Final Evaluation Report

Linn-Benton Community College: LB iLearn Campus

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Presented By:
Thomas P. Miller & Associates with Hamai Consulting

Thank You

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Executive Summary

LB iLearn Campus

The Linn-Benton (LB) iLearn Campus was implemented to facilitate post-secondary educational completion for Trade Adjustment Assistance (TAA)-eligible, veteran, and dislocated workers by capitalizing on innovative online education models. LB iLearn was funded by a four-year U.S. Department of Labor (USDOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant totaling nearly $3 million. At its inception in 2013, LB iLearn aimed to prepare these individuals with barriers to education for employment in Oregon's growing industry sectors – healthcare, accounting, business and office administration, and communications and marketing/social media. The intervention's purpose was to increase the number of qualified, employable candidates by providing them with increased opportunities to advance in their education and careers.[1]

Many of the programs that LB iLearn focused on through this grant (i.e., Business Administration, Medical Coding and Reimbursement, Accounting Clerk, Office Technology Skills, Entrepreneurship, and Computed Tomography) existed prior to the grant at Linn-Benton Community College (LBCC) – the traditional campus – but required funding and investments for enhancement purposes and online integration. The remaining program (i.e., Social Media Specialist) was developed once the grant was awarded. The virtual college platform did not exist prior to the grant and required funding to identify, design, and implement the appropriate online platform for the target student population. The funds provided by USDOL and investments made by other stakeholders (e.g., LBCC) made these enhancements and innovations possible.

The existing foundation afforded LB iLearn leadership, staff, and faculty the opportunity to utilize and enhance existing curriculum, hire personnel, and purchase the virtual platform, expediting project start-up time. While project implementation was still a lengthy process due to the significant time required to launch a virtual college and challenges associated with the design of a virtual college,[2] the existing foundation provided LB iLearn with a framework from which to work.

While marketing and recruitment strategies were further streamlined later in the grant, these efforts began early in the grant and were aided by the expedited project start-up time (see above). Individuals interested in LB iLearn received support from Admissions Specialists and Student Navigators as they navigated initial assessment, enrollment, and post-program experiences. Figure 1 on the following page identifies the ways participants moved through LB iLearn.

[1] The LB iLearn Campus was designed based on USDOL-identified core elements, identified and defined in *Appendix A*.
[2] See *Program Elements: Barriers and Challenges* for more information.

Figure 1: Participant Flow

Marketing and Recruitment

Marketing through asset development (i.e., website, brochures, radio, and television), market research (i.e., through web research, content development, and email), and communication (i.e., through branding and Facebook advertising). Utilized Google Analytics for continuous improvement.

Participants could enter into LB iLearn programs through a number of avenues including:

- Word-of-mouth/walk-ins
- Employer/organization connections/partnerships

Enrollment, Assessment, and Orientation

Once potential students expressed interest in LB iLearn programs, they were required to complete the placement test associated with their program requirements. Potential students could also receive credit for prior learning, which would enable the student to skip the placement test.

Assistance was provided to potential students throughout the application, enrollment, and course registration processes through the Admissions Specialist and Student Navigators. These individuals assisted students throughout their educational experience.

A student orientation was required of all LB iLearn students to determine whether the online environment was a good fit. The orientation introduced students to the platform, faculty roles, timelines and expectations, and helped students set goals.

Programs and Services

The following grant-funded programs and services were offered in LB iLearn:

Academic Programs

- Medical Coding and Reimbursement certificate
- Social Media Specialist certificate
- Office Technology Skills certificate
- Accounting Clerk certificate
- Computed Tomography certificate
- Entrepreneurship certificate (new in Jan. 2017)
- Business Administration AS degree

Support services available to students included the following:

- Assistance in courses from Content Experts (assists with course content) and Assessment Evaluators (grades assignments and provides feedback)
- LBCC services (e.g., Learning and Career Center, Learning Annex for tutoring, and counseling services)
- Student Navigator assistance throughout educational experience
- IT support for Canvas learning management platform
- Proctors for assistance with assessments

Employment and Continuing Education

Once students completed the academic programs, there were a number of options including employment facilitated through employer partnerships, and career services offered at LB iLearn and LBCC. Many students were employed throughout enrollment and required only upskilling.

Additionally, students could transfer and utilize articulation agreements established for LB iLearn with universities and other institutions in the region (e.g., LBCC, Oregon State)

In addition to participant training, LB iLearn also implemented the following:

- An online learning management system for LB iLearn courses – Canvas[3] – for technology-enabled learning;
- A revised pricing structure for LB iLearn courses and a contracted consultant to account for/assist with LBCC's inability to administer financial aid outside of a standard term structure; and
- Increased engagement with local partners and education institutions (e.g., through Advisory Committee meetings and articulation agreements).[4]

Each element of the LB iLearn Campus worked together to increase access to Oregon's growing industry sectors.

Program Evaluation

Linn-Benton Community College (LBCC) contracted with Thomas P. Miller & Associates, LLC (TPMA) to serve as an independent, third-party evaluator. TPMA, together with Hamai Consulting, comprised the Evaluation Team. The evaluation's primary purpose was to assess the planning, implementation, and effectiveness of the intervention. The evaluation itself consisted of two components.[5]

Implementation Evaluation

The Implementation Evaluation began October 2013 and continued through March 2017[6] to document program progress, monitor program outcomes, and provide recommendations for continuous improvement of program operations. The Implementation Evaluation primarily focused on the training provided by LB iLearn, but also covered progress of all grant-funded initiatives. A series of research questions guided the Implementation Evaluation (see *Appendix B*). The Implementation Evaluation was primarily qualitative and included conference calls, in-person interviews, virtual focus groups, quarterly surveys, curriculum review, and document reviews. The Implementation Evaluation can be described in two parts – the formative, or ongoing analysis of the program, and the summative, or the final cumulative program analysis. A general inductive thematic approach, with influences of applied phenomenology, was used to analyze the data gathered throughout the Implementation Evaluation.

Outcome and Impact Evaluation

The LB iLearn programs aimed to increase job placement for Trade Adjustment Assistance (TAA)-eligible and other disadvantaged learners by training them for high-wage, high-skill employment opportunities. The LB iLearn Campus targeted improvement in several academic and employment outcomes leading to job placement for its participants, including retention, program completion, transfer to additional higher education, employment placement, and earnings. The purpose of the outcome and impact evaluation was to assess whether the implementation of the LB iLearn Campus influenced participants' academic and employment outcomes, as compared with students attending the traditional Linn-Benton Community College (LBCC) campus (i.e., traditional campus) using a quasi-experimental design (QED) – propensity-

[3] For more information on the Canvas platform, see www.canvaslms.com
[4] For a complete timeline of LB iLearn grant activities, see *Appendix D*.
[5] For a detailed description of the methods used in the evaluation, see *Appendix B* and *Appendix C*.
[6] All TAACCCT Round 3 grantees received a six-month extension, continuing the grant implementation period through March 2017 instead of September 2016.

score matching. A series of research questions guided the Outcome and Impact Evaluation (see *Appendix C*).

This Final Evaluation Report provides USDOL with evidence-based findings and lessons learned from LB iLearn, giving insight for future funding and program scaling decisions.

Summary of Evaluation Findings

Between October 2013 and March 2017, LB iLearn leadership developed and implemented a project designed to increase the number of qualified, employable candidates by providing a student-centric educational experience. The LB iLearn Campus aimed to capitalize on innovative online education models to make credentials attainable for non-traditional students, employing a competency-based framework and a rigorous course development process.

The Outcome and Impact Evaluation used a correlational design and propensity-score-matched comparison group to compare the impact of the program on students' employability and academic achievement for both participants and non-participants. Data were used for 15 academic quarters, spanning from Fall 2014 through Winter 2017 (including only students enrolled on or prior to March 31, 2017).

Themes of Successes

As found in the Outcome and Impact Evaluation, when compared to the traditional campus, LB iLearn students had similar academic and employment outcomes, except for program completion. LB iLearn students were 37.21 times more likely to complete their program than traditional comparison students ($P < .001$), controlling for propensity score, days enrolled, and age. [7]

Important themes around LB iLearn program success include:

Flexibility

The LB iLearn Campus was designed to be flexible, to allow for adaptation in a variety of educational institution structures, employer needs, participant skill levels and needs, and delivery and support methods. LB iLearn was able to implement programs that were flexible and accessible to students through use of an online structure, weekly start dates, and self-paced approach. As the staff learned through trail-and-error, the methods of communication with employers were adjusted, online structure and programs were modified to better reflect the needs of participants and the region, and as staff and faculty experimented with different approaches to participant programs, the actual program offerings were different than anticipated. LB iLearn leveraged this flexible approach to refine program offerings, online structure, and student support approaches to better serve the needs of the students in LB iLearn. This flexible approach was successful for program completion in that for every additional day an LB iLearn student was enrolled, students completed 0.012% more of their required courses on average, and for every one point of a student's cumulative Grade Point Average, students completed 2.172% more of their required courses (compared to comparison group students).[8]

[7] For more information, please see the *Outcome and Impact Evaluation: Conclusions* section.
[8] If all other student characteristics remained unchanged. For more information, please see the *Outcome and Impact Evaluation* section.

Innovation

LB iLearn's most significant objective was to implement an innovative online, student-centric learning environment that provided ample support and integrated robust quality control and continuous improvement processes. Because LB iLearn targeted non-traditional students with barriers to education, their needs required innovative strategies that empowered students to manage their educational experience through low-cost, self-paced, accelerated programs. LB iLearn staff emphasized that this model enabled students to enroll and complete programs that would not have otherwise, in a shorter amount of time. Students were also successful in this online environment and reported satisfaction with the LB iLearn structure and support through interviews, focus groups, and survey results. With the implementation and success of this structure, LB iLearn is now able to contribute to the evidence base surrounding the need for more innovative approaches to education, including competency-based, modularized approaches, for non-traditional students with barriers to education.

Themes of Challenges

As found in the Outcome and Impact Evaluation, LB iLearn students tended to have better academic outcomes (i.e., progress toward program completion and credits earned) when they were enrolled for a greater number of days, earned a higher cumulative Grade Point Average, were of an ethnic/racial minority, and were in either the Accounting Clerk or the Office Technology Specialist programs.[9] However, limitations around inequivalent matches and data availability may have affected the findings. See the *Outcome and Impact Evaluation: Limitations* section for more information.

Helpful background around LB iLearn program challenges include:

Structure

Throughout the course of the grant, the structure of LB iLearn (i.e., not adhering to a traditional term structure) created a number of challenges in implementation. The open entry, accelerated, competency-based, modularized structure of LB iLearn facilitated obstacles with establishing financial aid, integrating with LBCC administrative systems such as Banner, operating within a traditional campus structure (i.e., LB iLearn was accredited through LBCC), and innovating within a traditionally-focused college environment (i.e., competency-based structure was a new and innovative approach). While LB iLearn's structure enabled the staff to offer innovative, student-centric education, the hindrances associated with the Campus affected implementation. The LB iLearn structure was both its greatest challenge and strength.

Engagement

Engaging college staff/faculty and community partners was an ongoing challenge throughout the grant. Due to a number of challenges around accelerated planning and Campus design, and ongoing obstacles and changes with program implementation (e.g., obstacles in establishing financial aid and program offering changes), challenges in engaging college faculty/staff continued throughout the grant. Because of this, LB iLearn and LBCC staff reported barriers in generating LBCC buy-in due to inconsistent communication and engagement. In addition, LB iLearn staff indicated challenges in engaging community partners at the beginning of the grant. During this time, LB iLearn hired a marketing consultant to develop a marketing and outreach plan but did not

[9] For more information, please see the *Outcome and Impact Evaluation: Conclusions* section.

have the capacity to implement this plan. A Marketing Manager was hired in Year 3 to lead these efforts but could not establish partnerships for internships, hiring commitments, or donations prior to the end of the grant. The Marketing Manager has since worked to generate a number of meaningful connections and anticipates stronger partnerships beyond the grant. While the engagement of these stakeholders began to increase toward the end of the grant, it was a noted challenge in the implementation of LB iLearn.

Beyond the Grant

Lasting Effects

One of the many findings within this evaluation report is projects like the LB iLearn Campus take time to implement, re-examine, and improve upon. In the early stages of LB iLearn, success and progress had been made toward increasing online and employable educational offerings in Oregon's growing industry sectors. As the grant period concludes, LB iLearn leadership are sustaining current programs and pursuing partnerships to continue growing LB iLearn programs. Effects of the LB iLearn Campus are anticipated to continue through the end of the grant and beyond,[10] including:

- LBCC commitment to sustain all programs as well as the online structure post-grant (including the contribution of $500,000 in funding over the next few years).
- Addition of other programs (e.g., Retail Management) in LB iLearn's catalog.
- Existing virtual platform and associated staff (e.g., Navigators, Content Experts, Assessment Evaluators, etc.).

Through the funding provided by USDOL and investments made by LBCC, LB iLearn was able to implement the LB iLearn Campus and solidify a framework for future success.

Replication Strategies

Throughout the grant, LB iLearn leadership, staff, and faculty identified recommendations for an education institution considering implementing programs similar to those at LB iLearn. These recommendations, at a high-level, include:[11]

Early Planning – Implementing a grant project requires coordination of a number of different mechanisms including, but not limited to, establishing project priorities, time and costs of building and customizing administrative processes, and timelines for curriculum/course development. Ensuring these plans, policies, and protocols are in place early in the grant is critical to successful implementation.

Consider Barriers to Innovation – The purpose of grant funding is to explore new and unique approaches to education. However, with these innovative approaches come challenges in complying with current educational processes and protocols (e.g., standard term structures). Recognizing these barriers to innovation early in the grant period could help alleviate delays and challenges later in the grant.

[10] Training funds ended in March 2017 and all other grant funded ends in September 2017.
[11] See *Implementation Evaluation: Future Project Implementation* section for more details.

Engage Stakeholders – Recognizing potential partners in the community (e.g., city councils, workforce centers, and other organizations) and within the institution (e.g., departments and key personnel) can be beneficial in generating buy-in for educational programs, aiding in student enrollment, and program development and sustainability (e.g., through financial assistance and expedited internal processes). Establishing these partnerships early in the grant affords partners the opportunity to participate in program design, development, and implementation, which can increase investment in the programs (i.e., through stronger participation).

Future Research

A review of the evaluation findings and limitations suggests several directions for possible future research. The following studies would provide additional insight into the effects of the TAACCCT-funded community college programs:

1. A study exploring how each of the innovative aspects of the LB iLearn Campus (online delivery, self-paced structure, and competence-focused curricula) uniquely and interactively contribute to student outcomes, for all students and for specific sub-groups of students (e.g., students with disabilities).
2. A study examining whether the impacts of the program vary based on whether the student enrolled in the TAACCCT-funded program because they would otherwise not be able to attend college at all, as compared to preferring the flexibility or format of the TAACCCT-funded program to a traditional program.
3. A study examining whether endorsement or articulation with employers and specific programs improves student academic and employment outcomes.

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LB iLearn Campus

LB iLearn Campus

Design Summary

In October 2013, Linn-Benton Community College (LBCC) received $2.7 million in funding through the U.S. Department of Labor (USDOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT) program to develop a virtual college. The purpose of the virtual college (referred to as the LB iLearn Campus) was to facilitate post-secondary educational completion for TAA-eligible, veteran, and dislocated workers to successfully compete in Oregon's growing industry sectors. These growing sectors included healthcare, accounting, business and office administration, and communications and marketing/social media career pathways. Ultimately, the LB iLearn Campus sought to increase the number of qualified, employable candidates by providing a student-centric educational experience that integrated stacked and latticed credentials, extensive student support, and an online delivery platform.

The LB iLearn Campus aimed to capitalize on innovative online education models to make credentials attainable for non-traditional students, employing a competency-based framework and a rigorous course development process. The strategy was to implement an open-entry, competency-based, and accelerated structure that aligned and leveraged the college's strategies and activities with partner support. LB iLearn's model intended to implement best practices and integrate lessons learned while using technology (online course delivery) to reduce time and travel barriers that existed for non-traditional students, and student support services to increase retention and persistence through the online coursework. For this section, information was drawn from LB iLearn's Technical Proposal submitted to USDOL. In addition, the following sources were used to supplement the information gathered from the Technical Proposal:

- Quarterly implementation update calls with the LB iLearn Leadership Team
- In-person interviews with LB iLearn leadership, staff and faculty, LB iLearn participants, regional employers, and community partners[12]
- Virtual focus groups with LB iLearn participants
- Quarterly surveys administered to individuals that expressed interest in LB iLearn, enrolled and/or dropped out of LB iLearn, and completed an LB iLearn program
- LB iLearn documents and artifacts, including quarterly program reports, program-related brochures and promotional materials, job descriptions, and other documents

The information gathered from these data sources was combined to identify the project's scope, grant elements and activities, logic model, participant flow, and evidence base.

[12] The Evaluation Team used purposive and convenience sampling for employer and participant interviews coordinated by LB iLearn leadership. See *Appendix B* for a discussion on various limitations to the study.

Grant Elements and Activities

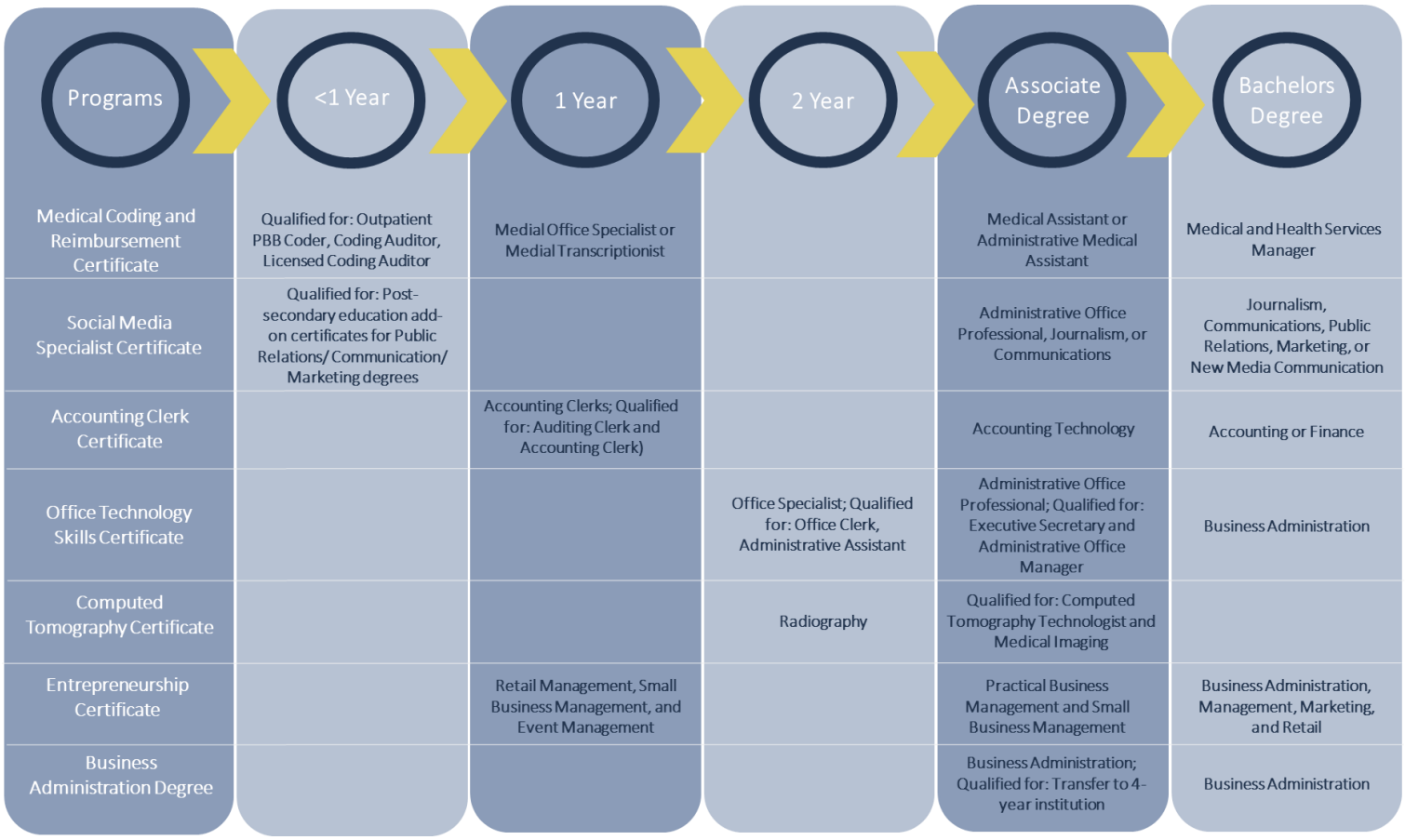
The core elements[13] of the intervention were developed to build training and educational programs that met industry needs and standards. These elements, with associated LB iLearn grant activities explained below, included: (1) evidence-based design; (2) stacked and latticed credentials; (3) transferability and articulation of credit; (4) advanced online and technology-enabled learning; (5) strategic alignment; and (6) alignment with previously funded TAACCCT projects. For the progression and changes to these elements throughout the life of the project, see *Program Changes* and *Appendix D: LB iLearn Timeline of Grant Activities*.

Evidence-based design – The primary objectives within this element were: (1) to create a virtual college; (2) to develop courses/programs that were modularized and competency-based enabling students to move at their own pace; (3) to enhance student support within this online environment to ensure successful completion and retention; and (4) to practice a student-centered approach that would influence all decision-making and serve as the primary purpose and philosophy of the virtual college. To meet these objectives, LB iLearn staff initially worked to finalize an appropriate platform for the LB iLearn Campus, settling on the Canvas system.[14] This system allowed staff to customize the experience for students to ensure the virtual college remained student-centered by allowing students to complete courses at their own pace. LB iLearn also set up a rigorous curriculum development and review process to develop quality courses/programs that were modularized and competency-based.[15] Additionally, a three-pronged support model was developed to provide students with the academic and non-academic assistance and guidance necessary to succeed in the programs. Student Navigators, Content Experts, and Assessment Evaluators positions were designed to support students in complementary ways throughout their LB iLearn educational experience. For more information on these roles, see *Accelerators: LB iLearn Support Model* and *Appendix F: LB iLearn Personnel Descriptions*.

Stacked and latticed credentials – LB iLearn staff developed stacked and latticed credentials with the guidance of LBCC faculty, staff, and Advisory Committee members. Through input received from these groups, LB iLearn staff implemented seven programs with curriculum modified from LBCC to meet the needs of non-traditional students and the online environment. Six of the seven programs were implemented early in the grant with the final program undergoing a number of changes. See *Program Implementation* section for more information on these changes. The final program was implemented during the extension period, bringing the program total to seven. The seven programs that were implemented through the grant included Business Administration (degree), Medical Coding and Reimbursement (certificate), Office Technology Skills (certificate), Accounting Clerk (certificate), Social Media Specialist (certificate), Computed Tomography (certificate), and Entrepreneurship (certificate). Several of these programs lead to professional credentialing opportunities. The breakdown of these stacked and latticed credentials as well as job opportunities that individuals would be qualified for are outlined in Figure 2 on the following page.[16]

[13] The referred to "core elements" were drawn from the USDOL-issued Solicitation for Grant Applications document. See *Appendix A* for definitions.
[14] For more information, please see: https://www.canvaslms.com/
[15] See *Accelerators* section for more information.
[16] Information drawn from TPMA's Final Evaluation Plan and LBCC Labor Market documents.

Figure 2: LB iLearn Stacked and Latticed Credentials



Transferability and articulation of credit – To encourage students to continue their education at other four-year institutions, LB iLearn leadership worked to establish transfer and articulation agreements with a number of local universities. While some of these relationships existing prior to the grant, they were enhanced and expanded through the LB iLearn Campus. By the end of the grant, in March 2017, LB iLearn established agreements with the following institutions:

Oregon State University – this relationship was strengthened through a new connection with the university's eCampus, where staff regularly referred students to LB iLearn programs. In addition, Oregon State referred students to LB iLearn to complete math prerequisites that were needed to enroll at the university. LB iLearn has worked with Oregon State's Career Center, Alumni Association, and Business program to discuss the online programs offered at LB iLearn and to explore potential partnership opportunities.

Eastern Oregon University – new transfer pathway agreement established through the grant for the Business Administration program.

Southern Oregon University – new transfer pathway agreement established through the grant for the Business Administration program.

Advanced online and technology-enabled learning – Because of the nature of LB iLearn (a virtual college), implementing advanced online and technology-enabled learning was a significant priority for LB iLearn staff and an underpinning of the entire program strategy. Throughout the grant, staff and faculty worked to ensure the programs' course content, delivery structure, and setup met the needs of non-traditional students and students with barriers to education, and was suitable for the online environment. The competency-based format that was utilized was designed to increase access and ease of progression, as well as encourage self-pace.

The virtual platform – Canvas – was launched to host LB iLearn courses/programs and the faculty Curriculum Developers helped structure courses in a modular format using this platform. Assessment Evaluators designed creative assessments for LB iLearn courses to determine whether students demonstrated an adequate competency level with material taught in the course.[17] Content Experts and Assessment Evaluators were used to develop, facilitate, and assess student competencies with self-assessments provided to help students track their learning. Continuous feedback mechanisms and staff dedicated to improving course content, structure, and flow helped maintain student interest and strengthen support for students (through visuals and gamification).

Strategic alignment – LB iLearn staff and leadership worked to establish relationships with employers, community organizations, and education institutions to encourage participation and interaction with LB iLearn development, implementation, and anticipated growth.

> LB iLearn established an Advisory Committee comprised of **employers and community organizations** to discuss industry trends, skill gaps, and obtain feedback on LB iLearn curriculum and programs of study. These relationships with employers and community organizations allowed LB iLearn staff to host presentations, participate in company tours, and discuss future partnership opportunities. While these relationships have not yet evolved into partnerships for donations, customized training programs, and hiring commitments, LB iLearn leadership anticipate moving in this direction beyond the grant.
>
> As mentioned above, a number of relationships with **education institutions** yielded partnerships for transfer and articulation agreements. Throughout the grant, partnerships with three four-year institutions were established – Oregon State University, Eastern Oregon University, and Southern Oregon University.

Alignment with previously funded TAACCCT projects – The LB iLearn Leadership Team engaged previously funded TAACCCT staff throughout the project. In the beginning of the grant, these staff assisted LB iLearn staff with navigating grant requirements and deliverables, and shared lessons learned and best practices from their TAACCCT experience. Previously funded TAACCCT project staff also connected the Marketing Manager to employers and organizations that were engaged in the previous grant in an effort to expedite employer partnerships. During project closeout, these staff were helpful in assisting LB iLearn staff with grant closeout activities (e.g., reporting).

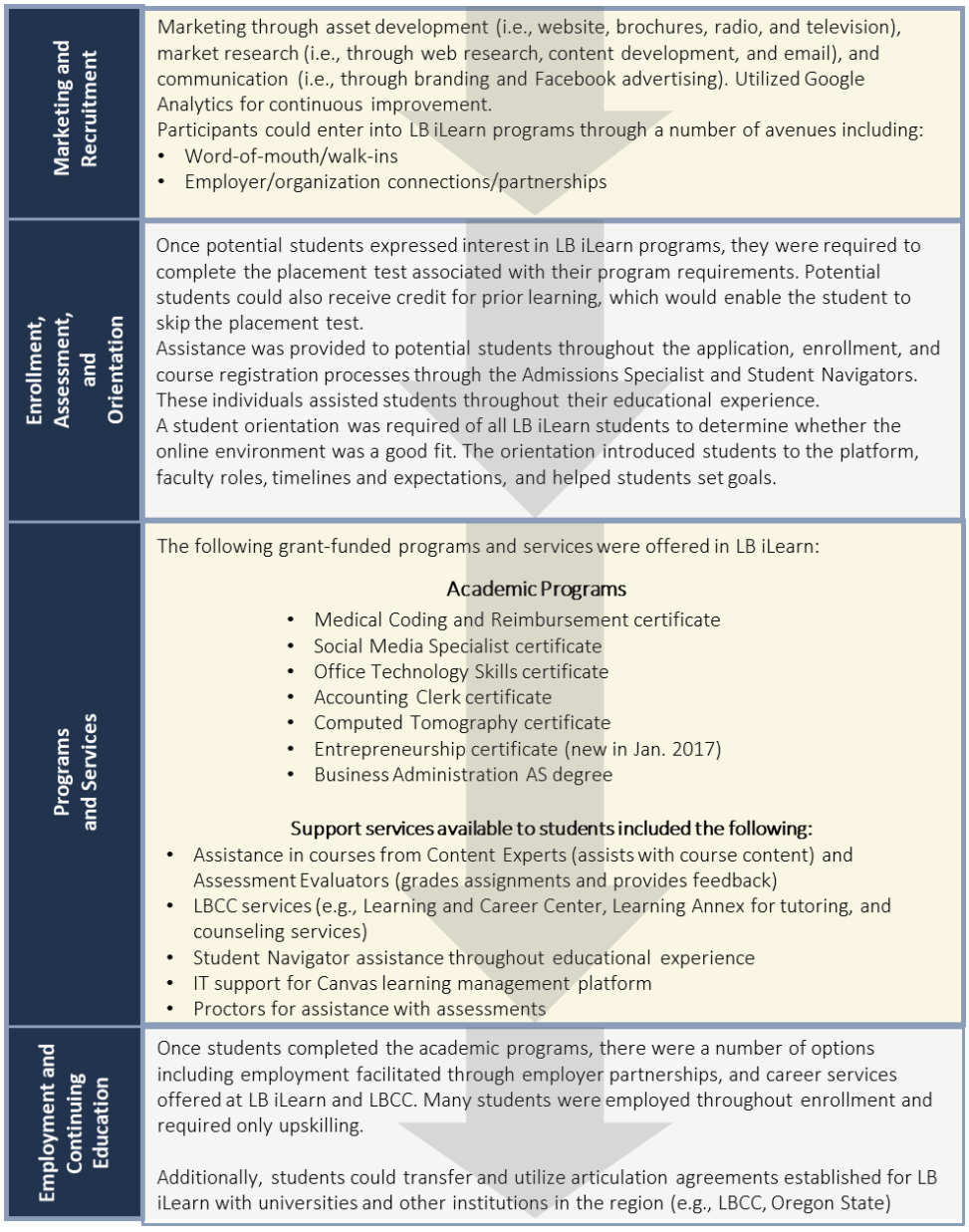
[17] See *Appendix F: LB iLearn Personnel Descriptions* for more information on these roles.

Participant Flow

LB iLearn leadership, staff, and faculty developed a series of marketing and recruitment strategies designed to recruit participants for LB iLearn programs. Once enrolled, assessments, diverse academic program offerings, and a wide array of student support and career services were intended to increase retention in programs and subsequent completion. Relationships and connections with employers, and articulation and transfer agreements were intended to assist participants with obtaining employment or continuing their education.

Figure 3 represents the marketing, recruiting, assessment, programs, and post-program opportunities for a typical participant going through an LB iLearn program.

Figure 3: LB iLearn Participant Flow



The LB iLearn Campus was designed to provide participants with an educational experience that would afford them technical skills and knowledge necessary for employment in Oregon's in-demand industries. Because previous education, employment history, and job readiness varied among participants, and because of the self-paced, competency-based nature of the academic programs, there was no specific standard enrollment timeframe envisioned for participants. Rather, students progressed as quickly or slowly as necessary through the courses depending on their needs and capabilities.

Marketing and Recruitment

There were multiple avenues from which a participant could be recruited and, thus, enter into an LB iLearn program. LB iLearn leadership and participants reported in interviews and through surveys that students entering LB iLearn programs typically learned about LB iLearn from the website. The specific avenues and strategies included:

Marketing

Participants could be marketed LB iLearn programs through a number of strategies around asset development (i.e., website, brochures, radio, and television), market research (i.e., through web research, content development, and email), and communication (i.e., through branding and Facebook advertising). LB iLearn monitored recruitment strategy success through Google Analytics for continuous improvement. A marketing consultant was originally hired to assist LB iLearn in the development of a marketing plan. This consultant prompted the hire of the Marketing Manager to implement the plan within LB iLearn's budget.

Recruitment

Word-of-Mouth/Walk-Ins – One form of recruitment came from potential student walk-ins and word-of-mouth. Student surveys indicated that this form was common as the students that completed LB iLearn programs would share their positive experiences with peers, encouraging others to inquire. While the most common of recruitment came from the website, word-of-mouth was a noted successful recruitment avenue.

Employer/Organization Connections/Partnerships – While not common until the end of the grant, some employers and organizations expressed interest in LB iLearn programs and distributed promotional materials to employees and customers. In addition, Oregon State University referred students to LB iLearn to complete prerequisite courses needed for enrollment.

Enrollment, Assessment, and Orientation

Enrollment

Once students passed the placement test required for their programs, Student Navigators and Admissions Specialists reached out to the students to assist with application forms, enrollment processes, and course registration. These individuals remained available for all students throughout their educational experience in LB iLearn.

The following page outlines academic programs and support services that were offered at LB iLearn:

Academic Programs

- Medical Coding and Reimbursement – certificate program
- Social Media Specialist – certificate program
- Office Technology Skills – certificate program
- Accounting Clerk – certificate program
- Computed Tomography – certificate program
- Entrepreneurship – certificate program (new program as of January 2017)
- Business Administration – degree program

Support Services

To ensure students were receiving adequate support throughout their educational experience, the following support and career services were provided through LBCC and LB iLearn:[18]

- Assistance in courses from Content Experts (subject matter experts) and Assessment Evaluators (graded assignments and provided feedback)
- Student Navigator assistance from application through completion
- IT support for Canvas learning management system/online delivery platform
- Proctors for assistance with assessments (e.g., submitting and IT questions)
- A host of services provided at LBCC including Learning and Career Center, Learning Annex for tutoring, counseling services, among others

Assessment

All potential program participants were required to complete placement tests associated with their program requirements to determine whether they could enroll in LB iLearn courses.[19] Students with prior learning experience could earn credit in lieu of the placement test.

Orientation

All incoming LB iLearn students were required to complete the student orientation. This orientation was developed to familiarize students with LB iLearn expectations, the online environment and platform, support services, and help students set goals to stay on track. The orientation was designed to help students determine whether the online learning environment was a good fit for their needs and career pathway.

Employment or Continuing Education

Once students completed LB iLearn programs, they typically took one of two paths:

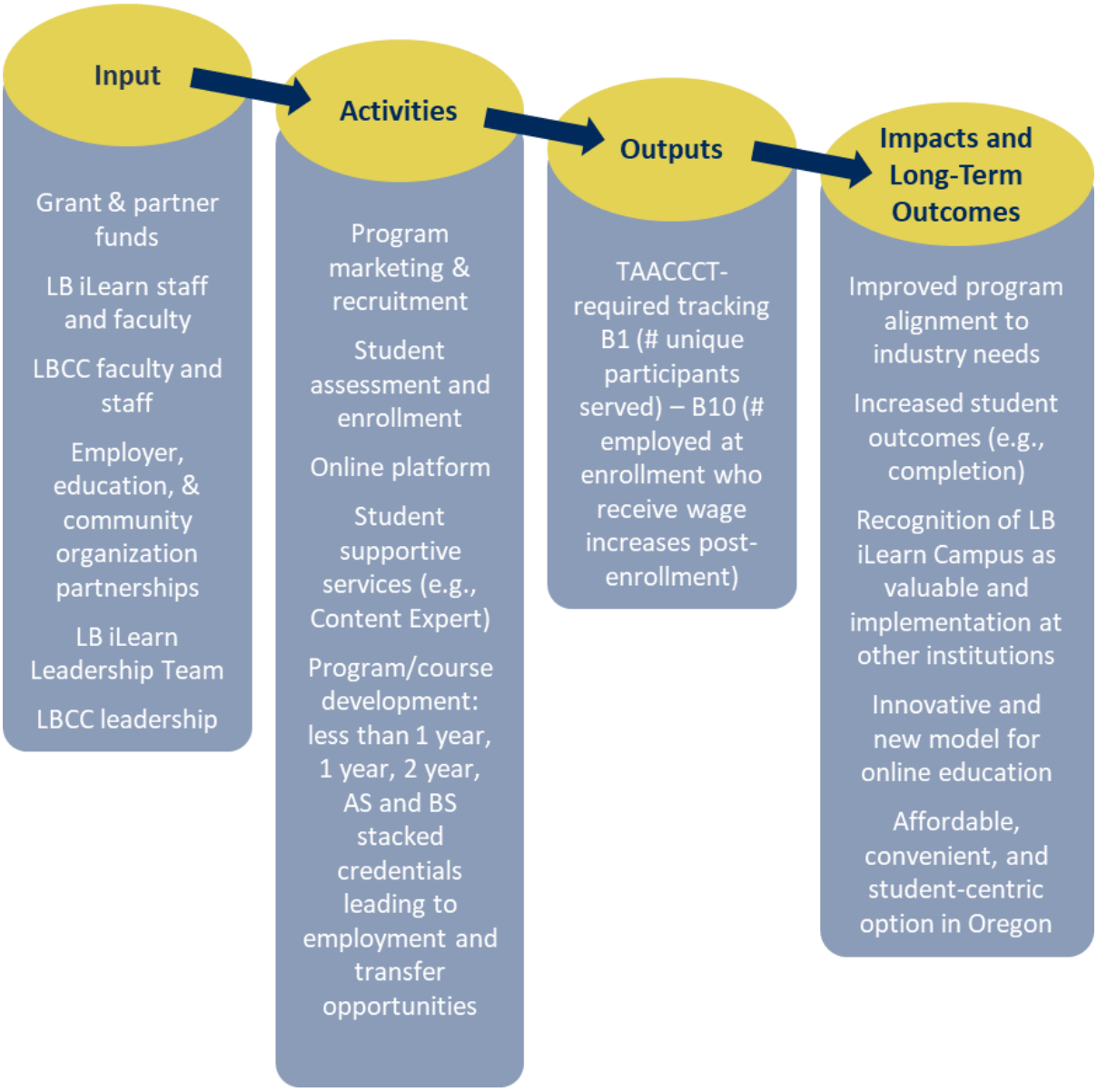
1. Obtain employment (or upskill with current employer) through career services provided at LBCC; or
2. Continue education to a four-year institution or at LBCC through transfer and articulation agreements.[20]

[18] See *Appendix F: LB iLearn Personnel Descriptions* for more information.
[19] This requirement could be met by completing the placement test for the program or receiving credit for prior learning.
[20] See *Transferability and Articulation* section for more details on the agreements that had been established.

