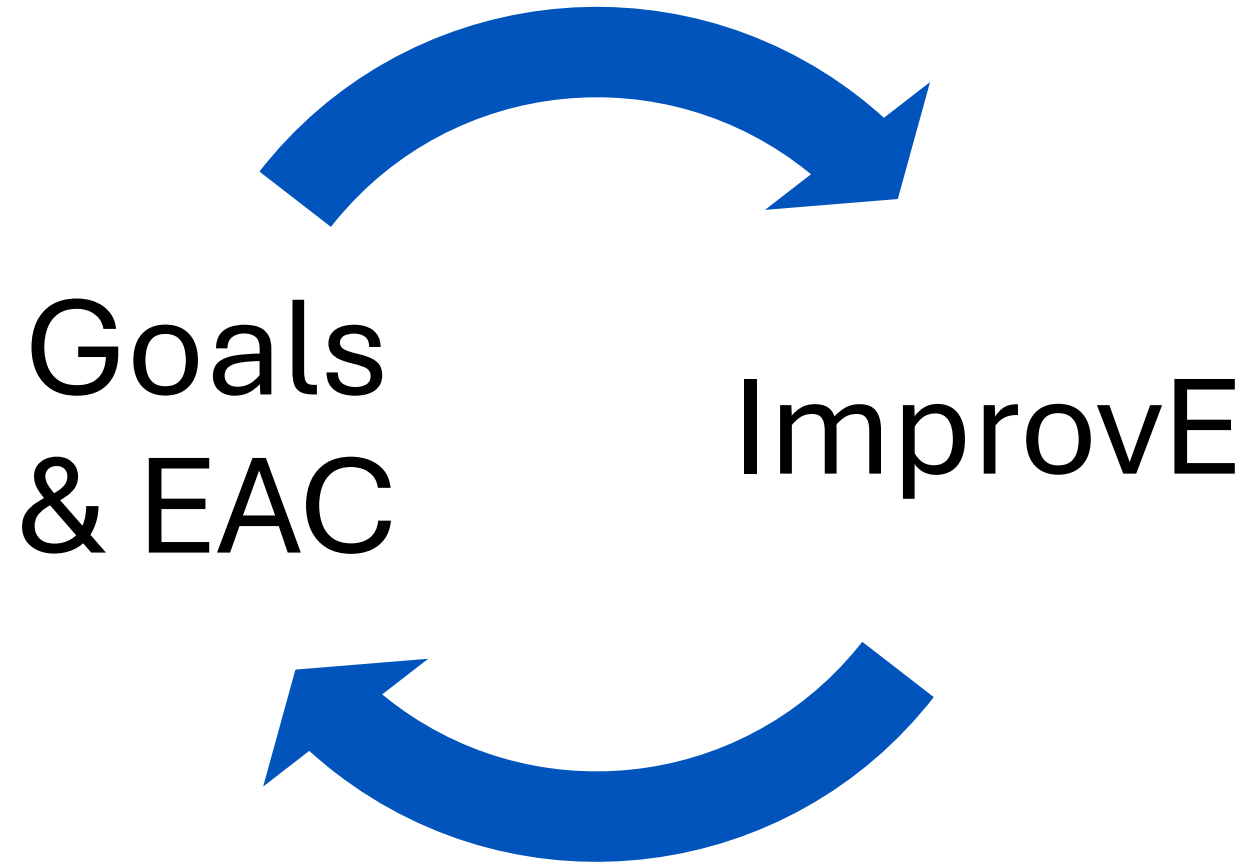
SJCGE-01-COM: Communication Skills

-  [Enhance content retention and engagement with in-class games](#)
Nada Alnounou

SJCGE-02-CT: Critical Thinking Skills

-  [Archival Literacy among Freshman in History](#)

Synergy



Accreditation takes a backseat . . .



ImprovE alignment to Accreditation Principles

| ImprovE Report | SACSCOC 8.2.a |
|--|---|
| Program Outcomes addressed by the report. | (a) Identifies expected outcomes |
| Data. What data did you review that prompted this improvement? | (b) Assesses extent to which it achieves outcomes |
| Plan. What do you plan to do, and how does the plan address the challenge highlighted by the data? | (c) Seeks improvement based on analysis of the results |
| Do. What did you actually do? Describe any changes or adjustments to the original plan. | (c) Seeks improvement based on analysis of the results |
| Check. What results were observed after implementation? What conclusions may be drawn? | (b) Assesses extent to which it achieves outcomes |
| Act. What are the next steps? What are the implications of the results of your plan? | (c) Seeks improvement based on analysis of the results |

Natural Science Associate of Science (2NATSCI)

Identifies expected outcomes

In addition to the program learning outcomes listed in this section, each individual Improve Report included in "Provides evidence of seeking improvement..." section below explicitly identifies, where relevant and appropriate, the specific program learning outcome addressed by the analysis and improvement.

