Perceptions Of Higher Education Learners And Educators Regarding The Learner-Centered Strategy Implementation: A Qualitative Single Case Study

Ngo T. Tran
University of New England

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PERCEPTIONS OF HIGHER EDUCATION LEARNERS AND EDUCATORS REGARDING THE LEARNER-CENTERED STRATEGY IMPLEMENTATION: A QUALITATIVE SINGLE CASE STUDY

By

Ngo T. Tran

Associate of Science in Mathematics from Los Angeles City College, 2000
Bachelor of Science in Computer Science from California State University Long Beach, 2004
Master of Science in Systems Engineering from Naval Postgraduation School, 2011

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And approved by:

Jennifer Scott, EdD, Lead Advisor
University of New England
Audrey Rabas, PhD, Secondary Advisor
University of New England
Donald Muehlbach, PhD, Affiliated Committee Member
Naval Postgraduate School
Doctor of Education Program Final Dissertation Approval Form

This Dissertation was reviewed and approved by:

Lead Advisor Signature: \textit{Dr. Jennifer Scott}

Lead Advisor (print name): Dr. Jennifer Scott

Secondary Advisor Signature: \textit{Dr. Audrey Rabas}

Secondary Advisor (print name): Dr. Audrey Rabas

Date: April 18, 2022
LEARNER-CENTERED EDUCATION STRATEGY IMPLEMENTATION

ABSTRACT

The problem in this study was the lack of an effective strategy implementation of learner-centered education in higher education institutions (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). The purpose of this study was to investigate perceptions of higher education learners and educators on LCE strategy implementation. The study’s conceptual framework was rooted in personalized learning, and the theoretical framework employed the educational theory from Dewey (1897). Study findings included:

1. LCE is a philosophy of education that places learners and their needs at the center of the educational process. The LCE concept in this study was constituted by the concept of personalized learning.

2. LCE strategies refer to educational approaches that intend to address distinct learning needs of individual learners or groups of learners. LCE strategies in this study included, but were not limited to, active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning.

3. To effectively implement LCE strategies, educators need a process that turns LCE strategies into actions that can be used to reach the desired outcomes. The LCE strategy implementation in this study included defining practicable goals; establishing roles and responsibilities for educators and learners; carrying out strategies; tracking progress, extending support, considering feedback, and communicating challenges; performing corrective action, including adjusting or revising as necessary; and reviewing the entire strategy implementation process and reflecting on lessons learned.

Keywords: student-centered learning, learner-centered education, personalized learning, active learning, authentic learning, competency-based learning
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DEDICATION

This study is dedicated to the learners whose differences should be acknowledged in their own way. The one-size-fits-all educational model does work for some learners; however, it does not work for all learners because it is simply not designed to be appropriately adjustable to each learner’s needs. This study serves to benefit learners. To prepare learners for their future lives, we must allow them to take charge of their educational process. Learners’ own activities should determine the curriculum. Indeed, to learn effectively, learners should be empowered so they can make decisions on what to learn, how to learn, and how to assess their own learning.
CHAPTER 1: INTRODUCTION

The U.S. public education system has provided knowledge and skills to millions of learners and, to a certain extent, fulfilled the demands for a competent workforce (Sullivan & Downey, 2015). This system is referred to as a traditional education, the long-established conventional education U.S. society traditionally uses in schools. The primary purpose of traditional education is to deliver information to learners that may help prepare them for productive lives. The traditional education system has worked well for many learners over the last 100 years (Sullivan & Downey, 2015). The benefits of traditional education include but are not limited to more effective implementation of coursework and curricula for educators; an easier transition from elementary school to middle school, high school, and college or university for learners; and more effective management of teaching methods for administrators (American University, 2020; Mohamed, 2018; Sullivan & Downey, 2015). The traditional education’s benefits for educators are because coursework and curricula have been already established, for learners are because the traditional education has been already accepted in many school systems, and for administrators are because teaching methods have been relatively consistent in the traditional education system.