Logic Model

The logic model that follows in Figure 4 outlines the resources utilized, activities undertaken, target outputs, and program outcomes that resulted from the LB iLearn Campus. The goal of LB iLearn was to increase the number of qualified, employable candidates in Oregon's growing industry sectors. This was accomplished by providing a student-centered educational experience that aimed to capitalize on innovative online education models, making credentials attainable for non-traditional students.

Figure 4: LB iLearn Campus Logic Model



Evidence Base

The activities that occurred under the LB iLearn Campus represented an emerging strategy, one that brought together the needs of students (e.g., accessible education) with the functions and purpose of a community college (e.g., serving all students). The purpose was to create a virtual college that had the support of LBCC and research on TAA-eligible and other non-traditional participants during the time of the grant application in 2013. The virtual college was new to the region, especially with the support models, competency-based framework, and rigorous course development process that was utilized.

As a new and untested idea, the proposed strategy was based on evidence that dislocated and disadvantaged adults will not have the post-secondary education that will be required of high paying jobs over the next ten years.[21] This challenge in producing qualified workers was coupled with the belief that training programs were not meeting the needs of dislocated and disadvantaged adults. Furthermore, the rural and remote areas that these individuals were located in were not conducive to traditional site-based program completion.

Given the evidence and assumptions, the intervention's hypothesis to incorporate a virtual college into LBCC was based on the following:

- Open Learning Initiative (OLI) participants, where minimal instructor contact was made during coursework, performed as well or better than students in traditional instructor-led courses;[22]
- Healthcare programs containing significant competency-based components, and demonstrated a much higher retention and completion rate over the last ten years compared to the traditional college;[23] and
- Online instructional program participants from Western Governor's University finished higher than 78 percent of other schools participating in the Collegiate Learning Assessment.[24]

With this evidence in mind, LB iLearn leadership designed the LB iLearn Campus to incorporate innovative online education models, making credentials attainable for non-traditional students by employing a competency-based framework. LB iLearn was designed to target disadvantaged adults and increase their capacity to retain or obtain jobs, advance in their jobs, experience higher wages, and be more productive for their employers.

LB iLearn operated under the following core values: involved faculty, student-centered focus, engaged dynamic learning, unique and individualized student experiences, and an easy-to-use course delivery system. Consistent with these values, LB iLearn was initially designed to be open-entry, competency-based, accelerated, and specifically designed to meet the training and education needs of disadvantaged adults.

[21] Drawn from original Technical Proposal submitted to USDOL
[22] Bowen, W., Lack, K., Chingos, M., & Nygren T. (2012). Interactive learning online at public universities evidence from randomized trials. Retrieved from: http://www.sr.ithaka.org/publications/interactive-learning-online-at-public-universities-evidence-from-randomized-trials/
[23] U.S. Department of Education (2012). Education Department Releases Guidance on Providing Title IV Eligibility for Competency-Based Learned Programs. [Press release] Retrieved from: https://ifap.ed.gov/dpcletters/GEN1310.html
[24] Mendenhall, R. (2012). Game changers: Education and information technologies. Retrieved from: https://library.educause.edu/resources/2012/5/chapter-9-western-governors-university

As the intervention was developed, the following strategies were designed to align with USDOL's core elements. These approaches, drawn from the original Technical Proposal submitted to USDOL, outlined the anticipated strategies for LB iLearn as well as their anticipated impact.[25]

Table 1: LB iLearn Initial Strategies and Expected Impact within USDOL-Identified Core Elements

Core Element	LB iLearn Initial Strategy[26]	Expected Impact
Evidence-Based Design	Create a virtual college that integrates competency-based education	Increase completion and graduation rates, persistence, and employment of disadvantaged adults
Stacked and Latticed Credentials	Partner with employers and industry representatives to identify industry trends, inform curriculum changes, and discuss skills needed in those fields	Stacked and latticed credentials to build upon educational and career advancement
Online and Technology-Enabled Learning	Implement a fully online, universally designed, competency-based, and modularized model with flexible enrollments	Improved access to online programs to allow for accelerated learning opportunities
Transferability and Articulation	Finalizing transferability and articulation agreements with four-year institutions and offering prior learning credits	Transferability agreements to ensure students can continue their education and prior learning credits to expedite time to program completion
Strategic Alignment	Coordinating with the Governor's plan, employers and industry, public workforce system, education institutions, and other organizations to assist/facilitate program development and implementation	Coordinating with these entities to finalize industry-recognized credentials, continuing education opportunities, and resources

[25] The activities listed were anticipated at the initial inception of the Technical Proposal, while actual activities are reflected earlier in the section as well as throughout the rest of the report.
[26] Information drawn from the original Technical Proposal submitted to USDOL.

The Evaluation

The Evaluation

Linn-Benton Community College (LBCC) contracted with Thomas P. Miller & Associates, LLC (TPMA), with Hamai Consulting as a partner, to serve as an independent, third-party evaluator. Within the evaluation, there were two main components:

Implementation Evaluation

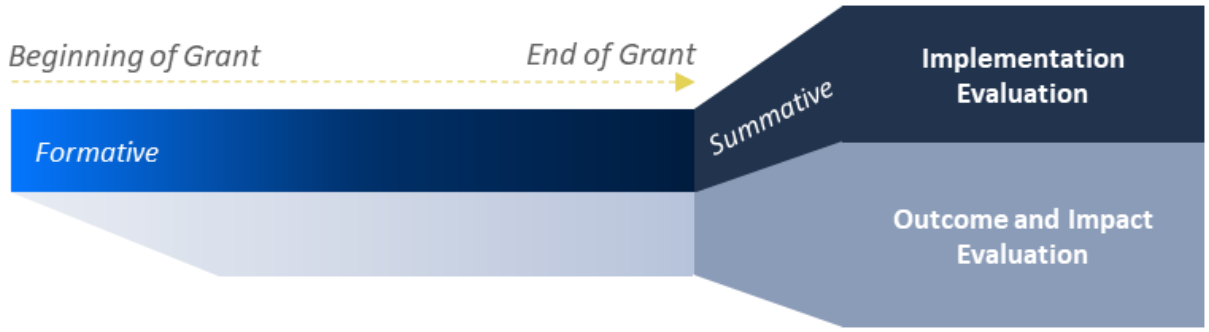
The Implementation Evaluation began October 2013 and continued through March 2017[27] to document program progress, monitor program outcomes, and provide recommendations for continuous improvement of program operations. The Implementation Evaluation primarily focused on the training provided by LB iLearn, but also covered progress of all grant-funded activities. The Implementation Evaluation was primarily qualitative and included conference calls, in-person interviews, virtual focus groups, quarterly surveys, curriculum review, and document reviews. The Implementation Evaluation could be described in two parts – the formative, or ongoing analysis of the program, and the summative, or the final cumulative program analysis.

Outcome and Impact Evaluation

The LB iLearn programs aimed to increase job placement for Trade Adjustment Assistance (TAA)-eligible and other disadvantaged learners by training them for high-wage, high-skill employment opportunities. The LB iLearn Campus targeted improvement in several academic and employment outcomes leading to job placement for its participants, including retention, program completion, transfer to additional higher education, employment placement, and earnings. The purpose of the outcome and impact evaluation was to assess whether the implementation of the LB iLearn Campus influenced participants' academic and employment outcomes, as compared with students attending the traditional Linn-Benton Community College (LBCC) campus (i.e., traditional campus) using a quasi-experimental design (QED) – propensity-score matching.

[27] All TAACCCT Round 3 grantees received a six-month extension, continuing the grant implementation period through March 2017 instead of September 2016.

Figure 5: Formative and Summative Evaluation



The formative Implementation Evaluation was conducted throughout the delivery of the LB iLearn project. Through this evaluation, the Evaluation Team documented program progress, successes, challenges, and provided ongoing recommendations to LB iLearn staff. Additionally, the formative Implementation Evaluation provided context for the Outcome and Impact Evaluation by documenting the timing and nature of adjustments to program design. The Outcome and Impact Evaluation used this documentation to understand whether changes to the program might affect various participants.

At the conclusion of the evaluation, and presented within this report, are the findings from the summative (cumulative) Implementation Evaluation and Outcome and Impact Evaluation.

Implementation Evaluation

Implementation Evaluation

Design Summary

The Implementation Evaluation of the LB iLearn Campus began in October 2013 and continued through March 2017. The purpose of the Implementation Evaluation was to document project progress, internal and environmental factors that influenced LB iLearn's rollout and operations, monitor project outcomes, and generate recommendations for continuous improvement of project operations. The Evaluation Team conducted a formative and summative evaluation, primarily focused on LB iLearn's programs and structures, key factors that influenced decision-making, and stakeholders' experiences with the Campus. Because LB iLearn's purpose was to increase the number of qualified, employable candidates by providing a student-centric educational experience utilizing competency-based online education models, another goal of the Implementation Evaluation was to establish lessons learned to enhance program implementation and results in real-time. Evaluation feedback was provided through analysis of the following primary themes:[28]

- Progress toward achieving program outcomes or milestones;
- Program accelerators and barriers;
- How unsuccessful strategies or activities could be adapted or modified to the realities surrounding the project; and
- Context for sustaining project activities.

To gather information on the themes above, the Evaluation Team used a combination of conference calls, virtual and in-person interviews, surveys, program documents, and artifact reviews including:[29]

- Quarterly implementation update calls with the LB iLearn Leadership Team
- In-person interviews with LB iLearn leadership, staff, and faculty; LB iLearn participants; and regional employers and community partners[30]
- Virtual and in-person focus groups with LB iLearn participants
- Quarterly surveys administered to individuals that expressed interest in LB iLearn, enrolled and/or dropped out of LB iLearn, and completed an LB iLearn program
- LB iLearn documents and artifacts, including quarterly program reports, work products and promotional materials, job descriptions, and others
- Curriculum review[31]

The Implementation Evaluation enabled the Evaluation Team, LB iLearn Leadership Team, and LB iLearn staff and faculty to better understand the project's core activities and the outputs produced by each activity. The analysis qualitatively evaluated LB iLearn's operations, activities, and results, placing the outcomes of the intervention into context with the implementation process and determining the degree of fidelity to the original project implementation plan, noting contextual factors that affected the program.

[28] For a description of analysis methods and data sources, see *Appendix B*.
[29] *Appendix B* contains descriptions of each Implementation Evaluation data source. Triangulating results from these varying sources was used as an attempt to address the limitation of partial and biased findings.
[30] The Evaluation Team used purposive and convenience sampling for employer and participant interviews coordinated by LB iLearn leadership. See *Appendix B* for a discussion on various limitations to the study.
[31] See *Accelerators* and *Appendix B* for more information.

This allowed the Evaluation Team to uncover potential threats to the validity of the study[32] and helped project staff understand how the process might be modified to produce better results.

Findings Overview

Findings for the Implementation Evaluation were grouped by research question themes. Every Implementation Evaluation research question is represented within this section. Overall themes within the Implementation Evaluation findings included:

Table 2: Findings Overview

Balance of Student Needs and Programmatic Development	Throughout the project, LB iLearn balanced accommodating student needs and the practicality of structuring programmatic operations. LB iLearn was designed to maintain flexibility (e.g., through competency-based, self-paced courses), accessibility (e.g., through an online structure), and affordability (e.g., through competency-based education, which can expedite time to completion). While this vision drove all LB iLearn Campus development, it also created challenges in programmatic development. LB iLearn's structure did not align with LBCC's administrative systems such as billing, grade submission and reporting, registration and course creation in Banner, faculty compensation, among others. Additionally, the competency-based model did not align with USDOE Title IV financial aid requirements (e.g., need for traditional term structures to administer financial aid). As a result, LB iLearn staff designed labor-intensive workaround processes to handle LB iLearn's administrative functions. Despite these challenges, the LB iLearn Leadership Team never strayed from the original vision for the Campus, but the challenges associated with LB iLearn's structure delayed programmatic development. This balance between remaining committed to LB iLearn's philosophy, accommodating the needs of the students, working to find an alternative way for LB iLearn to become Title IV-financial aid eligible, adhering to requirements around LBCC Financial Aid office's infrastructure, and programmatic development was critical. The LB iLearn Leadership Team's commitment to the process afforded LB iLearn the opportunity to maintain their original vision while meeting grant objectives.
Importance of Online Education	Throughout the grant period, a theme surrounding the importance of online education to accommodate educational needs for different populations surfaced. While LB iLearn faced a number of challenges due to the structure of the Campus, it enabled non-traditional students to reconsider their ability to access higher education. Interviewed and surveyed students indicated that they would not have been able to return to college without the option of virtual education. With that, LB iLearn used a comprehensive support system and rigorous curriculum development and review process to ensure ongoing student engagement and success. LBCC pioneered competency-based online education in their region and highlighted the importance of this option for non-traditional adult learners.
Capacity Building	The grant allowed the LB iLearn Leadership Team, staff, and faculty to experiment with programming innovations. Elements of these innovations will last beyond the grant period, including the online learning environment and presence of short-term, competency-based, self-paced academic programs. The LB iLearn Campus was designed to be flexible and adaptable through the online learning environment that was continually improved (e.g., Campus structure modifications, and curriculum and course quality control processes), allowing each student to customize their educational experience at LB iLearn. With this flexibility, however, came challenges with LB iLearn's faculty role structure. Many Content

[32] See *Appendix B: Informing Outcomes and Impact Evaluation* section.

Experts and Assessment Evaluators emphasized that the flexibility of LB iLearn encouraged them to work outside of normal business hours, reducing their capacity for LBCC and LB iLearn course instruction and support. However, it was through this struggle with flexibility that the LB iLearn Leadership Team, staff, and faculty were able to create real-time program innovations. LB iLearn developed its capacity to support and enhance program offerings moving beyond the grant. Grant-funded activities that contributed to the capacity building of the LB iLearn Campus are detailed in the *Implementation Evaluation: Beyond the Grant* section and include: virtual college structure and platform; student-centric approach, including the Student Navigator model; robust curriculum development and quality control processes; demand-driven approach; refined and focused programs; and stronger partner relationships.

Program Implementation

The content within this section of findings focuses on research questions grouped around the common elements of project implementation. These findings discuss the overall program rollout, changes, and project outputs.

Research Questions

- How were programs and program designs modified or expanded using grant funds? What delivery methods were offered? What was the program administrative structure? What support services and other services were offered?
- Was an in-depth assessment of participants' abilities, skills, and interests conducted to select participants into the grant program? What assessment tools and processes were used? Who conducted the assessment? How were the assessment results used? Were the assessment results useful in determining the appropriate program and course sequence for participants? Was career guidance provided, and if so, through what methods?
- What program outputs have been generated to date?

Annual Activities[33]

Year 1 (October 1, 2013 – September 30, 2014)

Year 1 of grant activities involved curriculum development, personnel hires, course delivery platform selection, refinement of faculty roles, and other project implementation activities. The LB iLearn Leadership Team was formed with six original members[34] and implemented a rigorous curriculum development process, which included involvement of multiple faculty and a beta-test process for each course. Three programs were developed and accredited – Business Administration, Social Media, and Medical Coding and Reimbursement – and an additional three programs were beta-tested in Year 1 – Office Technology Skills, Accounting Clerk, and Computed Tomography.[35] Curriculum Developers[36] (25 total in Year 1) tasked with generating LB iLearn course content and developing assessments and rubrics were brought on to finalize LB iLearn course curricula in each of the programs. For implemented programs and courses, 10-12 Content Experts and Assessments Evaluators assisted students with course content and graded course assessments.[37] Initial challenges surfaced around integrating LB iLearn with existing LBCC processes and systems, including administrative records and Title IV financial aid administration compatibility.

Year 2 (October 1, 2014 – September 30, 2015)

In Year 2 of grant operations, LB iLearn focused on finalizing six LB iLearn programs, which included beta testing, quality control and assurance processes, final modifications, and full launch. While the LB iLearn Leadership Team attempted to launch the seventh and final program in Year 2, challenges with USDOL approval to proposed programs and translating curricular requirements to an online format delayed

[33] For a detailed timeline of LB iLearn activities, see *Appendix D*.
[34] The six original members were: Ann Buchele, LB iLearn Campus Dean; Linda Carroll, business and accounting faculty; Stacy Mallory, healthcare programs faculty; Steve Smith, LBCC Distance Learning; Anne Whittington, Grant Manager; and Lara Miller, LB iLearn Campus Admissions Specialist.
[35] As outlined in the LB iLearn Campus section, the original plan was to offer a Polysomnography program but instead chose the Computed Tomography program due to student and employer needs.
[36] For a complete list of LB iLearn current and previous staff and faculty, see *Appendix F.*
[37] A compensation model was finalized for faculty serving as Content Experts and Assessment Evaluators in Year 1.

implementation.[38] The LB iLearn Leadership Team encouraged Curriculum Developers to use Open Educational Resources (OERs) when creating LB iLearn curriculum, but challenges surfaced with copyright restrictions. An orientation was developed to instruct faculty on how to appropriately integrate OERs into their classes. An additional orientation program was developed for incoming LB iLearn students to familiarize students with faculty roles (e.g., Assessment Evaluator and Student Navigator) and how to navigate an online, competency-based environment. The orientation helped students determine whether LB iLearn was a good fit for their career aspirations and personal circumstances. The most significant challenges experienced in Year 2 were around the incompatibility of LB iLearn's structure with Title IV financial aid administration. The non-term competency-based structure of LB iLearn meant that the Campus was not compatible with LBCC financial aid administration systems and USDOE requirements. A consultant – Attain[39] – was hired to facilitate and identify solutions for this problem.

The absence of Title IV financial aid availability for LB iLearn reportedly affected student enrollment in Year 2. To alleviate this obstacle, the LB iLearn Leadership Team implemented a revised pricing model to encourage enrollment.[40] Additionally, LB iLearn hired a consultant – Wildwood SEO[41] – to develop a marketing plan to streamline outreach and recruitment efforts. Throughout Year 2, the LB iLearn Leadership Team worked with the consultant to develop and implement targeted marketing strategies. Finally, LB iLearn Leadership Team members shifted in Year 2 to account for shifts to their LBCC roles (i.e., many team members came from LBCC and shifts in their roles – promotions and/or role changes – led to decreased involvement in LB iLearn and subsequent team shifts).

Year 3 (October 1, 2015 – September 30, 2016)

LB iLearn staff continued to shift roles in Year 3 of grant operations. Early in Year 3, a Marketing Manager was hired to implement the marketing plan developed by Wildwood SEO[42] in Year 2. Throughout Year 3, the Marketing Manager worked to establish connections and relationships with employers, organizations, and education institutions in the region. With the revised pricing model and specialized marketing staff, LB iLearn experienced increases in student enrollment. However, ongoing challenges with establishing LB iLearn's compatibility with Title IV financial aid continued to affect student enrollment numbers. The LB iLearn Leadership Team attempted to work with LBCC departments, other education institutions, USDOE, and a third-party consultant – Attain[43] – to determine the most appropriate strategy moving forward. Additional challenges around launch of the seventh academic program also surfaced in Year 3 and led to a shift in direction – to revamping and launching an Entrepreneurship certificate. Employers in the region identified a need for this certificate, which prompted LB iLearn staff to revise existing LBCC curriculum and integrate the program into LB iLearn's offerings. Despite the challenges experienced in Year 3, LB iLearn made progress in the realm of marketing, student enrollment, and program implementation.

[38] The original plan was to implement a Veterinary Technician degree program. However, this program was not easily integrated to an online format due to the laboratory and hands-on requirements. A Certificate Nursing Assistant certificate program was the next option but lengthy USDOL processes due to the switch in the plan from a degree to certificate program created delays.
[39] For more information, please see: https://www.attain.com/FAMSS
[40] The pricing model was such that the first course was $200/month, the second was $100/month, and the third was $50/month.
[41] For more information, please see: http://www.wildwoodseo.com/
[42] For more information, please see: http://www.wildwoodseo.com/
[43] For more information, please see: https://www.attain.com/FAMSS

Extension Period (October 1, 2016 – March 30, 2017)

Significant strides in program implementation, the quest for LB iLearn's Title IV financial aid eligibility, outreach and recruitment, industry and community engagement, and sustainability were made during the grant extension period. The seventh program – Entrepreneurship certificate – was launched in January 2017 as a result of challenges experienced in Year 2 with implementing a Certified Nursing Assistant program (e.g., federal approval) and identified employer needs. LBCC also committed to sustaining the LB iLearn Campus beyond the grant, working with the LB iLearn Leadership Team to develop a cost recovery plan to move the Campus toward self-sustainability, with temporary financial support for operations provided by LBCC. This cost recovery plan included definition of an approach to establish financial assistance options for students.

During the extension period, LB iLearn applied for a USDOE experimental site classification under the subscription period disbursement waiver[44] to obtain approval to administer Title IV financial aid under a non-term structure. Under the subscription period waiver, LB iLearn would charge students a single flat fee for all competency-based instruction within a specific period, which would waive the term structure requirement. Although USDOE wanted to grant LB iLearn the waiver, the LBCC Financial Aid department could not accommodate the amount of work required to administer financial aid for a non-term structure. To increase student enrollment until LBCC and LB iLearn could determine an acceptable solution, LB iLearn dedicated significant time to outreach and recruitment, emphasizing the self-paced program and flat fee per period structure. The LB iLearn Leadership Team and staff also established and cultivated connections with local employers, organizations, and education institutions to increase enrollment.

[44] For more information, please see: https://experimentalsites.ed.gov/exp/index.html

Project Changes

As highlighted in the Implementation Evaluation narrative above, throughout the course of the grant, changes and adjustments were made to the original project model. Reflecting on the original project design created for the grant application, several adjustments were made to account for lessons learned and contingencies that surfaced during actual program rollout and implementation. These adjustments were modifications to grant concepts/activities, which are outlined in Table 3.

Table 3: LB iLearn Program Changes and Associated Rationale

Item (Change)	Rationale
Programmatic Development	
Program Offerings	While the general goal of launching seven self-paced, competency-based programs in LB iLearn did not change, the types of programs implemented were modified. Due to a partnership with a medical facility early in the grant period, LB iLearn staff transitioned from a certificate program in Polysomnography to Computed Tomography. For the seventh program, the unsuitability of the Veterinary Technology degree program for an online platform due to laboratory time and hands-on requirements prompted the LB iLearn Leadership Team and staff to shift to a Certified Nursing Assistant certificate. However, challenges with obtaining federal approval to implement this change, as well as LBCC faculty preference for all nursing education offered through LBCC to remain non-virtual, prompted the LB iLearn Leadership Team and staff to research other options for the seventh program. LBCC's Business Office indicated an employer need for an Entrepreneurship certificate, encouraging LB iLearn staff to make this final change to program offerings during the grant extension period.
Curriculum Development Process	A rigorous curriculum development process was part of the initial plan to create quality LB iLearn curricula. With that, the LB iLearn Leadership Team implemented a beta testing phase early in the grant period to pilot key courses. This enabled staff to make changes to the courses to better meet the needs of non-traditional student populations. For instance, through beta testing it was discovered that the competency-scoring rubric would have required students to pass all points on the scale to move onto other LB iLearn courses. Therefore, the threshold was lowered from 80 percent (LBCC's standard threshold) to 75 percent to encourage completion. In addition, through this process, staff found that students were unsure how to best utilize the academic support available (e.g., Content Expert and Assessment Evaluator). Because of this, inefficiencies were created as staff needed to connect students to the appropriate support. The LB iLearn Leadership Team developed an orientation program for new students to outline the support model and other relevant topics (e.g., online platform usability and assessment scoring) to alleviate these inefficiencies. The orientation was required prior to course enrollment and helped students determine if an online, competency-based model was an appropriate fit for the student's career and personal aspiration. For more information about the curriculum development process, see *Project Elements: Robust Quality Control and Continuous Improvement Process*.

Internal Operations	
Target Population	Prior to project implementation, the target population for the LB iLearn Campus seemed straightforward – Trade Adjustment Assistance (TAA) and other disadvantaged adults.[45] However, upon LB iLearn Campus launch, staff began to recognize the need for clarifications of the target population definition due to surfaced concerns from LBCC. LBCC faculty felt the LB iLearn Campus was recruiting students that were enrolled at LBCC for LB iLearn programs. However, these populations were drastically different. For example, student focus groups revealed a population of students with disabilities that were drawn to the Campus because of the flexibility and online environment, which were more accommodating than a traditional college environment. Surveyed students also indicated that they would not have enrolled at the traditional campus as they had other obligations that prevented success in that environment (e.g., children and jobs). While LB iLearn staff did not necessarily anticipate an expansion on the definition of disadvantaged adults, they continued to make changes to course structure and content to reflect the students' needs.
Staffing and Leadership	Throughout the project, a number of leadership and staffing changes occurred within LB iLearn. These changes included multiple shifts in grant management such as the removal of the Internship Coordinator position, which was rolled into the Marketing Manager's responsibilities. In addition, Recruitment and Retention Specialists were removed with responsibilities rolled into the Marketing Manager's role and then added back at the end of the grant. The LB iLearn Leadership Team also experienced changes due to availability and shifting roles in LBCC's organizational structure.[46]
Cost-Recovery Model	During the initial planning stages of the grant, staff developed a cost-recovery tuition model outlining a business plan for LB iLearn to sustain itself at least five years into the future, with temporary operational support from LBCC. However, with the challenges of establishing Title IV financial aid and integrating with LBCC systems, among others, the cost-recovery model was revised. The revised cost-recovery model outlined assumptions (e.g., number of net students enrolling in LB iLearn) and a plan for the Campus to be self-sustaining in the next five years with the support of LBCC (versus by the end of the grant period with the support of LBCC, which was part of the original plan). See *Barriers and Challenges* section for more information.
Marketing and Recruitment	An Internship Coordinator was initially projected to conduct outreach and serve as a liaison between LB iLearn and TAA-eligible workers. While a Marketing Manager[47] was hired in Year 3 and tasked with community outreach and student recruitment, staff sought initial guidance from a third-party marketing consultant – Wildwood SEO.[48] Throughout much of the grant, the consultant assisted LB iLearn in branding, outreach strategies, and budgeting. Because of the time commitment of the marketing plan developed by the consultant, the Marketing Manager was hired to implement this plan and conduct outreach for LB iLearn moving forward. However, by the time the Marketing Manager was hired, a

[45] This information was drawn from the original Technical Proposal submitted to USDOL.
[46] For more information about LB iLearn staff and faculty roles, see *Appendix F*.
[47] The Internship Coordinator's responsibilities (highlighted in the original Technical Proposal) were rolled into the Marketing Manager's role.
[48] For more information about this consultant, please see: http://www.wildwoodseo.com/

	significant amount of the funds available for marketing had been expended. The Marketing Manager worked to implement as much of the consultant's plan as possible, identifying cost-effective solutions for components of the plan that would not have been implemented within the budget, and will continue outreach and recruitment efforts beyond the grant.
Data Tracking	One of the most significant challenges experienced throughout the project was the inability to integrate LB iLearn's operations with LBCC administrative systems due to its unique structure. The original Technical Proposal indicated plans for tracking each LB iLearn student through LBCC reporting systems to collect, record, store, and report outcomes. However, because the Campus could not integrate with these systems, tracking student data became more of a manual process (i.e., through Excel spreadsheets). Staff reported that these manual processes led to inefficiencies, as student data was tracked across different staff in different spreadsheets. While this approach was practical given student enrollment numbers, the LB iLearn Leadership Team anticipates challenges in the future and will be working to identify potential solutions beyond the grant.
Financial Aid	Within the first couple of years, the LB iLearn Leadership Team anticipated receiving approval for the Title IV financial aid application. However, with the challenges around the definition of competency-based education, structure of the LB iLearn Campus (e.g., online, competency-based), lack of administrative system integration (e.g., with Banner), among other challenges, financial aid was never established for the Campus. To counteract these barriers, LB iLearn staff changed the pricing model for the Campus courses, hired a consultant – Attain[49] – to guide the process, attended regular meetings with LBCC's Financial Aid Department to determine potential solutions, discussed options with other education institutions implementing similar models, sought direction from USDOL, and eventually applied for a subscription waiver under USDOE. However, LBCC did not have the infrastructure to process both LBCC and LB iLearn's financial aid so the process was halted. LB iLearn anticipates completing this process in the future but, until then, will attempt to better align with a standard term structure. LB iLearn will pilot this approach while also researching systems that could enable LB iLearn to offer weekly start dates and minimize complications for LBCC. See *Program Elements* and *Program Implementation* for more information.
Stakeholder Engagement	
Workforce System	While LB iLearn staff established a connection with the workforce system in the area and several TAA students enrolled throughout the project, the initial plan to have a cohort of TAA-eligible individuals complete LB iLearn programs did not materialize. The LB iLearn Leadership Team and workforce staff reported that the relationship between the two entities was strong, but the presence of TAA individuals in the region was not as prevalent as it was during the initial grant application.

[49] For more information, please see: https://www.attain.com/FAMSS

Community Partnerships	With the hire of a Marketing Manager in Year 3, LB iLearn made significant strides in establishing relationships and connections with employers and organizations in the community. However, because the Marketing Manager was not hired until Year 3, establishing partnerships that resulted in major contributions (e.g., donations and job placement for LB iLearn students) rather than general interest and referring some individuals to LB iLearn, did not occur before the end of the grant.[50] However, an Advisory Committee was established and used to review curriculum and identify skill needs. The Marketing Manager anticipates continuing to cultivate these Advisory Committee relationships and observing more significant contributions beyond the grant period.

[50] More information about the original plan for employer engagement is outlined in the *LB iLearn Campus* section.

Project Elements

The content within this section of findings focuses on research questions grouped around the common theme of project elements. These findings discuss the accelerators, barriers, and environmental factors that influenced grant success and progress.

Research Questions

- What have been accelerators and obstacles to program performance?
- What barriers hindered output achievement? What factors unexpectedly improved output achievement? Why?

Accelerators and Strengths

Strengths and accelerators are defined as elements of the LB iLearn Campus that positively impacted project outputs, outcomes, and/or implementation. Project accelerators included:

- LB iLearn Staff Commitment
- Robust Quality Control and Continuous Improvement Process
- LB iLearn Support Model
- Ongoing Recognition of Student's Academic Needs
- LB iLearn Accessibility and Flexibility
- Existing Programmatic Foundation
- Purchasing Power of the Grant

LB iLearn Staff Commitment

> "Typically, I have had to reach out to other institutions to create a partnership, but with LB iLearn, they came to me." *Industry Partner*

The LB iLearn Leadership Team, faculty, and staff were engaged and invested in the success of LB iLearn. Despite the challenges created by an unconventional Campus structure and education delivery method, the LB iLearn Leadership Team prioritized the original purpose and vision of the LB iLearn Campus: to develop and offer high quality, student-centric academic programs under a self-paced, competency based structure. Students and community partners reported they were continually impressed by LB iLearn staff's accessibility, responsiveness, and genuine desire to serve as resources. Community partners emphasized that their interest in a partnership with LB iLearn was due to the accessibility and responsiveness of the LB iLearn staff. One community partner indicated, "[LB] has been very responsive and comes to us. We always know what is happening with LB iLearn." This was due, in part, to weekly meetings amongst LB iLearn staff that facilitated collaborative decisions regarding challenges and improvements that could be made to support the success of LB iLearn. LB iLearn students reported throughout the grant that they felt supported and accommodated by LB iLearn staff indicating that Student Navigators connected them to resources, assisted with enrollment and the orientation process, and addressed technical problems.

The LB iLearn faculty also dedicated their time to the LB iLearn Campus by instructing courses, developing curriculum, and serving in different support roles for students (e.g., Content Experts). Students emphasized that the interaction with Content Experts and Assessment Evaluators was valuable stating, "It was like having a teacher right there even though it was online." Many of the faculty also instructed courses on the

traditional campus, adding LB iLearn to their LBCC workload. LB iLearn faculty continually worked to support the development and continuous improvement of LB iLearn.

Robust Quality Control and Continuous Improvement Process

To ensure a high level of program quality and consistency of content as well as skills and competencies gained with programs offered at LBCC, LB iLearn curricula were adapted from traditional LBCC programs. The extensive process of adapting the curriculum included a rigorous quality control process that involved the following activities, in no particular order:

1. Development of learning specifications to ensure quality through instructional designers and subsequent gamification testing to maximize engagement with and access to content;
2. Training and orientation for faculty Curriculum Developers to ensure consistent and rigorous material development;
3. Beta test of all LB iLearn programs to ensure students' needs were met and appropriate modifications could be made;
4. Adherence to the Quality Matters[51] rubric to evaluate the design of the online content;
5. Review of curriculum from LBCC's Curricular Issues Committee;
6. Review of curriculum from third party consultant – WorkED Consulting[52] as well as other Subject Matter Experts;
7. Secondary quality improvement process to ensure all courses complied with the Americans with Disabilities Act[53] (use of closed captioning and scripts); and
8. Consistent review and improvement of course modules by LB iLearn faculty and Builders, with training and orientation content reinforcement.

As an institution, LBCC underwent a curriculum review process during the grant period to ensure that all courses identified direct student outcomes/objectives to maintain accreditation with the Northwest Commission on Colleges and Universities. These outcomes were measurable, specific, and tied to assessments, eliminating purposeless assignments for LB iLearn-enrolled students and providing LB iLearn staff with meaningful data that could be used to measure future success.

As part of the Implementation Evaluation, third party consultant – WorkED Consulting – conducted a review of LB iLearn course curriculum. Within this, a review of the percentage of Open Educational Resources, course outcomes and assessments, teaching methods, and industry standards used was completed for 25 LB iLearn courses from various programs. This information was used to supplement other quality assurance approaches used throughout the curriculum development and continuous improvement process described above. The robust quality control and continuous improvement processes empowered LB iLearn to maintain the student-centered approach that served as the foundation for LB iLearn during the initial discussions/planning of the model.

[51] Quality Matters is a program that created a scalable process for course quality assurance. For more information, please see: https://www.qualitymatters.org/.
[52] See *Appendix B* for more information about this Implementation Evaluation component.
[53] For more information, please see: https://www.ada.gov/

LB iLearn Support Model

To further facilitate student success in LB iLearn, a three-pronged approach to student support was utilized. Content Experts, Assessment Evaluators, and Student Navigators were incorporated into the learning structure and are described in detail below:[54]

Content Experts from various disciplines (many were LBCC faculty) were hired to assist students in learning and mastering course material. These faculty provided subject matter expertise and assistance to students regarding LB iLearn course material.

Assessment Evaluators were tasked with grading assessments according to a rubric developed by Curriculum Developers.[55] Assessment Evaluators also provided qualitative feedback and comments on the student's coursework, and many Assessment Evaluators were LBCC faculty.

