Process Improvement & Evaluation

pathways TO results

The Office of Community College Research and Leadership (OCCRL) was established in 1989 at the University of Illinois at Urbana-Champaign. OCCRL is affiliated with the Department of Education Policy, Organization and Leadership in the College of Education. Our mission is to use research and evaluation methods to improve policies, programs, and practices to enhance community college education and transition to college for diverse learners at the state, national, and international levels. Projects of this office are supported by state, federal, and private and not-for-profit organizations. The contents of publications do not necessarily represent the positions or policies of our sponsors or the University of Illinois. Comments or inquiries about our publications are welcome and should be directed to OCCRL@illinois.edu.

This module is part of a series of publications associated with the Pathways to Results initiative that is funded by a grant from the Illinois Community College Board (ICCB Grant Agreement Number 2014-00266).

Acknowledgement:

Staff of the Office of Community College Research and Leadership (OCCRL) thank the Illinois Community College Board for their persistent and gracious support of the Pathways to Results (PTR) initiative. We also express our thanks to the PTR team leaders and team members throughout the state who have piloted and implemented PTR since its inception. Finally, we thank Design House for their creative contributions to the design, production and editorial work on this publication.

Suggested Citation:

Harmon, T., Liss, L., Umbricht, M., & Flesher, J. (2014). *Process improvement & evaluation* (2nd ed.). Champaign, IL: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign.

Pathways to Results (PTR) is an outcomes-focused, equity-guided process to improve pathways and policies that support student transition to and through postsecondary education and employment. PTR focuses on addressing equity gaps between diverse learner groups and continuously improving processes critical to student success, including retention, completion of postsecondary credentials, and transition to employment.

The PTR process is most effective when it begins with a strong collaboration of team members and partners focusing on the critical problems that get in the way of student success. These problems are identified when the teams use student-level data to identify outcome and equity gaps in results between racial, gender, low-income and other underserved groups. Major processes are assessed to understand how contributing factors create the identified problems and impede student success. Implementation and evaluation plans are designed to create solutions that increase the impact of pathways immediately and over time. Team members reflect on what they have learned and share insights with one another, enabling them to sustain and scale the knowledge they have acquired with others.

> “An overarching goal and benefit of the PTR process is that it provides teams with the opportunity to continuously improve pathways and programs that produce ever-more equitable student outcomes.”

PTR provides the opportunity to continuously improve pathways and produce ever-more equitable student outcomes. When PTR is implemented fully, the opportunity to improve pathways never ends.

Overview

Process Improvement and Evaluation builds on a detailed understanding of processes identified and developed during the Process Assessment, particularly processes to improve equity and outcomes for all students. Whereas Process Assessment is focused on the "whys" of equity and outcomes, Process Improvement and Evaluation is focused on the "what" of process change, and the "how" of process implementation.

The first step develops solutions to address problems the team identified in the PTR process. These solutions are evaluated to determine whether they support the desired outcome, taking into account institutional support, cost, and feasibility. Individuals who directly support or who are responsible for the identified processes are included to add their perspectives, identify improvement opportunities, and build buy-in among other stakeholders.

The next step involves identifying opportunities to integrate assessment and improvement plans into existing planning and accountability frameworks. Teams are encouraged to use existing planning templates to guide implementation.

In the third step, an evaluation plan is drafted to track implementation and measure results. Teams decide what data to collect to measure results and set the stage for thinking about implications for future improvement. Outputs of this process are a plan for implementation of the solutions recommended by the team and a plan for evaluating the results.

The fourth step involves implementing the solutions and beginning to analyze results. Depending on the timing of implementation, the team begins to evaluate implementation of the solutions. Eventually, the team returns to this step to evaluate the impact of problems identified in the PTR process.

Purpose and Goals

The primary purpose of Process Improvement and Evaluation is to build on the work of Process Assessment, with attention to parts of the process that impact quality and student outcomes and equity. Through developing implementation and evaluation plans, this process prepares participants to implement sustainable solutions that lead to more equitable student outcomes.

The goals of this process are to:

1. select the solutions,
2. develop an implementation plan,
3. create an evaluation plan, and
4. implement and begin evaluation of the team's solutions.

Outcomes and Equity

By engaging in process improvement & evaluation, PTR teams can avoid the "deficit thinking" that sometimes leads to attributing equity gaps to deficiencies in students rather than limitations of the systems that enroll them. Looking critically at how processes create or contribute to gaps in student outcomes shifts the responsibility for improvement from students to practitioners who can make a difference. Getting input from stakeholders representing all aspects of the problem to help identify solutions is a critical component of PTR, particularly when solutions are being identified and tested.