However, although the traditional education system works for some learners, it does not work for all learners (Green & Harrington, 2021). The traditional education system is based on a standardized, one-size-fits-all model (Education Reimagined, 2015; Sullivan & Downey, 2015). Typically, at the beginning of each class, semester, quarter, or school year; an educator is assigned some learners and a standardized curriculum. Although educators sometimes attempt to individualize differences between learners, chances to accommodate learning contents and the teaching methodologies are limited. Learners are expected to accept their assigned materials and
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proceed as time passes by. Per Education Reimagined (2015), grading is mainly developed to evaluate learning outcomes, not to improve learning outcomes.

The current education model is simply not designed for learners because it is not adequately adjustable for each learner’s needs. In traditional education, learners are expected to fit into the model that is designed to just pass on knowledge, in which many decisions are made based on convenience for administrators, educators, and others, rather than what is necessarily best for learners (Green & Harrington, 2021). Many learners have an incomplete understanding of the content, causing some problems in their learning process. These problems include discrepancies between what is known and what should be known and the lack of a chance to investigate something outside the syllabus (Education Reimagined, 2015). According to the American University (2020) and Sullivan and Downey (2015), in the traditional education system, administrators and educators are less concerned about learners themselves and how they can benefit from their lessons. Rather, they focus on constructing learners into educated individuals who can contribute to the working world. As a result, the traditional school system is not providing the best learning environments to prepare every learner for success (Mohamed, 2018; Nellie Mae Education Foundation, n.d.).

While the standardized, one-size-fits-all school model persists, the world is evolving, including societies and workforces. According to Education Reimagined (2015), more than ever, the whole nation places considerable job demands on the current education system. With the unprecedented and rapid development of technology and extremely easy access to information via the Internet, the rote learning methodology of traditional education is no longer applicable (Education Reimagined, 2015). Educators should consider the mastery of concepts for learners instead of just memorization or following procedures. Indeed, the ability to understand, analyze,
synthesize, be creative, and practice learning materials will lead to success for learners (Education Reimagined, 2015).

The opposite of traditional education is progressive education. Progressive education is an education reform that focuses less on how educators prepare learners for jobs and more on what learners are excited about and what critical thinking skills they can develop (Hopkins, 2017). In progressive education, educators help learners understand how they can be lifelong learners, constantly engaging them with new ideas and solving new problems. Additionally, educators recognize and honor creativities and enthusiasms of individual learners (American University, 2020; Sullivan & Downey, 2015).

The main goal of progressive education is practical relevance. Generally, there are two main components of progressive education: learning by doing and advancing social responsibility and democracy (Hopkins, 2017). In progressive education, educators do not simply deliver information to learners and expect them to memorize it and perform well on assignments. Instead, educators let their learners actively participate in hands-on learning through projects, experiments, or collaboration with peers. As a result, learners can pursue subjects they are excited about. Learners can use their critical thinking skills outside the classroom to solve real-world problems (American University, 2020; Sullivan & Downey, 2015). According to Zhang et al. (2021) and Lathan (n.d.), student-centered learning, also known as learner-centered education (LCE), is a more progressive education, and teacher-centered learning is a more traditional or conventional education.

Teacher-centered learning has several advantages. These advantages include but are not limited to the ability to manage large classes because educators do not have to deal with each learner, taking a shorter time to implement class activities because activities are consistent,
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preparation of learning materials because materials are defined in advance, and an easier management of classes because educators can set rules or policies for learners to follow (Emaliana, 2017). Although the teacher-centered learning within traditional education does work for some learners, it does not work for all learners (Green & Harrington, 2021).