Student Navigators assisted students through their educational experience in LB iLearn from enrollment through course/program completion. Navigators provided a range of assistance from program enrollment to communication with students regarding progress and interventions (e.g., if students were at-risk of dropping out or not progressing through modules).

> "The Navigator's functions have been a huge success and a very important component of iLearn…administrators want to expand elements of the Navigator role across the [traditional] campus."
> *LB iLearn Leadership Team Member*

Admissions Specialists assisted students through the admissions process. This included applications, enrollment, registration for orientation, and other assistance that students required in order to enroll into LB iLearn courses.

LB iLearn students also had access to Information Technology support staff for questions regarding the Canvas platform[56] and Proctors for assistance with assessment scheduling. The ability for students to access a number of different support staff virtually, was a noted selling point of the LB iLearn Campus. LB iLearn students agreed that these staff played a role in student satisfaction and success in the programs.

Ongoing Recognition of Student's Academic Needs

Throughout the grant, the LB iLearn Leadership Team, staff, and faculty continually worked to meet the student's educational needs. During initial Campus development, the LB iLearn Leadership Team and faculty conducted a beta test of developed LB iLearn programs to demonstrate that non-traditional student needs were being addressed, and that students could succeed in the existing course structure. The beta test enabled LB iLearn Builders to make modifications and enhancements to courses, which were continually monitored by Builders for potential threats and barriers to student success. In addition, LB iLearn staff developed an orientation program that students were required to complete prior to course enrollment. This orientation highlighted faculty roles (e.g., Content Experts) and helped students determine if an online, competency-based environment fit their career and personal aspirations.

[54] For a complete list of LB iLearn current and previous staff and faculty, see *Appendix F*.
[55] Curriculum Developers were typically faculty that were tasked with generating LB iLearn course content, assessments, and assessment rubrics for each credit unit measuring if a student attained a competency based on the defined student outcomes.
[56] Canvas is a learning management system used by K-12 and higher education institutions. For more information, please see: https://www.canvaslms.com/k-12/

> "With my condition, I have a lot of appointments and can't sit long. iLearn made it easy for me to go back to school and helped me."
> *Program Participant*

The nature of the LB iLearn Campus provided a means for non-traditional student populations with barriers to traditional education structures and schedules, to complete a post-secondary degree or certificate through the online platform – Canvas.[57] Both LB iLearn faculty and students consistently reported the Canvas platform as user-friendly. The online platform enabled students to access course content at any time (e.g., students were able to start and stop coursework throughout the day), while offering a support system of Content Experts, Assessment Evaluators, and technical assistance and other support staff. See *LB iLearn Support Model* section above for more details. Students reported they were empowered to ask questions regarding course content, materials, assignments, and Canvas as specific LB iLearn staff were dedicated to each of these areas. LB iLearn students consistently reported that the ability to access staff at any time was a unique and helpful feature of the LB iLearn Campus.

LB iLearn Accessibility and Flexibility

The LB iLearn Campus online structure allowed students to take up to two courses at a time, which were completed online their own pace. These courses began every Wednesday and could be completed over holiday breaks as coursework could be accessed at any point through the platform, accommodating students with other obligations (e.g., full-time employment). LB iLearn also utilized a competency-based structure enabling students to progress through the course upon content mastery.[58] The competency-based model allowed students to complete courses more quickly as they did not have to adhere to a traditional course model (e.g., semester-long, lecture format). Students could progress to the next module in the course as soon as they passed the assessment for the previous course. This expedited course model was a valued component of LB iLearn's structure as many of the students were employed and/or were confronted by other circumstances that limited the time they could spend in class. Survey results indicated that students chose LB iLearn over traditional programs because of other obligations that prevented them from taking courses during the day (e.g., children and full-time job). The substantive support, technology-enabled learning, and purposeful LB iLearn content development facilitated the singular focus on student achievement and success upon which LB iLearn was built; cultivating an environment that was flexible and accessible to students that may otherwise have been unable to attend college.

> "Taking one course at a time allowed me to get the full impact of the program."
> *Program Participant*

Existing Programmatic Foundation

Although grant funds provided the means to develop infrastructure and fund personnel for the LB iLearn Campus, much of the curricula were based on already-existing and accredited programs offered through LBCC. The existing programmatic structure enabled LB iLearn staff, faculty, and leadership to expedite curriculum approval processes. While the curriculum was revamped using grant funds to align it with industry and non-traditional student needs as well as the online model, it provided LB iLearn with a framework from which to work.

[57] For more information, please see: https://www.canvaslms.com/
[58] Scoring 75 percent on assessments indicated student mastery in the LB iLearn Campus (drawn from Faculty Association contract).

LB iLearn leveraged the existing LBCC accreditation to expedite Campus development. Because the accreditation process for a new, fully online campus would have required a significant amount of time, LB iLearn was compelled to obtain accreditation in connection with LBCC. LB iLearn also utilized LBCC's existing Advisory Committees to ensure programs were aligned with industry needs and other college resources from the beginning of the grant. While a number of challenges surfaced throughout the grant period in terms of reconciling LB iLearn's unique structure with LBCC administrative systems and operations, the LB iLearn Leadership Team was able to expedite accreditation and curriculum approval by leveraging LBCC curriculum, processes, and existing accreditation.

Purchasing Power of the Grant

The grant funds that LBCC received enabled the college to develop and staff a new, fully online college. The ability to hire staff specifically for LB iLearn and purchase all necessary technology empowered the LB iLearn Leadership Team to accomplish the objective of providing an alternative education option for individuals with barriers to education. The USDOL grant funds enabled the LB iLearn Leadership Team, staff, and faculty to develop a philosophy and vision for the Campus that guided all subsequent grant activities. This philosophy included maintaining the **flexibility** (i.e., ability to enroll in one course at a time, each Wednesday), **accessibility** (i.e., ability to complete courses/programs completely online and at the student's own pace), and **affordability** (i.e., ability to provide career-focused education for a competitive price) for non-traditional students seeking post-secondary education.

Barriers and Challenges

As with any grant project, several factors hinder or slow grant progress. For LB iLearn, these included a range of elements from student enrollment and recruitment, to traditional campus collaboration and financial aid. These hindering factors included:

- Administrative System Integration
- Ongoing Absence of Title IV Financial Aid Eligibility
- Familiarity with Competency-Based Education
- Inconsistent Collaboration and Communication
- Operating/Innovating Within LBCC
- Accelerated Project Design and Development
- LB iLearn Faculty Capacity

Administrative System Integration

As originally envisioned, LB iLearn's non-term, competency-based structure was incompatible with LBCC systems that relied on standard terms (e.g., Banner and Financial Aid), hindering LB iLearn's progress throughout the grant period. The preferred non-term model allowed students to enroll and complete courses at any time and at their own pace but required significant modifications to LBCC's administrative systems to implement. Banner – the student information system used at LBCC – could not be modified in a cost-effective way that would accommodate the non-term model as significant modifications were needed and the college enacted a moratorium on all modifications to Banner, eliminating the possibility of integrating Banner with the non-term model.

> "The most significant barriers [the program] faces for success and sustainability are the [non-term] structure's incompatibility with systems at the college, which are extrapolated and replicated all the way up to systems at the federal level."
> *LB iLearn Leadership Team Member*

The incompatibility of LB iLearn with Banner facilitated constraints with a number of administrative tasks such as tracking, billing, registration, course creation, and reporting. These tasks were managed manually by LB iLearn staff, which also further impacted compatibility with other administrative and data systems at LBCC. For instance, the Business office had to track invoices, which were sent by LB iLearn staff, and manually add tuition costs to the invoices each month. The LB iLearn Leadership Team and staff efforts to develop workarounds to these system incompatibilities and manage tasks manually diverted a significant amount of time and effort away from other program implementation activities.

Ongoing Absence of Title IV Financial Aid Eligibility

Establishing financial aid was a consistent obstacle as the LB iLearn Campus did not align with LBCC's term-based structure, which is a requirement for standard USDOE Title IV financial aid administration. Even after applying for an experimental site waiver[59] from the USDOE under the subscription period disbursement provision, and with support from LBCC administrators, LBCC could not practically implement aid disbursement on a non-term schedule because it would have been too complicated and time-consuming. LBCC staff reported that accommodating a model such as non-term, which would enable LB iLearn to continue course offerings every Wednesday and self-paced student completion, would require significant staffing to manage manual financial aid administration. As a smaller community college, LBCC did not have the administrative capacity and infrastructure to maintain a non-term model without the hire of additional staff. Because the grant targeted non-traditional student populations that could have financial barriers to education, and nearly 60 percent of LBCC students applied for financial aid in the 2015-2016 academic year,[60] establishing a financial aid model was critical to increasing student enrollment. The absence of financial aid reportedly affected student enrollment into LB iLearn throughout the grant period.

> "The lack of financial aid made it hard to sell [LB iLearn] to employers and potential students."
> *LB iLearn Leadership Team*

To address these obstacles, the LB iLearn Leadership Team revised the pricing model by significantly lowering tuition costs to encourage student enrollment and retention in LB iLearn programs. Throughout the grant period, the LB iLearn Leadership Team, LBCC administrators, and LBCC department staff dedicated a significant amount of time to identifying potential solutions for financial aid. For example, the LB iLearn Leadership Team examined and collaborated with other similar education institutions employing non-term models to draw out best practices and potential action plans. The LB iLearn Leadership Team also established regular meetings with LBCC departments – Financial Aid – to address financial aid questions and concerns as well as develop a plan. LBCC administrators assisted the LB iLearn Leadership Team with the experimental site waiver application[61] to USDOE and continued to discuss potential solutions.

While LB iLearn anticipates completing the process of receiving the subscription waiver in the future, at the current time, LBCC reported that the infrastructure was not in place to process financial aid for both LBCC and LB iLearn. LB iLearn will still prioritize the flexibility and student-centered approach but anticipate fewer course start dates to better align with a standard term structure. LB iLearn will pilot this approach beyond the grant and will continue researching systems that could enable LB iLearn to offer weekly start dates, while minimizing complications for LBCC.

[59] For more information, please see: https://experimentalsites.ed.gov/exp/index.html
[60] Retrieved from LBCC's 2015-2016 Common Data Set
[61] For more information, please see: https://experimentalsites.ed.gov/exp/index.html

Familiarity with Competency-Based Education

Because the concept of competency-based education was so new and innovative when LB iLearn was designed, there was a lack of definition available to establish parameters around the approach. With this lack of parameters, LB iLearn received accreditation quickly from the Northwest Commission on Colleges and Universities at the beginning of the grant. However, as the LB iLearn Campus was implemented, challenges surfaced around the definition of competency-based education.

The purpose of the Campus was to provide a student-centric approach to education through the use of competency-based, modularized courses. The ability for students to start a course every week and complete at the student's pace was innovative but did not align with standard term structures. The ambiguity around the concept of competency-based education exacerbated existing challenges with establishing financial aid and integrating with LBCC systems as definitions could not be finalized between LB iLearn and LBCC, or verified from the U.S. Department of Education.

> "Competency-based education was not well-defined at the beginning of the grant. This was a new concept for us and them [NW Association of Colleges and Universities and LBCC]."
> *LB iLearn Leadership Team*

As the grant progressed, and familiarity with and use of competency-based education increased, regulations and requirements for institutions utilizing these models increased as well. Despite receiving accreditation, LB iLearn staff were asked to document and submit retrospective data to the Northwest Commission on Colleges and Universities to meet expanded requirements around this model. This process, reported by the LB iLearn Leadership Team, was lengthy and time-consuming. Because the use and understanding of this model increased since 2012 (the original grant application process), requirements and regulations as well as definitions also increased. LB iLearn staff will continue to adjust to these changes moving forward.

Inconsistent Collaboration and Communication

Because the concept of LB iLearn was so innovative, the original grant writing team reported challenges in identifying the appropriate college departments to engage because the concept of LB iLearn was so innovative. Because of this, college departments such as Financial Aid and Institutional Research indicated that they were not as involved in discussions regarding concerns and best practices prior to grant award (e.g., how to integrate the virtual college into LBCC systems) as they preferred. Reportedly, this influenced the progress of LB iLearn as the LB iLearn Leadership Team could not anticipate the challenges that were experienced throughout the project (lack of Banner integration and financial aid, most notably) because the virtual college concept was new to the team and college as a whole.

As the grant progressed, the LB iLearn Leadership Team became increasingly focused on addressing challenges, such as establishing a financial aid structure, and less on communicating with LBCC about progress. Communication between the LB iLearn Leadership Team and LBCC did not occur as consistently as many LBCC faculty had anticipated, and LBCC faculty reported confusion around what the LB iLearn Campus had accomplished, the challenges LB iLearn was facing, and future plans. The inconsistent communication exacerbated concerns around the target population of the grant. Interviewed LBCC staff indicated a belief that LB iLearn staff were actively recruiting students from LBCC. However, LB iLearn student surveys highlighted that those enrolled in LB iLearn programs would not have enrolled in traditional programs due to obligations (e.g., children and full-time) that would have prevented daytime class

attendance. While these results revealed that LB iLearn was targeting a different demographic, inconsistent communication and collaboration facilitated concerns among LBCC faculty and staff. LBCC faculty indicated the desire to be involved in LB iLearn development and implementation, and emphasized that consistent communication could have alleviated the negative perceptions of the LB iLearn Campus that surfaced throughout the grant.

Operating/Innovating Within LBCC

The LB iLearn Leadership Team anticipated and avoided some challenges by aligning LB iLearn with existing resources and processes at LBCC (e.g., obtaining accreditation and adapting existing LBCC curricula). With this, however, LB iLearn was unable to make changes independent of LBCC, including improvements to competency-based material, grading system threshold changes, and modifications to faculty compensation. Any changes had to be adapted by both LB iLearn and LBCC, and go through the appropriate approval processes at LBCC.

LB iLearn staff, faculty, and leadership reported that they were unable to make certain changes because of the need to adhere to LBCC processes. These challenges reportedly halted innovation within LB iLearn as changes could not be made to better meet the needs of the unique student population targeted through the Campus. This was especially prevalent for LBCC curriculum, which required substantial modifications to better address non-traditional student needs – a target for the LB iLearn Campus. However, these changes could not be made to the curriculum unless LBCC adapted the same changes. This was not always practical for LBCC as the campuses had different goals, target audiences, and course objectives. Operating within LBCC created a number of challenges with modifying course curriculum, faculty compensation for LB iLearn faculty, and grading system changes (i.e., threshold for meeting competency was changed from the LBCC standard – 80 percent – to 75 percent,[62] requiring significant negotiations) throughout the grant.

Accelerated Program Design and Development

Upon the release of the grant, LBCC voiced significant interest in the development and launch of the virtual college. With this push, a Leadership Team was developed to plan, develop, and implement the concept within the bounds of the grant requirements. A group of 30-40 faculty, managers, and staff were also brought together to finalize the LB iLearn concept and the steps needed to implement the virtual college. However, the consistent push from LBCC to expedite implementation stressed the progress of LB iLearn initially, as the LB iLearn Leadership Team attempted to accelerate the development process.

Because of this, challenges surfaced around faculty buy-in (i.e., the LB iLearn Leadership Team could not adequately involve LBCC faculty because they were focusing on implementation) and project implementation (i.e., some college departments were not involved or as involved as anticipated in planning, which perpetuated challenges around administrative system integration and financial aid establishment).

[62] As indicated throughout the report, the competency threshold is the percentage an LB iLearn student must obtain from a graded assessment in order to be classified as mastering the content and move on to the next module.

LB iLearn Faculty Capacity

> "It's a major time commitment of these roles, especially if you fill both [Content Expert and Assessment Evaluator] roles."
> *LB iLearn Faculty*

Most of the LB iLearn faculty were drawn from LBCC to serve as Content Experts and Assessment Evaluators for LB iLearn courses. Therefore, many of the LB iLearn faculty were working for LB iLearn in addition to LBCC to serve as Content Experts and Assessment Evaluators.[63] Throughout the grant, faculty reported that serving in the Assessment Evaluator role was significantly time consuming given the 24-hour turnaround for grading assessments. Because LB iLearn students could submit assessments at any time (e.g., during holiday breaks, weekends, and late evenings), Assessment Evaluators reported grading assessments more frequently than in traditional classes (i.e., there was no specific deadline, so Assessment Evaluators graded assessments as they were submitted versus after a single deadline). While compensation was increased for Assessments Evaluators, these individuals reported challenges in accommodating the responsibilities of this role.

Environmental Factors

In addition to accelerators and barriers, there were also several external factors within the environment surrounding LB iLearn, which positively and negatively influenced project implementation. These included:

- Innovative Nature of Online, Competency-Based Model
- Institutional Systems and Bureaucracy

Innovative Nature of Online, Competency-Based Model

Online education is increasingly more common in the United States with 27.1 percent of higher education institutions offering at least one distance education course.[64] This has been attributed to the innovative nature, low cost to operate and maintain, and ability to enroll more students in online education; thus, increasing overall profitability for the higher education institution.[65] However, skeptics argue there is a lack of academic rigor in and fiscal strength of online education as compared to traditional campus settings as well as challenges in placing hands-on programs online.[66] While many of these concerns have been dismantled by research, this larger context has very likely shaped the perceptions of and attitudes toward LB iLearn by the LBCC administration and faculty.

The non-term, student-centered design of LB iLearn is highly innovative. Online and competency-based education may not be a new concept but such a substantial change to the way education is delivered requires large changes in faculty expectations and behaviors (e.g., availability throughout the entire calendar year), student enrollment and account billing systems, course registration and grade tracking, and course delivery (e.g., flexibility that permits every student to receive different material at any given point in time). The online, competency-based structure of LB iLearn was a challenge to implement from the administrative side, but was a success from student and LB iLearn staff perspectives because of the student-centered approach and flexible nature of online, competency-based education. LB iLearn students reported in interviews and surveys that they would not have been able to enroll in a certificate/degree program if

[63] For a complete list of LB iLearn current and previous staff and faculty, see *Appendix F*.
[64] United States Department of Education, National Center for Education Statistics, 2016.
[65] Christensen, C., Eyring, H., & Young, B. (2012). The Innovative University: Changing the DNA of Higher Education. *Forum for the Future of Higher Education*, 47-53.
[66] Barth, T. (2007). Teaching PA Online: Reflections of a Skeptic. *International Journal of Public Administration*, 439-455 and Rovai, A. & Downey, J. (2010). Why Some Distance Education Programs Fail While Others Succeed in a Global Environment. *The Internet and Higher Education*, 141-147.

they did not have the option of online education. The innovative structure created a higher education environment that was accessible, flexible, and cost-effective. The innovative nature of the LB iLearn model is both its biggest strength and its biggest challenge.

Institutional Systems and Bureaucracy

Within all institutions exists some sort of bureaucratic system. However, as emphasized by the LB iLearn Leadership Team, this system can sometimes work against innovative practices due to the nature of systemic bureaucracy. Large organizations, such as postsecondary institutions, develop bureaucratic processes to gain adequate accountability for the diverse ranges of work completed. Large institutions also utilize bureaucratic systems to ensure appropriate division of labor, provide a well-defined hierarchy of authority, a governing system of rules covering the rights and duties of employees, and systematic procedures for diverse work situations.[67] The bureaucratic system in place at LBCC facilitated progress for LB iLearn in that the Campus could leverage existing curriculum to expedite program implementation and draw from the LBCC faculty pool for LB iLearn faculty, Content Experts, and Assessment Evaluators.

However, this system is only successful for large volumes of routine work and can be dysfunctional with regard to work that facilitates drastic changes to the operational environment.[68] Innovative structures and models can require significant modifications to the traditional college operations. For LB iLearn, the online, competency-based model did not align with LBCC administrative systems, creating significant delays in financial aid establishment. Research identified the necessary components that encourage innovative practices under the constraints of institutional bureaucracy, including clear objectives; college participation and support; steady pace of activities; timing and adaptation to context; reflection, learning, feedback; and effective leadership.[69] These elements must collectively encourage innovation within a bureaucratic system, surfacing challenges for those attempting to implement new and innovative models.

[67] Kimbrough, R. & Todd, E. (1997). Bureaucratic Organization and Educational Change. *Educational Leadership.*
[68] Thomas, P., McDonnell, J., McCulloch, J., and While, A. (2005). Increasing Capacity for Innovation in Bureaucratic Systems. Retrieved from www.ncbi.nlm.nih.gov/pmc/articles/PMC1466894/
[69] Thomas, P., McDonnell, J., McCulloch, J., and While, A. (2005). Increasing Capacity for Innovation in Bureaucratic Systems. Retrieved from www.ncbi.nlm.nih.gov/pmc/articles/PMC1466894/

Student Progress

The content within this section of findings focuses on research questions grouped around the common theme of student progress. These findings outline student feedback and quarterly survey data.

Research Questions

- How satisfied are participants with the program? Why?

Student Perspectives

Interviewed students reported overall satisfaction with the program offerings and structure of LB iLearn. Students indicated satisfaction with the following:

Flexibility and pace – Students indicated that the inherent flexibility of LB iLearn's structure (i.e., online, competency-based, weekly enrollment) enabled them to complete courses at their own pace. For many students, the ability to enroll and complete courses at any point in the year was a significant factor in their decision to enroll. Most surveyed students indicated that they enrolled in an LB iLearn program over a traditional program because of the flexibility as it accommodated their other obligations (e.g., children and job) and traditional programs did not have that level of flexibility. Interviewed students indicated completing courses during holiday breaks and after business hours, allowing them to maintain employment. Almost all surveyed students indicated interest in LB iLearn because of the online course delivery and ability to complete courses at their own pace,[70] which expedited time to completion for many students.

> "It's hard to carve out time [for school] when you have other obligations. I appreciated the flexibility [of LB iLearn]."
> *Program Participant*

Student support – LB iLearn's tiered support model provided students with a number of options for assistance. The Content Experts helped students learn the course material, while the Student Navigators assisted students throughout their educational experience.[71] Students accessed these individuals easily and reported that the staff and faculty were helpful and valuable.

> "The support is so great it's like having a teacher right there even though you don't."
> *Program Participant*

Competency-based online learning model – The competency-based structure of LB iLearn made it possible for students to complete certificate and degree programs more quickly than a traditional program would allow. Students could demonstrate mastery of knowledge and competencies for each course and then move on without adhering to a standard term/semester. The online model was accessible to students with barriers to education (e.g., job, family, and/or rural/remote location), and interviewed students reported the online, competency-based model as a selling point for them.

> "I looked into LBCC and other colleges but the opportunity to complete coursework online is why I chose LB iLearn."
> *Program Participant*

[70] See *Appendix E* for more findings from the survey.
[71] For more information on this support model, see *Accelerators and Strengths*.

Survey Findings

Throughout the course of the grant, a survey was administered to assess the perceived effectiveness of various components of the LB iLearn Campus. The survey evaluated the experience of individuals related to the enrollment process, virtual coursework, and interactions with faculty, career services, and support services. The survey was administered to three groups: (1) individuals that expressed interest in LB iLearn courses but did not enroll; (2) students that were enrolled/dropped out of LB iLearn courses; and (3) students that completed an LB iLearn program.[72] Survey distribution to these groups occurred on a quarterly basis from January 2016 through July 2017 to capture feedback through the end of the grant period.[73] From the period of January 2016 to July 2017, a total of 157 individuals responded to the survey. A brief overview of findings is outlined in the following sections with detail provided in *Appendix E*.

Recruitment and Application Process

Recruitment-targeted questions were incorporated into the survey to better understand how individuals entered, or did not enter, the LB iLearn Campus. Through these questions, it was found that the LB iLearn website was identified as the most effective tool in recruiting potential students and should be a focus for continuous improvements moving forward. Individuals were interested in the LB iLearn Campus because of the online course delivery model and ability to complete courses at the individual's own pace. For individuals that enrolled in LB iLearn programs/courses, having obligations that prevented them from taking traditional courses during the day (e.g., children and job) was noted as the most significant factor leading to the student's decision to enroll at LB iLearn versus a traditional campus (29, 56.86%). After learning of LB iLearn, most respondents enrolled in at least one course (63, 40.91%) at the Campus. Interest reportedly remained high among those who did not enroll.

Student Orientation

Students that were enrolled at LB iLearn – either completed or dropped out of a program/course – were targeted for questions regarding student orientation. The student orientation was required for all students prior to course enrollment to familiarize students with faculty roles (e.g., Content Experts) and help students navigate the online competency-based model. The orientation also helped students determine whether this model was appropriate for them given their career and personal aspirations. Almost every student who enrolled at the LB iLearn Campus reported completing the orientation (61, 92.42%). Students perceived all parts of the orientation as useful, but the sections on setting up proctoring for Credit Unit Assessments and submitting assignments were most frequently rated as being critical or very useful. One student indicated, "I would not have been successful getting through courses without the orientation maneuvering me through the different areas."

Assessment and Placement

Questions on assessments and placement tests targeted whether students completed a placement or assessment as part of their program's requirements and, if so, whether they understood how their results were used. Each LB iLearn program has their own placement test requirements, which can be met by sending transcripts from previous coursework outlining equivalent college courses. However, it was important to understand whether students that completed an assessment or placement test were aware of how the results would be used. Of the 14 individuals that reported completing an assessment, less than

[72] For more information regarding the methodology used to administer and analyze this survey data as well as findings, please see *Appendix E*.
[73] A pilot of the survey was conducted in November 2015 with key students to ensure language was appropriate for the target audience, questions yielded appropriate responses, and the survey structure functioned properly (e.g., skip logic).

half (7, 46.67%) reported an understanding of how their assessment results were used. Students that did understand how the results were used reported that placement into courses and fulfillment of pre-requisites depended on their results.

Couse Delivery and Content

The delivery and LB iLearn course content were significant components of the Campus. Therefore, students were asked questions about the Canvas[74] platform to get a better understanding of the effectiveness and satisfaction with the delivery platform. The appropriateness of course content was also targeted to measure whether students perceived that the curriculum development process matched their abilities. Because much of the LB iLearn curriculum existed at LBCC prior to the grant (and was modified for the Campus), LB iLearn staff wanted to confirm that the course content was appropriate for students in the programs.

Overall, students were satisfied with Canvas, considered the platform user-friendly, and stated that Canvas was the appropriate platform for the online Campus. In addition, students perceived the course content as being an appropriate level of difficulty, of high quality, and effective in helping them learn the material.

Student Support

Implementing a model of faculty support through different roles (i.e., Content Expert, Assessment Evaluator, and Navigator) was a significant component of LB iLearn design and implementation. Therefore, questions around the effectiveness of these faculty in serving the diverse roles that they were designed to fill, was critical to the survey. Additionally, LB iLearn staff wanted to measure whether faculty were used intentionally, and in an appropriate way, given their role within the Campus.

For many tasks, students looked to one or two LB iLearn staff members for a particular type of support. For example, students overwhelmingly turned to the Navigator for support with completing orientation, answering questions not related to course content, and checking on their progress in the program. Students reported interacting most frequently with the Navigator (all students reported interacting sometimes, often, or very often with the Navigator). Interactions were less frequent with the Content Expert and Assessment Evaluator (each had the most responses for rarely interacted or did not interact at all). Therefore, the Student Navigator continued to be the students' main point of contact throughout their educational experience with LB iLearn.

Career and Employment Services

As part of LB iLearn's connection to LBCC, LB iLearn students were able to utilize support services offered at the main campus, including career and employment services. These questions targeted the utilization and effectiveness of the career services provided to students enrolled in the LB iLearn Campus.

Similar to the findings in the Assessment and Placement section, students indicated limited engagement with career services. For those that reported utilization of career services, students indicated that the services were useful, and students were generally satisfied with their engagement with this department.

[74] For more information, please see: https://www.canvaslms.com/

Program Partners

The content within this section is focused on partner engagement and perspectives. Throughout the course of the evaluation, the Evaluation Team interviewed employers and community partners, and discussed partner engagement with LB iLearn staff and leadership.

Research Questions

- How satisfied are program partners with the program? Why?
- What contributions did each of the partners (employer, workforce system, other training providers and educators, philanthropic organizations, and others as applicable) make in terms of: (1) program design; (2) curriculum development; (3) recruitment; (4) training; (5) placement; (6) program management; (7) leveraging of resources; and (8) commitments to program sustainability? What factors contributed to partners' involvement or lack of involvement in the program? Which contributions from partners were the most critical to the success of the grant program? Which contributions from partners had less of an impact?

Partner Engagement and Perspectives

Interviewed community partners and employers reported that LB iLearn staff provided a high level of responsiveness in how they reached out to partners and listened to their needs. Partners indicated that LB iLearn's visibility and activity in the community laid the groundwork for positive relationships. Interviewed partners emphasized interest in developing more meaningful relationships and partnerships with LB iLearn when financial aid and/or customized training programs are established.

> "There are other affordable options for education in the area but nothing as accessible as LB iLearn."
> *Partner*

Partner engagement in the development and implementation of LB iLearn primarily took two forms:

Advisory Committee meetings – LB iLearn utilized Advisory Committee meetings to obtain feedback and input from employers in the community. The Campus hosted three meetings to discuss skill gaps, employee needs, and opportunities for future partnerships. LB iLearn staff expressed the value of these meetings in ensuring the courses and programs were continually fulfilling the needs of employers in the region.

> "The committee meeting was very productive and we are excited to see where things go with LB iLearn."
> *Employer Partner*

Informal presentations and meetings – When the Marketing Manager was hired, LB iLearn presented to and met with a number of community organizations and employers in the area. These meetings increased familiarity with the Campus and explored unmet skill needs (with employers), potential student needs (with community partners), and opportunities for future partnerships. Through this outreach, the Marketing Manager became visible in the community and increased familiarity with LB iLearn to explore potential partnership opportunities.

> "It's exciting to be at the table and provide [the Marketing Manager] with the opportunities to discuss LB iLearn."
> *Community Partner*

Beyond the Grant

The following research questions focus on sustainable change created by the grant and considerations for other institutions of higher education that may implement a project similar to the LB iLearn Campus.

Research Questions

- How can program processes, tools, and/or systems be modified to improve performance?
- How can the program expand or enhance institutional capacity? What are the most promising programmatic components to use institution-wide? Why?

Program Sustainability

Reflecting over the grant period, LB iLearn leadership, staff, and faculty indicated satisfaction with LB iLearn. The LB iLearn Leadership Team, staff, and faculty recognized the importance of LBCC's existing programs and institutional resources in reducing start-up time. LB iLearn leadership, staff, and faculty promoted and maintained the original philosophy of the Campus – accessibility, flexibility, and affordability for students with barriers to education.

The LB iLearn Leadership Team will continue implementing and improving the programs to serve student and partner needs. The LB iLearn Leadership Team indicated that they will continue to work toward cost recovery and will offer additional programs as the funding period ends. With the support of LBCC, all LB iLearn programs will continue beyond the grant.

LB iLearn leadership reported satisfaction with several outcomes, including a positive participant experience,[75] mutually beneficial relationships developed between employers and partners,[76] and several sustained changes from the programs. The following are legacies of the LB iLearn Campus:

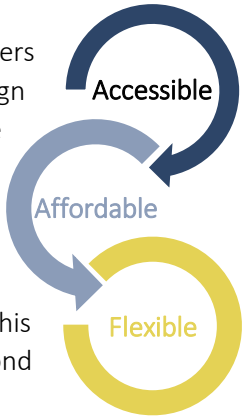
- Virtual College Structure and Platform
- Student-Centric Approach
- Robust Curriculum Development and Quality Control Processes
- Demand-Driven Approach
- Refined and Focused Programs
- Stronger Partner Relationships

Virtual College Structure and Platform

The LB iLearn Campus structure (e.g., self-paced, competency-based, modularized), and course delivery platform Canvas,[77] allowed LB iLearn staff and faculty to offer innovative and meaningful learning experiences to students. With a completely online, competency-based educational structure, leadership and partners indicated that LB iLearn was the first education institution to offer this type of structure in the region. The competitive advantage of LB iLearn's design enabled LB iLearn leadership to sustain programs moving beyond the grant and was deemed one of the most successful components of this grant.

[75] Seen throughout *Accelerators* and *Student Progress* sections.
[76] Seen throughout *Program Partners* section.
[77] For more information, please see: https://www.canvaslms.com/

Student-Centric Approach



The LB iLearn Campus was designed to meet the needs of non-traditional adult learners and other disadvantaged individuals. With that, every decision on programmatic design and development was based on the philosophy that LB iLearn should be accessible (e.g., ability to complete courses/programs completely online and at the student's own pace), affordable (e.g., ability to provide career-focused education at competitive price), and flexible (e.g., ability to enroll in one course at a time, each Wednesday). These objectives guided decisions on LB iLearn Campus structure, financial aid, support services, marketing strategies, and stakeholder engagement. This approach, which resulted in reported student satisfaction, will be maintained beyond the grant.

Robust Curriculum Development and Quality Control Processes

To develop and maintain quality curricula for LB iLearn students, a number of quality control processes were implemented (e.g., training for Curriculum Developers, Quality Matters compliance, and consistent course review by Builders). These processes helped align the curriculum, adapted from LBCC programs, with the needs of non-traditional students and determine whether the curriculum was appropriate for the online structure of LB iLearn. These processes were ingrained in the structure and function of LB iLearn through staff and faculty reinforcement (e.g., training for consistency and LBCC Curricular Issues Committee reviews), which will continue beyond the grant. The LB iLearn Leadership Team anticipates implementation of additional programs in the coming year, which will utilize the same quality control processes. The robust processes helped LB iLearn develop relevant and high-quality program offerings and will be replicated in future curriculum efforts.

Demand-Driven Approach

The LB iLearn Leadership Team, faculty, and staff experienced a strengthened focus on the needs identified by participants and employers in programmatic development and implementation. Specifically, this demand-driven approach enabled the LB iLearn Leadership Team to gather feedback from both participants and employers to determine the best programs to implement. The LB iLearn Leadership Team offered additional programs (i.e., Entrepreneurship),[78] even though they were not part of the original project plan because of needs in the community. Additionally, LB iLearn developed new partner relationships through the grant to facilitate this demand-driven approach.

Refined and Focused Programs

While many of the LB iLearn programs existed at LBCC prior to the grant, grant funds enabled LB iLearn leadership and faculty to enhance and expand the programs in a number of different ways. For instance, LB iLearn curriculum was refined to reflect industry and student needs (e.g., employers identified relevant skills and curriculum was adjusted to reflect adult learners' work experience and lack of educational experience). Grant funds afforded LB iLearn the opportunity to implement the online learning management system – Canvas[79] – to enhance the student's learning experience. LB iLearn staff, faculty, and leadership were able to refine and focus programs directly to employer and student needs using grant funds.

[78] For more information about this certificate, please see the *LB iLearn Campus* section.
[79] For more information, please see: https://www.canvaslms.com/

Stronger Partner Relationships

The grant project, especially through the expansion and enhancement of LB iLearn programs, highlighted the need to meaningfully engage employers in program development and cultivate strong relationships with partners in the community. Fundamentally, identifying in-demand skillsets in different industries and articulation/transfer agreements could not be accomplished without partner engagement. The LB iLearn Leadership Team and staff reported a stronger focus on reaching out to community partners for program development assistance and partnership opportunities than before the grant. This was due, in part, to having a dedicated LB iLearn staff member – Marketing Manager – to conduct outreach and community engagement activities for the Campus. The Marketing Manager allocated time to promoting LB iLearn programs, and will continue these efforts beyond the grant.

Future Project Implementation

LB iLearn leadership, staff, and faculty identified the following recommendations for an education institution considering implementing a project similar to that of the LB iLearn Campus. It is important to note that these recommendations were drawn from best practices utilized by LB iLearn as well as lessons learned that were identified by staff, faculty, and leadership. These best practices and lessons learned fall into two general categories – program design and development and stakeholder engagement and collaboration.

Considerations for Program Design and Development

- Identify Project Priorities First
- Emphasize Student Support Services in Project Design
- Engage in Curriculum/Course Development After Establishing Administrative Processes
- Budget for the Time and Costs of Building and Customizing Administrative Processes
- Understand Impact of Institutional Bureaucracy on Innovative Practices
- Maintain Flexibility in Project Implementation

Considerations for Stakeholder Engagement and Collaboration

- Prioritize College, Faculty, and Community Investment in Planning and Implementation
- Hire Marketing-Specific Staff Early in Project
- Share Expertise to Maximize Efficiencies Across College

Considerations for Program Design and Development

For Starting or Adapting the LB iLearn Campus

Identify Project Priorities First

The team that will lead and implement the project should consider identifying the priorities of the project as early as possible. These priorities (i.e., self-paced, student-centered education like that of LB iLearn) guide all decisions ranging from design to implementation. These priorities also help expedite decisions as grant leadership understands, and has already agreed upon, the guiding principles of the project. It is critical for grant leadership to discuss and determine the priorities of the project prior to development and implementation. These principles become the reference point for all activities and decisions moving forward.