Outputs

Materials available to support this process are:

- *Implementation plan,*
- *Evaluation plan,*
- *Suggested Solutions Worksheet,* and
- *Solutions Evaluation Worksheet.*

Steps at a Glance

STEP 1: Identify solution(s), also called process change(s), and reach consensus on their implementation.
Key goals of this step are to create a list of potential solutions and to make a team decision on solutions to be implemented. The team narrows its list of potential solutions by looking at the feasibility and potential impact of each.

STEP 2: Develop an implementation plan.
Develop an implementation plan that includes a statement of goals, intended outcomes, roles, and responsibilities; a description of the steps needed to create the solutions; an estimated timeline, cost and resource requirements; and potential mechanisms for integrating this work into institutional and partner organizational planning.

STEP 3: Develop an evaluation plan.
Performance measures and evaluation methods are identified to evaluate the success of the identified solutions. If data collection procedures are not in place, teams develop them. All of these activities are included in the evaluation plan.

STEP 4: Implement the solutions and begin to analyze results.
Persons and organizations responsible for implementing the solutions begin to make improvements. Depending on the timing of implementation, the team begins to evaluate the scope and extent of implementation. Eventually, the team returns to this step to evaluate the extent to which the solutions are successfully implemented and address the problem identified.

Who Should be Involved?

This process includes team members, institutional research staff and other personnel who support the processes identified for improvement. Individuals who directly support or are responsible for the solutions add their perspectives, identify opportunities, and build buy-in to help sustain the proposed solutions.

Detailed Steps

Step 1: Identify solutions that address one or more of the contributing factors identified in Process Assessment and reach team consensus on the solution.

This step includes creating a list of potential solutions to improve the identified process. The list of solutions includes options that address one or more of the reasons why the process is not currently accomplishing the desired level of performance identified in Process Assessment.

Next, the team narrows its list of potential solutions by looking at their feasibility and potential impact. The team should estimate how much it will cost to implement the solutions. The team needs to know whether there is evidence to suggest that the proposed changes will be effective. This is particularly important if the changes are difficult or expensive to implement, or difficult to "undo" if they are not effective. The team also needs to be able to gather evidence of the costs and benefits of implementing each solution, including confidence (or uncertainty) of the solutions.

The team gathers information about potential changes to the process, and it summarizes how the changes meet several criteria in the *Suggested Solutions Worksheet* (see Appendix A). This analysis supports team consensus on recommended changes.

Recommended activities are:

A. The team brainstorms solutions, including the perspectives of stakeholders who bring diverse perspectives. This process begins by generating ideas for solutions, with each individual recording his or her ideas individually. The team then captures these ideas, without evaluating them, but seeking clarification, when needed.

B. The team creates an initial list of solutions by categorizing them to reflect the collective ideas of the team. The product is a list of potential solutions grouped into related categories, such as professional development and communications. The team uses the *Suggested Solutions Worksheet* (see Appendix A) to record these solutions.

C. The team reviews the potential solutions and identifies redundancies in solutions that are partial components of others to be sure each solution is uniquely important on its own.

D. The team evaluates the potential solutions using the *Solution Evaluation Worksheet* (see Appendix B). The team may wish to assign specific improvement ideas to one or more team members, rather than evaluate all ideas as a full team.

E. The team engages in a facilitated discussion to reach consensus on solutions to be implemented.

Step 2: Develop an implementation plan for each proposed solution.

Planning templates and frameworks should be integrated with other institutional and partner planning processes, where possible. Small scale implementations or pilots are encouraged.

New process steps are identified by interviewing personnel included in the solutions or by asking students engaged in the solutions to record how they are engaged in or affected by them.

Plans created in this step are starting points for implementation, including a statement of the targeted outcomes, goals, roles, and responsibilities; an overview of steps needed to create a pilot or small scale implementation; estimated timeline, cost and resources; and potential mechanisms for integration within organizational planning processes.

Recommended activities are:

A. Create a general description of the solutions by answering the following questions:
   - What are the desired outcomes of the proposed solutions?
   - What has to change to accomplish these solutions?
   - What is the order or sequence for the desired solutions?
   - Who needs to be involved?
   - When should changes be made?
   - What support (e.g., resources, authority, coordination) is needed?
   - Who should lead this work?

B. Determine whether existing institutional and partner planning processes can be used. Is there an existing planning process that would naturally include the proposed solutions? Involve institutional researchers and other administrative personnel to help identify potential supports, templates and frameworks. Many organizations already have planning templates that can be incorporated based on the type of process improvement and evaluation (i.e., institutional annual plans, improvement plans, program reviews). Integration with existing planning processes lends support to implementation and helps to garner recognition and buy-in for this work. It may also create an opportunity to coordinate or increase resources, improve project management, and enhance sustainability.