Teacher-centered learning is pedagogy in which a teacher or an educator is at the center of the teaching and learning process. In other words, educators control the entire teaching and learning process (Emaliana, 2017; Matsuyama et al., 2019; Northern Arizona University, n.d.). Educators decide what to learn, how to learn, and how learners are assessed on their own learning (Keiler, 2018; Stanford University, n.d.). Learners are in a passive role and educators are in an active role. In a typical teacher-centered learning environment, learners are instructed to passively follow direct instruction structured and led by an educator (Amick, 2019; Lee & Branch, 2018). Particularly, learners spend most of their time sitting in a classroom, listening to their teacher, taking notes, answering questions, or completing assignments (Great Schools Partnership, 2014a, Wright, 2011). Learners usually assume their efforts are spent memorizing knowledge from textbooks or teacher-prepared handouts to be successful or at least surviving through testing (Matsuyama et al., 2019).

In the teacher-centered learning space, educators actively serve as deliverers of instructional services (Coalition of Essential Schools, n.d.; Sullivan & Downey, 2015). Educators tend to be the most active person in their classrooms; they do most of the talking via demonstrations or issuing instructions. Educators become the most dominant source of information and control every single learning experience (Emaliana, 2017). Additionally, learners are taught the same materials at the same time. The opposite of teacher-centered learning is LCE.
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Per the Great Schools Partnership (2014b) and Starkey (2019), in some instances, the LCE term may have a very specific meaning, but in others, it may be unclear, which is difficult for others to understand. Because of this, it is essential to explore exactly how the LCE term is being used and what it is referring to in a specific educational context. Per IGI Global (n.d.) and Zhang et al. (2021), LCE is defined as a philosophy of education built on constructivism. LCE places learners and their needs at the center of the educational process and learners actively engage in their own learning. In this environment, instructors are facilitators or mentors. According to Njoku et al. (2017) and XQ (2020), LCE is a pedagogy in which learners can make decisions about what material they learn and how they learn it. In this sense, LCE does not decrease the role of educators. Instead, it uses educators’ professionalism in different ways to increase the engagement of learners. LCE leads to collaborative learning environments that foster interdisciplinary learning as learners follow their interests wherever these interests take them. In turn, interdisciplinary learning leads to deeper meaningful engagement and problem-solving abilities for learners (Njoku et al., 2017; XQ, 2020). Practically, LCE is a pedagogy that is being used more and more in schools. However, because the term LCE has extensive connections, it is inappropriate to ascertain exactly what LCE means without clarification or additional explanation.

In this study, the concept of LCE was defined as knowledge domains of the LCE phenomenon that can be understood through experience, reasoning, visioning, or any combination of them. In the LCE space, educators and learners work collaboratively to co-create a personalized learning model that best fits each individual learner’s needs (Green & Harrington, 2021). There is a balance between delivering knowledge and learners’ interests and experiences being considered.
In this study, LCE strategies was defined as a wide variety of instructional or academic-support approaches intended to address distinct learning needs of individual learners or groups of learners. In practice, the process of implementing LCE strategies has been dynamic, comprehensive, and complex and must be managed well to be effective (Hoidn, 2017; Nellie Mae Education Foundation, n.d.). In this study, the LCE strategy implementation referred to the process of turning LCE strategies into actions to reach desired outcomes. The implementation of LCE strategies can provide learners opportunities to make decisions about their learning process; specifically, on what they learn, why they learn, how they learn, and how they assess their own learning (Crumly et al., 2014; Green & Harrington, 2021; XQ, 2020). These opportunities are essential to the effectiveness of learning, because the focus of the entire teaching and learning process is on learners, not on educators.

In practice, LCE created quantifiable advantages. In April of 2020, The National Conference of State Legislature and the Nellie Mae Education Foundation reported a large-scale review of LCE-related studies and concluded LCE indeed produced measurable benefits. Schools that implemented LCE experienced a considerable enhancement in learners’ achievements (Emaliana, 2017; XQ, 2020). Learners who understood and felt in control of the learning environment were more likely to engage in the learning process; thus, the level of academic accomplishment of these learners increased dramatically (Green & Harrington, 2021; Nellie Mae Education Foundation, n.d.). The practice of LCE constructed plentiful learning occasions that promoted personalization and competency for learners joining the workforce (Hopkins, 2017). In this study, the use of the term “learner-centered education” rather than “student-centered learning” reflected a broader viewpoint about a learner learning something as a whole, not just a student learning in an institution or institutions.
Definitions of Key Terms

The following terms contained and applied with frequency in this study are operationally defined as:

**Active Learning**

In this study, active learning is a method of teaching and learning in which learners are actively or experientially constructing their knowledge, and the activity level depends on the learner’s involvement (Carr et al., 2015).

