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# Examples

## Improving the Effectiveness of Online Courses

A traditional brick-and-mortar university has been offering some of their academic programs online for the past three years with mixed results. They hire Wise Learning Solutions, LLC, to help them increase the overall effectiveness of these courses and programs.

### I. Want

#### 1. Align Concerns and Goals

##### Concerns

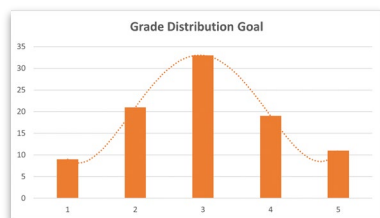
At a meeting of program directors and department chairs at the College of Education, anecdotal evidence is shared of apparent differences in student performance between courses taught in the classroom as opposed to the same courses taught online. After some discussion, the consensus is that:

- (1) Students seem to earn lower grades in online courses.
- (2) Online courses are frequently flagged as needing improvement.
- (3) Very few current online courses at the college are eligible for a university distance learning award.

##### Goals

Following the discussion, the dean of the college set forth three goals to reach by the next academic year:

- (1) The grade distribution in online courses will be the same as in traditional courses.
- (2) Fewer than 10% of online courses will need improvement.
- (3) At least 10% of online courses will be eligible for a distance learning award.



(1) Grade distribution goal



(2) Course improvement goal

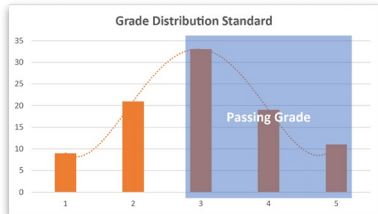


(3) Course excellence goal

## 2. Identify Applicable Standards

The university assesses the success of all academic courses according to the following standards:

- (1) The final course grades are distributed normally, with a passing grade of 3/5.
- (2) Courses need improvement if the *Overall Course Score* on student feedback forms is less than 3/5.
- (3) Courses qualify for an award nomination if the *Overall Course Score* is 5/5.



(1) Target grade distribution



(2) Target course improvement rate

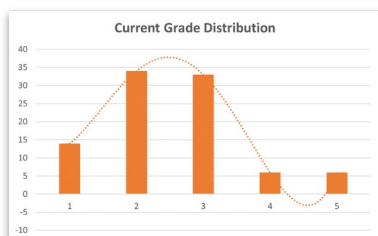


(3) Target course excellence rate

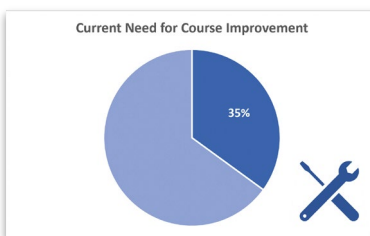
## 3. Assess Current State

An analysis of the available data from the university's learning management system (LMS) and the student feedback forms shows the following:

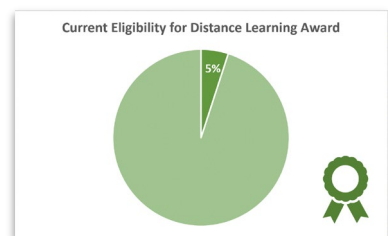
- (1) The average distribution of grades in online courses taught in the college is skewed towards students underperforming with a mean of 2.5/5.
- (2) Thirty-five percent of online courses taught in the college scored less than 3/5 on *Overall Course Rating* and are therefore flagged as needing improvement.
- (3) Five percent of online courses taught in the college currently qualify for a distance learning (DL) award nomination based on the university's criteria.



(1) Current grade distribution



(2) Current need for course improvement



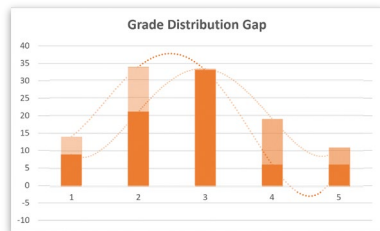
(3) Current award eligibility

#### 4. Determine Gaps and Root Causes

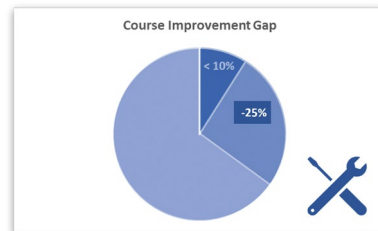
##### Gaps

The inquiry shows three gaps for online courses taught at the college, based on comparing the current state to the applicable university standards:

- (1) A need to increase by 0.5 points the percentage of passing grades in online courses.
- (2) A need to reduce by 25% the percentage of online courses that require improvement.
- (3) A need to increase by 5% the percentage of online courses qualifying for an award nomination.