C. If no planning process or template exists, use the *PTR Implementation Plan* (see Appendix C). This planning template starts the process and provides the foundation for additional planning in the future. The *PTR Implementation Plan* is a collection of action plans for each proposed solution. Teams should use the template to provide the following types of information:

Roles and Responsibilities

- Sponsor – typically administrative personnel who have authority to approve the changes, allocate budget, and provide general institutional support
- Project leader – the person who leads the improvement process
- Team members – individuals who help accomplish implementation

Basic Steps

- List steps that accomplish the proposed solutions
- Specify the milestones and outcomes

Timeline

- Start date – the time when implementation starts
- Order of events – some actions need to occur first, others can be done at the same time
- Pilots – specify pilot implementation periods and reviews
- Timing – approximate how long each major step will take
- Completion – set the date that each major step and the overall process improvement and evaluation project will be finished

Resource Requirements

- Determine how many team members are needed to help with project
- Specify the budget, materials, and equipment that are needed

Approval Authority

- If approval is required, who does it?
- How are approvals done?

Step 3: Develop an evaluation plan that includes measures and prepares team members to collect and analyze data.

Teams identify performance measures and evaluation methods to evaluate the solutions, both in terms of progress on implementation and impact on contributing factors. If data collection procedures are not in place, teams should develop them in this step.

Recommended activities are:

A. The team reviews the solutions recommended in the *PTR Implementation Plan* (see Appendix C). For each solution, the team identifies an evaluation method that helps the members decide whether or not the solutions have been implemented. When choosing evaluation methods (e.g., questionnaires, interviews, follow-up studies), the team should consider the knowledge and capacity of others to conduct the method properly, the cost and feasibility of conducting the method in the allocated time, and the ability of the group to analyze the data. Whatever methods are chosen, the team needs to be able to answer the following questions:
   - By what measures should we evaluate the proposed solutions?
   - Do we have data available for these measures currently? If not, can we collect it?
   - Do we have a baseline for these measures?
   - What measures will give us an indication of whether the solutions are working, including measures of progress toward the desired outcomes?
   - How will we know that our evaluation methods are sensitive to the solutions that we are implementing, and their contributing factors?

   After identifying possible measures and data collection methods, teams should discuss the advantages and disadvantages of using different methods to evaluate the extent to which the solutions have addressed the problem. Selected evaluation actions and reporting requirements should be added to the Implementation Plan as additional steps.

B. The evaluation of outcomes may require that data collection occur in the future, and in these cases, teams should propose an extended timeline. For instance, if the team is focused on improving student retention results, several semesters may elapse before improvements due to solutions take effect and results can be assessed.

Step 4: Implement the solutions and begin to analyze results.

Implementation of the solutions begins, and the team also begins to evaluate the extent of this implementation. The evaluation of implementation includes the achievement of plan milestones, the review of pilot or small scale implementations, and observation of effects (as specified in the *PTR Implementation Plan Completion Worksheet*, see Appendix E).

Recommended activities are:

A. Begin implementation steps in accordance with the plan

B. Begin implementation of the data collection in accordance with the plan

C. Review the data and assess the extent to which the solutions address the problem

D. Document the results using the *PTR Implementation Plan Completion Worksheet* (see Appendix E)

E. Modify the Plan as necessary (extended due dates, added or deleted steps, changes in responsible Team Members, etc.)

Reflection Questions

1. In what ways do the solutions enable practitioners to improve the process?
2. How does the team envision the recommended solutions affecting outcomes and equity for students?

References & Resources

Continuous Improvement

Pande, P., & Holpp, L. (2002). *What is six sigma?* New York, NY: McGraw-Hill Companies, Inc. More information about the book is available online: http://www.mhprofessional.com/product.php?isbn=0071381856

Six Sigma. (n.d.). *What is Six Sigma?* Retrieved from http://www.6sigma.us/six-sigma.php

Tague, N. R. (2004). *The quality toolbox.* (2nd ed.). Milwaukee, WI: ASQ Quality Press.