Emphasize Student Support Services in Project Design

When targeting non-traditional and adult learners, it is critical to consider the student support services that are appropriate for the population. Typically, this population is returning to college after multiple years of being in the workforce and/or away from the college atmosphere. The gap in attending college generates concerns for these students, as they are unfamiliar and uncomfortable with the college environment and processes (e.g., time commitment and enrollment process). Designing robust student support services that accommodate and support students, as well as designating staff specifically to these support services, is beneficial to student populations that may prefer the additional assistance. Developing comprehensive student support services that can guide and support students through their educational experience from enrollment to completion is valuable for these populations and should be prioritized in project design.

Engage in Curriculum/Course Development After Establishing Administrative Processes

Creating protocols for the process of tracking, collecting, and distributing administrative data and executing normal administrative processes (e.g., student registration) throughout the grant period and beyond is critical to the impact and success of a new program. In addition, creating processes and procedures early in the grant, if possible, will afford the grant management team the opportunity to determine where challenges may arise (i.e., integration into other data systems) and whether a system should be put in place that is unique to the project (i.e., implementing their own data system that can communicate with the other systems).

Establishing these administrative systems prior to curriculum/course development means that it is possible to address the major challenges that may threaten the long-term feasibility before substantial faculty, staff, and students are invested in the program. Further, expenses and personnel time can be hyper-focused on building these difficult systems, without having their attention diverted to supporting the curriculum development, recruitment, and course delivery processes.

When developing these processes and procedures, consider addressing:

1. How student information is going to be tracked and stored throughout their enrollment in the program or course;
2. Developing a timeline for data collection and distribution to other data systems for federal and state reporting that aligns with existing systems;
3. In what ways the data should be distributed to internal and external stakeholders;
4. The types and uses for data within various college departments that may overlap or conflict with the new program's data and systems;
5. The compatibility with other data systems at the institution; and
6. Costs that will likely be incurred for retrieving and storing data, especially if a tracking system must be developed or the project requires integration with other systems.

Budget for the Time and Costs of Building and Customizing Administrative Processes

In program development, it is necessary to budget funds and time to the development and customization of the technological infrastructure that lays the foundation for the operation of the new programs. Sometimes external consultants may be needed to facilitate initial programmatic components around financial aid, curriculum development, sustainability, staffing, administrative data and systems, and marketing/recruiting, as well as integrate the new components with existing systems. These consultants could also benefit the college departments, as they are able to express their concerns and/or support for

the project as well as provide their expertise on ways to best implement the project based on their needs and capabilities. Planning to invest substantial resources and time for this stage at the very beginning of the grant will lessen pressures to make progress in other aspects of implementation prior to the creation of critical systems.

Understand Impact of Institutional Bureaucracy on Innovative Practices

In general, innovating under the umbrella of institutional bureaucracy can be difficult, especially when the policies and procedures that make up the bureaucratic system inhibit innovation and innovative practices. To ensure that innovation can occur within the institution's bureaucratic system, there are a number of factors that must be in place. These factors include:

- **College participation and support** to create a forum for creativity;
- **Effective leadership** that encourages and facilitates innovative thinking;
- Appropriate **timing and adaption to the context** of the region so there is capacity to support innovation;
- **Clear objectives** to guide the innovative activity/idea;
- Opportunities for **reflection, learning, and feedback** to encourage continual and consistent innovation; and
- Activities implemented at a **steady pace** so individuals have the freedom to innovate rather than managing a chaotic, fast-paced environment.[80]

In addition to the points above, taking a more systematic, program-development approach could help expedite implementation as it accounts for the system that the program is functioning within and encourages communication and involvement of the relevant parties early on. Functioning within the bureaucratic system, which cannot be dismantled anyway, could facilitate success.

Maintain Flexibility in Project Implementation

Throughout any grant project, programs, staff, processes, and other components may need to be changed to accommodate project/process delays, changes in priorities/objectives, and staffing models. Because of this reality, it is important to remain flexible throughout project implementation to ensure that grant objectives are still met. Following a specific project plan and timeline are important as it encourages accountability and sets deadlines for grant components, while recognizing that the plan should be malleable, enables the project team to adjust to the realities of grant implementation more easily. Maintaining flexibility in project implementation is critical to successful grant project implementation.

Considerations for Stakeholder Engagement and Collaboration

For Starting or Adapting the LB iLearn Campus

Prioritize College, Faculty, and Community Investment in Planning and Implementation

College, faculty, and community investment in new grant projects is significant when considering grant success. Discussions with key representatives from these areas help the grant development team achieve buy-in from stakeholders and determine how it makes sense to work and communicate with the college, faculty, and community. Engaging these individuals from the beginning could expedite program development and implementation, as these entities are already aware of the grant components and

[80] Thomas, P., McDonell, J., McCulloch, J., and While, A. (2005). *Increasing Capacity for Innovation in Bureaucratic Systems.* Retrieved from www.ncbi.nlm.nih.gov/pmc/articles/PMC1466894/

activities as well as their role in the project. In addition, these discussions encourage conversations around college infrastructure, federal policies, and other obstacles that can hinder grant implementation. Engaging college, faculty, and community investment in project planning and implementation can help address obstacles early and expedite implementation, resulting in a successful grant project.

Hire Marketing-Specific Staff Early in Project

Innovative and strategic marketing and outreach approaches facilitate program enrollment and meaningful partnerships with community organizations and employers. While some institutions have been successful utilizing the marketing staff that are already present at the college, it is important to consider the practicality of hiring marketing-specific staff for the grant project. This individual can lead partnership development with community organizations and employers that are specific to the need of the grant programs, and can assist in enrollment and development of promotional materials that are targeted toward the grant program's student population. Hiring a marketing-specific individual that serves only the grant has been a successful approach for many grantees as that person is dedicated to the target population and focus of the grant only.

If hiring this person is feasible, it should be done early in grant implementation as that person can participate in conversations about how best to meet the target population's needs, and can customize outreach strategies according to those discussions. Institutions implementing a similar grant project should consider hiring a staff member that specializes in outreach specifically for the grant programs early in the project to ensure grant objectives and metrics are met.

Share Expertise to Maximize Efficiencies Across College

For institutions that receive multiple grants, developing operational efficiencies and sharing best practices can help ensure all grants (1) adhere to requirements and regulations, (2) promote successful best practices in program development and implementation, and (3) share resources, if applicable (i.e. partnerships and data tracking). Institutions can also develop a structure to share content knowledge across all grants (i.e., Project Managers from past grants can meet with new Managers to share best practices and lessons learned).

Outcome and Impact Evaluation

Outcome and Impact Evaluation

Introduction

The LB iLearn programs aimed to increase job placement for Trade Adjustment Assistance (TAA)-eligible and other disadvantaged learners by training them for high-wage, high-skill employment opportunities. The LB iLearn Campus targeted improvement in several academic and employment outcomes leading to job placement for its participants, including retention, program completion, transfer to additional higher education, employment placement, and earnings. The purpose of the outcome and impact evaluation was to assess whether the implementation of the LB iLearn Campus influenced participants' academic and employment outcomes, as compared with students attending the traditional Linn-Benton Community College (LBCC) campus (i.e., traditional campus) using a quasi-experimental design (QED) – propensity-score matching.

Design Summary

First, the Evaluation Team used a correlational design to examine the variables that facilitated or hindered academic success (program completion, credits earned, enrollment in further education), and career improvement (employment status and wage increases). Second, the Evaluation Team used a propensity-score-matched comparison group design to compare the impact of the program on students' employability and academic achievement for program participants and non-participants. See *Appendix C* for a detailed description of the design and method.

The outcome and impact evaluation included students who enrolled in their first credit[81] at the LB iLearn Campus and traditional campus during the Fall 2014 quarter through the Winter 2017 quarter (on or before March 31, 2017). All of the students in the LB iLearn certificate and degree programs funded by the Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant comprised the treatment group. The comparison group was comprised of students enrolled at the traditional LBCC campus in a program that was comparable to a TAACCCT-funded virtual LB iLearn program. Five of the LB iLearn programs (Office Specialist certificate, Accounting Clerk certificate, Business Administration degree, Medical Coding and Reimbursement Specialist certificate, and Practical Business Management/Entrepreneurship certificate) were adaptations of LBCC programs for LB iLearn's online format. The last two LB iLearn programs (Computed Tomography certificate and Social Media Specialist certificate) did not have an equivalent program on the traditional campus, and, thus, were excluded from the comparative analyses.

The Evaluation Team conducted 1:2 optimal matching of the comparison to treatment group.[82] Matching balanced the groups for all the covariates, except for number of days enrolled and age. Although not balanced, matching substantially reduced the amount of selection bias for these two variables. To adjust for the remaining group differences, number of days enrolled and age will be included as covariates in the outcome analyses. See *Appendix C* for a detailed description of the treatment and control groups, and matching process.

[81] The definition of first credit is either (a) first credit in an LB iLearn program (even if they took previous credits at LBCC) or (b) declared a comparison group major and were enrolled during the grant period (regardless of timing of first credit at LBCC).
[82] Gu & Rosenbaum, 1993.

This final report focuses on the outcomes and impact achieved for students since the creation of the LB iLearn Campus. Data were used from 15 academic quarters, spanning from Fall 2014 through Winter 2017 (including only students enrolled on or prior to March 31, 2017). Data were collected as part of the ongoing activities of the LB iLearn programs using the assessment tools and database used as part of LBCC's program review process, and results from the standard LBCC Graduate Follow-Up Survey. Data were also supplied through partnerships with the National Student Clearinghouse and Oregon Employment Department. See *Appendix C* for a detailed description of the data sources.

Research Questions

The following research questions guided the outcome and impact evaluation:

1. Is the LB iLearn Campus successful in preparing students for either a career or completing higher academic achievement?
    a. What variables correlate with and/or predict success or failure within the LB iLearn Campus competency-based model?
    b. What variables correlate with and/or predict retention in the LB iLearn Campus?
2. Do LB iLearn Campus students demonstrate greater levels of educational achievement, labor market outcomes, and student success than traditional LBCC students?

Findings Overview

Research Question 1: Is the LB iLearn Campus successful in preparing students for either a career or completing higher academic achievement?

To uncover the predictors of success and retention within the LB iLearn Campus, the Evaluation Team conducted six multiple regressions using data for all the LB iLearn Campus participants, adjusting for the covariates (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative Grade Point Average (GPA)). Each of the six regressions had a different dependent variable, including: (1) program completion, (2) credits earned, (3) transfer to a four-year institution, (4) retention in the LB iLearn Campus, (5) employment placement, and (6) wage upon completion of the program.[83] See *Appendix C* for more details about each analysis.

Program Completion

None of the seven student covariates predicted the likelihood of students completing their academic program, $\chi^2(20) = 13.45$, $p > .05$. However, major ($\beta = .24$, $t(168) = 2.83$, $p = .005$), days enrolled ($\beta = .15$, $t(168) = 2.07$, $p = .040$), race/ethnicity ($\beta = .16$, $t(168) = 2.18$, $p = .030$), and cumulative GPA ($\beta = .17$, $t(168) = 2.35$, $p = .020$) significantly predicted percent of required courses students had completed, an indicator of progress toward completion. Specifically, for every additional day a student was enrolled, they completed 0.012% more of their required courses, on average, and, for every 1 point of a student's cumulative GPA, they completed 2.172% more of their required courses, if all other student characteristics remain unchanged. Students in the Accounting Clerk program completed 6.30% more and students in the Office Technology Specialist program completed 18.38% more required courses, on average, than did students in other programs. Additionally, non-Hispanic American Indian students completed 25.10% more

[83] The program completion, transfer, retention, and employment placement variables are binary; thus, those four models were run as logistic regressions.

and students with unknown race/ethnicity (missing or declined to state) completed 6.34% more required courses, on average, than students of other race/ethnicities.

Credits Earned

Major (β = .36, $t(185) = 4.88$, $p < .001$); degree type (β = .25, $t(185) = 3.36$, $p = .001$); days enrolled (β = .28, $t(185) = 4.55$, $p < .001$); race/ethnicity (β = -.25, $t(185) = -4.11$, $p < .001$); gender (β = -.15, $t(185) = -2.39$, $p = .018$); and cumulative GPA (β = .20, $t(185) = 3.10$, $p = .002$) significantly predicted the number of credits earned ($R = .58$, $F(7,185) = 13.05$, $p < .001$). Specifically, for every additional day a student was enrolled, they earned 0.081 more credits, on average, and, for every 1 point of a student's cumulative GPA, they earned 8.204 more credits, if all other characteristics remained unchanged. Students in the Accounting Clerk program earned 6.54 more and students in the Office Technology Specialist program earned 18.54 more credits, on average, than did students in other programs. Additionally, non-Hispanic White students earned 6.57 fewer credits, on average, than students of other race/ethnicities. Other subgroups within the significant predictors did not significantly vary from one another in terms of credits earned.

Transfer to a Four-Year Institution

Likelihood of program completion significantly varied based on the seven student characteristics, $\chi^2(17) = 44.38$, $p = .001$, with approximately 65.4% of variance accounted for and 96.9% of cases being correctly classified by the model. This relationship is cumulative, such that all the student characteristics predicted transfer in combination, not individually. None of the individual student characteristics added significantly to the model.

Retention in the LB iLearn or Traditional Campus

Likelihood of retention did not significantly vary based on any of the seven student characteristics, $\chi^2(20) = 17.44$, $p > .05$.

Employment Placement

Likelihood of improvement in employment status significantly varied based on the seven student characteristics, $\chi^2(7) = 17.91$, $p = .01$. Age (β = .16, Wald = 5.56, $p = .018$) was the only significant covariate. Students of higher ages were more likely to improve their employment status.

Wage upon Completion of the Program

Wage change significantly varied based on the covariates ($F(7,198) = 2.60$, $p = .01$), with 8.4% of the variance in wage change explained. Degree type (B = 1470.57, $t(1) = 2.47$, $p = .001$), and gender (B = -349.35, $t(1) = -3.62$, $p = .004$) were the only two significant predictors. Specifically, male students (B = 3167.24, $p < .001$) and female students (B = 3448.54, $p < .001$) had higher average wages than did students who declined to state their gender or had an unknown gender in the data set. Students in certificate programs had more negative changes in their wages than students in other degree types (B = -1628.17, $p = .011$).

Research Question 2: Do LB iLearn Campus students demonstrate greater levels of educational achievement, labor market outcomes, and student success than traditional LBCC students?

The propensity-score matched comparison group design focused on addressing the second research question. The Evaluation Team conducted six hierarchical regressions using the matched samples. For all six regressions, the propensity scores, number of days enrolled, and age were entered as controls, and group assignment (treatment or comparison) was entered as the predictor of interest. As with the analyses for the first research questions, each of the six regressions had a different dependent variable, including: (1) program completion, (2) credits earned, (3) transfer to a four-year institution, (4) retention in the LB iLearn Campus, (5) employment placement, and (6) wage upon completion of the program (with logistic regressions for program completion, transfer, retention, and employment placement). See *Appendix C* for more details about each analysis.

Program Completion

Likelihood of program completion significantly varied based on treatment/comparison group membership, after accounting for the effects of the propensity score, days enrolled, and age, $\chi^2(4) = 45.25$, $p < .001$. LB iLearn students were 37.21 times more likely to complete their program than traditional comparison students ($p < .001$), controlling for propensity score, days enrolled, and age.

Credits Earned

The variables in the model significantly predicted the number of credits ($R = .43$, $F(4,574) = 32.50$, $p < .001$), with 18.5% of the variance in credits earned explained. Treatment/comparison group membership, however, was not a significant predictor ($\beta = -.06$, $t(574) = -1.16$, $p = .25$). Rather, only days enrolled ($\beta = .42$, $t(574) = 11.08$, $p < .001$), and propensity score ($\beta = .20$, $t(574) = 3.24$, $p = .001$) significantly predicted the number of credits earned.

Transfer to a Four-Year Institution

Likelihood of transferring significantly varied based on treatment/comparison group membership, propensity score, days enrolled, and age, $\chi^2(4) = 102.19$, $p < .001$. Treatment/comparison group membership, however, did not significantly predict the likelihood of transferring ($p = .12$); the model's significance was primarily due to the effects of the covariates (days enrolled, $p = .01$, age, $p < .001$, and propensity score, $p = .04$.

Retention in the LB iLearn or Traditional Campus

Likelihood of retention did not significantly differ based on treatment/comparison group membership nor the covariates, $\chi^2(4) = 5.73$, $p > .05$.

Employment Placement

Likelihood of improvement in employment status significantly varied based on treatment/comparison group membership, propensity score, days enrolled, and age, $\chi^2(3) = 12.64$, $p = .005$, with 72.0% of cases being correctly classified. Treatment/comparison group membership, however, did not significantly predict the likelihood of transferring ($p = .91$); the model's significance was primarily due to age ($p = .004$).

Wage upon Completion of the Program

The model significantly predicted the number of credits (R = .43, F(4,574) = 32.50, p < .001), with 18.5% of the variance in credits earned explained. Treatment/comparison group membership, however, was not a significant predictor (β = -.06, t(574) = -1.16, p = .25). Rather, only days enrolled (β = .42, t(574) = 11.08, p <.001), and propensity score (β = .20, t(574) = 3.24, p = .001) significantly predicted the change in wage.

Conclusions

Overall, LB iLearn students tended to have better academic outcomes (progress toward program completion and credits earned) when they were enrolled for a greater number of days, earned a higher cumulative GPA, were of an ethnic/racial minority, and were in either the Accounting Clerk or the Office Technology Specialist programs. Improving employment status was more common for older students.

When compared with the traditional campus, LB iLearn students had similar academic and employment outcomes, except for program completion. LB iLearn students were 37.21 times more likely to complete their program than traditional comparison students (p < .001), controlling for propensity score, days enrolled, and age.[84]

[84] For a discussion of the study's limitations, see *Appendix C: Limitations*.

Conclusions

Conclusions

Lasting Effects of the Grant

It is beyond the scope of this evaluation to make value judgments about whether the degree of tangible and intangible success obtained as a result of the LB iLearn Campus was sufficient to warrant the amount of public investment made, or to otherwise draw conclusions about the benefit of the LB iLearn Campus. Qualitative evidence suggests, however, that effects of the LB iLearn Campus are likely to continue through the end of the grant and beyond.[85] Although the LB iLearn project took more time to implement than originally anticipated, the time that has been invested has positioned the staff, faculty, partners, and participants for continued success.

Capacity Building – The LB iLearn Campus facilitated capacity building within LBCC by enhancing program offerings and allowing staff and faculty to test programming innovations (e.g., online models). While some programmatic elements of these innovations will last – LB iLearn Campus platform and structure – even more so the effects will be on the capacity of LBCC and LB iLearn to offer enhance and expanded programs targeting non-traditional adult learners.

Online Learning Model – Significant investments in the online delivery platform, development of the support model (e.g., Content Experts, Assessment Evaluators, Navigators, and Admissions Specialists), and quality control processes will continue to benefit LB iLearn's faculty, staff, and students. Interviewed and surveyed program participants found the online learning model, which incorporated open entry, open exit; competency-based; self-paced; and modularized education, as a unique and valuable component. Similarly, regional employers, LBCC staff and faculty, and local organizations noted that the model provided relevant training for non-traditional adult learners with barriers to education.

Looking Beyond the Grant

At the end of the grant, LB iLearn leadership determined next steps for the LB iLearn Campus. Due to the funding from USDOL, and investments from LBCC, LB iLearn was able to expand and enhance programs to offer innovative delivery models and meaningful academic experiences for non-traditional adult learners. Because of these features, and commitment from LBCC, LB iLearn leadership anticipate sustaining all programs and continuing to expand partnerships with employers moving forward. Moving beyond the grant, LB iLearn leadership anticipate the following activities to take place.

Additional Programs

In addition to the current programs being sustained beyond the grant, LB iLearn leadership have researched other program opportunities, including Retail Management, to implement beyond the grant. Upon discussions with LBCC, this program may be added because of its relevance to the LB iLearn student population and community. This program would enable LB iLearn to continue to expand in regards to student enrollment through a new focus area.

[85] Training funds ended in March 2017 and all other grant funding ends in September 2017.

Additional Partnerships

LB iLearn began to establish a number of connections with local employers, education institutions, and other community partners that will likely continue post-grant. LB iLearn leadership anticipate expanding partnerships with local employers to offer specialized training programs, a potential contributor to sustainability.

Enhancing Programs

Through the robust curriculum development and quality control processes, LB iLearn leadership anticipate continuing to enhance programs by finding new and innovate ways to encourage enrollment and completion. While LB iLearn leadership are still determining the best avenues for program enhancements (e.g., OER and MOOCs), the ability to continue enhancements and modifications to programs post-grant suggests knowledge sharing and growth as a result of grant implementation.

Cost Recovery

In the final year of the grant, the LB iLearn Leadership Team worked with LBCC administrators to develop a plan for cost recovery of the LB iLearn Campus. The LB iLearn Leadership Team mapped out a plan including different assumptions (e.g., number of net students enrolled) to better understand the potential for cost recovery within the next five years. This plan includes the college's investments of $500,000 to the virtual college as well as other potential revenue sources (e.g., students and employers).

Future Research Opportunities

A review of the evaluation findings and limitations suggests several directions for possible future research. The following studies would provide additional insight into the effects of the TAACCCT-funded community college programs:

1. A study exploring how each of the innovative aspects of the LB iLearn Campus (online delivery, self-paced structure, and competence-focused curricula) uniquely and interactively contribute to student outcomes, for all students and for specific sub-groups of students (e.g., students with disabilities).
2. A study examining whether the impacts of the program vary based on whether the student enrolled in the TAACCCT-funded program because they would otherwise not be able to attend college at all, as compared to preferring the flexibility or format of the TAACCCT-funded program to a traditional program.
3. A study examining whether endorsement or articulation with employers and specific programs.

A longer study window could have also revealed impacts of greater magnitude and would require extending the post-program observational period for the purposes of examining outcomes beyond the first quarter following LB iLearn program completion. Employing an extended post-program observational period would answer questions about whether the effects of TAACCCT-funded programs were different over the short and longer terms. This empirical question would be worth investigating.

Appendices

Appendix A. USDOL-Identified TAACCCT Core Elements

Information from this section was drawn from the USDOL-TAACCCT Solicitation for Grant Applications.

Table 4: TAACCCT Core Elements

Evidence-Based Design	Implement projects that seek to use evidence to design program strategies – new or the replication of existing strategies – that are committed to using data for continuous improvement of programs that provide workers with the education and skills to succeed in high-wage, high-skill occupations.
Stacked and Latticed Credentials	Incorporate a variety of credentials, including certificates, certifications, diplomas, and degrees. These credentials should be earned in sequence and build on previously learned content, or "stacked," as students progress through their programs, allowing them to build a portfolio of credentials that can serve them well as they transition from learning to work.
Transferability and Articulation of Credit	Transferability and articulation of academic credit to create career pathways for TAA-eligible workers and other adults to further their education. This can be accomplished through increased cooperation among institutions within and across state lines, as well as through linkages with programs, such as postsecondary career and technical education, pre-apprenticeship and apprenticeship programs, and other programs that lead to credit-bearing coursework and employment.
Advanced Online and Technology-Enabled Learning	Incorporate online and/or technology-enabled learning strategies that provide adults an opportunity to balance the competing demands of work and family with acquiring new knowledge and skills at a time, place, and/or pace that is convenient for them.
Strategic Alignment	Demonstrate outreach to, and information on, relevant entities in the communities to be served by the project, including those that can provide data on the characteristics and skill needs of workers receiving TAA benefits and services in the community. Align programs to Governor efforts (Economic Development and WIOA state plans); employers and industry; public workforce systems; and philanthropic organizations, business-related and other non-profit organizations, community-based organizations, and labor organizations.
Alignment with Previously-Funded TAACCCT Projects	To help decrease duplication and to strengthen the geographic reach of the project, and coordinate efforts where possible.

Appendix B. Implementation Evaluation Methods

Introduction

The Implementation Evaluation for the LB iLearn Campus began in October 2013 and continued through March 2017[86] to document program progress, monitor program outcomes, and provide recommendations for continuous improvement of program outcomes. Throughout the execution of the evaluation, and especially through the Implementation Evaluation, the Evaluation Team employed principles of a utilization-focused framework.[87] The substantiated assumptions[88] of utilization-focused evaluations are: (1) intended users are more likely to utilize evaluation findings if they understand and value the evaluation's process; (2) intended users are more likely to understand and value the evaluation's process if they are engaged in evaluation decisions; (3) engaged intended users both enhance the credibility of evaluation findings and possess greater capacity for utilizing findings to improve the project; and (4) capacity for utilizing findings relies heavily on a collaborative, functional relationship between intended users and evaluators.

Additionally, the formative component of the Implementation Evaluation offered real-time feedback as the project rolled out, as opposed to offering information only retrospectively, through frequent calls and annual reports following evaluation site visits. This provided the opportunity to identify early evidence of strengths and areas for growth throughout the development of the project.

Research Questions

Table 5 summarizes the research questions examined through the Implementation Evaluation, including ties to data sources and collection tools/protocols, and analysis methods. Further details on data sources and collection plans, analysis methods, and potential limitations of the Implementation Evaluation are detailed in subsequent sections.

Table 5: Implementation Evaluation Research Questions

Research Question	Data Sources and Collection	Analysis Methods
How was the particular curriculum selected, used, and/or created?	• Implementation Evaluation update calls • On-site interviews • Artifact reviews • Curriculum review	• Document themes, interpret, and report on qualitative data provided by LB iLearn leadership and staff/faculty • Conduct curriculum review documenting course outcomes and link to industry standards in LB iLearn courses
How were programs and program designs improved or expanded using grant funds? What delivery methods	• Implementation Evaluation update calls • On-site interviews	• Document themes, interpret, and report on qualitative data provided by employers/partners,

[86] Grant implementation occurred through March 31, 2017, with April 1, 2017 through September 30, 2017 reserved for evaluation activities.
[87] Patton, M.Q. (2012) *Essentials of Utilization-Focused Evaluation*. Thousand Oaks, CA: Sage.
[88] Brandon, P., Smith, N., Trenholm, C., and Devaney, B. (2010). "The Critical Importance of Stakeholder Relations in a National, Experimental Abstinence Education Evaluation." *American Journal of Evaluation*, 31, 4: 517-531.
Patton, M. Q. (2012). *Essentials of utilization-focused evaluation*. Thousand Oaks, CA: Sage.
Taut, S. (2008). What have we learned about stakeholder involvement in program evaluation? *Studies in Educational Evaluation,* 34.

were offered? What was the program administrative structure? What support services and other services were offered?	• Artifact reviews • Quarterly surveys • Curriculum review	staff/faculty, LB iLearn leadership, and program participants • Review artifacts including program materials to verify changes and progress • Conduct curriculum review documenting delivery methods and resources utilized in LB iLearn courses
Was an in-depth assessment of participants' abilities, skills, and interests conducted to select participants into the grant program? What assessment tools and processes were used? Who conducted the assessment? How were the assessment results used? Were the assessment results useful in determining the appropriate program and course sequence for participants? Was career guidance provided, and if so, through what methods?	• Implementation Evaluation update calls • On-site interviews • Virtual focus groups • Quarterly surveys • Curriculum review	• Document themes and report on qualitative data provided by LB iLearn leadership, staff, faculty, and program participants • Conduct curriculum review documenting assessments used in LB iLearn courses
What contributions did each of the partners (employers, workforce system, other training providers and educators, philanthropic organizations, and others as applicable) make in terms of 1) program design; 2) curriculum development; 3) recruitment; 4) training; 5) placement; 6) program management; 7) leveraging of resources; and 8) commitment to program sustainability? What factors contributed to partners' involvement or lack of involvement in the program? Which contributions from partners were most critical to the success of the grant project? Which contributions from partners had less of an impact?	• On-site interviews • Implementation Evaluation update calls	• Document themes and report on qualitative data provided by employers/partners and LB iLearn leadership
How satisfied are program leadership, staff, and participants with the program? Why?[89]	• On-site interviews • Virtual focus groups	• Document themes and report on qualitative data provided by employers/partners, staff/faculty,

[89] Note that this question, within the *Implementation Evaluation* section, is separated into two questions.

	• Implementation Evaluation update calls • Quarterly surveys	participants, and LB iLearn leadership
What program outputs have been generated to date? What barriers hindered output achievement? What factors unexpectedly improvement output achievement? Why?[90]	• On-site interviews • Implementation Evaluation update calls • Artifact reviews	• Review artifacts including quarterly program reports to verify output production • Discuss outputs with LB iLearn leadership and staff/faculty
What have been accelerators and obstacles to program performance?	• Implementation Evaluation update calls • On-site interviews	• Document and synthesize general themes and details from interviews and interpret and summarize qualitative data in report format
How can program processes, tools, and/or systems be modified to improve performance?	• On-site interviews • Virtual focus groups • Quarterly surveys	• Document themes, interpret, and report on qualitative data provided by LB iLearn leadership, staff, faculty, and participants
How can the program expand or enhance institutional capacity? What are the most promising programmatic components to use institution-wide? Why?	• On-site interviews • Virtual focus groups • Quarterly surveys • Implementation Evaluation update calls	• Document and synthesize general themes and details from interviews, focus groups, surveys, and discussions and interpret and summarize qualitative data in report format

Data Sources and Collection

Data for the Implementation Evaluation was collected from the following data sources:

- Implementation Evaluation update calls with LB iLearn Leadership Team – quarterly
- On-site interviews with LB iLearn Leadership Team, staff and faculty, LB iLearn participants, and employers and community partners
- Virtual and in-person focus groups with program participants
- Quarterly surveys administered to individuals that expressed interest in LB iLearn, enrolled and/or dropped out of LB iLearn, and completed an LB iLearn program
- Curriculum review examining LB iLearn course curricula for 25 LB iLearn courses
- LB iLearn documents and artifacts, including quarterly program reports, program-related documents and promotional materials, and other documents

Implementation Evaluation Update Calls

Implementation Evaluation update calls between the Evaluation Team and LB iLearn Leadership Team took place on a quarterly basis. Members of the LB iLearn Leadership Team included a number of individuals from Linn-Benton Community College as well as individuals hired specifically for LB iLearn implementation – Grant Manager and Marketing Manager.[91]

The Implementation Evaluation update calls enabled the LB iLearn Leadership Team to provide the Evaluation Team with timely information regarding the project's processes, progress, obstacles, and

[90] Note that this question, within the *Implementation Evaluation* section, is separated into two questions.
[91] For a complete list of LB iLearn current and previous staff and faculty, see *Appendix F*.

successes. These findings were elaborated upon during site visit interviews but calls provided the LB iLearn Leadership Team with an opportunity to recall events and challenges more frequently than the annual site visits. Members of the Evaluation Team maintained detailed notes from each call and provided a summary from each call to the LB iLearn Leadership Team for their records. These notes and summaries were stored on TPMA servers and provided a timeline of relevant occurrences used as a reference point for staff, faculty, and employer/partner interviews as well as participant focus groups. When USDOL granted the six-month extension, the Evaluation Team incorporated additional update calls to supplement the final site visit and ensure that ample qualitative data were being collected.

On-Site Interviews

Site visit plans included a series of annual site visits for one-on-one interviews and virtual/in-person focus groups in October 2014, February 2016, and February 2017.[92] The Evaluation Team developed interview discussion guides to be used with each of the site visits. These guides were originally deployed during the October 2014 site visit and were modified for use in the subsequent site visit in February 2016. For the final site visit in February 2017, the guide was revised to focus on themes and issues that had emerged throughout the years of implementation as well as program sustainability and lessons learned.

The Evaluation Team visited the LBCC and conducted interviews with stakeholder groups outlined in Table 6.

Table 6: Implementation Evaluation Stakeholders

Stakeholder	Description	Totals
LB iLearn Leadership Team	The Evaluation Team conducted semi-structured 60-90 minute interviews with LB iLearn leadership on program activities and integration, collaboration/partnerships, resources, lessons learned, and sustainability.	>5 interviews
LB iLearn staff	Semi-structured 30-60 minute small-group and individual interviews were held with LB iLearn staff, covering program activities and integration, collaboration/partnerships, resources, lessons learned, and sustainability.	>15 interviews
LBCC staff	Semi-structured 30-minute small-group and individual interviews were help with LBCC staff, covering program activities, collaboration/partnerships, sustainability, lessons learned and resources.	>10 interviews
LB iLearn faculty	As available, 30-minute semi-structured small-group interviews were conducted with LB iLearn faculty from different roles (e.g., Assessment Evaluator and Content Expert). Discussions centered on program activities, collaboration/partnerships, resources, and lessons learned.	>10 interviews
Regional employers and partners	Semi-structured 30-60 minute interviews were held with regional employers and partners. These interviews took place at LBCC. Employer discussions focused on program engagement, impacts to the business, and overall satisfaction.	>5 interviews

[92] Site visit dates shifted from October 2015 to February 2016 to account for the anticipated grant extension, enabling the Evaluation Team to collect information closer to the grant's end.

LB iLearn participants	The Evaluation Team held semi-structured 30- to 60-minute virtual focus groups with grant participants while on site as well as periodic in-person interviews when students were available.[93] Discussions focused on the individual's goals, program experience and satisfaction to date, accessibility of staff and online platform, and overall program feedback.	>5 focus groups

Interviews were semi-structured with open-ended questions used for probing and conversational inquiry.[94] In line with the principles of applied thematic research, this interview approach enabled participants to speak about experiences in their own words, free of the constraints imposed by fixed-response questions. Inductive probing allowed the Evaluation Team to clarify statements, meaning, and the feelings associated with the experiences, to promote accuracy in detailed observational notes. This interview framework also provided the means to "[learn] from the participants' talk and dynamically [seek] to guide the inquiry in response to what is being learned."[95]

To increase validity of the interviews, either the Project Lead or Project Manager were present for every site visit and participated in the Implementation Evaluation update calls, artifact reviews, and report writing. This consistency helped build and preserve institutional knowledge across site visits. In addition, these methods are consistent with recommendations made by qualitative researchers,[96] and allow a member of the Evaluation Team to focus on facilitation and a second member to take detailed notes.

Virtual Focus Groups

Virtual focus groups were used to supplement site visits and quarterly surveys. Because of the online structure of LB iLearn, the Evaluation Team opted for virtual focus groups to accommodate LB iLearn students.[97] During site visits in 2016 and 2017, and during Summer 2017, virtual focus groups were held with current LB iLearn students to assess satisfaction with LB iLearn programs and structure, interactions with faculty and support services, and student enrollment processes.

Hosted through Discuss.io and Zoom, the Evaluation Team had one facilitator and two note-takers to capture all information provided through the virtual focus group. These focus groups were also recorded for validity purposes. Data from these focus groups were analyzed for themes and included as part of interim and final reports.

Quarterly Surveys

The Evaluation Team worked collaboratively with the LB iLearn Leadership Team to inform survey design and development to appropriately structure and target survey questions. Through that process, the Evaluation Team developed a survey to assess the perceived effectiveness of LB iLearn, administrative management, efficiency, appropriateness of the curricula and programs, and interactions with faculty and support services.

The survey was administered to three groups of individuals: (1) individuals that expressed interest in LB iLearn courses but did not enroll; (2) students currently enrolled in LB iLearn courses (including those that

[93] One virtual focus group was not held at LBCC in Summer 2017, after the last site visit.
[94] Virtual focus group methodology is described in greater detail in the following section: *Virtual Focus Groups*.
[95] Guest, G., MacQueen, K.M., and Namey, E.E. (2011). *Applied Thematic Analysis*. Thousand Oaks, CA: Sage.
[96] Kidd, P. S. & Parshall, M. B. (2000). Getting the focus and the group: Enhancing analytical rigor in focus group research. *Qualitative Health Research*, 10, 3: 293-308.
[97] When students were available, some interviews with LB iLearn students were conducted in person.

dropped out); and (3) students that completed an LB iLearn program.[98] The LB iLearn Leadership Team sent an updated list of email addresses and identified the category the student fell into, which were collected on a quarterly basis. The Evaluation Team then sent an online survey to the identified individuals, tracking responses through the online platform and through Excel spreadsheets. The Evaluation Team was responsible for sorting and maintaining the spreadsheets to ensure the correct individuals were receiving the survey each quarter, to avoid over surveying.[99]

Curriculum Review

As part of the Implementation Evaluation, TPMA partnered with WorkED Consulting[100] to complete a review of LB iLearn's course curriculum. Curriculum review matrices were developed for 25 LB iLearn courses and reviewed information such as Open Educational Resources percentage, program of study, overarching goal of the course, desired learning outcomes, teaching methods, embedded industry standards, and methods of student assessment. Each course was examined by the subject matter expert, in which recommendations were made to better address the matrix components, when relevant. The curriculum review served to supplement LB iLearn's robust quality assurance processes by verifying that LB iLearn courses were aligned with industry standards and appropriately structured for online courses.