(1) Grade distribution gap



(2) Course improvement gap



(3) Course excellence gap

##### Root Causes

An analysis of student feedback and a systematic review of courses uncover the following root causes:

- (1) Lack of directions for planning and completing online courses in the LMS
- (2) Ineffective course design and facilitation by online instructors

##### Note

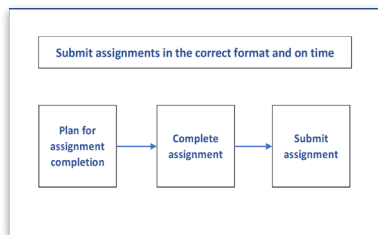
Most of the examples in this document focus on the first root cause.

## II. Inquire

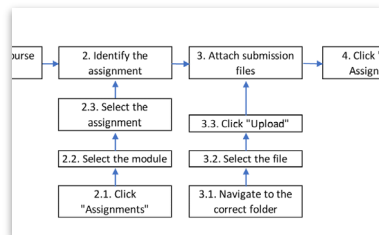
### 1. Map Goals, Tasks, & Procedures

A first set of inquiries is conducted to map the goals, tasks, and procedures that students typically perform in the college's online courses. *Goals* are mapped as a series of top-level tasks, *tasks* are mapped as a series of sub-tasks, and *procedures* are mapped as a flowchart including decision points. The following are examples of each type.

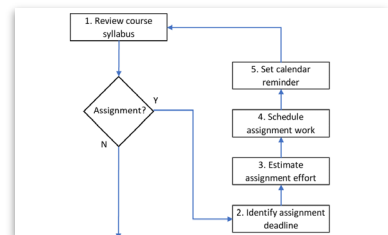
- (1) Goal: Online students will submit course assignments in the correct format and on time.
- (2) Task: Submit an assignment in the learning management system
- (3) Procedure: Planning for the completion of assignments in an online course



(1) Goal mapping



(2) Task mapping



(3) Procedure mapping

### 2. Describe Experts & Learners

Two types of online students are surveyed to identify their characteristics.

- (1) *Experts*: Students who plan their work on a weekly basis, are organized, read instructions, and follow directions, tend to succeed in online courses.
- (2) *Learners*: Students who procrastinate, are unorganized, don't read instructions, and don't follow directions, tend to struggle in online courses.



(1) Successful online students



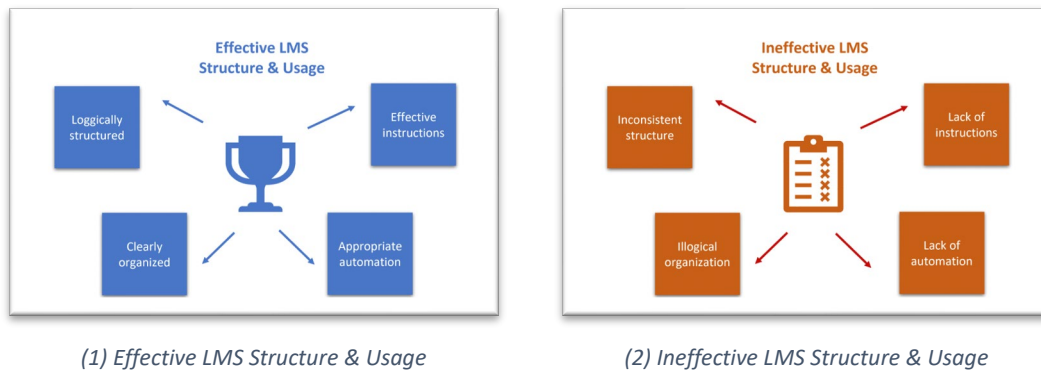
(2) Struggling online students

### 3. Examine Performance Context

Additional inquiries target the LMS used to deliver online courses. The results reveal that

- (1) Successful courses exhibit a consistent structure and appropriate guidance in relevant areas.
- (2) Unsuccessful courses lack guidance for navigation and contain flaws and inconsistencies in the way information is organized and presented.

Furthermore, successful courses tend to take advantage of available LMS features to support students, such as the personal dashboard, specialized discussion boards, targeted messaging, and automations including adaptive release of content, to keep students engaged and on track.