Evaluation and Program Improvement

Flesher, J., & Bragg, D. (2013). *Evaluation and benchmarking module*. Champaign, IL: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign. Retrieved from http://occrl.illinois.edu/wp-content/uploads/2013/07/Evaluation-Benchmarking-Module.pdf

Patton, M. Q. (2009). *Developmental evaluation: Applying complexity concepts to enhance innovation*. New York, NY: The Guilford Press. More information about the book is available online: http://www.guilford.com/cgi-bin/cartscript.cgi?page=pr/patton.htm&dir=research/res_eval&cart_id=311804.11544

National Alliance for Partnerships in Equity. (2006). *Guide for program improvement for Perkins IV: Nontraditional CTE program participation and completion*. Retrieved from http://www.napequity.org/nape-content/uploads/Guide-for-Program-Improvement-Perkins-IV.pdf

U. S. Department of Education, Office of Vocational and Adult Education. (2002). *Improving performance: A five-step process* (Version 2). Retrieved from http://www.stemequitypipeline.org/_documents/Guidebook[1].pdf

Appendix A
Suggested Solutions Worksheet

This worksheet can be used to capture each of the suggested solutions identified by the team. Terms used in the worksheet include:

Process: This is the process examined in Process Assessment. If more than one process is examined, the team should complete a separate worksheet for each one.

Suggested Solutions: Briefly describe the suggested solutions. If this solution is implemented, what will be different about the process?

Contributing Factors: Briefly describe why the suggested solutions will address the problem, with reference to the contributing factors identified in the PTR process.

Further Consideration: Determine whether or not each solution will be further evaluated.

Process:		
Suggested Solution	**Explanation and Contributing Factors**	**Further Consideration?**
e.g.: Develop information sessions for eighth grade students on health careers, along with recommended high school courses.	e.g.: Students lack of awareness of the steps they need to take during high school to prepare for entry into higher-paying health careers leads to inadequate numbers of interested and qualified students, which reduces student retention and success.	Yes No

Appendix B
Solution Evaluation Worksheet

Process:

Suggested Solution:

Theory: Does the proposed solution make sense, and does it address the contributing factors?

Evidence: Does the evidence support the proposed solution?

Feasibility: Is the solution feasible in terms of time and money?

Resources: What resources are necessary to support the solution, and are these resources available?

Stakeholders: Have major stakeholders had input into the solution, and will they support it?

Equity: Will the solution lead to more equitable student outcomes?

Other Effects on Students: What other effects will the solution have on students?

Not Implementing: What might the consequences of not implementing the solution?

Recommendation: Should the solution be implemented?

This worksheet is adapted from the selection criteria suggested in *Improving Performance: A Five-Step Process* (United States Department of Education, 2002, p. 22). Additional criteria related to PTR have been added.

Appendix C
PTR Implementation Plan

Implementation Tasks, Timeframes, Staff, and Results:

Implementation Task	**Timeframe** Start and End Dates	**Lead staff, other staff and resources needed**	**Results** What are the expected measurable outcomes of this step or action?

Appendix D
PTR Evaluation Plan

Improvement Objective: Describe the improvement objective that will be evaluated. What should change?

Measurement: Describe the measures. Are data available for these measures currently? Is there a baseline?

Expected Results: What level of change does the team consider to be a promising indicator of the desired change?

Data Collection Requirements: What data must be collected to evaluate the results for this improvement objective?

Appendix D
PTR Evaluation Plan (continued)

Evaluation Measures and Potential Data Collection Methods			
What is being measured?	**Measurement Indices**	**Data Collection Method(s)**	**Advantages and Disadvantages**
e.g.: Student retention	• *Drop-out rate* • *Semester to semester retention rate* • *Annual program enrollment* • *First day of class and last day of class enrollments for program courses*	*Existing Institutional enrollment measures*	*Measures describe scale of retention issue and changes should occur to demonstrate effectiveness of solutions* *May not have course specific numbers for all program courses without changes to data collection process*
e.g.: Student drop-out reasons	• Reasons for dropping out of the program	Survey sent to students who dropped out of the program Exit interview when students complete drop forms or survey at that time Telephone interviews when students drop out	Can possibly find out contributing factors as to why the student left; can inform process changes Labor-intensive; may not have contact information for past students
Select the evaluation methods that are effective and feasible. List evaluation tasks in a plan format (similar to the implementation plan format). Add the evaluation plan steps in chronological order to the implementation plan.			

Appendix E
PTR Implementation Plan Completion Worksheet

Include actions from the *PTR Implementation Plan* and *PTR Evaluation Plan* in chronological order. This worksheet is used to manage the completion of plan tasks, create awareness for changes that may be needed in the plan, and provide visibility to task completion.

Implementation Task	**Due Date**	**Status** Was this completed? What remains to be done?	**Plan Modifications** Do changes need to be made to actions, timeframes or other elements of the Plan?

pathwaysTOresults

COLLEGE OF EDUCATION AT ILLINOIS

Office of Community College
Research and Leadership
University of Illinois
51 Gerty Drive, 129 CRC
Champaign, IL 61820
occrl@illinois.edu
http://occrl.illinois.edu
(217) 244-9390