Program Learning Outcomes

1. Collect, organize, and evaluate relevant data from credible sources to draw logical conclusions. (NATSCI-2NATSCI-PLO-01-00)
2. Communicate scientific principles, experiments, or investigations in written, oral and/or visual formats. (NATSCI-2NATSCI-PLO-02-00)
3. Utilize quantitative and empirical skills to analyze and explain natural science phenomena. (NATSCI-2NATSCI-PLO-03-00)
4. Interdependently consider scientific evidence and points of view to achieve a shared goal. (NATSCI-2NATSCI-PLO-04-00)
5. Develop investigative skills based on scientific evidence to make ethical decisions. (NATSCI-2NATSCI-PLO-05-00)
6. Apply scientific reasoning and principles to real world situations to make informed decisions. (NATSCI-2NATSCI-PLO-06-00)

Assesses student attainment of the learning outcomes

1. Improve Reports (see the "Provides evidence of seeking improvement..." section below) include assessment data at two points of the improvement process. The *Data Reviewed* section of the report describes the data that prompted the need for and planning of the improvement sought which is sufficient to document compliance with 8.2.a. In addition however, once the implementation of the improvement is completed, the *Check* section of the report includes data and observations regarding the results of the improvement which may inform future improvements and/or potential application of the improvement to other programs.
2. In addition to assessment data collected directly by faculty, the College facilitates institutional assessment processes and data collection that provide supplemental data sources. These **may** include (a) results of an institutional juried assessment of general education outcomes which are part of every associate and bachelor's degree program and (b) prior to a program's transition to EAC in Blackboard, college-wide program outcomes assessment guides.

This program of study performs program assessment using EAC in Blackboard for which program-wide reporting is completed by faculty or instructional leaders and incorporated directly into ImprovE Reports. That provides more real-time assessment data than the legacy system that produced the "Program Outcomes Assessment Guides."

- [General Education Report Written Communication](#)
- [General Education Report Critical Thinking](#)
- [General Education Report Empirical and Quantitative Reasoning](#)
- [General Education Report Social Responsibility](#)

Provides evidence of seeking improvement based on analysis of the results

1. Improve Reports (below) include evidence of seeking improvement at 2-3 points during the improvement process. The *Plan* section of the report identifies the original plan of the improvement sought which is sufficient to document compliance with 8.2.a. In addition however, additional evidence of seeking improvement may be documented (a) in the *Do* section if changes to the plan are made during implementation and (b) in the *Act* section which describes the future implications of the improvement.
2. In addition to the program specific Improve Reports listed below, all Improve Reports focused on the general education outcomes are documented in the [General Studies Associate of Arts \(AA, 1G-STUDY\)](#) program summary; each of those has potential relevance to all instructional programs given the inclusion of general education outcomes in each program.

- [Plan to improve scores in Equation Writing and Nomenclature](#)
- [Leveling up algebra skills needed in chemistry courses](#)
- [Instruction of SI \(International System\) Unit Prefixes](#)
- [Pre-Lecture Quizzes PHYSICS](#)
- [Use of animated PowerPoints as a substitute for lectures for online anytime physics courses.](#)
- [Proposal to Improve Students' Interpretation of Anatomy and Physiology Textbook Images](#)
- [Improve student success on critical thinking in the biology department BIOL1306](#)
- [Using Prelabs to Increase Equity and Student Success in Microbiology Lab \(BIOL 2120\)](#)
- [Adjustment of Exam Reviews in PHYS 1301](#)
- [Using an Exemplar and Think-Pair-Share Activity to Increase Critical Thinking Skills in BIOL 2120](#)

- [Increase study guide participation](#)
- [Use of Discussion Board on Vaccines to assess ethical and informed decisions.](#)
- [BIOL 2301 5 Unit Lecture Plan](#)
- [Improvement of Student-Professor Meetings \(early semester\) in PHYS](#)
- [Collaborative Review Guides Enhance Student Success, Teamwork, and Communication](#)
- [Cells to Singularity](#)
- [Collaborate with Jennifer Gernand to use her course notebook, activities and HW for 1306](#)
- [Implementation of Class Scribe in Online Course to Improve Note-Taking Skills](#)
- [Collaborative Grading for Instant Feedback from Instructors to Students](#)
- [BIOL 1306 Chapter Outline/Activities/Review Packet](#)
- [STEM Student Volunteering at STEM Expos](#)
- [Covering the Basics to Increase Equity in Microbiology \(BIOL 2320\)](#)
- [Effectiveness of added Interactive Instructor Led Blackboard \(Bb\) Collaborate Histology Sessions or Anatomy and Physiology Revealed \(APR\) Graded Activities versus only Pre-recorded Histology sessions in Anatomy and Physiology Histology Lab](#)
- [Natural Science Program Outcome Assessment – 2022-2023 Data](#)
- [Empirical Formulas](#)
- [Dynamic Lab Schedule](#)
- [Question Formulation Technique \(QFT\) Implementation](#)

Questions?



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**Associate Vice
Chancellor**

Managers, Program Effectiveness



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