### 4. Write Outcomes & Objectives

As a result of this inquiry, a set of outcomes and objectives are created to guide the improvement effort across all online courses offered at the college. An *outcome* describes the impact of an instructional intervention on an organization. An *objective* defines a change in behavior of an individual resulting from a learning solution.

The following are examples of student outcomes and objectives applicable to the case.

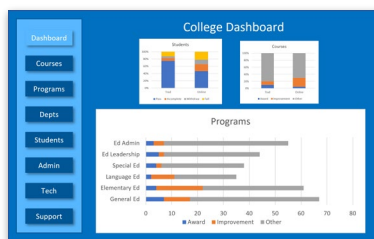
- (Outcome) Students' grades in online courses will be normally distributed around a mean of at least 3.
- (Outcome) At least 80% of online students will submit all course assignments on time and in the correct format.
- (Objective) Given a course syllabus, the student will choose to add the due dates for all assignments to their personal calendar by the end of the first week of classes.
- (Objective) Given the directions and effort estimates, the student will plan for an appropriate amount of time to complete an assignment.
- (Objective) Given specific directions for submission, the student will correctly submit the assignment in the learning management system by the deadline.

## III. Solve

### 1. Construct Assessment Instruments

The stated outcomes and objectives are measured by means of learning management system (LMS) analytics, supplemental questions added to the standard student feedback forms, and course reviews conducted by instructional design staff and peer online instructors.

- (1) Queries into the LMS performance data are compiled on a custom dashboard showing student pass rate and other relevant statistics for online courses across programs and academic units.
- (2) Additional questions are created to collect student feedback on specific behaviors and attitudes that are directly related to the outcomes and objectives of the learning solution.
- (3) Online instructors' course design is assessed by scheduled course reviews that are guided by checklists, guidelines, and standards.



(1) College dashboard

The screenshot shows a 'Student Feedback Form' with a sidebar menu including Dashboard, Courses, Programs, Depits, Students, Admin, Tech, and Support. The main content area is titled 'Additional Questions' and contains three questions with radio button options:

- Did you use the LMS dashboard to help you plan your weekly learning activities?  
 Yes  No
- Please rate the overall usefulness of the LMS dashboard.  
 Excellent  Very Good  Good  Fair  Poor
- Did you review the general LMS directions?  
 Yes  No
- Please rate the overall usefulness of the general directions.  
 Excellent  Very Good  Good  Fair  Poor

(2) Student feedback form

The screenshot shows an 'Online Course Review Form' with a sidebar menu including Dashboard, Courses, Programs, Depits, Students, Admin, Tech, and Support. The main content area is titled 'Course Organization & Structure' and contains three questions with radio button options:

- Please rate the overall organization of the course.  
 Excellent  Very Good  Good  Fair  Poor
- Is the course organization consistent?  
 Yes  No
- Please rate the effectiveness of the course structure.  
 Excellent  Very Good  Good  Fair  Poor

Below the questions is a text input field for providing specific feedback about the course organization and structure.

(3) Course review form

### 2. Define Instructional Strategy

The strategy aims to address the root causes of the measured gaps in performance, i.e., insufficient directions for planning and completing online courses in the LMS, and ineffective facilitation by online instructors.

- (1) The first part of the strategy targets the online students by offering common directions and instructions designed to help them plan and monitor their own progress. Planned elements include:
  - a. Descriptions of content elements (e.g., LMS shared menu items, buttons, etc.)
  - b. Written directions and short videos on completing typical tasks (e.g., accessing course materials, submitting assignments, posting to discussions, etc.)
  - c. A brief video by the dean of the college welcoming students to online learning
  - d. A virtual student resource center offering a range of support services (e.g., library, research, technical, etc.)
- (2) The second part of the strategy targets online instructors. Planned elements include:
  - a. Individual micro-learning units on selected topics (e.g., writing effective objectives, etc.)
  - b. Annotated examples of key course elements (e.g., syllabus, assignment, discussion, etc.)
  - c. Best practices for facilitating online student engagement and success (e.g., weekly communications, virtual office hours, etc.)
  - d. A virtual faculty resource center offering a range of support services (e.g., technical, instructional, etc.)