Document and Artifact Review

The Evaluation Team reviewed a variety of program artifacts including, but not limited to:

- Quarterly program narrative reports sent by LB iLearn leadership to USDOL;
- Promotional materials highlighting LB iLearn programs (e.g., brochures);
- Job descriptions and curriculum materials prepared internally by LB iLearn leadership, staff, and faculty;
- Training, process flow, policies and procedures, and marketing plans prepared internally by LB iLearn leadership, staff, and faculty; and
- Relevant documentation with partners (e.g., Memorandum of Understanding agreements).

These documents provided additional context and information to evaluate project implementation at each stage – challenges, successes, unintended consequences (both positive and negative), and the reasons for accelerated or delayed progress. Context from these documents informed questions for the quarterly Implementation Evaluation update calls, quarterly survey development, virtual focus groups, and on-site interviews, and informed context within evaluation reports.

Analysis Methods

Thematic Analysis

A general inductive thematic approach,[101] with influences of applied phenomenology,[102] was used to analyze the qualitative data generated from the interviews and virtual focus groups. This approach was selected because of its usefulness in drawing clear links between research questions or objectives and data

[98] Students that fit into the "enrolled" category and then completed an LB iLearn program were surveyed twice to capture changes in satisfaction and perceptions.
[99] For more information on the survey findings, see: *Appendix E*.
[100] For more information about TPMA's partner WorkED Consulting, LCC, please see: http://workedconsulting.com/
[101] Thomas D. R. (2006). A general inductive thematic approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27: 237-245.
[102] Guest, G., MacQueen, K.M., & Namey, E.E. (2011). *Applied thematic analysis*. Thousand Oaks, CA: Sage.

collection results, and because it provides a theoretical foundation for subjective meaning to be interpreted and extrapolated from discourse. The analytical framework used for the analysis included a time-dependent gradient (before the project, changes occurring in each year of project implementation, and post-project scaling) and a program-dependent gradient (analyzing the program components).

Units of analysis included the programs, LB iLearn Leadership Team, LB iLearn and LBCC staff and faculty, employers and community partners, and participants.

Emerging themes were then developed according to the analytical framework and through a review of (1) the notes taken during quarterly calls; (2) LB iLearn documents and artifacts; (3) detailed notes taken during site visits; and (4) the Evaluation Team's extensive experience with technical training programs and the body of evaluation knowledge built through their work. Guidance about what was important came from the Project Narrative, Evaluation Plan, and calls that had occurred throughout the grant period. Following the initial theme development, additional Evaluation Team members reviewed the results, adding contextual details and examples. These themes were divided into five categories:

- *Interim Progress* – Documentable steps that had been taken to advance or achieve grant outcomes, deliverables, milestones, and/or goals;
- *Accelerators/Strengths of Progress* – Factors that had enhanced grant progress and improved the ability of grant staff to carry out grant initiatives, focused on internal factors (program design, modifications, implementation, and application);
- *Barriers/Challenges to Progress* – Persistent difficulties grant staff faced in accomplishing grant initiatives;
- *Recommendations* – Opportunities the Evaluation Team identified for improving progress toward grant outcomes (in Interim Reports), and recommendations for other education institutions looking to start similar programs and initiatives; and
- *Sustainability* – Components of the program that will continue once funding ends.

The results were again compared to the analytical framework and the anticipated reporting elements. The final step in the analysis was to send the summarized results to the LB iLearn Leadership Team for clarification and additional contextual details.

To strengthen the accuracy and credibility of implementation study findings, the Evaluation Team relied on triangulation and collaborative inquiry. By comparing findings based on different data sources and using approaches that incorporated both evidence and negative evidence, the Evaluation Team created a robust and dynamic depiction of implementation.[103] By presenting findings to LB iLearn stakeholders for elaboration, corroboration, and modification, the Evaluation Team confirmed and updated analyses. Additionally, by sharing findings with intended users as they emerged, the Evaluation Team built a collaborative relationship with stakeholders that encouraged higher quality first-person data and increased the likelihood the evaluation could produce timely, user-relevant findings.[104]

[103] Brewer, J. and Hunter, A. (2006). *Foundations of multimethod research: Synthesizing styles.* Thousand Oaks, CA: Sage.
[104] Cousins, J. B. and Whitmore, E. (1998). Framing participatory evaluation. New Directors for Evaluation, 80. 5-23.
Greene, J.G. (1998). Stakeholder participation and utilization in program evaluation. Evaluation Review, 12. 91-116.
Reineke, R. A. (1991). Stakeholder involvement in evaluation: Suggestions for practice. American Journal of Evaluation, 12. 39-44.

Reporting

Data were interpreted, analyzed, and included in two Interim Reports, in November 2014 and March 2016, and the Final Report, drafted in Summer 2017 and finalized by September 2017. The reports contained the results of the analysis, recommendations for improvements, rationale for recommended modifications, and any threats or challenges that may have arisen as a result of recommended modifications. These results were compared over time. The LB iLearn Leadership Team conducted an in-depth review of these reports for member checking, factual verification, and elaboration on findings and recommendations. Subsequently, the reports were submitted to the USDOL.

Survey Analysis

Survey responses were collected by the Evaluation Team, with all data exported from the online survey tool into Excel for analysis. Data were disaggregated, cleaned, and prepared for analysis. Demographic and frequency data was tracked for close-ended questions to enable the Evaluation Team to track changes in response trends over time.

Grounded theory analysis, a general method for comparative analysis,[105] was used for open-ended questions, organizing responses into codes (i.e., frequent themes and concepts that are extracted from survey responses). Open coding was used to classify data into categories with consistencies and differences in responses, and patterns and connections within and between categories identified.[106] Once theoretical saturation[107] was achieved with no new indicators emerging from categorizing processes, the Evaluation Team extrapolated findings from the data. The identified patterns and connections were drawn upon to inform implications of the survey findings for LB iLearn operation and process modifications and improvements.[108]

Limitations

Limitations for the Implementation Evaluation included three main elements:

Partial and Biased Findings – Qualitative and perceptual research methods offer good insights, but are, by nature, partial and biased. To attempt to address this limitation, the Evaluation Team took advantage of an opportunity embedded in mixed-methods evaluation, the triangulation of data.[109] Triangulating results from multiple sources, such as comparing findings among stakeholder interviews and with documents reviewed, creates more credible evaluation results, and is considered critical to the validity and reliability of findings. Findings that have been corroborated through triangulation tend to be sufficiently robust and credible.[110]

Selection Bias – To address the threat of non-response and non-consent and to improve the likelihood that sufficient data could be collected to draw valid conclusions, the Evaluation Team relied on purposive and convenience sampling coordinated by project staff. However, this approach introduced selection bias into the findings. Participants and employers more interested

[105] Glaser, B. & Strauss, A. (2012). The discovery of grounded theory: Strategies for qualitative research. Rutgers University, New Jersey: Aldine Transaction.
[106] Smith, J. (2015). Qualitative psychology: A practical guide to research methods. Thousand Oaks, CA: Sage.
[107] Theoretical saturation occurs when all concepts all well-developed and no new data appear. Beck, M., Bryman, A., & Liao, T. (2004). The SAGE Encyclopedia of Social Science Research Methods. Thousand Oaks, CA: Sage.
[108] Additional information on the methodology used for survey analysis is located in *Appendix E*.
[109] Brewer, J. and Hunter, A. (2006). *Foundations of multidimensional research: Synthesizing styles*. Thousand Oaks, CA: Sage.
[110] Denzin, N. K. (1978). The research act: A theoretical introduction to sociological methods (2nd edition). New York, NY. McGraw-Hill.

in providing feedback or more involved in the program may have chosen to participate in interviews at a higher rate than less interested or less engaged participants and employers, and project staff responsible for coordinating interviews may have selected only those cases where they anticipated favorable responses to interview questions. These biases were strengthened due to the nature of LB iLearn, as it is a virtual campus meaning that participants may have been difficult to reach. Therefore, selection bias could have become more apparent as project staff may have selected participants that were more engaged with the traditional campus. Neutral and critical feedback from participants and employers at LB iLearn, however, supported the notion that these research participants were chosen primarily for their willingness to participate in the study rather than the likelihood that they would cast the program in a favorable light.

Researcher Extrapolation – Analyses conducted with an interpretive and analytical framework, influenced by phenomenology, suffer from the threat that researcher extrapolation and interpretation may go too far beyond what is present in, and supported by, data.[111] Indeed, the recommendations provided in this report are based on a combination of what was learned and supported by data and the experiences and findings of the evaluator's previous experience designing, implementing, and evaluating various training programs.

Informing Outcome and Impact Evaluation

The Implementation Evaluation findings provided context for the Outcome and Impact Evaluation by documenting the timing and nature of adjustments to program design. The Outcome and Impact Evaluation utilized this documentation to understand whether changes to the project might affect various participants.

Outcome and Impact Evaluation Revisions

Although the overall design of the outcome and impact evaluation was the same as originally proposed, some minor changes were necessary to adapt to the real-time data availability issues, and changes in the LB iLearn programs.

Comparison Group Changes – The Evaluation Team initially anticipated a difference in program length between the Medical Coding Reimbursement Specialist and Veterinary Technology programs on the LB iLearn and traditional campuses, but this was not the case. The Medical Coding and Reimbursement Specialist programs ended up both being certificate programs when implemented and the Practical Business Management (i.e., Entrepreneurship) program that replaced the Veterinary Technology program at LB iLearn had an equivalent major at the traditional campus (eliminating the need for planned additional corrections for non-equivalence). Additionally, the last two LB iLearn programs (Computed Tomography certificate and Social Media Specialist certificate) did not have an equivalent program on the traditional campus. The Evaluation Team attempted to obtain employment data for graduates with degrees in Diagnostic Imaging, Public Relations, and Marketing from Oregon State University to act as comparison groups for the Computed Tomography and Social Media Specialist certificate LB iLearn programs. These attempts were unsuccessful, as the University did not share data with third parties. Thus, no comparison students were available for these two programs and students from the Computed Tomography and Social Media Specialist LB iLearn programs were excluded from the comparative analyses.

[111] Guest, G., MacQueen, K.M., & Namey, E.E. (2011) *Applied thematic analysis.* Thousand Oaks, CA: Sage.

Data Availability and Delivery –Data from the National Student Clearinghouse and Oregon Employment Department were not available for all students. As data sets were merged for the Final Evaluation Report, issues causing a lack of alignment between the LBCC Student Information System and LB iLearn course information system were identified, creating the need for the LBCC Institutional Research staff to recreate the data files previously delivered throughout the grant period with new data limits and definitions.[112] After this process, there was not sufficient time remaining to re-request the data match from the National Student Clearinghouse and Oregon Employment Department prior to the final report deadline. Thus, the students who were added to the groups through this redefinition (76 treatment group and 305 comparison group students) increased the number of cases, but there were no employment or transfer data for these students.

Sample Size and Time Series Analysis – Originally, the Evaluation Team planned to conduct time series analyses for the LB iLearn students in the programs without comparison groups (Computed Tomography and Social Media Specialist); however, the sample sizes for these groups were too small to yield stable conclusions using the planned analyses.

[112] For example, collecting data on first credit was originally restricted to the grant period. However, this left out a large percentage of LB iLearn students because they had previously completed classes at the traditional campus. The restriction was lifted from first LBCC credit to first LB iLearn credit or declared comparison major during the grant period.

Appendix C. Outcome and Impact Evaluation Methods

Introduction

Purpose and Background

The LB iLearn programs aimed to increase job placement for Trade Adjustment Assistance (TAA)-eligible and other disadvantaged learners by training them for high-wage, high-skill employment opportunities through award of the Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant. The LB iLearn Campus targeted improvement in several academic and employment outcomes leading to job placement for its participants, including retention, program completion, transfer to additional higher education, employment placement, and earnings. The purpose of the outcome and impact evaluation was to assess whether the implementation of the LB iLearn Campus influenced participants' academic and employment outcomes, as compared with students attending the traditional Linn-Benton Community College (LBCC) campus (i.e., traditional campus) using a quasi-experimental design (QED) – propensity-score matching.

Research Questions

The following research questions guided the outcome and impact evaluation:

1. Is the LB iLearn Campus successful in preparing students for either a career or completing higher academic achievement?
    a. What variables correlate with and/or predict success or failure within the LB iLearn Campus competency-based model?
    b. What variables correlate with and/or predict retention in the LB iLearn Campus?
2. Do LB iLearn Campus students demonstrate greater levels of educational achievement, labor market outcomes, and student success than traditional LBCC students?

Study Design

First, the Evaluation Team used a correlational design to examine the variables that facilitated or hindered academic success (program completion, credits earned, enrollment in further education), and career improvement (employment status and wage increases). Program outcomes and potential covariates were examined for all students who enrolled in at least one course at the LB iLearn Campus. Second, the Evaluation Team used a propensity-score-matched comparison group design to compare the impact of the program on students' employability and academic achievement for program participants and non-participants. Students decide whether they apply to enroll in the traditional college or the LB iLearn Campus and their program within the college based on their interests, geographic location, and other personal reasons; thus, an experimental design using random assignment was not feasible. Instead, the Evaluation Team conducted a propensity-score-matched group design[113] to examine the program's effectiveness in promoting program completion, credits and credentials earned, enrollment in further education, employment, and wages. It matches treatment and comparison group students based on their likelihood of having been in the treatment group (regardless of their actual membership in the treatment group), based on the variables included in the propensity score model. This matching procedure reduces or

[113] Rosenbaum, P. R., & Rubin, D. B., 1983, 1985.

eliminates any imbalances between the treatment and comparison group that would otherwise not exist if participants were randomly assigned.

Data Sources and Collection

This final report focuses on the outcomes and impact achieved for students since the creation of the LB iLearn Campus. Data were used from 15 academic quarters, spanning from Fall 2014 through Winter 2017 (including only students enrolled on or prior to March 31, 2017). Primary data were collected as part of the ongoing activities of the educational programs using the assessment tools and database used as part of LBCC's program review process, and results from the standard LBCC Graduate Follow-Up Survey. All these data were collected and managed as part of LB iLearn and LBCC's normal operations. In other words, the data collection was not added for the purposes of evaluation, but were collected on an on-going basis through existing campus procedures. The Evaluation Team worked with the LB iLearn Campus leadership and research staff to obtain the required data from their data system and gather data for the comparison group students from LBCC via their existing data sharing agreement. For both the treatment and comparison groups, these variables included:

- Student ID
- Date Enrolled
- Date Enrollment Concluded
- Number of Quarters Enrolled
- Birth Date
- Race/Ethnicity
- Gender
- College Readiness Scores and Dates
- Cumulative Credits Earned and GPA
- LB iLearn Campus-only Credits Earned and GPA
- Major Code, Description, and Type (for current and most recent previous major – if changed major)
- Completion of Program of Study (and other programs, if applicable) at traditional or LB iLearn campus
- LB iLearn Campus course codes, enrollment start and end dates, and grades received

Oregon Employment Department and National Student Clearinghouse

Data on academic success and employment were also collected from the Oregon Employment Department and the National Student Clearinghouse database.[114] The data supplied by the National Student Clearinghouse permitted the tracking of educational activities beyond or in lieu of the LB iLearn certificate/degree programs. The data from the National Student Clearinghouse and Oregon Employment Department included:

- Transfer from LBCC/LB iLearn to another institution
- Type of institution (2-year or 4-year) where students transferred
- Employment status and wage for each quarter during the grant period, collected through Oregon's Unemployment Insurance database.

[114] LBCC had a standing agreement with the State to obtain employment and wage data from Oregon employers.

Treatment and Comparison Groups

The outcome and impact evaluation included students who enrolled in their first credit at the LB iLearn Campus and traditional campus during the Fall 2014 quarter through the Winter 2017 quarter (on or before March 31, 2017).

Treatment Group

The seven certificates and degrees funded by the TAACCCT grant targeted TAA-eligible and other disadvantaged students. The LB iLearn Campus required entering students to complete college readiness assessments to screen for non-developmental student status. All LB iLearn students had to be "college ready" by the standards of the program for which they were enrolled. All students in the LB iLearn certificate and degree programs funded by the TAACCCT grant comprised the treatment group.

At the start of the program, it was anticipated that 1,000 students would be enrolled during the evaluation period; however, 259 students were enrolled in any treatment program during the evaluation period.[115] Actual and anticipate enrollment numbers by program are listed below:

Table 7: Treatment Group Enrollment Numbers

Program	Anticipated	Actual
Office Technology Skills Specialist certificate program	50	14
Accounting Clerk certificate program	100	35
Business Administration degree program	450	71
Medical Coding and Reimbursement Specialist certificate program	200	75
Social Media Specialist certificate program	50	16
Computed Tomography certificate program	50	11
Practical Business Management (Entrepreneurship) degree program	-	5

The Veterinary Technologist degree program was not created as planned; thus, no students were enrolled (100 anticipated).[116] During the grant extension, the LB iLearn Campus launched a Practical Business Management degree program (rather than the Veterinary Technologist degree program).[117]

Comparison Group

The comparison group was comprised of students enrolled at LBCC who enrolled with their first credit during the grant period in a traditional program that was comparable to a TAACCCT-funded LB iLearn program. At the start of the program, it was anticipated that 1,415 students would be enrolled during the evaluation period; however, 1,159 students enrolled during the evaluation period in any treatment program.[118] Actual and anticipate enrollment numbers by program are outlined on the following page:

[115] See *Table 9*.
[116] Please see the *Implementation Evaluation* section for more information.
[117] The Practical Business Management program is also called the Entrepreneurship program. Please see the *Implementation Evaluation* section for more information.
[118] See *Table 9*.

Table 8: Comparison Enrollment Numbers

Program	Anticipated	Actual
Office Specialist/Office Technology Skills certificate program	10	28
Accounting Clerk certificate program	35	12
Medical Coding Reimbursement Specialist certificate program	280	38
Business Administration degree program	1,000	1,059
Practical Business Management degree program	40[119]	22

Equivalence of Treatment and Comparison Group Programs

For five of the programs (Office Specialist certificate, Accounting Clerk certificate, Business Administration degree, Medical Coding and Reimbursement Specialist certificate, and Practical Business Management certificate), the LB iLearn program was an adaptation of an LBCC program, which was modified for LB iLearn's online format. The comparison group students completed their first credit and were enrolled concurrently in the equivalent traditional programs. The Evaluation Team initially anticipated a difference in program length between the Medical Coding Reimbursement Specialist and Veterinary Technology programs on the LB iLearn and traditional campuses, but this was not the case. The Medical Coding and Reimbursement Specialist programs ended up both being certificate programs when implemented and the Practical Business Management program that replaced the Veterinary Technology program at LB iLearn had an equivalent major at the traditional campus (eliminating the need for planned additional corrections for non-equivalence).

Table 9: Sample Sizes for Treatment and Comparison Groups

Treatment Group Major	*N*	Percent	Comparison Group Major	*N*	Percent
Accounting Clerk	35	13.5	Accounting Clerk	12	1.0
Business Administration Emphasis	71	27.4	Business Administration Emphasis	1059	91.4
Coding Reimbursement Specialist	75	29.0	Coding Reimbursement Specialist	38	3.3
Computed Tomography	11	4.2	No Equivalent Major	-	-
Office Technology Skills	14	5.4	Office Specialist, or Office Technology Skills	28	2.4
Practical Business Management	5	1.9	Practical Business Management	22	1.9
Social Media Specialist	16	6.2	No Equivalent Major	-	-
Unknown	32	12.4	No Equivalent Major	-	-

[119] The anticipated numbers listed were for the original program – Veterinary Technician.

The last two LB iLearn programs (Computed Tomography certificate and Social Media Specialist certificate) did not have an equivalent program on the traditional campus. For the Computed Tomography certificate, the most relevant traditional campus comparison program was the Diagnostic Imaging degree; however, many of the students enrolled in the Computed Tomography certificate program already earned the Diagnostic Imaging degree before starting the certificate program. The LB iLearn certificate was intended to aid students in achieving greater employability than they would if they only had the Diagnostic Imaging degree, so this was not an equivalent program. The Social Media Specialist certificate had no equivalent program offered at the traditional campus. The program recruited graduates from Oregon universities who received degrees in Public Relations or Marketing. Similar to the Computed Tomography certificate program, the goal of the Social Media Specialist certificate was to aid students in achieving greater employment success than they would if they only had the Public Relations or Marketing degree, so this was not an equivalent program.

The Evaluation Team attempted to obtain employment data for graduates with degrees in Diagnostic Imaging, Public Relations, and Marketing from Oregon State University to act as comparison groups for the Computed Tomography and Social Media Specialist certificate iLearn programs. These attempts were unsuccessful, as the University did not share data with third parties. Thus, no comparison students were available for these two programs and students from the Computed Tomography and Social Media Specialist LB iLearn programs were excluded from the comparative analyses.

The Evaluation Team initially planned to use college readiness scores (e.g., Algebra Readiness Score) to select only those students who had similar levels of college readiness upon entering school for inclusion in the comparison group; however, the scores did not end up being useful or feasible for improving the match between the two groups. LB iLearn students were required to either score as "ready" or demonstrate their readiness through past coursework to be eligible for enrollment, while this requirement was not in place for students at the traditional campus. In other words, LB iLearn students who demonstrated readiness via past coursework or other methods did not need to take the college readiness assessment. Traditional students also had a similar option to opt out of the assessment using other methods of demonstrating readiness, and could elect to enroll in remedial courses instead of placing into "college-ready" courses.

Because students could opt out of assessments using other methods, only 728 of the 1,418 students in the treatment and comparison groups (51.3%) had an Algebra Readiness Score documented in the LBCC Student Information System. Therefore, readiness scores were not available for most of the students so comparability of readiness could not be assumed or compared for students without scores. Thus, the Evaluation Team relied upon the covariates used for propensity score matching to balance the potential non-equivalence of the treatment and comparison groups.

Variables

Covariates

The following covariates were used for the propensity score matching and in the statistical analyses: major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative Grade Point Average (GPA). See *Table 9* and *Table 10* for a summary of the covariate distributions for LB iLearn students, and refer back to *Table 7* and

Table 8 for a summary of majors.

Table 10: Frequencies for Categorical Variables

	Treatment Group		Comparison Group	
Covariate	*N*	Percent	*N*	Percent
Degree Type				
Certificate	151	58.3	78	6.7
Associate Degree	77	29.7	1079	93.1
Not Declared or Unknown	31	12.0	2	0.2
Gender				
Male	55	21.2	653	56.3
Female	146	56.4	486	41.9
Missing or Refused	58	22.4	20	1.7
Race/Ethnicity				
Hispanic or Latino				
Native American or Alaska Native	0	0	4	0.3
Asian	0	0	1	0.1
Black or African American	0	0	1	0.1
Native Hawaiian or other Pacific Islander	0	0	0	0
White	4	1.5	38	3.3
Two or more races	1	0.4	6	0.5
Unknown race	3	1.2	9	0.8
Not Hispanic or Latino				
Native American or Alaska Native	2	0.8	9	0.8
Asian	9	3.5	57	4.9
Black or African American	1	0.4	12	1.0
Native Hawaiian or other Pacific Islander	0	0	7	0.6
White	152	58.7	604	52.1
Two or more races	6	2.3	41	3.5
Unknown race	8	3.1	7	0.6
Missing or unknown race and ethnicity	73	28.2	363	31.3

The table below highlights sample size with valid data (N), minimum, maximum, and average for number of days enrolled in LB iLearn courses or at the LBCC traditional campus, age (in years), and cumulative GPA.

Table 11: Treatment and Comparison Sample Size and Covariates

	Treatment Group				Comparison Group			
	N	Minimum	Maximum	Average	*N*	Minimum	Maximum	Average
Number of days enrolled	258	2	914	215.29	1159	2	1168	338.16
Age (in years)	224	17.56	99.40	49.59	1159	17.63	68.15	24.46
Cumulative GPA	258	2	914	215.29	1159	2	1168	338.16

Propensity Score Matching

To correct for the inherent bias resulting from the non-random assignment of a quasi-experimental design, the treatment and comparison groups were matched using propensity scores based on students' educational records for all programs except for the Computed Tomography and Social Media Specialist certificates. All covariates available for both the treatment and comparison groups were considered for inclusion in the propensity score model (see previous section for the characteristics of the covariates for the treatment and comparison groups). To verify that the covariates included in the propensity score model were significantly related to the outcome variables, the Evaluation Team ran Pearson correlation analyses between each of the covariates and each of the outcome variables (see Table 12 below for a summary of the correlations).

Table 12: Pearson Correlation Coefficients and Covariate Sample Size Per Outcome

	Program Completion	Credits Earned	Transfer to Four-Year Institution	Retention	Employment Placement	Wage
Major	.007 (1386)	0.032 (1352)	-.214** (1386)	-.047 (1370)	-.086** (1493)	.016 (207)
Degree Type	-.064* (1418)	-.023 (1363)	-.002 (1418)	.007 (1383)	-.019 (1522)	-.047 (207)
Number of Days Enrolled	.108*** (1417)	.534*** (1363)	-0.083** (1417)	.113*** (1383)	-.001 (1521)	.062 (207)
Age	.005 (1383)	.083** (1363)	-.196*** (1383)	-.077** (1383)	-.014*** (1490)	.021 (207)
Race/Ethnicity	-.086** (1418)	-.264** (1363)	.186** (1418)	.047 (1383)	-.020 (1522)	-.111 (207)
Gender	-.032 (1418)	-.109*** (1363)	-.032 (1418)	-.048 (1383)	-.061* (1522)	.219** (207)
Cumulative GPA	.131*** (1363)	.259*** (1363)	154.*** (1363)	.087** (1363)	-.026 (1470)	.033 (205)

* $p < .05$, ** $p < .01$, *** $p < .001$

	Continued Enrollment	Cont_days2
Pearson Correlation	-.077**	.012
Sig. (2 tailed)	.004	.675
N	1383	1307
Pearson Correlation	.047	.083**
Sig. (2 tailed)	.084	.003
N	1383	1307
Pearson Correlation	-.048	.054
Sig. (2 tailed)	.073	.051
N	1383	1307

* $p < .05$, ** $p < .01$, *** $p < .001$

All the covariates were significantly correlated with at least one of the outcome variables such that their inclusion in the propensity score model would be expected to substantially reduce bias and improve the strength of the propensity score estimation. A logistic regression with the covariates as predictors and group assignment (treatment or comparison) as the outcome variable yielded preliminary propensity scores for each student. The preliminary propensity scores were then rescaled using a logit transformation to generate scores that are more useful.

The Evaluation Team conducted 1:2 optimal matching of the comparison to treatment group.[120] A ratio of 2 comparison group members to every 1 treatment group member increases power and allows for the detection of statistical significance for smaller differences. The optimal matching typology is helpful with smaller samples. The primary goal of propensity score matching is to balance the distributions of the covariates over the treatment and comparison groups, so that the covariates do not predict group assignment. Of the 1352 students with valid data for all of the covariates, 386 comparison group students were matched with 193 treatment group students through the optimal matching process. Prior to matching, the two groups only demonstrated initial selection bias for the Business Administration major, Certificate degree type, Associate degree type, number of days enrolled, and age. As shown in Table 13 on the following page, matching balanced the groups for all the covariates, except for number of days enrolled and age. Although not balanced, matching substantially reduced the amount of selection bias for these two variables. To adjust for the remaining group differences, number of days enrolled and age will be included as covariates in the outcome analyses.

[120] Gu & Rosenbaum, 1993.

Table 13: Indicators of Balance Between Treatment and Comparison Groups

Covariate	Raw Selection Bias	Matched Selection Bias	Percent Bias Reduction
Major			
Accounting Clerk	.134	.119	14.82
Business Administration	-.608	-.485	20.32
Coding and Reimbursement	.314	.251	20.06
Office Technology Specialist	-.033	-.010	68.44
Practical Business Management	-.009	-.005	39.89
Degree Type			
Certificate	.617	.490	20.60
Associate Degree	-.615	-.490	20.37
Not Declared or Unknown	-.002	.000	100.00
Gende			
Male	-.325	-.070	78.48
Female	.244	.023	90.44
Missing or Refused	.081	.047	42.56
Race/Ethnicity			
Hispanic or Latino			
Native American or Alaska Native	-.004	.000	100.00
Asian	-.001	.000	100.00
Black or African American	-.001	.000	100.00
Native Hawaiian or other Pacific Islander	.000	.000	0
White	-.012	-.026	-114.79
Two or more races	.008	.013	-66.52
Unknown race	.000	.003	-57850.00
Not Hispanic or Latino			
Native American or Alaska Native	.003	.003	.26
Asian	-.013	-.026	-100.66
Black or African American	-.005	-.013	-150.43
Native Hawaiian or other Pacific Islander	-.006	.000	100.00
White	.147	.029	80.65
Two or more races	.030	.026	14.30
Unknown race	-.004	.000	100.00
Missing or unknown race and ethnicity	-.142	-.008	94.54
Number of Days Enrolled	-118.334	-7.845	60.26
Age	21.349	16.697	18.09
Cumulative GPA	.251	-.122	86.67

Analytic Approach

Research Question 1: Is the LB iLearn Campus successful in preparing students for either a career or completing higher academic achievement?

Analysis of data for LB iLearn students address the first research question, "Is the LB iLearn Campus successful in preparing students for either a career or completing higher academic achievement?" and its two related sub-questions. To uncover the predictors of success and retention within the LB iLearn Campus, the Evaluation Team conducted six multiple regressions using data for all the LB iLearn Campus participants, adjusting for the covariates (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative GPA). Each of the six regressions had a different dependent variable, including: (1) program completion, (2) credits earned, (3) transfer to a four-year institution, (4) retention in the LB iLearn Campus, (5) employment placement, and (6) wage upon completion of the program (the program completion, transfer, and employment placement variables are binary; thus, those three models were run as logistic regressions).

With 7 covariates in each of the regressions, the minimum detectable effect size for the credits earned and wage analyses is 0.06, which is a small to medium effect size (sample size of 259, power of 0.8, and alpha set at 0.05).[121] For the program completion, transfer, retention, and employment placement analyses, the minimum detectable effect size would be an odds ratio of at least 1.56. The sample sizes for each program major are not large enough to support comparisons of outcomes by major.

Research Question 2: Do LB iLearn Campus students demonstrate greater levels of educational achievement, labor market outcomes, and student success than traditional LBCC students?

The propensity-score matched comparison group design focused on addressing the second research question: "Do LB iLearn Campus students demonstrate greater levels of educational achievement, labor market outcomes, and student success with lower cost than traditional LBCC students?" The Evaluation Team conducted six hierarchical regressions using the matched samples. For all six regressions, the propensity scores were entered in the first step of the regression as controls, and group assignment (treatment or comparison) was entered in the second step. As with the analyses for the first research questions, each of the six regressions had a different dependent variable, including: (1) program completion, (2) credits earned, (3) transfer to a four-year institution, (4) retention in the LB iLearn Campus, (5) employment placement, and (6) wage upon completion of the program (with logistic regressions for program completion, transfer, and employment placement).

With propensity scores, number of days enrolled, and age as controls in the regressions, the minimum detectable effect size for credits earned and wage improvement is 0.02, which is a small effect size (sample size of 579, power of 0.8, and alpha set at 0.05).[122] For the program completion, transfer, retention, and employment placement analyses, the minimum detectable effect size would be an odds ratio of at least 1.34. Given the sample size is small for each program (particularly for LB iLearn) and each year, program-to-program and year-by-year comparisons would have not yielded stable, interpretable results. Thus, there was one each of the treatment and comparison groups including participants from all programs across all

[121] Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G., 2009.
[122] Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G., 2009.

evaluation years. By using propensity score matching, the effect of group assignment will be a reasonable reflection of the causal relationship between the program and each outcome.[123]

Results by Outcome Variable

Program Completion

As shown in Table 14 below, the majority of students in both the treatment and comparison groups did not finish their program within the evaluation period. For the treatment group, a student was counted as having completed his or her program if they first enrolled in LB iLearn, and finished within the evaluation period. For the comparison group, a student was counted as having completed his or her program if a comparison group major was declared and courses finished within the evaluation period. Completions of non-comparison or non-declared programs were not counted. Courses completed were mapped onto the program course requirements to calculate the percentage of completion of required courses. The LB iLearn Campus programs are more prescriptive in terms of required courses than are the traditional programs (which allow for many course pathways to complete a program); thus, percentage of completion of required courses is feasible for the LB iLearn students, but not the comparison group students.

Table 14: Descriptive Statistics for Program Completion[124]

	Did Not Complete Program		Completed Program		Percent of Required Courses Completed		
	N	Percent	*N*	Percent	*N*	Range	Average
Comparison Group	1106	95.4	53	4.6	-	-	-
Treatment Group	257	99.2	2	0.8	205	0 to 93.33	7.03

To address the first research question regarding the success of the LB iLearn Campus in preparing students for either a career or higher academic achievement, a binary logistic regression was conducted[125] using seven variables (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative GPA) as predictors and program completion as the criterion for LB iLearn students. Likelihood of program completion did not significantly vary based on any of the seven student characteristics, $\chi^2(20) = 13.45$, $p > .05$. However, the covariates predicted students' progress toward program completion when considering the percentage of required courses completed ($R = .43$, $F(7,168) = 5.37$, $p < .001$), explaining 18.3% of the variance in completion percentage. Major ($\beta = .24$, $t(168) = 2.83$, $p = .005$), days enrolled ($\beta = .15$, $t(168) = 2.07$, $p = .040$), race/ethnicity ($\beta = .16$, $t(168) = 2.18$, $p = .030$), and cumulative GPA ($\beta = .17$, $t(168) = 2.35$, $p = .020$) significantly predicted percent of required courses students had completed.

Specifically, for every additional day a student was enrolled, they completed 0.012% more of their required courses, on average, and, for every 1 point of a student's cumulative GPA, they completed 2.172% more of their required courses, if all other student characteristics remain unchanged. Students in the Accounting Clerk program completed 6.30% more and students in the Office Technology Specialist program completed 18.38% more required courses, on average, than did students in other programs. Additionally, non-Hispanic American Indian students completed 25.10% more and students with unknown race/ethnicity (missing or declined to state) completed 6.34% more required courses, on average, than students of other race/ethnicities. The other covariates were not significantly related to course completion percentage.

[123] Shadish, W. R., Cook, T. D., & Campbell, D. T., 2002.
[124] Program completion data were not available for 192 traditional (16.6%) and 164 LB iLearn (63.3%) students.
[125] SPSS 21 was used for this analysis.

To address the second research question regarding the success of students at the LB iLearn Campus as compared to students from the traditional campus, a binary logistic regression was conducted using four variables (number of days enrolled, age, propensity scores, and treatment/comparison group membership) as predictors and program completion as the criterion for LB iLearn students. Likelihood of program completion significantly varied based on treatment/comparison group membership, after accounting for the effects of the propensity score, days enrolled, and age, $\chi^2(4) = 45.25$, $p < .001$, with approximately 20.5% of variance accounted for and 93.8% of cases being correctly classified by the model. LB iLearn students were 37.21 times more likely to complete their program than traditional comparison students ($p < .001$), controlling for propensity score, days enrolled, and age.

Credits Earned

To address the first research question regarding the success of the LB iLearn Campus in preparing students for either a career or higher academic achievement, an ordinary least squares multiple regression[126] was conducted. This regression was conducted using eight variables (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative GPA) as predictors and the number of cumulative credits earned at LBCC (regardless of program) as the criterion, for only LB iLearn students. See Table 15 below for descriptive statistics for credits earned by group. On average, LB iLearn students earned 40.75 credits as of the end of Winter 2017, with a minimum of 0 and maximum of 277. The number of credits earned significantly varied based on the covariates ($R = .58$, $F(7,185) = 13.05$, $p < .001$), with 33.0% of the variance in credits earned explained. Major ($\beta = .36$, $t(185) = 4.88$, $p < .001$), degree type ($\beta = .25$, $t(185) = 3.36$, $p = .001$), days enrolled ($\beta = .28$, $t(185) = 4.55$, $p < .001$), race/ethnicity ($\beta = -.25$, $t(185) = -4.11$, $p < .001$), gender ($\beta = -.15$, $t(185) = -2.39$, $p = .018$), and cumulative GPA ($\beta = .20$, $t(185) = 3.10$, $p = .002$) significantly predicted the number of credits earned.