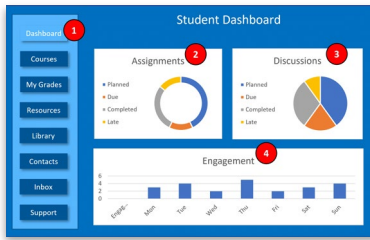
### 3. Develop Instructional Materials

The development of instructional materials results from the instructional strategy.

- (1) A detailed catalogue of materials is compiled, including materials that will be purchased or licensed, materials that will be created in house, and materials that will be created by vendors.
- (2) Annotated LMS screenshots are created to illustrate the directions.
- (3) Videos are scripted and storyboarded to guide production.

Item ID	Title	Type	Source	Format	Notes
1	University logo	Image	Branding Office	GF	Contact ti
2	Online student, male	Image	Getty #14071238	JPG	Include o
3	Online student, female	Image	Getty #1221479375	JPG	Include o
4	Reference numbers	Image	Original, Digital Design Team	GF	Create fr
5	Photo avatar	Image	Original, Digital Design Team	JPG	Use fema
6	Sample syllabus, annotated	Document	Original, Curriculum Committee	PDF	Contact ti
7	Sample assignment, annotated	Document	Original, Curriculum Committee	PDF	Contact ti
8	Sample discussion, annotated	Document	Original, Curriculum Committee	PDF	Contact ti
9	Welcome video, dean	Video	Original, Digital Design Team	MP4	Set up th
10	Submitting an assignment (D)	Document	Original, Curriculum Committee	PDF	Contact ti
11	Submitting an assignment (V)	Video	Original, Digital Design Team	MP4	Set up th
12	Participating in a discussion (D)	Document	Original, Curriculum Committee	PDF	Contact ti
13	Participating in a discussion (V)	Video	Original, Digital Design Team	MP4	Set up th
14	Planning your online class (D)	Document	Original, Curriculum Committee	PDF	Contact ti
15	Planning your online class (V)	Video	Original, Digital Design Team	MP4	Set up th
16	Creating an assignment (D)	Document	Original, LMS Support Team	PDF	Contact ti
17	Creating an assignment (V)	Video	Original, LMS Support Team	MP4	Set up th
18	Creating an online discussion (D)	Document	Original, LMS Support Team	PDF	Contact ti

(1) Catalogue of materials



(2) Annotated LMS screenshot



(3) Video storyboard

### 4. Design Learner Experience

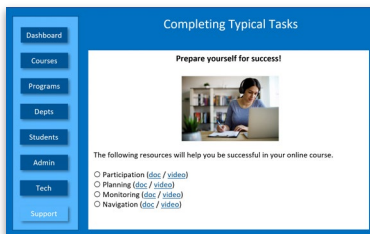
The learning experience for online students aims to be seamless in all online courses and provides both upfront and context-sensitive information.

- (1) The learning path for all courses is adjusted to include an on-boarding section.
- (2) Support links are added to cover general topics on course participation, planning, monitoring, and navigation.
- (3) Context-sensitive links are added to provide just-in-time support for core actions (e.g., assignment submission).

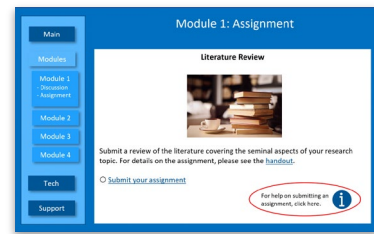
The learner experience for faculty who create and facilitate online courses consists of a series of micro-courses that are packaged into a certificate of completion, which some departments choose to make mandatory, and others incentivize to motivate faculty to participate.



(1) Online course on-boarding



(2) Support links



(3) Context-sensitive links

## IV. Employ

### 1. Implement Learning Solution

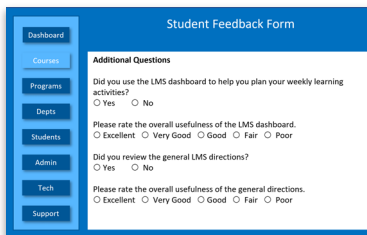
Upon approval by the college's online teaching committee, the learning solutions are implemented in the learning management system (LMS).

- (1) For the student solutions consisting of standard on-boarding components, support links, and context-sensitive help, are added to all online courses starting in the next semester.
- (2) The student feedback forms are customized with the supplemental questions.
- (3) Faculty members are enrolled in an LMS-based organization that offers the micro units and other resources, including a discussion board where online teachers can ask questions and share insights.