Specifically, for every additional day a student was enrolled, they earned 0.081 more credits, on average, and, for every 1 point of a student's cumulative GPA, they earned 8.204 more credits, if all other characteristics remained unchanged. Students in the Accounting Clerk program earned 6.54 more and students in the Office Technology Specialist program earned 18.54 more credits, on average, than did students in other programs. Additionally, non-Hispanic White students earned 6.57 fewer credits, on average, than students of other race/ethnicities. Other subgroups within the significant predictors did not significantly vary from one another in terms of credits earned. Student age did not significantly predict number of credits earned.

Table 15: Descriptive Statistics for Number of Credits Earned

	Treatment Group				Comparison Group			
	N	Minimum	Maximum	Average	*N*	Minimum	Maximum	Average
Number of credits earned	204	0	277	40.75	1159	0	251	39.55

To address the second research question regarding the success of students at the LB iLearn Campus as compared to students from the traditional campus, a binary logistic regression was conducted. This regression was conducted using four variables (number of days enrolled, age, propensity scores, and treatment/comparison group membership) as predictors and number of cumulative credits earned at LBCC (regardless of program) as the criterion. The model significantly predicted the number of credits ($R = .43$,

[126] SPSS 21 was used for this analysis.

$F(4,574) = 32.50$, $p < .001$), with 18.5% of the variance in credits earned explained. Treatment/comparison group membership, however, was not a significant predictor ($\beta = -.06$, $t(574) = -1.16$, $p = .25$). Rather, only days enrolled ($\beta = .42$, $t(574) = 11.08$, $p < .001$), and propensity score ($\beta = .20$, $t(574) = 3.24$, $p = .001$) significantly predicted the number of credits earned.

Transfer to a Four-Year Institution

As shown in Table 16 below, approximately 4% of treatment group students and 22% of comparison group students transferred to a four-year institution after enrolling at LB iLearn or the traditional campus during the evaluation period. Transfers to two-year institutions were not counted in this analysis.

Table 16: Descriptive Statistics for Enrollment in Further Education by way of Four-Year Institution

	Did Not Transfer		Transferred	
	N	Percent	*N*	Percent
Comparison Group	907	78.3	252	21.7
Treatment Group	250	96.5	9	3.5

To address the first research question regarding the success of the LB iLearn Campus in preparing students for either a career or higher academic achievement, a binary logistic regression was conducted.[127] This regression used seven variables (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative GPA) as predictors and transfer to a four-year institution as the criterion for LB iLearn students. Likelihood of program completion significantly varies based on the seven student characteristics, $\chi^2(17) = 44.38$, $p = .001$, with approximately 65.4% of variance accounted for and 96.9% of cases being correctly classified by the model. This relationship is cumulative, such that all of the student characteristics predicted transfer in combination, not individually. None of the individual student characteristics added significantly to the model.

To address the second research question regarding the success of students at the LB iLearn Campus as compared to students from the traditional campus, a binary logistic regression was conducted using four variables (number of days enrolled, age, propensity scores, and treatment/comparison group membership) as predictors and transfer to a four-year institution as the criterion for LB iLearn students. Likelihood of transferring significantly varied based on treatment/comparison group membership, propensity score, days enrolled, and age, $\chi^2(4) = 102.19$, $p < .001$, with approximately 27.3% of variance accounted for and 83.4% of cases being correctly classified by the model. Treatment/comparison group membership, however, did not significantly predict the likelihood of transferring ($p = .12$); the model's significance was primarily due to the effects of the covariates (days enrolled, $p = .01$, age, $p < .001$, and propensity score, $p = .04$).

Retention in the LB iLearn or Traditional Campus

As shown in Table 17 below, less than one quarter of LB iLearn students (17.9%) and traditional students (24.4%) were retained. A student was counted as having been retained if they maintained enrollment for all the academic quarters between their first and last dates of enrollment (during the study window from Fall 2014 to Winter 2017). For LB iLearn students, any length of enrollment during the quarter, even if it was for only a part of the time span, was treated as being enrolled. Thus, a student was counted as not

[127] SPSS 21 was used for this analysis.

being retained if they skipped enrollment for one or more full academic quarters between the first and last enrollment dates.

Measuring retention by quarters aligns more with the traditional campus design than the LB iLearn Campus design. The competency-based, self-paced format of the LB iLearn Campus enables students to set their own pace that is needed to master the concepts and skills taught in a single course. Therefore, the course timing does not match with the length of an academic quarter. To illustrate, a student may choose to complete each course very quickly or several courses sequentially within a single quarter, and then take a longer than typical break before his or her next course. In the data, this would make it appear as though the student was no longer retained in school or was enrolled in fewer academic quarters, despite staying on track to finish the program. The Evaluation Team attempted to address this issue by counting enrollment for partial quarters as being enrolled for the entire quarter addresses, but this solution still does not fully resolve the non-equivalence of definitions of retention for the traditional and LB iLearn campuses.

Table 17: Descriptive Statistics for Number of Academic Quarters Enrolled

	Not Retained		Retained	
	N	Percent	*N*	Percent
Comparison Group	876	75.6	283	24.4
Treatment Group	184	82.1	40	17.9

To address the first research question regarding the success of the LB iLearn Campus in preparing students for either a career or higher academic achievement, a binary logistic regression was conducted using seven variables (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative GPA) as predictors and retention for as the criterion for LB iLearn students. Likelihood of retention did not significantly vary based on any of the seven student characteristics, $\chi^2(20) = 17.44$, $p > .05$.

To address the second research question regarding the success of students at the LB iLearn Campus as compared to students from the traditional campus, a binary logistic regression was conducted using four variables (number of days enrolled, age, propensity scores, and treatment/comparison group membership) as predictors and retention as the criterion for LB iLearn students. Likelihood of retention did not significantly vary based on treatment/comparison group membership nor the covariates, $\chi^2(4) = 5.73$, $p > .05$.

Employment Placement

As shown in Table 18 below, only a small percentage of students started unemployed and gained employment during the grant period. Students were counted as having improved their employment placement if they did not have any reported wages during the first quarter of the grant period, and had reported wages in the last quarter of the grant period. In contrast, students were counted as having lower or the same employment status (i.e., no gain) if they (a) had no reported wages in the first and last quarter of the grant period (i.e., stayed unemployed), (b) had reported wages in the first quarter and no reported wages in the last quarter of the grant period (i.e., started employed and stopped working for any reason by the end), or (c) had reported wages in the first and last quarter of the grant period (i.e., stayed employed).

Table 18: Descriptive Statistics for Employment Status

	Lower or Same Employment Status		Gained Employment	
	N	Percent	*N*	Percent
Comparison Group	876	75.6	283	24.4
Treatment Group	195	94.7	11	5.3

To address the first research question regarding the success of the LB iLearn Campus in preparing students for either a career or higher academic achievement, a binary logistic regression was conducted.[128] This regressed used the covariates (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative GPA) as predictors and improvement of employment status as the criterion for LB iLearn students. Likelihood of improvement in employment status significantly varied based on the seven student characteristics, $\chi^2(7) = 17.91$, $p = .01$. Age ($\beta = .16$, Wald = 5.56, $p = .018$) was the only significant covariate. Students of higher ages were 1.17 times more likely to improve their employment status.

To address the second research question regarding the success of students at the LB iLearn Campus as compared to students from the traditional campus, a binary logistic regression was conducted[129] using four variables (number of days enrolled, age, propensity scores, and treatment/comparison group membership) as predictors and improvement in employment status as the criterion. Likelihood of improvement in employment status significantly varied based on treatment/comparison group membership, propensity score, days enrolled, and age, $\chi^2(3) = 12.64$, $p = .005$, with 72.0% of cases being correctly classified. Treatment/comparison group membership, however, did not significantly predict the likelihood of transferring ($p = .91$); the model's significance was primarily due to the effects of age ($p = .004$).

Wage upon Completion of the Program

To address the first research question regarding the success of the LB iLearn Campus in preparing students for either a career or higher academic achievement, a least squares multiple regression was conducted.[130] This regression used the seven covariates (major, degree type, number of days enrolled, age, race/ethnicity, gender, and cumulative GPA) as predictors and the amount of change in dollars between students' reported wages from the first to last quarter of the grant period as the criterion for only those students from LB iLearn. See Table 19 below for descriptive statistics for wage change by group. Wage change significantly varied based on the covariates ($F(7,198) = 2.60$, $p = .01$), with 8.4% of the variance in wage change explained. Degree type (B = 1470.57, $t(1) = 2.47$, $p = .001$), and gender (B = -349.35, $t(1) = -3.62$, $p = .004$) were the only two significant predictors. Specifically, male students (B = 3167.24, $p < .001$) and female students (B = 3448.54, $p < .001$) had higher average wages than did students who declined to state their gender or had an unknown gender in the data set. Students in certificate programs had more negative changes in their wages than students in other degree types (B = -1628.17, $p = .011$).

[128] SAS was used for this analysis. A LBCC Institutional Researcher ran the analysis due to challenges in obtaining wage and employment data from the State.
[129] SAS was used for this analysis. A LBCC Institutional Researcher ran the analysis due to challenges in obtaining wage and employment data from the State.
[130] SAS was used for this analysis. A LBCC Institutional Researcher ran the analysis due to challenges in obtaining wage and employment data from the State.

Table 19: Descriptive Statistics for Wage Change

	Treatment Group				Comparison Group			
	N	Minimum	Maximum	Average	*N*	Minimum	Maximum	Average
Change in wages (in dollars) from first to last quarter of the grant period	206	0	277	40.75	1159	0	251	39.55

To address the second research question regarding the success of students at the LB iLearn Campus as compared to students from the traditional campus, a binary logistic regression was conducted.[131] This regression used four variables (number of days enrolled, age, propensity scores, and treatment/comparison group membership) as predictors and number of cumulative credits earned at LBCC (regardless of program) as the criterion. The model significantly predicted the number of credits (R = .43, $F(4,574) = 32.50$, $p < .001$), with 18.5% of the variance in credits earned explained. Treatment/comparison group membership, however, was not a significant predictor (β = -.06, $t(574) = -1.16$, p = .25). Rather, only days enrolled (β = .42, $t(574) = 11.08$, p <.001), and propensity score (β = .20, $t(574) = 3.24$, p = .001) significantly predicted the number of credits earned.

Limitations

Even with a rigorous design, bias can be introduced. The Evaluation Team has identified aspects of the design that may reduce the ability to separate the effects of programming from potential sources of bias.

Endogeneity – While the study employed an apparently equivalent comparison and treatment group, it is possible that endogeneity (i.e., potential nonequivalence of the treatment and comparison groups due to selection bias into the program) was introduced into the study. It is possible that there were differences between the two groups with regard to the length and intensity of comparison programs that could have influenced findings.

Systematic Differences – When an evaluator is not able to conduct a randomized controlled trial for a study, one runs the risk of systematic differences between the treatment and control/comparison groups, which can bias findings. As the LB iLearn Campus was new to LBCC during the time the study was conducted, locating students by which to form a comparison group may present challenges as the evaluation unfolded.

Inequivalent Matches – Certificate and degree programs offered through LB iLearn do not have exactly equivalent matches on the traditional campus. Comparison group programs were selected to match the new programs as closely as possible; however, some differences exist due to divergent campus structures, such as the use of cohorts for the traditional campus (which were not used for LB iLearn,), and the lack of traditional campus comparable programs for the Computed Tomography and Social Media Specialist LB iLearn programs. To address this limitation, many background and academic variables were included as covariates in the matching process to minimize the number of potential confounding variables and maximize the quality of the matching

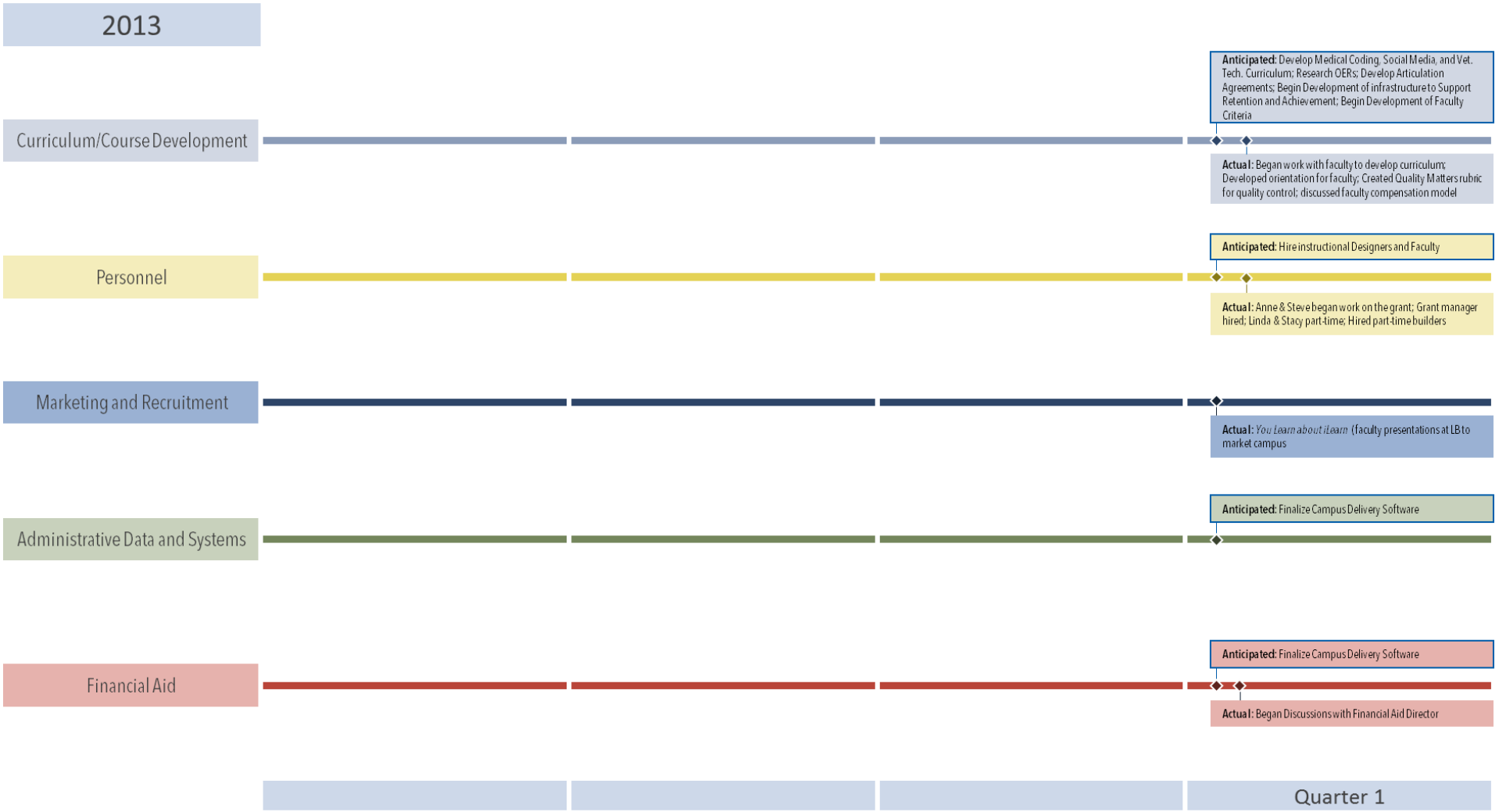
[131] SAS was used for this analysis. A LBCC Institutional Researcher ran the analysis due to challenges in obtaining wage and employment data from the State.

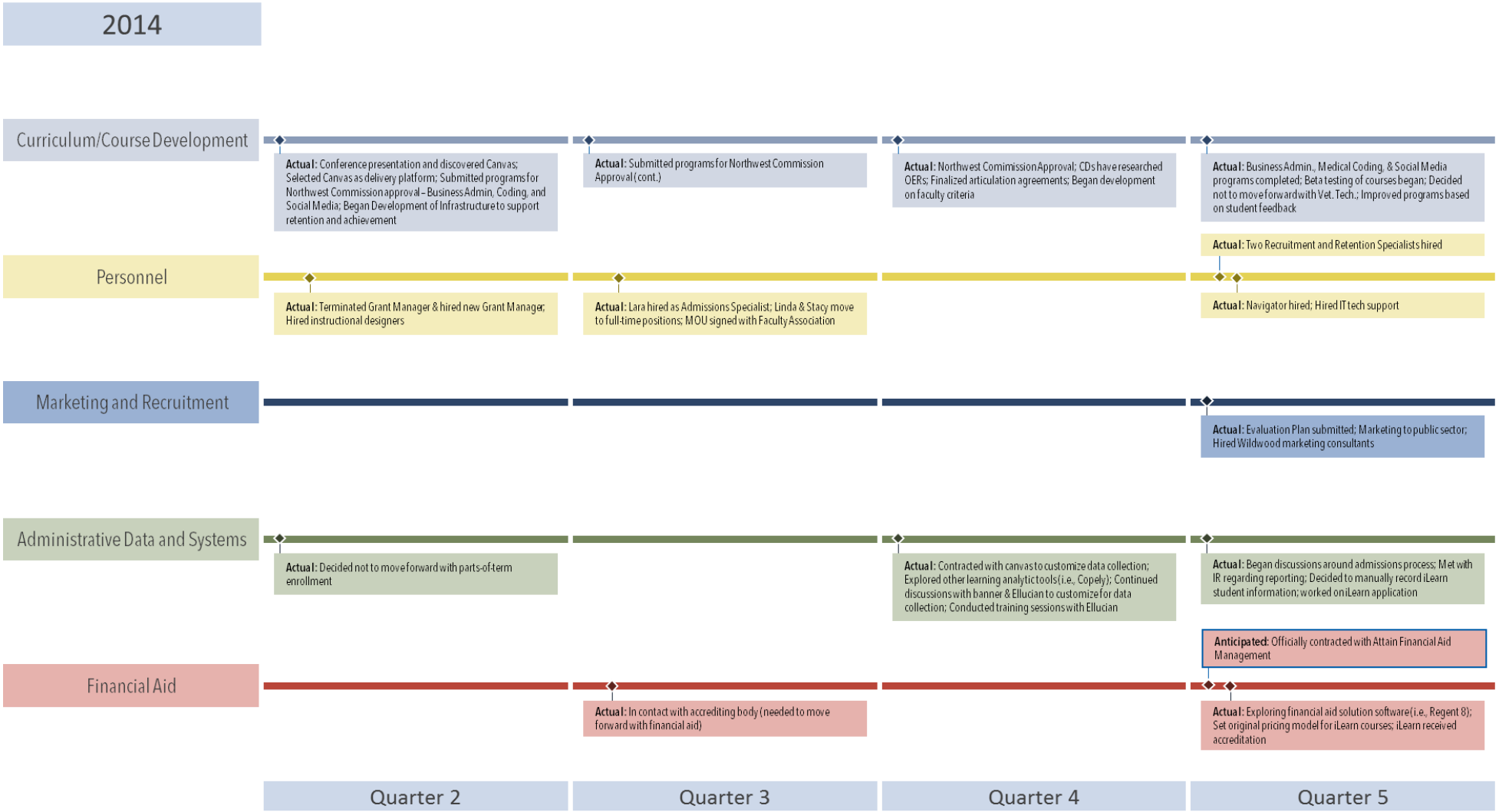
process in balancing the treatment and comparison groups, but it is not possible to eliminate all potential error introduced into the model by this limitation. Efforts to construct comparison groups from outside of LBCC (from other Oregon universities) were not successful due to unwillingness to share record-level student information.

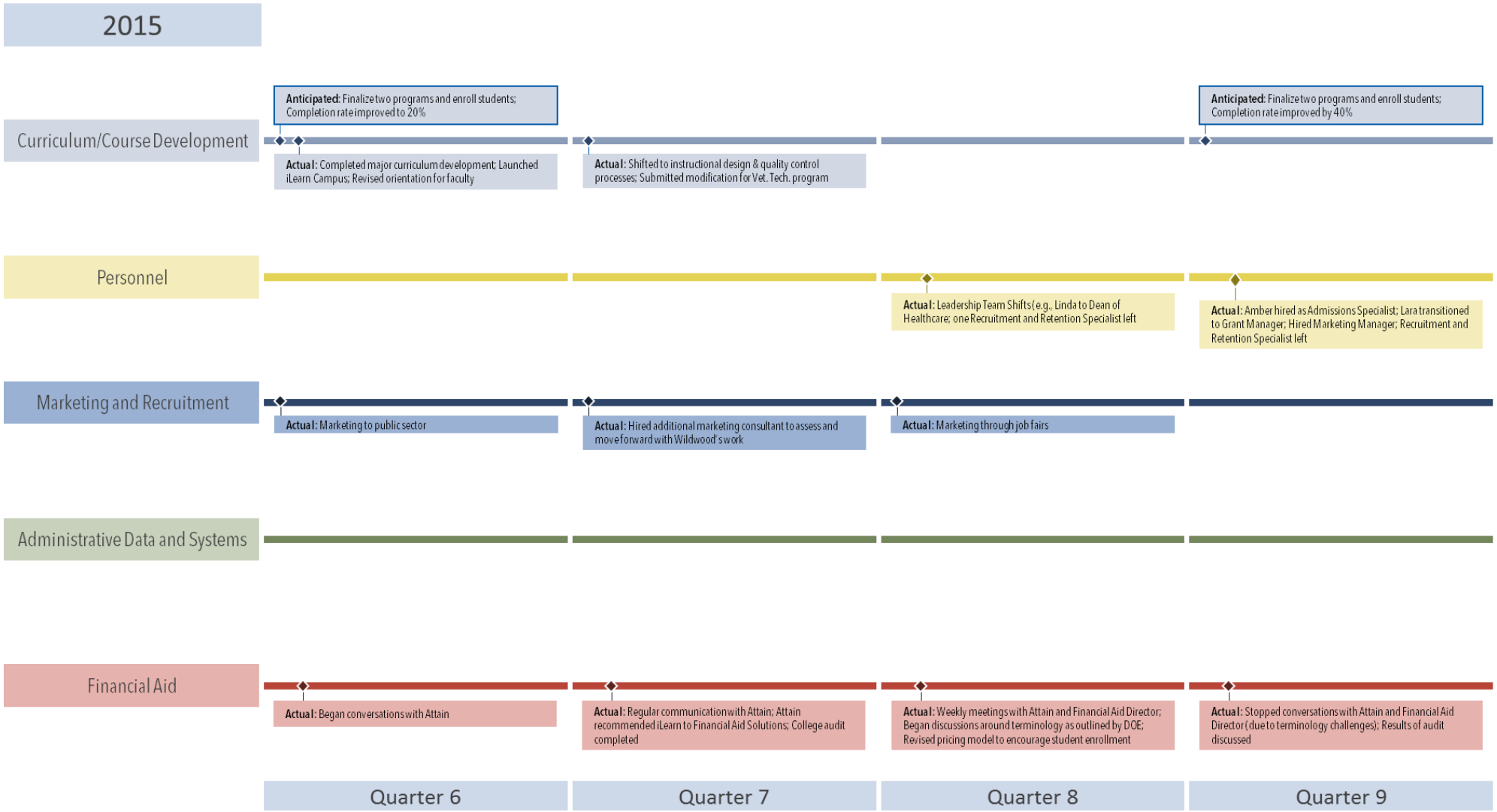
Data Availability – Additionally, data from the National Student Clearinghouse and Oregon Employment Department were not available for all students. As data sets were merged for the final report, issues causing a lack of alignment between the LBCC Student Information System and LB iLearn course information system were identified, creating the need for the LBCC Institutional Research staff to recreate the data files previously delivered throughout the grant period with new data limits and definitions.[132] After this process, there was not sufficient time remaining to re-request the data match from the National Student Clearinghouse and Oregon Employment Department prior to the final report deadline. Thus, the students who were added to the groups through this redefinition (76 treatment group and 305 comparison group students) increased the number of cases, but there was no employment or transfer data for these students.

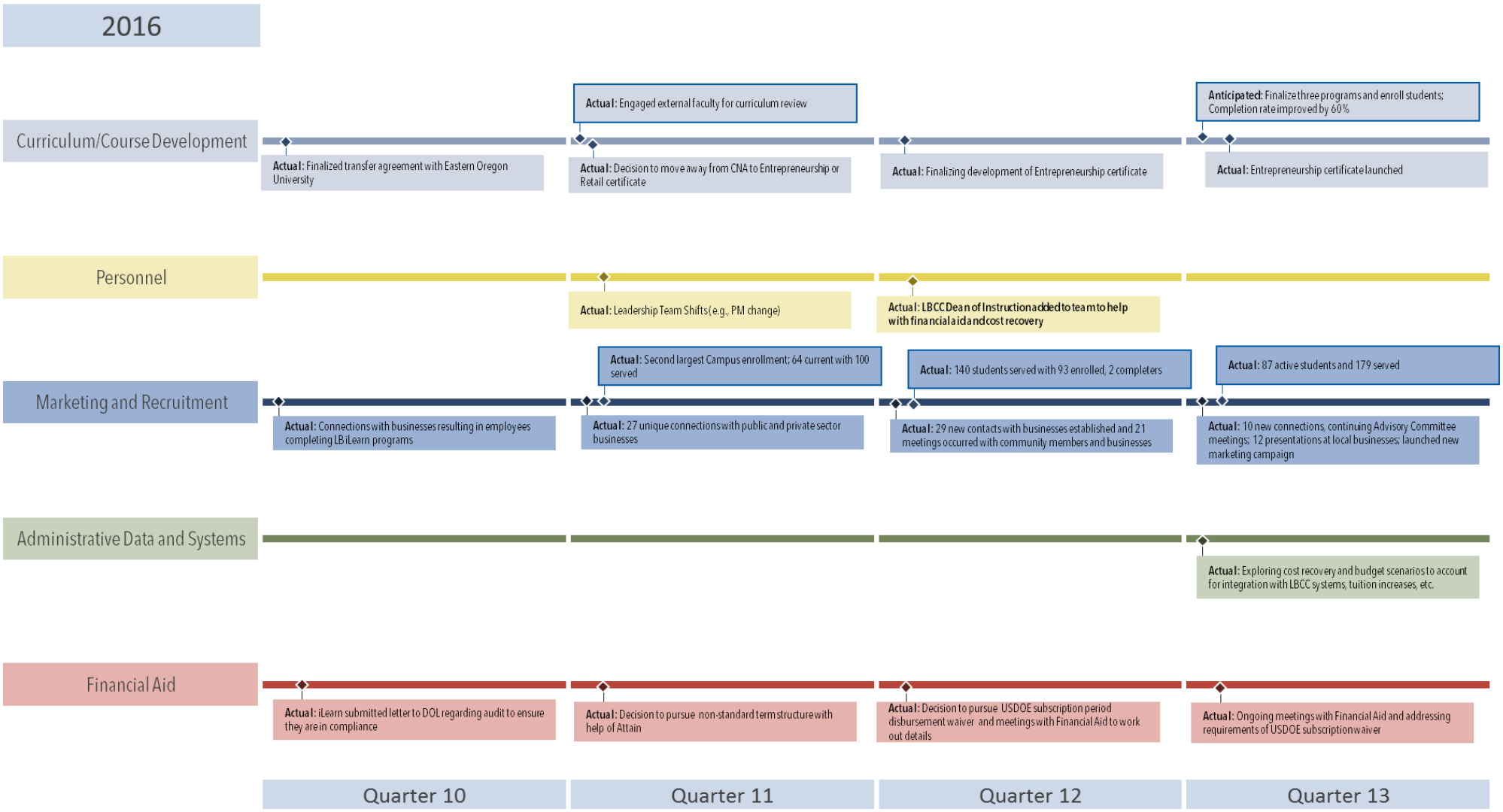
[132] For example, collecting data on first credit was originally restricted to the grant period. However, this left out a large percentage of LB iLearn students because they had previously completed classes at the traditional campus. The restriction was lifted from first LBCC credit to first LB iLearn credit or declared comparison major during the grant period.

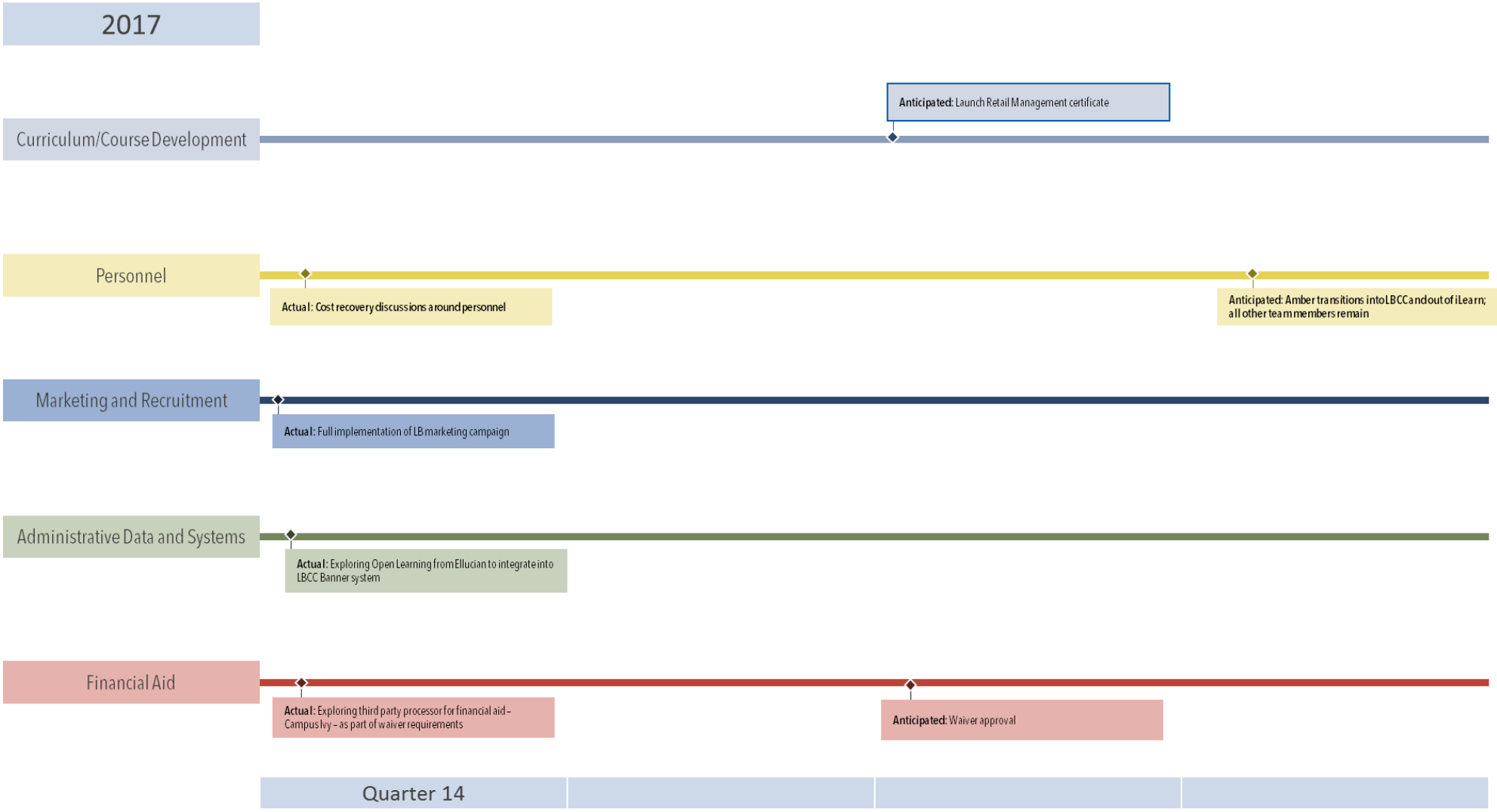
Appendix D. LB iLearn Timeline of Grant Activities




2014
Curriculum/Course Development
Actual: Conference presentation and discovered Canvas; Selected Canvas as delivery platform; Submitted programs for Northwest Commission approval - Business Admin, Coding, and Social Media; Began Development of Infrastructure to support retention and achievement
Actual: Submitted programs for Northwest Commission Approval (cont.)
Actual: Northwest Comimission Approval; CDs have researched OERs; Finalized articulation agreements; Began development on faculty criteria
Actual: Business Admin., Medical Coding, & Social Media programs completed; Beta testing of courses began; Decided not to move forward with Vet. Tech.; Improved programs based on student feedback
Personnel
Actual: Two Recruitment and Retention Specialists hired
Actual: Terminated Grant Manager & hired new Grant Manager; Hired instructional designers
Actual: Lara hired as Admissions Specialist; Linda & Stacy move to full-time positions; MOU signed with Faculty Association
Actual: Navigator hired; Hired IT tech support
Marketing and Recruitment
Actual: Evaluation Plan submitted; Marketing to public sector; Hired Wildwood marketing consultants
Administrative Data and Systems
Actual: Decided not to move forward with parts-of-term enrollment
Actual: Contracted with canvas to customize data collection; Explored other learning analytic tools (i.e., Copely); Continued discussions with banner & Ellucian to customize for data collection; Conducted training sessions with Ellucian
Actual: Began discussions around admissions process; Met with IR regarding reporting; Decided to manually record iLearn student information; worked on iLearn application
Anticipated: Officially contracted with Attain Financial Aid Management
Financial Aid
Actual: In contact with accrediting body (needed to move forward with financial aid)
Actual: Exploring financial aid solution software (i.e., Regent 8); Set original pricing model for iLearn courses; iLearn received accreditation
Quarter 2
Quarter 3
Quarter 4
Quarter 5


2015
Curriculum/Course Development
Anticipated: Finalize two programs and enroll students; Completion rate improved to 20%
Actual: Completed major curriculum development; Launched iLearn Campus; Revised orientation for faculty
Actual: Shifted to instructional design & quality control processes; Submitted modification for Vet. Tech. program
Anticipated: Finalize two programs and enroll students; Completion rate improved by 40%
Personnel
Actual: Leadership Team Shifts (e.g., Linda to Dean of Healthcare; one Recruitment and Retention Specialist left
Actual: Amber hired as Admissions Specialist; Lara transitioned to Grant Manager; Hired Marketing Manager; Recruitment and Retention Specialist left
Marketing and Recruitment
Actual: Marketing to public sector
Actual: Hired additional marketing consultant to assess and move forward with Wildwood's work
Actual: Marketing through job fairs
Administrative Data and Systems
Financial Aid
Actual: Began conversations with Attain
Actual: Regular communication with Attain; Attain recommended iLearn to Financial Aid Solutions; College audit completed
Actual: Weekly meetings with Attain and Financial Aid Director; Began discussions around terminology as outlined by DOE; Revised pricing model to encourage student enrollment
Actual: Stopped conversations with Attain and Financial Aid Director (due to terminology challenges); Results of audit discussed
Quarter 6
Quarter 7
Quarter 8
Quarter 9


2016
Curriculum/Course Development
Actual: Finalized transfer agreement with Eastern Oregon University
Actual: Engaged external faculty for curriculum review
Actual: Decision to move away from CNA to Entrepreneurship or Retail certificate
Actual: Finalizing development of Entrepreneurship certificate
Anticipated: Finalize three programs and enroll students; Completion rate improved by 60%
Actual: Entrepreneurship certificate launched
Personnel
Actual: Leadership Team Shifts (e.g., PM change)
Actual: LBCC Dean of Instruction added to team to help with financial aid and cost recovery
Marketing and Recruitment
Actual: Connections with businesses resulting in employees completing LB iLearn programs
Actual: Second largest Campus enrollment; 64 current with 100 served
Actual: 27 unique connections with public and private sector businesses
Actual: 140 students served with 93 enrolled, 2 completers
Actual: 29 new contacts with businesses established and 21 meetings occurred with community members and businesses
Actual: 87 active students and 179 served
Actual: 10 new connections, continuing Advisory Committee meetings; 12 presentations at local businesses; launched new marketing campaign
Administrative Data and Systems
Actual: Exploring cost recovery and budget scenarios to account for integration with LBCC systems, tuition increases, etc.
Financial Aid
Actual: iLearn submitted letter to DOL regarding audit to ensure they are in compliance
Actual: Decision to pursue non-standard term structure with help of Attain
Actual: Decision to pursue USDOE subscription period disbursement waiver and meetings with Financial Aid to work out details
Actual: Ongoing meetings with Financial Aid and addressing requirements of USDOE subscription waiver
Quarter 10
Quarter 11
Quarter 12
Quarter 13


2017
Curriculum/Course Development
Anticipated: Launch Retail Management certificate
Personnel
Actual: Cost recovery discussions around personnel
Anticipated: Amber transitions into LBCC and out of iLearn; all other team members remain
Marketing and Recruitment
Actual: Full implementation of LB marketing campaign
Administrative Data and Systems
Actual: Exploring Open Learning from Ellucian to integrate into LBCC Banner system
Financial Aid
Actual: Exploring third party processor for financial aid – Campus Ivy – as part of waiver requirements
Anticipated: Waiver approval
Quarter 14

Appendix E. LB iLearn Survey Findings

Introduction

Purpose and Background

Linn-Benton Community College (LBCC) received funding through the U.S. Department of Labor (USDOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT) program to develop a virtual college – LB iLearn Campus. The purpose of this four-year project was to facilitate post-secondary education completion for Trade Adjustment Assistance (TAA)-eligible, veteran, and dislocated workers to successfully compete in Oregon's growing industry sectors. These growing sectors included healthcare, accounting, business and office administration, and communications and marketing/social media. Ultimately, the LB iLearn Campus sought to increase the number of qualified, employable candidates by providing a student-centric educational experience. The LB iLearn Campus aimed to capitalize on innovative online education models to make credentials attainable for non-traditional students, employing a rigorous course development process and competency-based framework.

Thomas P. Miller & Associates (TPMA) and Hamai Consulting, collectively the Evaluation Team, served as the external evaluators for the LB iLearn project. The Evaluation Team was responsible for conducting an implementation evaluation, including the administration of a survey to assess the perceived effectiveness of various components of the LB iLearn Campus.

Summary of Survey Method

The online survey evaluated the experience of individuals relating to the enrollment process, experience with the virtual coursework, and interactions with faculty and career services. The Evaluation Team administered the survey to three groups including:

(1) Individuals that expressed interest in LB iLearn courses but did not enroll,

(2) Students that were enrolled in LB iLearn courses (including those that dropped out of LB iLearn courses), and

(3) Individuals that completed an LB iLearn program[133] to effectively capture the experiences of all individuals interacting with the LB iLearn Campus.

Online survey distribution, through the SurveyMonkey tool, to the three groups listed above occurred on a quarterly basis through the end of the program implementation period on March 31, 2017.

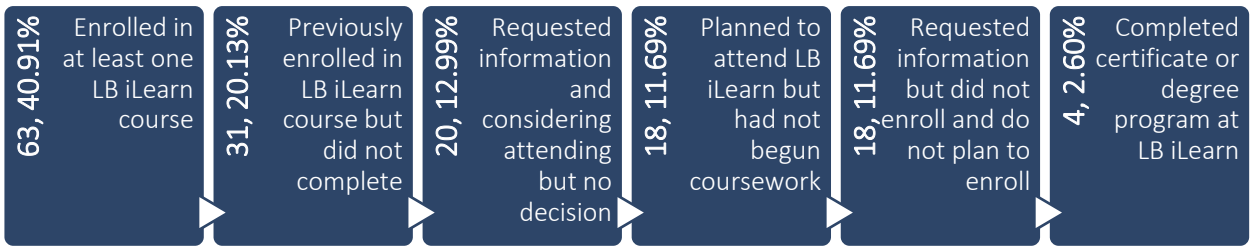
The Evaluation Team developed the LB iLearn survey questions with assistance from the LB iLearn Leadership Team to assess topic areas including LB iLearn Campus effectiveness, administrative management, efficiency and appropriateness of the curricula and programs, and interactions with faculty and career services. Targeted questions around student services were also included.[134] For more background on the Survey Administration Plan, please see *Appendix A*.

[133] Students that were surveyed while they were enrolled in LB iLearn programs were surveyed again upon program completion.
[134] For research questions addressed by the survey, see the Detailed Evaluation Plan.

Respondent Demographics

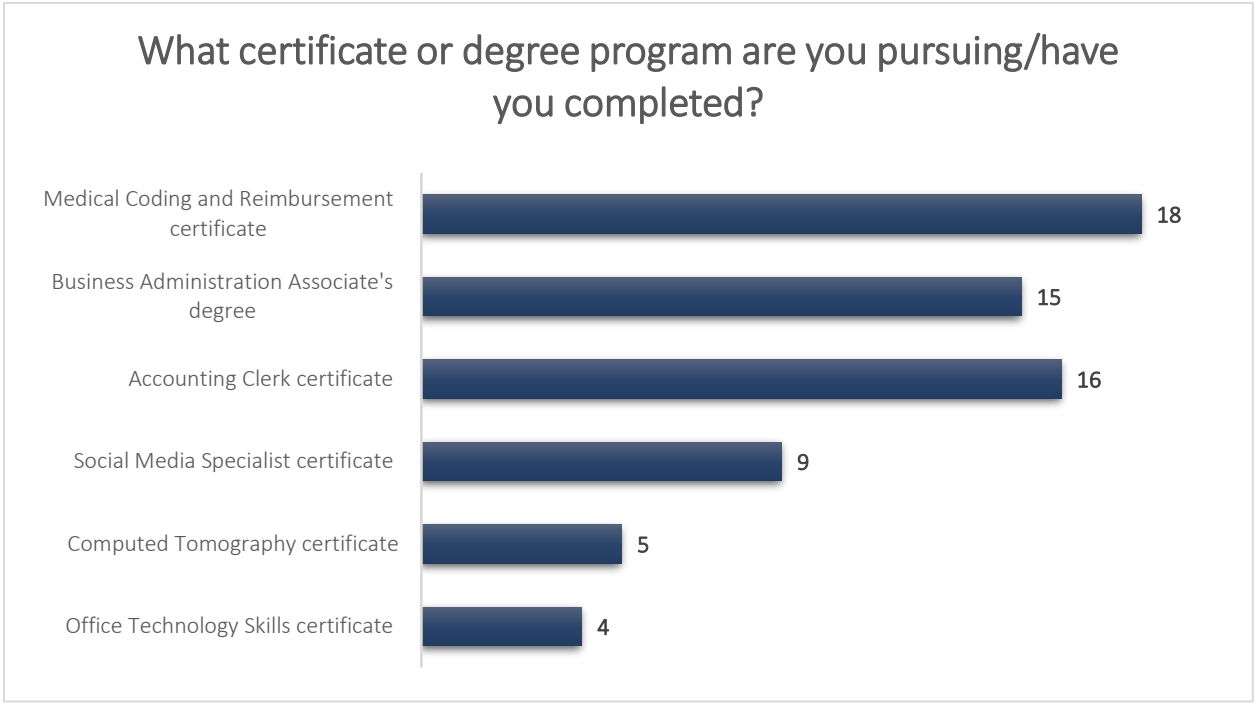
Population Breakdown

Based on the email addresses provided to the Evaluation Team, 60 percent of the email addresses provided (346 in total) were individuals that did not begin but were interested in LB iLearn. The remaining 40 percent included individuals that were currently enrolled or previously enrolled in LB iLearn, including those that dropped out or completed any coursework. Of those contacted, from the period of January 2016 to July 2017, 157 individuals responded to the survey. Within this period, **15** individuals replied to the survey in January/February 2016, **29** in May 2016, **32** in July/August 2016, **33** in October 2016, **25** in January 2017, **30** in April 2017, and **8** in July 2017. The breakdown of respondents' involvement with LB iLearn is indicated below:[135]



For those students who were enrolled in LB iLearn and were pursuing degrees/certificates at the Campus, the Medical Coding and Reimbursement certificate program was most popular with 18 (26.87%) students pursuing or completing the program (see *Figure 1*).[136]

Figure 1



[135] The remaining three individuals chose not to respond to the question.
[136] 67 individuals responded to this question.

Recruitment and LB iLearn Application Process

Summary

Recruitment-targeted questions were incorporated into the survey to better understand how individuals entered, or did not enter, the LB iLearn Campus. With this information, the LB iLearn Leadership Team could better target their recruitment efforts moving forward.

All individuals were asked to complete the questions around recruitment because all individuals that completed the survey were familiar with LB iLearn; thus, the Evaluation Team gathered information on the avenues respondents first learned about the LB iLearn Campus.

Additionally, to better understand the process of applying to the LB iLearn Campus, respondents were asked a series of questions that could enable the LB iLearn Leadership Team to streamline the application process. Only students that were enrolled in LB iLearn courses, completed LB iLearn courses, or dropped out of LB iLearn were targeted for this series of questions because of their exposure to the application process.[137]

Recruitment

Key Findings

Respondents were asked to identify how they first learned about the LB iLearn Campus to determine the marketing/recruiting strategies that were the most effective for LB iLearn and better understand how respondents were exposed to LB iLearn. When considering recruitment and the avenue upon which individuals first learned about LB iLearn, respondents reported LBCC or the LB iLearn website as the most significant tools (82, 52.23%; see *Figure 2*).

Figure 2

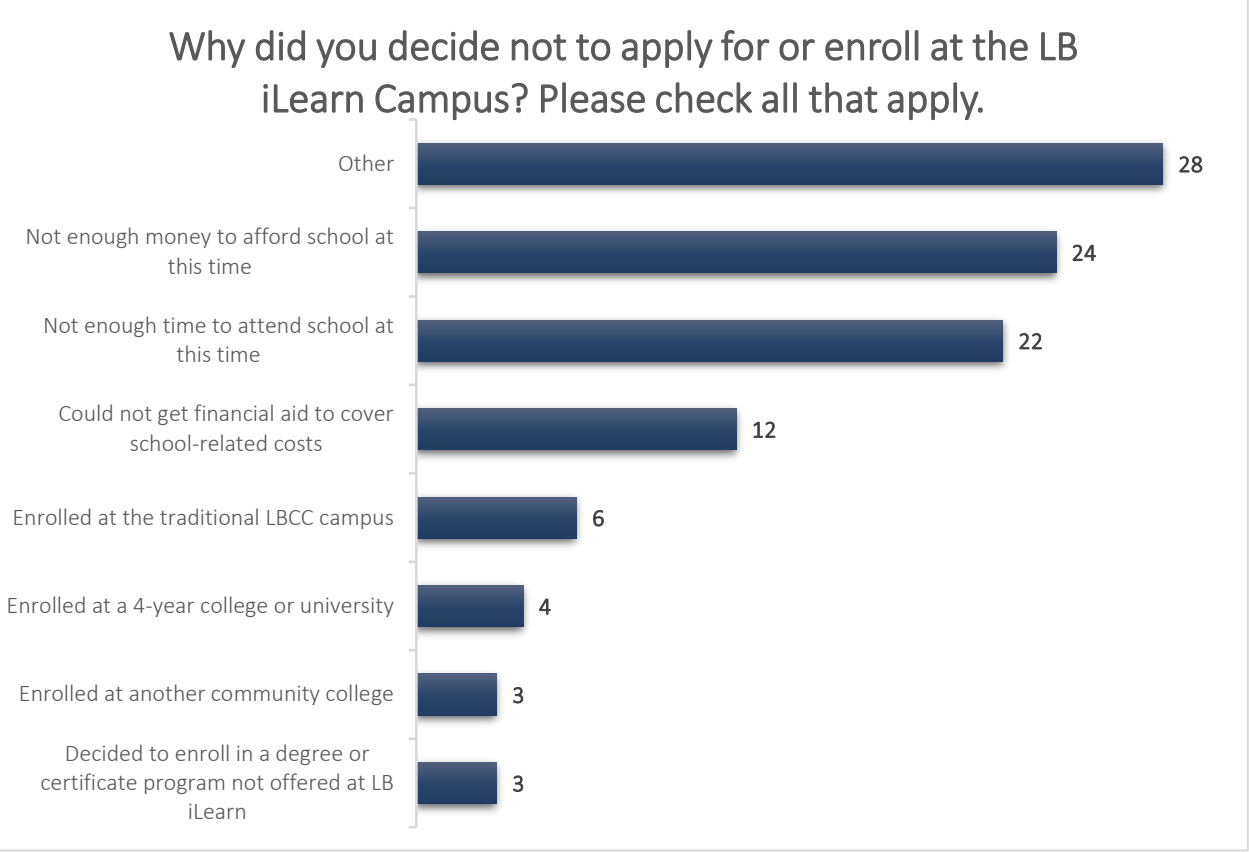
[137] Skip logic was used to control the response path for individuals completing the survey.

Respondents also reported learning about LB iLearn through the following avenues:[138]

- Coworker and employer referrals (n=2)
- Employment Office
- Internet search (n=3)
- Trade Act Case Manager or Unit Rep (n=4)
- LBCC employee (n=5)
- Oregon State University admissions department (n=3)

After learning of LB iLearn, most respondents subsequently attended the Campus (63, 40.91%, were currently enrolled in at least one course; 31, 20.13%, were previously enrolled but were no longer enrolled; and four, 2.60%, completed a certificate or degree at LB iLearn). However, for those that did not enroll, interest in LB iLearn reportedly remained high. Most of the individuals who had not yet attended a course at LB iLearn planned to attend (18, 11.69%) or requested information and were considering attending (20, 12.99%). Less than 12 percent of individuals that requested information and considered attending, decided never to enroll (18, 11.69%). The most common reason individuals did not apply for or enroll at the LB iLearn Campus was that they did "not have enough money to afford school at the time" and several others reported that they did "not have enough time to attend school at the time" (see *Figure 3*).

Figure 3



[138] These examples were gathered from those that answered 'Other.'

Respondents also reported not applying for or enrolling in LB iLearn for the following reasons:

- Difficulty enrolling
- Deciding appropriate program
- Submitting application to enroll or currently enrolled (n=10)
- Focusing on employment rather than studies (n=3)
- Not enough flexibility (n=4)
- Awaiting Trade Act approval
- Interested in enrolling and plan to (n=5)
- Not eligible for program (n=2)
- Not interested in certifications or degrees

Individuals were motivated to learn more about the LB iLearn Campus because of the ability to complete courses/programs at their own schedule/pace (40, 48.78%), and the online course delivery (26, 31.71%; see *Figure 4*). Other factors that motivated respondents to learn more about LB iLearn included the lower cost (n=3), the progressive fee structure (n = 1), and "the topic, the ability to complete on my own schedule, and that I would be an enrolled part-time student at LBCC" (n = 1).

For those previously or currently enrolled in LB iLearn courses, the primary factor that contributed to respondents' decisions to enroll in LB iLearn courses rather than traditional courses were other obligations (e.g., children and full-time jobs) that prevented them from taking traditional courses during the day (29, 56.86%). Respondents also indicated that the ability to finish courses faster on the LB iLearn Campus versus the traditional campus (9, 17.65%; see *Figure 5*) was a factor that influenced their decision to enroll in LB iLearn. Because of the factors highlighted above, these individuals preferred online education as traditional education was less feasible for them.

Figure 4

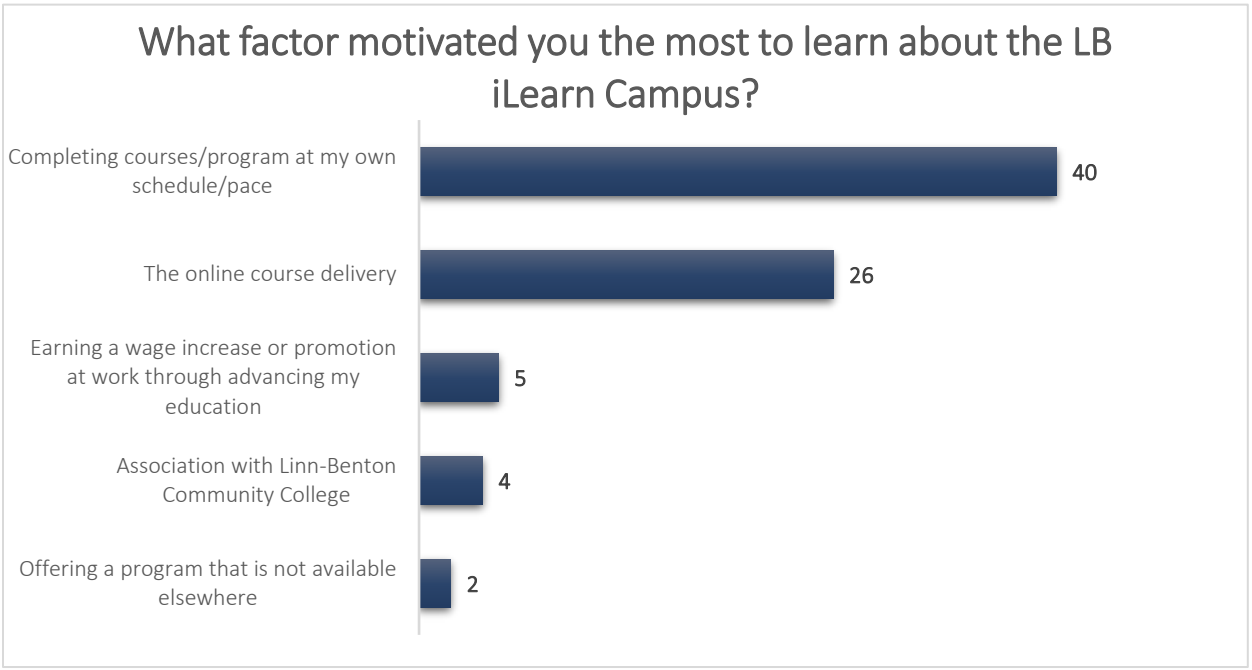
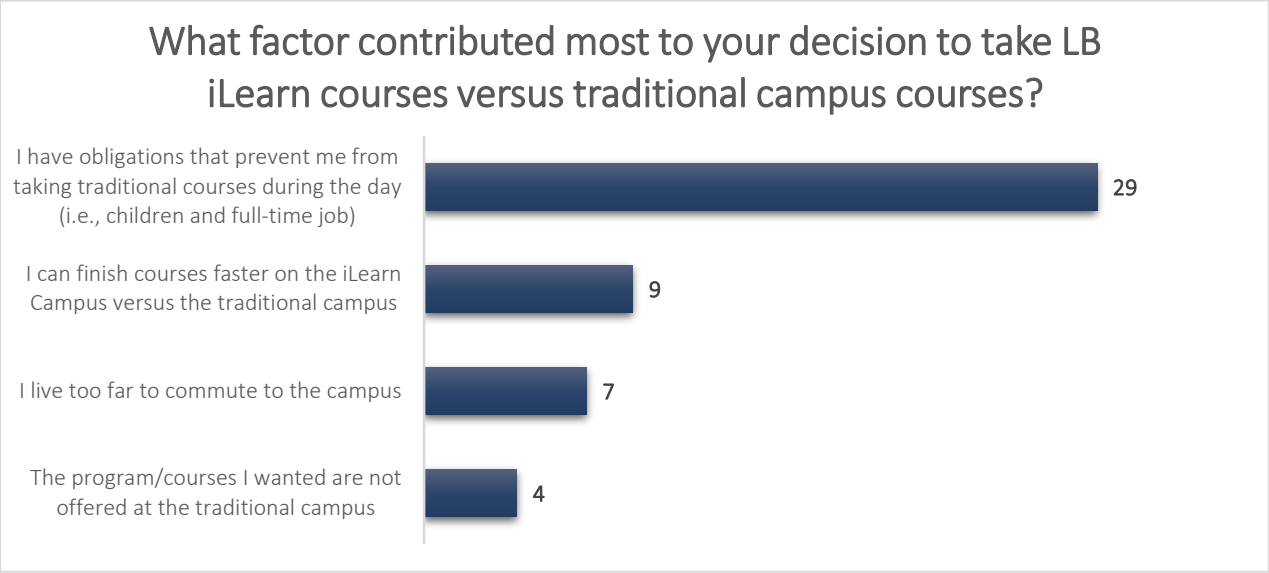


Figure 5



Implications/Recommendations

The LB iLearn website was identified as the most effective tool in recruiting potential students and could be a focus for continuous improvements moving forward. In other words, the website should be consistently refined in order to facilitate student recruitment as most individuals discover LB iLearn through the website. For the methods that were not as effective, discussions around modifications that could be made or approaches that could best enhance these strategies could be useful. While the website is a critical recruitment mechanism, enhancing other recruitment avenues could yield enhanced enrollment numbers.

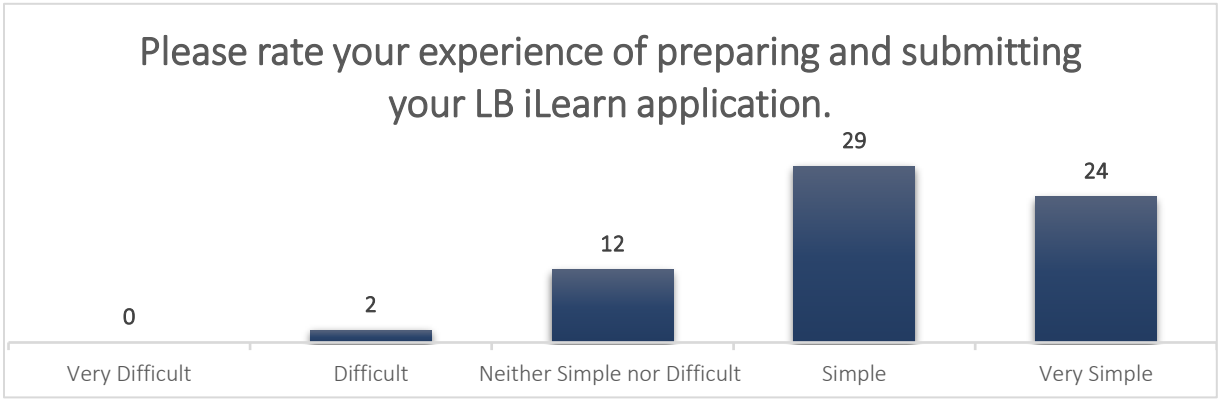
For those individuals that did not enroll in LB iLearn courses, the inability to afford schooling was cited as the most common response. LB iLearn staff must continue to prioritize the establishment of financial aid for students moving forward. Once students have access to financial aid, based on the survey responses, it can be assumed that enrollment will increase as students will have the financial support needed to afford school.

Application Process

Key Findings

Overall, respondents perceived the application process as simple (see *Figure 6*).

Figure 6



Many of the respondents indicated that the LB iLearn staff (e.g., Student Navigator) expedited and streamlined the application process, guiding the students through every step of the process. Students reported that staff were friendly, helpful, and responsive. Specifically, the aspects that respondents reported worked well and should not be changed included:[139]

- Helpful and communicative staff (n=10)
- Contact and support from Navigator (n=6)
- Received all support and information needed (n=4)
- Simple and easy process (n=5)
- No suggestions (n=11)

Implications/Recommendations

Students cited that there might be room for improvements to the application process, streamlining communication and the process itself for students. However, most students emphasized the communicability of staff as a selling point for LB iLearn, expediting the application process for them.

Respondents outlined recommendations for making the application process more effective or user-friendly:[140]

- Creating Mac compatible application
- Increase communication regarding Trade Act benefits and the process of completing the agreement
- Revisit the petition that students must sign when transitioning from LBCC courses to LB iLearn
- Step-by-step checklist for application process
- Compare the application process to other online opportunities to determine if the process can be streamlined
- Consider a student guide or mentor to provide to students throughout the process

[139] 36 individuals responded to this question.
[140] 35 individuals responded to this question, 29 individuals did not have changes to suggest.

Student Orientation

Summary

All students were reportedly required to complete the student orientation upon enrollment in LB iLearn. This orientation familiarized students with the Canvas platform, faculty roles, and other processes within the Campus as well as helped students determine whether the online environment was a good fit for their career pathway and life circumstances. Students that were currently enrolled or previously enrolled – either completed or dropped out of an LB iLearn course/program – were targeted for this set of questions due to their experience with student orientation.

Orientation Process

Key Findings

Almost every student who enrolled at LB iLearn Campus reported that they completed an orientation (61, 92.42%; see *Figure 7*). Students perceived all parts of the orientation as useful, but the sections on setting up proctoring for Credit Unit Assessments and how to submit assignments were most frequently rated as being critical or very useful (see *Figure 8*).

Figure 7

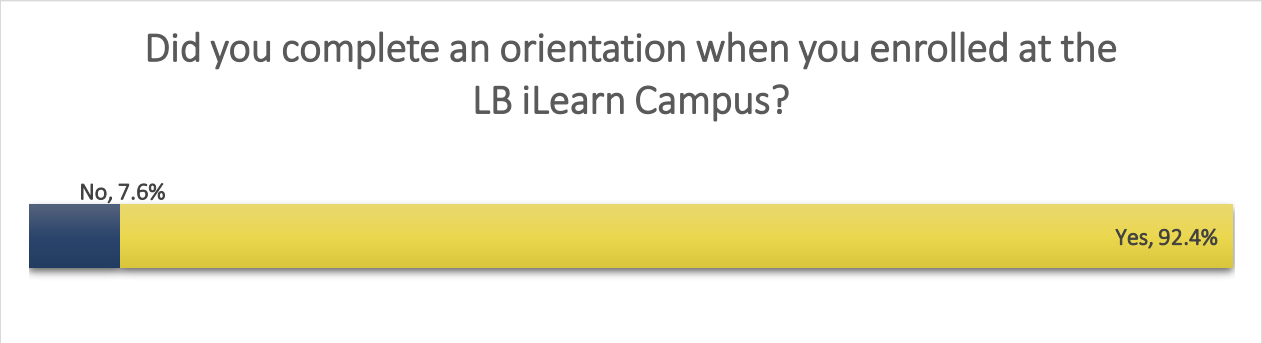
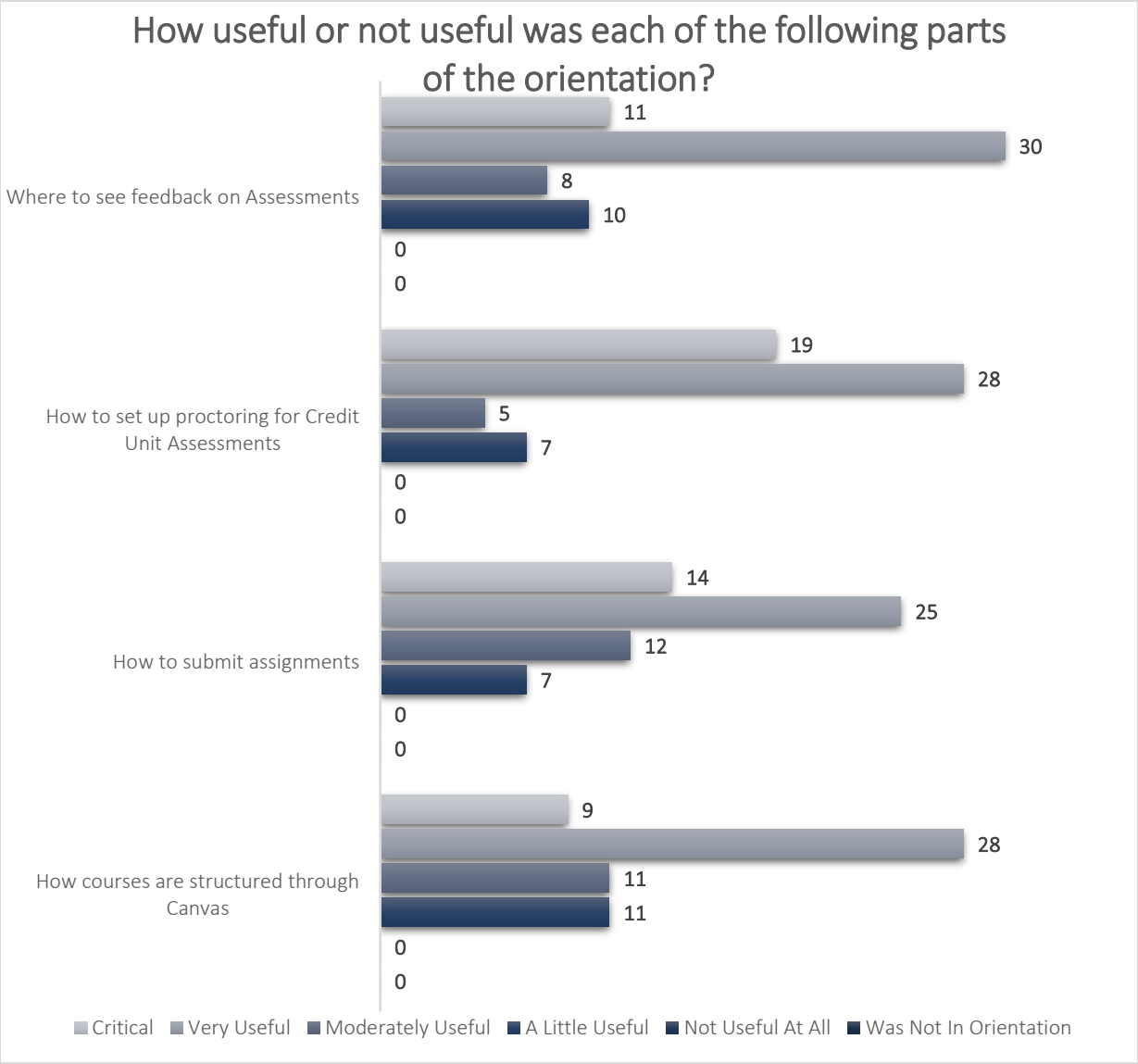


Figure 8



Implications/Recommendations

Although most students considered the orientation useful, students provided several recommendations to streamline and improve the orientation:

- Step-by-step guidance provided during first assignment submission
- Note time zones for those that are completing online education in a different area (n=2)
- Suggest the appropriate web browser
- Update orientation questions to reflect the most current version of Microsoft Office
- Revisit library links as they were confusing
- Make orientation and courses mobile friendly

Assessment and Placement

Summary

Survey questions regarding assessments and placement tests were utilized to target whether students completed a placement or assessment test associated with their program and, if so, whether they understood how their placement was impacted. However, students may not have been required to complete a placement or assessment test as part of program enrollment. In addition, students with prior learning experience could opt out of placement and assessment tests, once LB iLearn staff examined their previous experience. Because of this, the results in this section may not be as useful as results in other sections as only 14 respondents indicated completing a placement or assessment test.

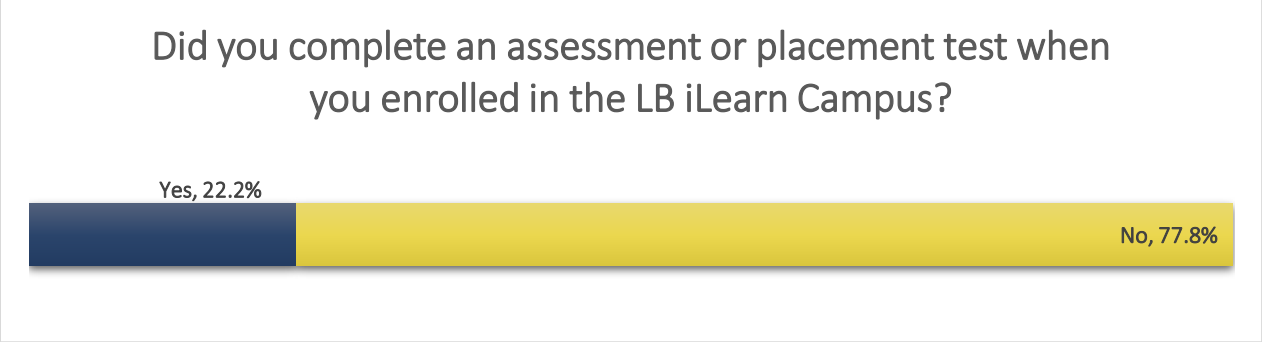
The questions in this section were administered to all students that were currently and previously enrolled in LB iLearn courses (including those that completed and dropped out of courses).

College Assessment

Key Findings

When asked about assessment, 14 (22.22%) students reported completing a placement or assessment test when they enrolled in the LB iLearn Campus (see *Figure 9*).

Figure 9



Of those 14 students, less than half (7, 46.67%) reported an understanding of how their assessment results were used. Specifically, the students indicated that placements into courses and fulfillment of pre-requisites depended on their test results. Of the students who completed a placement or assessment test, two (14.29%) reported receiving referrals to any on-campus or off-campus resources based on their test results.

Implications/Recommendations

When asked about how to change the assessment process to make it more effective or user-friendly, students did not provide recommendation. However, because less than half of the students indicated an understanding of how their assessment and placement results were used, it could be beneficial to add this content to the student orientation or reach out to the student directly following their completion of the test. Having this information may empower students to take control of their education by identifying their growth and strength areas.

Course Delivery and Content

Summary

Appropriate delivery and LB iLearn course content was a significant priority for the Campus. To better understand students' satisfaction with the delivery and course content, students were asked questions about the Canvas platform. This series of questions enabled the Evaluation Team to gain a deeper understanding of the effectiveness and satisfaction with the LB iLearn's delivery platform.

The questions also explored the appropriateness of course content to ensure that the curriculum development process aligned with students' abilities. Most of the curriculum was modified from existing LBCC curriculum to the appropriate level of difficulty for the LB iLearn student population. Students that were currently and previously enrolled in LB iLearn, including students that completed and dropped out of the Campus, were included in this analysis.

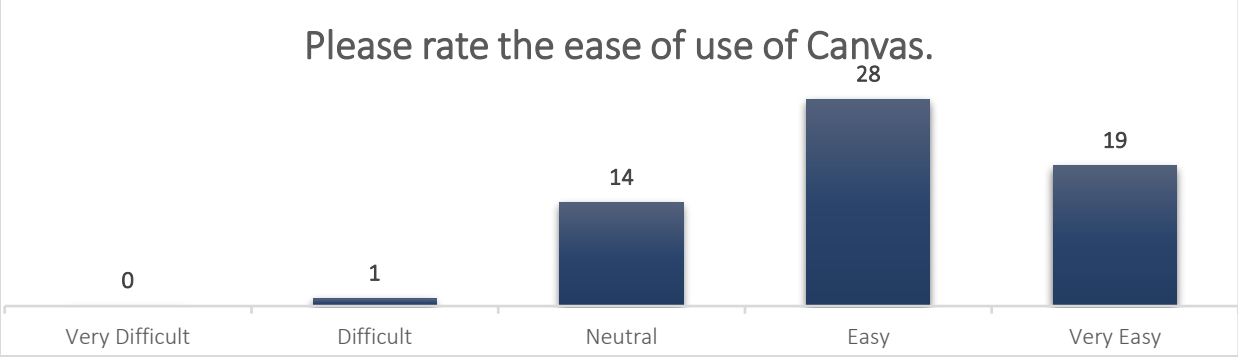
Canvas Platform

Key Findings

Overall, students were satisfied with the Canvas platform (see *Figure 10*) and considered the platform easy to use (see *Figure 11*). As noted in the Student Orientation section, students found the information provided during the orientation about Canvas to be critical/very useful, which could have contributed to the ease of use of this system (i.e., students were adequately educated on the Canvas system).

Figure 10

Figure 11



Implications/Recommendations

Overall, students were satisfied with Canvas and its ease of use. Students were asked how Canvas could be modified to become more effective and user-friendly. Students provided the following thoughts:

- Compatibility with Mac products
- Email and other applications (e.g., accounts and tuition payment) accessed through the platform
- The number of gates made it difficult to move forward
- Ensure the platform is mobile friendly
- Break up the units so the page can load more quickly

Course Content

Key Findings

Students perceived the course content as being an appropriate level of difficulty (see *Figure 12*), of high quality (see *Figure 13*), and effective in helping them learn (see *Figure 14*).