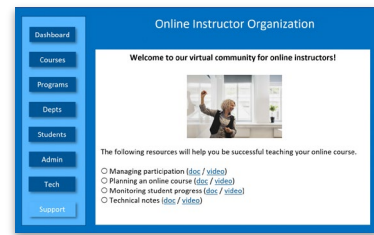
All changes are communicated across departments in the college to ensure that support personnel are aware and have a chance to review the new materials.



(1) Online course on-boarding



(2) Custom student feedback questions



(3) Online instructor organization

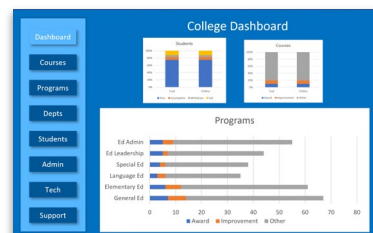
### 2. Collect Learning Analytics

Learning analytics are based on key performance indicators.

- (1) Online instructors monitor the performance of students in their online courses using data from the LMS.
- (2) In addition to the course level LMS dashboards, designated department staff and administrators are given access to LMS dashboards that summarize results at the program, department, and college level, as well as across colleges for the entire university.



(1) Instructor dashboard



(2) College dashboard

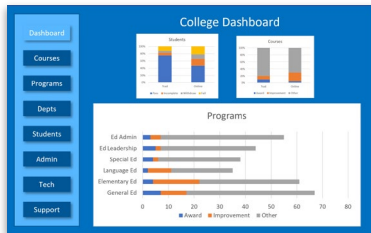


### 3. Evaluate Learning Solution

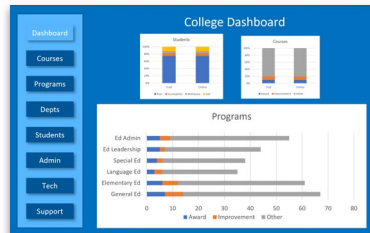
The evaluation of the learning solutions involves a comparison of performance data before and after their implementation.

- (1) Pre-implementation data from the LMS and the student feedback forms are used as a baseline.
- (2) Post-implementation data from ongoing learning analytics are then used to assess progress and evaluate the effectiveness of the learning solutions.
- (3) An evaluation report summarizes the results and recommendations for stakeholders.

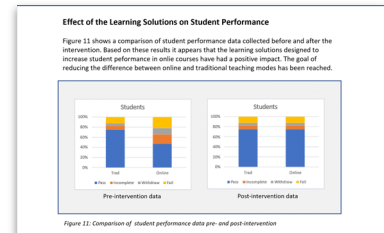
A similar analysis is conducted of the additional student feedback questions and the effectiveness of online instructors.



(1) Pre-implementation data



(2) Post-implementation data



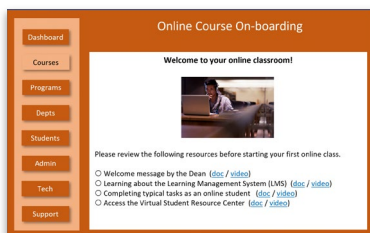
(3) Evaluation report

### 4. Maintain Learning Solution

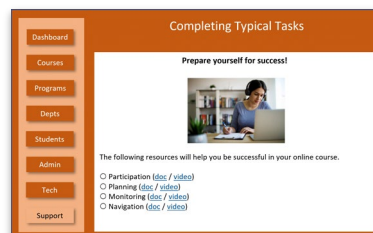
A few years after implementation, the university decides to change to a different campus wide LMS. Consequently, the learning solutions must be adapted to reflect the new environment, which involves changes to detailed directions that refer to LMS-specific terminology, creation of new screenshots, and updated instructional videos that reflect the new LMS environment.

The structure of the online learning environment is maintained to minimize the impact of switching to the new LMS. However, content that reflects the specifics of the new LMS requires revision.

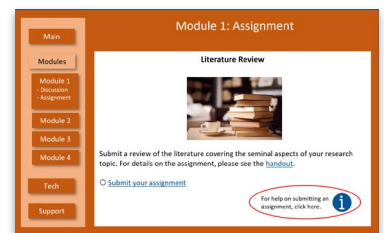
- (1) Revise online course on-boarding
- (2) Revise directions for completing typical tasks
- (3) Revise context-sensitive help



(1) Online course on-boarding



(2) Completing typical tasks



(3) Context-sensitive help

## Summary

	Want	Inquire	Solve	Employ
1	<p>(1) The grade distribution in online courses is the same as in traditional courses.</p> <p>(2) Fewer than 10% of online courses need improvement.</p> <p>(3) At least 10% of online courses are eligible for a distance learning award.</p>	<p>(1) Goal. Online students submit course assignments in the correct format and on time</p> <p>(2) Task. Submit an assignment in the LMS</p> <p>(3) Procedure. Planning for the completion of assignments in an online course</p>	<p>(1) Queries into the LMS performance data</p> <p>(2) Additional student feedback questions</p> <p>(3) Scheduled course reviews that are guided by checklists, guidelines, and standards.</p>	<p>(1) Standard onboarding components are added to all online courses starting in the next semester.</p> <p>(2) The student feedback forms are customized with the supplemental questions.</p> <p>(3) Faculty members who create and teach online courses are enrolled in an LMS-based organization that offers the micro units and other resources.</p>
2	<p>(1) The final course grades are distributed normally, with a passing grade of 3/5.</p> <p>(2) Courses need improvement if the Overall Course Score on student feedback forms is less than 3/5.</p> <p>(3) Courses qualify for an award nomination if the Overall Course Score is 5/5</p>	<p>(1) Experts: Students who plan their work on a weekly basis, are organized, read instructions, and follow directions tend to succeed in online courses.</p> <p>(2) Learners: Students who struggle procrastinate, are unorganized, don't read instructions, and don't follow directions tend to struggle in online courses.</p>	<p>a. Descriptions of content elements (e.g., LMS shared menu items, buttons, etc.)</p> <p>b. Written directions and short videos on completing typical tasks (e.g., accessing course materials, submitting assignments, posting to discussions, etc.)</p> <p>c. A brief video by the dean of the college welcoming students to online learning</p> <p>d. A virtual student resource center offering a range of support services (e.g., library, research, technical, etc.)</p>	<p>(1) Online instructors monitor the performance of students in their online courses using data from the LMS.</p> <p>(2) LMS dashboards that summarize results at the program, department, and college level, as well as across colleges for the entire university.</p>

	Want	Inquire	Solve	Employ
3	<p>(1) The average distribution of grades in online courses taught in the college is skewed towards students underperforming with a mean of 2.5/5.</p> <p>(2) Thirty-five percent of online courses taught in the college scored less than 3/5 on Overall Course Rating and are therefore flagged as needing improvement.</p> <p>(3) Five percent of online courses taught in the college currently qualify for an award nomination based on the university's criteria.</p>	<p>(1) Successful courses exhibit a consistent structure and appropriate guidance in relevant areas.</p> <p>(2) Unsuccessful courses lack guidance for navigation and contain flaws and inconsistencies in the way information is organized and presented.</p>	<p>(1) A detailed catalogue of materials is compiled, including materials that will be purchased or licensed, materials that will be created in house, and materials that will be created by vendors.</p> <p>(2) Annotated LMS screenshots are created to illustrate the directions.</p> <p>(3) Videos are scripted and storyboarded to guide production.</p>	<p>(1) Pre-implementation data from the LMS and the student feedback forms are used as a baseline.</p> <p>(2) Post-implementation data from ongoing learning analytics are then used to assess progress and evaluate the effectiveness of the learning solutions.</p> <p>(3) An evaluation report summarizes the results and recommendations for stakeholders.</p>
4	<p>(1) A need to increase the percentage of passing grades in online courses by 0.5 points.</p> <p>(2) A need to reduce the percentage of online courses that require improvement by 25%.</p> <p>(3) A need to increase the percentage of online courses qualifying for an award nomination by 5%.</p>	<p>(Outcome) Students' grades in online courses will be normally distributed around a mean of at least 3.</p> <p>(Outcome) At least 80% of online students will submit all course assignments on time and in the correct format.</p> <p>(Objective) Given a course syllabus, the student will choose to add the due dates for all assignments to their personal calendar by the end of the first week of classes.</p> <p>(Objective) Given specific directions for submission, the student will correctly submit the assignment by the deadline.</p>	<p>(1) The learning path for all courses is adjusted to include an on-boarding section.</p> <p>(2) Support links are added to cover general topics on course participation, planning, monitoring, and navigation.</p> <p>(3) Context-sensitive links are added to provide just-in-time support for core actions (e.g., assignment submission).</p>	<p>(1) Revise online course on-boarding</p> <p>(2) Revise directions for completing typical tasks</p> <p>(3) Revise context-sensitive help</p>