Figure 12

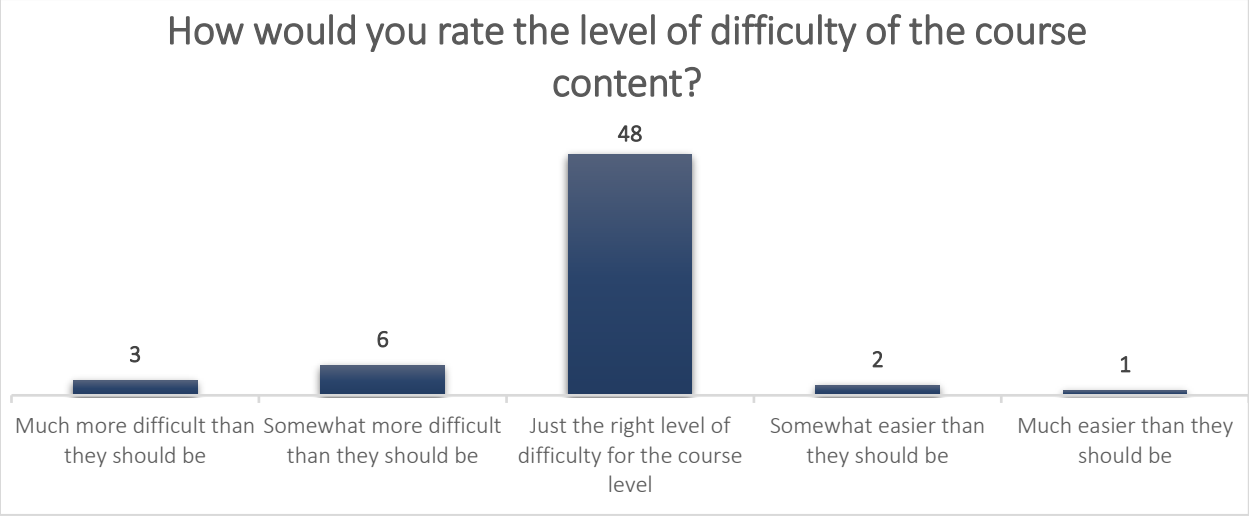


Figure 13

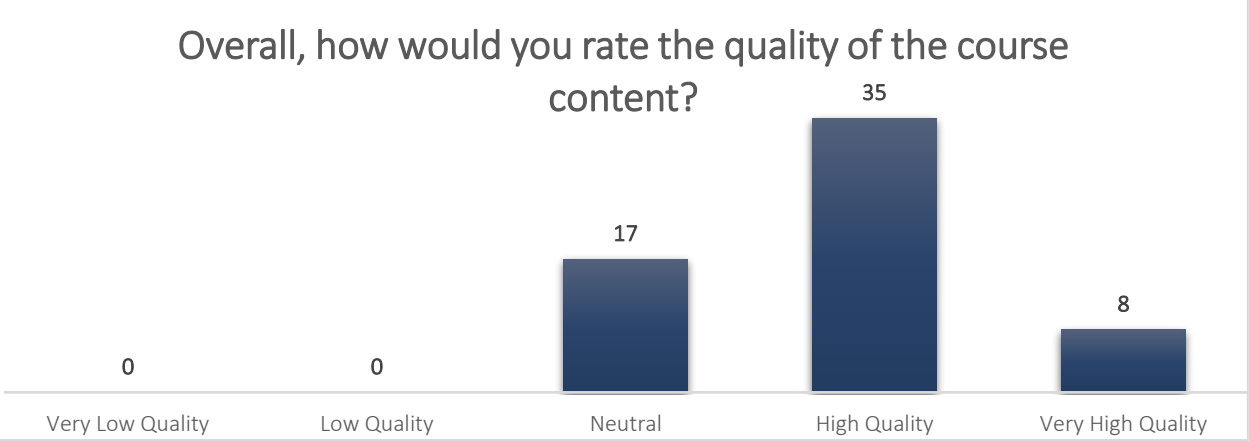
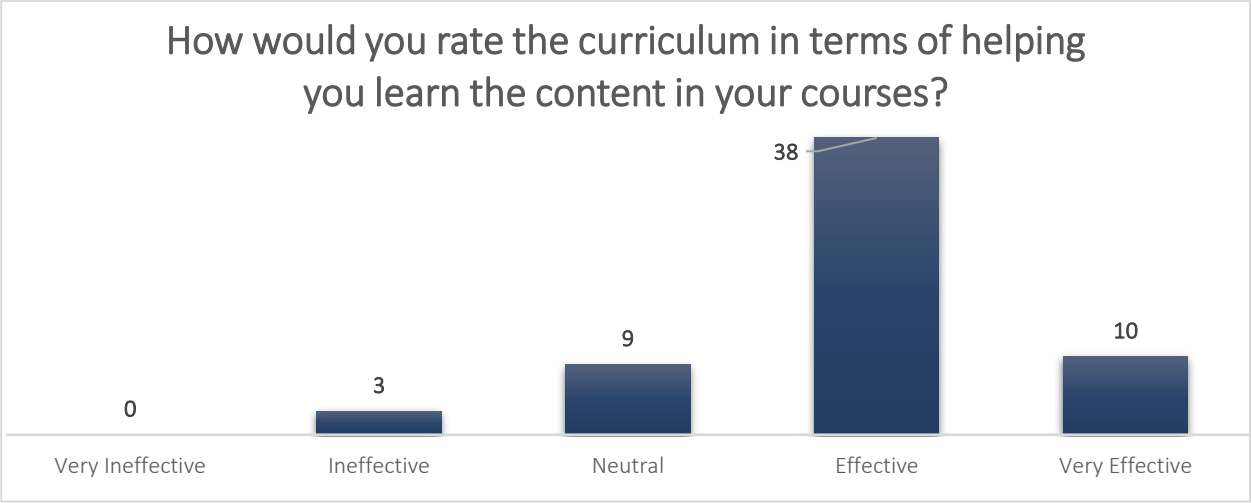


Figure 14



Implications/Recommendations

Because many of the students found the curriculum to be appropriate in regards to level of difficulty and effectiveness, LB iLearn staff can continue to use similar curriculum development and modification methods moving forward. In the future, when a larger study body is enrolled in LB iLearn, effectiveness of specific material and teaching methods could be evaluated using assessment, course grades, and completion rates.

Student Support

Summary

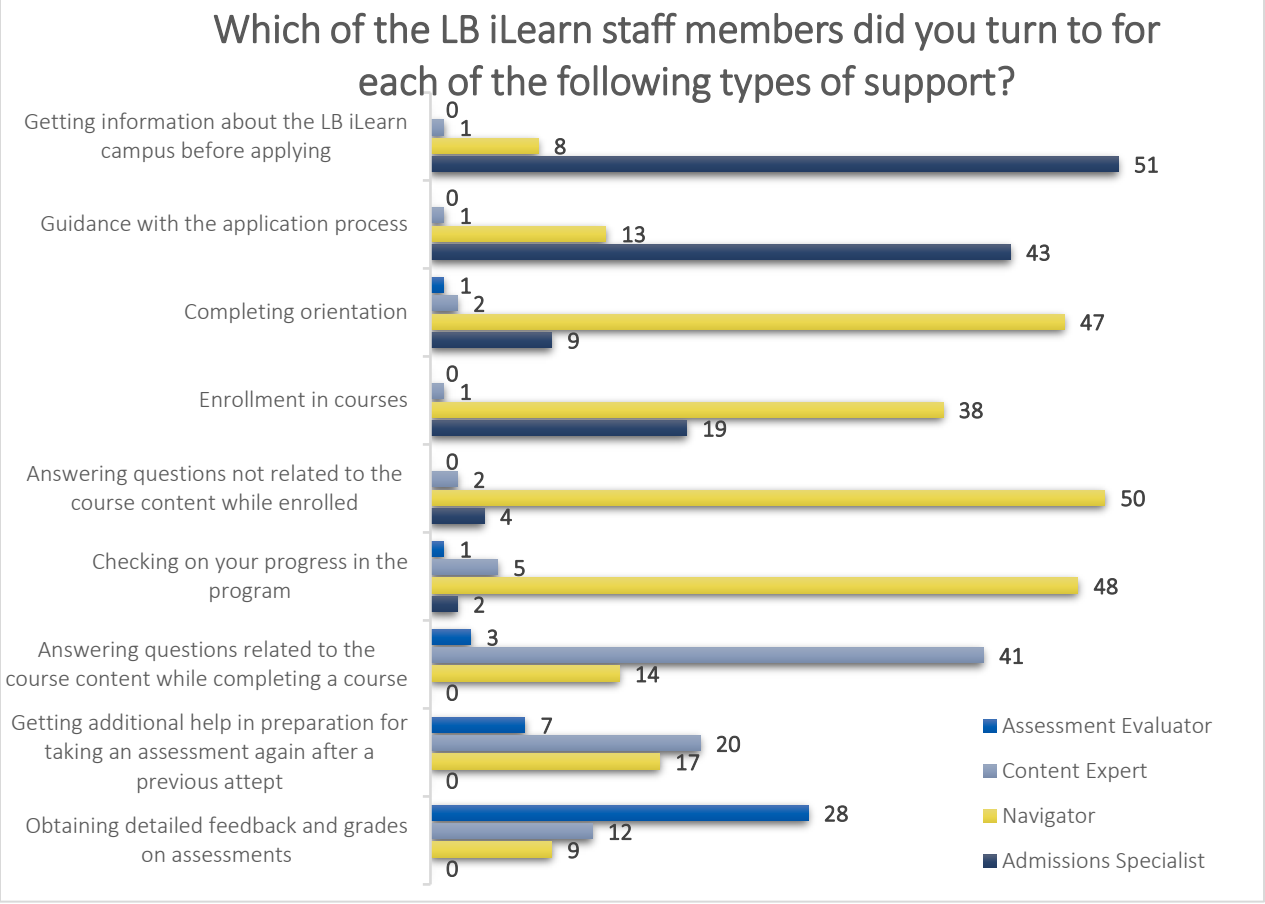
Implementing a model of faculty support through different roles (i.e., Content Expert, Assessment Evaluator, Admissions Specialist, and Navigator) was a significant component of LB iLearn design and implementation. Therefore, questions around the impact and effectiveness of these faculty and staff in serving the diverse roles that they were designed to fill was critical to the survey. Additionally, LB iLearn wanted to ensure that the faculty/staff were being utilized appropriately. Students currently or previously enrolled in LB iLearn, including those that completed and dropped out, were included in this analysis.

Faculty Roles and Support

Key Findings

For many tasks, students looked to one or two LB iLearn staff members for a particular type of support (see *Figure 15*). For example, students overwhelmingly turned to the Navigator for support with completing orientation, enrolling in courses, answering questions not related to the course content while enrolled in LB iLearn, and checking on progress in LB iLearn. Students utilized the Content Expert for getting additional help in preparation for taking an assessment and answering questions related to the course content, and the Assessment Evaluator for obtaining feedback and grades on assessments. Students sought guidance for the application process and information about the Campus from the Admissions Specialist.

Figure 15



Students reported interacting most frequently with the Navigator (all students reported interacting sometimes, often, or very often with the Navigator). Interactions were less frequent with the Content Experts and Assessment Evaluators (each had the most responses for rarely interacted or did not interact at all; see Figures *16-19*). Therefore, the Student Navigator continued to be the students' main point of contact throughout their educational experience with LB iLearn.

Figure 16

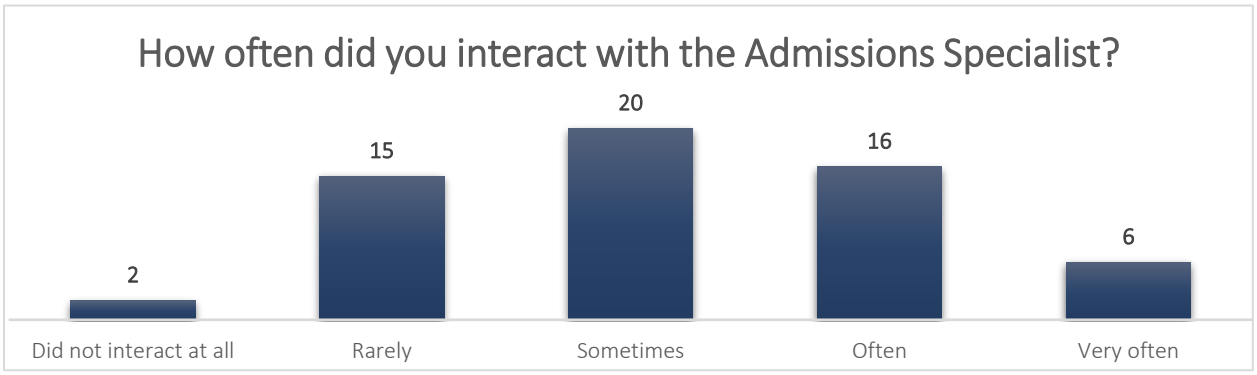


Figure 17

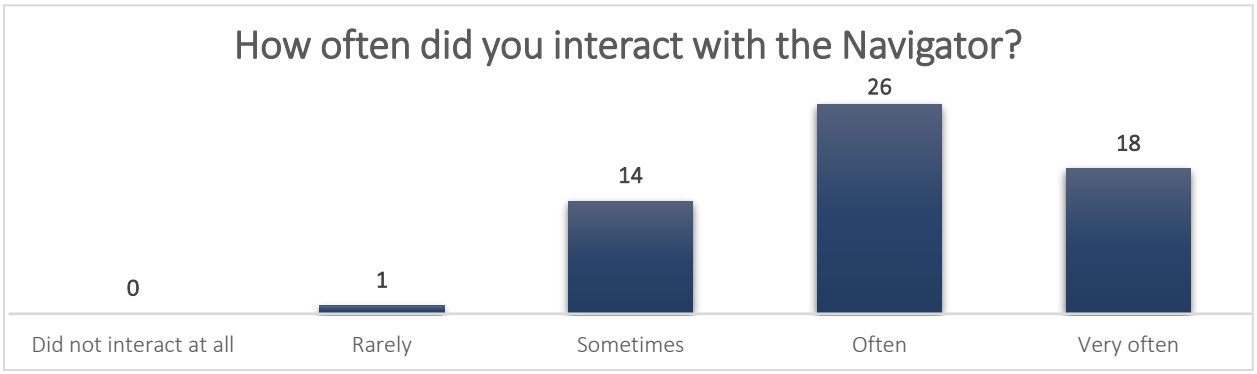


Figure 18

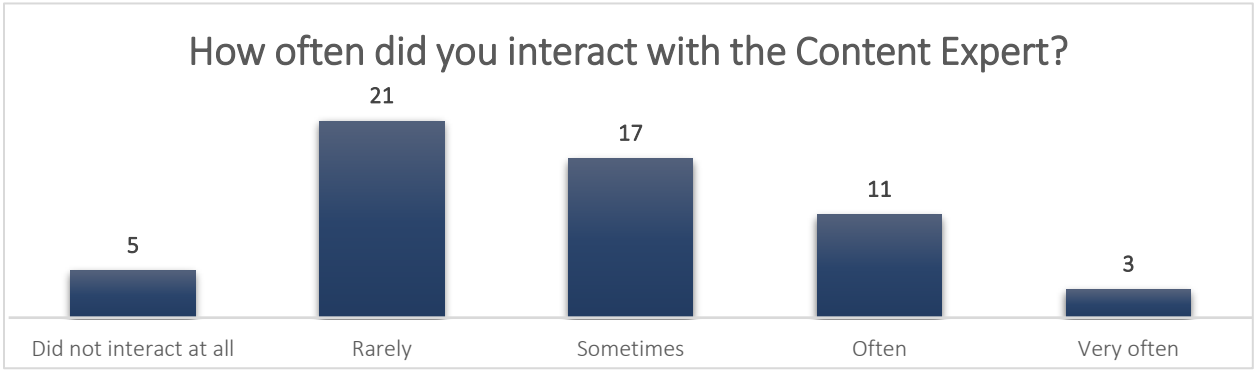
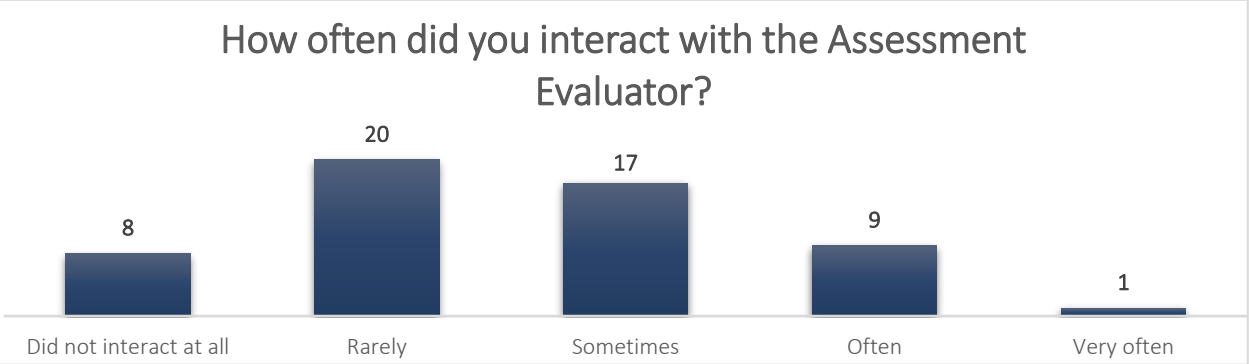


Figure 19



Overall, students reported being satisfied with faculty and staff in every role. Satisfaction was highest for the Admissions Specialist and Navigator roles (see *Figures 20-23*). This trend was also seen throughout the survey as students continually reported that the Admissions Specialist and Navigator were responsive and helpful.

Figure 20

Figure 21

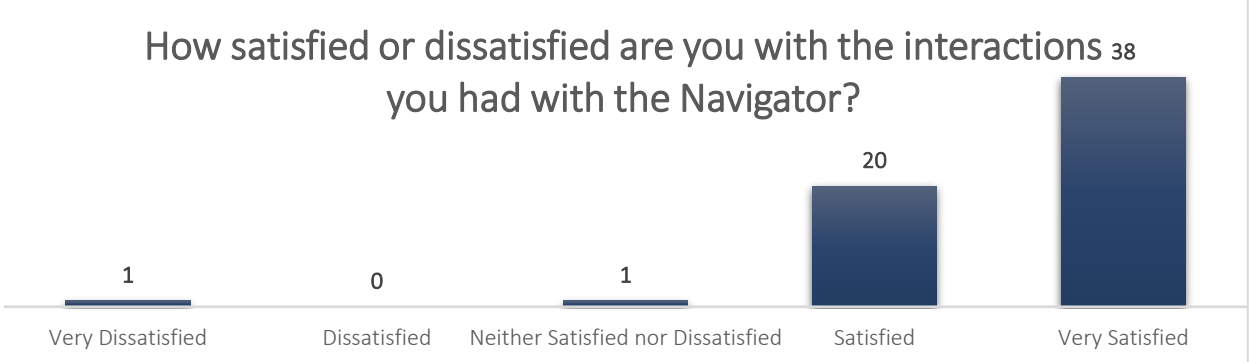
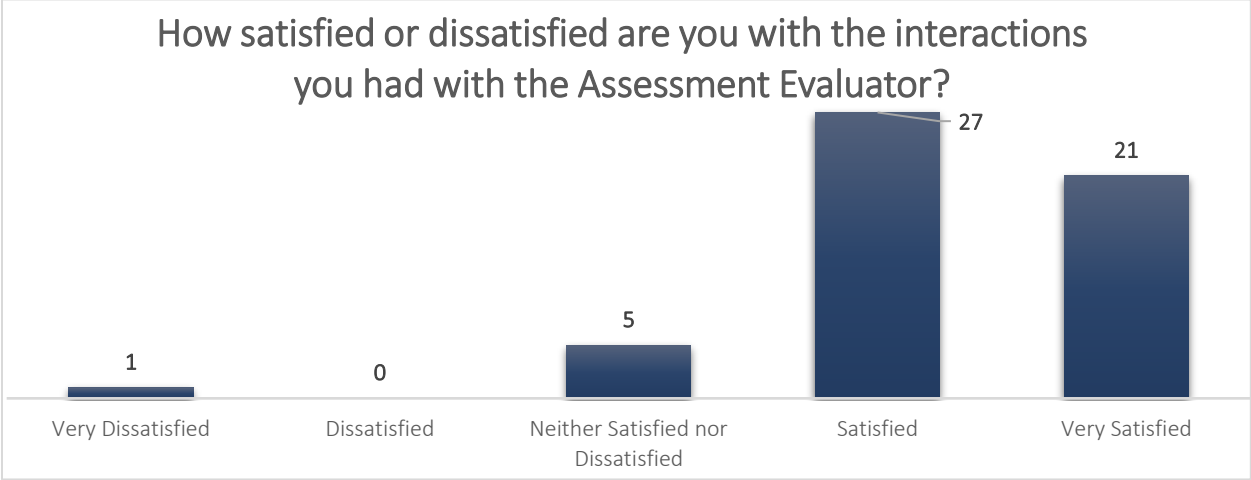


Figure 22

Figure 23



The distinction and value of having the Content Expert and Assessment Evaluator as two separate roles was appreciated by many students (32, 53.33%), but not recommended by other students (28, 46.67%). Students that emphasized the need for two roles stated that the differing perspectives was helpful and encouraged neutral grading, and that combining the roles would be too much work for a single person. Students in support of keeping the roles separate also stated that it could expedite responses on assignments and questions. However, other students believed that one faculty member could fill both roles, stating that having the context of knowing the student and course material was beneficial. These students also reported that combining both roles could enable the faculty member to build a relationship with the student, and communication could be streamlined if students had only one point of contact.

Implications/Recommendations

Ongoing reinforcement of information by faculty and staff could help students better understand the roles that each faculty and staff member fills within LB iLearn. With this, students offered suggestions to improve the effectiveness and accessibility of faculty, including:

- Skype, live chat, or other virtual communication tools would be more beneficial for face time with the faculty
- Encouraging the Assessment Evaluator to provide more substantial comments, especially when an answer is incorrect
- Adding an indicator that notifies the student when an assignment has been graded

Career and Employment Services

Summary

Due to the connection to LBCC, students were able to utilize the career support services that were available at LBCC. The purpose of the following questions was to target the utilization and effectiveness of the career services provided to students enrolled in the LB iLearn Campus. Individuals that answered these questions were currently or previously enrolled in LB iLearn, including those individuals that completed coursework or dropped out.

Career Support Services

Key Findings

Similar to the Assessment and Placement section, students indicated limited engagement with career services to date. Only 13 students (21.67%) reported receiving career guidance or support at the LB iLearn Campus. Of those students, three indicated receiving career guidance upon enrollment, from a Navigator (to discuss the student's career path), and regarding course choice.

The services received were considered useful (see *Figures 24* and *25*), and students were generally satisfied with the services received (*Figure 26)*. Some students (15.38% of those who received career services) successfully made new connections with possible employers through the LB iLearn Campus.

Figure 24

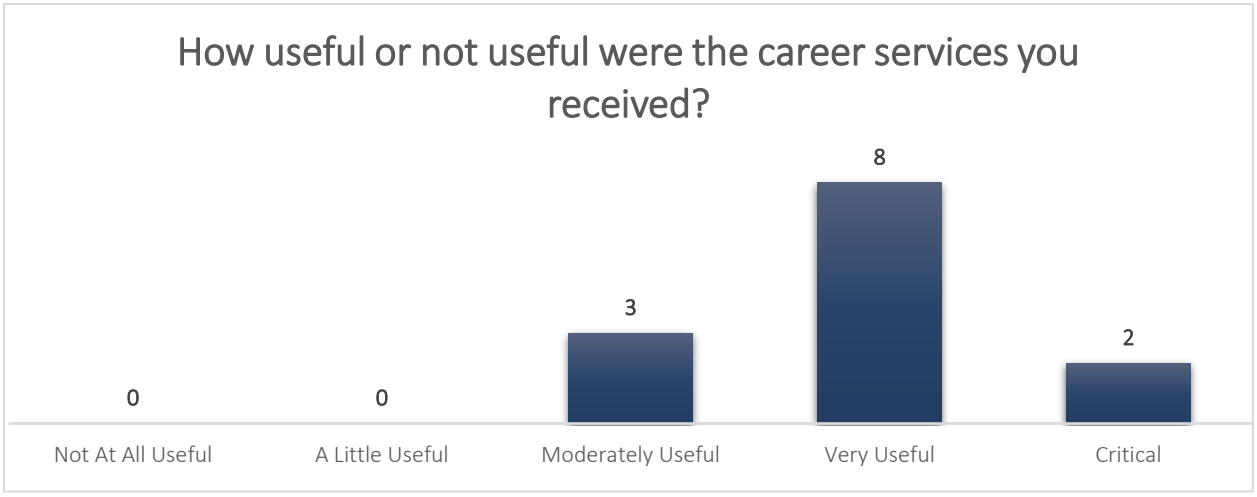


Figure 25

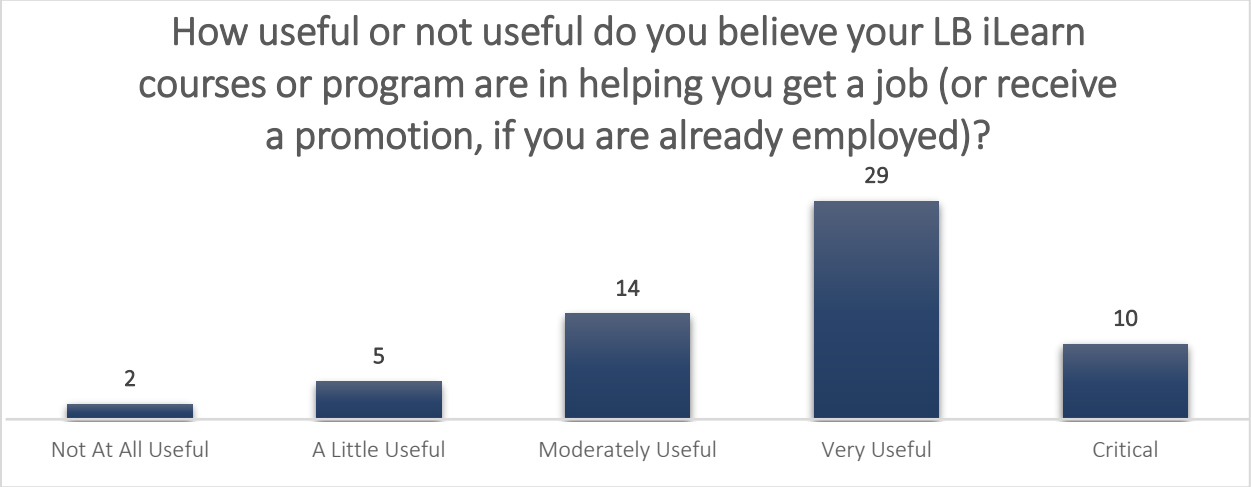
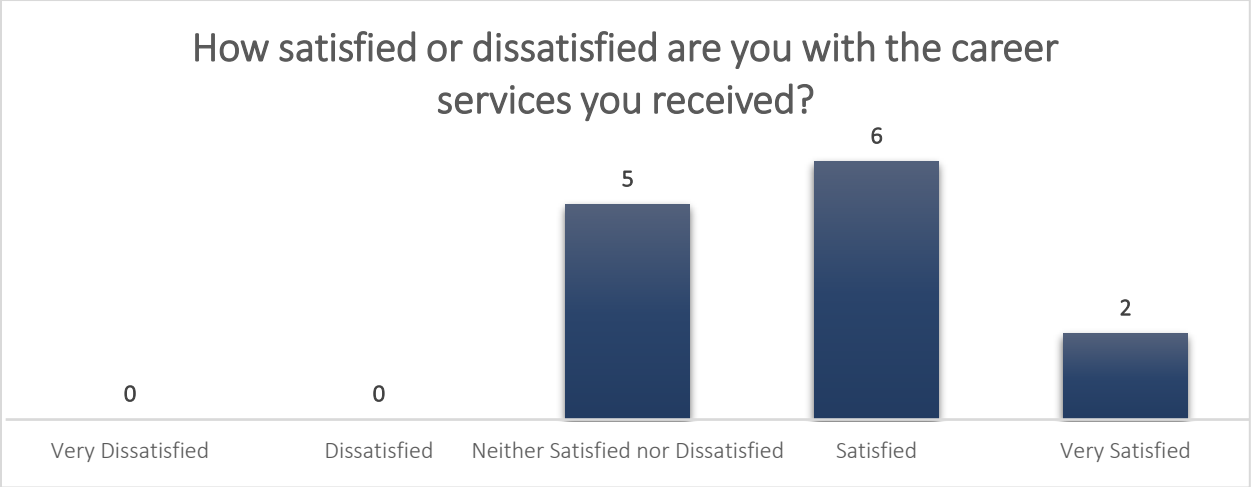


Figure 26



Implications/Recommendations

No recommendations were provided by students when asked how to improve the effectiveness and accessibility of career services; however, one individual reported the desire for the addition of job placement services. It is important to note that many students reportedly had not utilized career services at the time of data collection. This could be because many students had not yet completed an LB iLearn program, were already employed, or obtained employment without use of career services. It could be useful for the LB iLearn Leadership Team to continue gathering data on career service utilization to better understand the types of services that students need, in an effort to better focus career service promotion when interacting with LB iLearn students.

Conclusions

A significant number of respondents reported interest in LB iLearn, but were unable to enroll for a number of reasons (e.g., lack of funding and other obligations). Of the students that were currently or previously enrolled in LB iLearn, including those that dropped out or completed coursework, all reported satisfaction with the structure, faculty roles, staff and support system, and processes utilized within the Campus. Students reported minimal recommendations to the LB iLearn Leadership Team and emphasized the helpfulness of LB iLearn staff and faculty throughout their educational experience. Moving forward, data collection instruments such as this survey could enable the LB iLearn Leadership Team to continually enhance and improve Campus components based on the feedback provided by respondents.

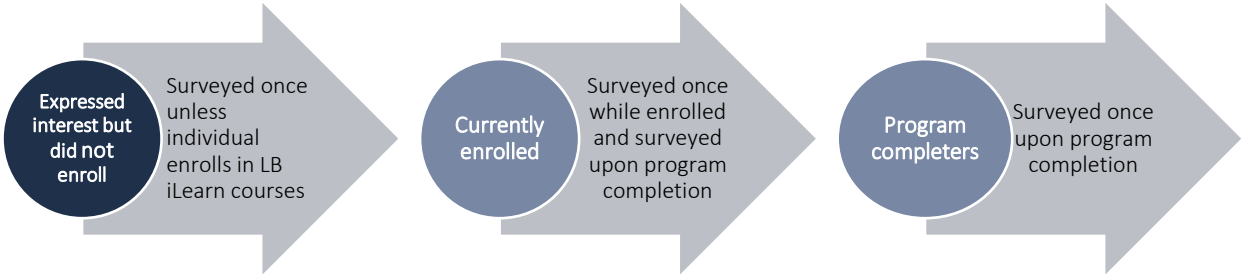
Appendix A. Survey Administration Plan

The Survey Administration Plan was developed in January 2016 and is outlined, in its original form, below.

Survey Administration and Tracking

Survey Administration

The survey will be administered to three groups of respondents: students currently enrolled in LB iLearn courses, individuals that have already completed an LB iLearn program and individuals that have expressed interest in LB iLearn programs but have not enrolled. Students currently enrolled in LB iLearn courses will receive the survey upon LB iLearn program completion. The survey will be distributed to all other groups only once. See below for more details:

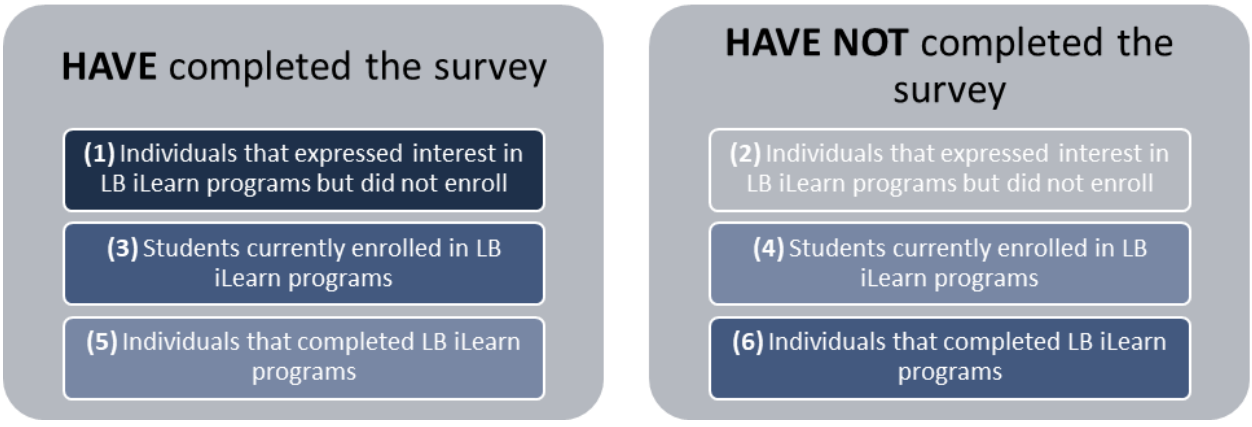


The LB iLearn Leadership Team will update the list of individuals and email addresses, identifying the category that the individual falls into (i.e., expressed interest but did not enroll, currently enrolled, and program completers), and supply the information to the Evaluation Team for distribution. Email addresses will be collected on a quarterly basis beginning in January 2016.

Response Tracking

A spreadsheet to capture those that had received the survey will be compiled, separating individuals, their email addresses into subcategories of those completed the survey, and those that did not based on the categories listed above. The tracking system will ensure that these individuals are not surveyed more than once, unless intentional, and will track survey completion. Once the survey is closed, email addresses of respondents that completed the survey will be collected and inputted into a spreadsheet.

The subcategories – six in total – are outlined in detail below and details on response rates are provided to the LB iLearn Campus Leadership Team regularly.



Survey Distribution Timeline

The survey will be distributed at the start of each administration window, remaining open for a total of two weeks. Reminders will be sent to those that did not completed the survey after five days, and another set of reminders will be sent after ten days. The survey will be administered quarterly and results will be analyzed and shared with the LB iLearn Campus Leadership Team. The survey distribution will follow the schedule, outlined below:

Task	Schedule
Survey is distributed	Day 1
First reminder email sent	Day 5
Second reminder email sent	Day 10
Survey closes	Day 14
Evaluation Team begins survey analysis	Day 15

Email Invitation and Reminder

The email invitation and reminder emails will contain the following language outlining the purpose of the survey as well as contact and security information:[141]

"Linn-Benton Community College has contracted with Thomas P. Miller & Associates (TPMA) and Hamai Consulting to serve as third-party evaluators for the LB iLearn Campus project. We invite you to participate in a survey to assess perceptions of the new LB iLearn courses and programs. The survey is one way the TPMA team is gathering information about experiences while applying for, enrolling in, and completing courses through the online LB iLearn Campus. You are being asked to complete this survey because you considered enrolling in, are currently or were previously enrolled in, or have graduated from an academic program delivered through the LB iLearn Campus.

Below is a link to the survey. Your participation is voluntary and anonymous – with individual responses viewed only by the TPMA team – and will not affect your current or future relationship with the faculty, staff, administration, or courses at the LB iLearn Campus or Linn-Benton Community College. We will only share aggregate-level data with the LB iLearn project team, and no individuals will be identified when presenting this data.

The survey will take approximately 15 minutes to complete. It is open and available now and will close at 5:00 p.m. on [insert date]. Please complete before the closing date.

If you have any questions or concerns, please email [insert contact information]

To begin, please click the survey URL: [insert link]

Thank you for your participation!"

[141] Highlighted areas will be customized for each quarter.

Appendix F: LB iLearn Personnel Descriptions

Below is a list of the staff and faculty roles within LB iLearn and descriptions of the personnel's responsibilities. The information below was drawn from Implementation Evaluation calls with the LB iLearn Leadership Team, program documents such as job descriptions, and on-site interview notes. The list below does not include LB iLearn leadership.

LB iLearn Staff

Current Staff

- **Student Navigator –** Assisted students through their educational experience in LB iLearn to course/program completion.
- **Marketing Manager** – Led employer and business engagement and outreach to generate partnerships and recruits LB iLearn students.
- **IT Support** – Provided technical assistance to students using the Canvas online platform.
- **Builders** – Facilitated modifications to LB iLearn courses and assisted with quality assurance processes.
- **Proctors** – Assisted students with assessment scheduling and testing for LB iLearn programs.

Previous Staff

- **Recruitment and Retention Specialists** – Recruited individuals for LB iLearn programs. These Specialists also assisted with student enrollment and other retention activities.
- **Admissions Specialist** – Provided administrative support to the LB iLearn Campus leadership and participated in the creation and maintenance of Campus processes and systems (e.g., students, marketing, employer outreach, tracking students)

LB iLearn Faculty

Current Faculty

- **Content Expert** – Served as subject matter experts who tutored students as they engaged specific sections of the LB iLearn Campus curriculum. Content Experts helped students as questions surfaced and offered specialized instruction on challenging topics.
- **Assessment Evaluator** – Accurately and consistently scored students' assessment submissions based on pre-defined rubric criteria. Assessment Evaluators provided detailed feedback to students on a one-on-one basis on each assessment.

Previous Faculty

- **Curriculum Developers** – Tasked with creating LB iLearn courses, including assessment and rubrics for the Assessment Evaluators.