**Authentic Learning**

In education, authentic learning refers to a wide variety of instructional strategies focused on connecting between school and real-world matters and applications (Great Schools Partnership, 2013a).

**Educator**

Generally, an educator refers is a person who provides intellectual, moral, and social instructions to learners, whereas teacher refers to a person who teaches students in schools (Pediaa, 2016).

**Higher Education**

In the United States, higher education is considered voluntary studies beyond the high school level (Learn.org, n.d.).

**Independent Learning**

Independent learning is a method where learners can make informed choices and take responsibility for their own learning activities (University of Hull, n.d.).
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Learner

A learner is a person who can independently learn with or without a teacher, both inside and outside a school or a classroom, whereas a student is taught by a teacher in a school or in a classroom (Great Schools Partnership, 2014a).

Learning Environment

The learning environment concept is commonly used as an alternative to a classroom (Great Schools Partnership, 2013b). However, in this study, the learning environment typically refers to an educational space or knowledge experience in which teaching and learning occur.

Pedagogy

Pedagogy is a broad term. In this study, pedagogy refers to theories and practices of teaching and learning and how these theories and practices influence and are influenced by societies’ social and psychological development.

Strategy Implementation

In this study, strategy implementation is the process of turning strategies into actions to reach desired outcomes (Miller, 2020).

Statement of the Problem

The problem to be addressed in this study was the lack of an effective strategy implementation of LCE in higher education institutions (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). Per Hoidn (2017), there has been a great consensus that LCE was rooted in the constructivist view of learning, which put learners at the center of the learning process to support deep conceptual understanding. However, there has been a significant controversy and uncertainty about LCE practices among education practitioners (Hoidn, 2017).
According to Starkey (2019), the term LCE has been used universally in education; however, its concept has been unclear and undertheorized. Furthermore, the concept of LCE has been found to lack specificity in implementation, which can affect its effectiveness (Starkey, 2019). Per Sweetman (2017), education reformers have claimed that by promoting LCE, educators can improve teaching and learning in higher education. However, strategies of promoting LCE were often debatable (Sweetman, 2017). According to Lee and Hannafin (2016), although LCE was progressively discussed in higher education, researchers and practitioners still lacked a complete framework to design, develop, and implement LCE. Per Sabah and Du (2018), although LCE had been promised for decades in higher education, the level of effort educators used to implement LCE remained in question. Additionally, the lack of maturity and enthusiasm from learners, which may be due to culture, also constituted a challenge of LCE strategy implementation (Sabah & Du, 2018).

**Statement of the Purpose**

The purpose of this qualitative single case study was to investigate perceptions of higher education learners and educators regarding LCE strategy implementation. In this study, strategy implementation was the process of turning LCE strategies into actions to reach desired outcomes. Understanding the LCE strategy implementation process and how it relates to the transformation of higher education institutions was critical to ensuring the effectiveness of LCE pedagogy. In general, the success of every organization depended on its capability to implement the strategy effectively (Miller, 2020; Zhang et al., 2021). Although developing a strategy is one of the first steps to implementing organizational change, the implementation itself is essential to an organization’s success. Without an effective implementation process, the best strategy may not reach its desired result.
Research Questions and Design

In general, research questions are used to lead the components of the study and provide the structure for presenting the study’s findings (Roberts & Hyatt, 2019). Research design is a plan for conducting a study. Once there is a plan that defines the information needed and the method that will be used to obtain that information, the next step is to develop the research design (Bloomberg & Volpe, 2016).

Research Questions

The research questions of this single case study were narrowed down to a few overarching central questions. The goal of research questions is to find answers so the purpose of the study is accomplished. The following central research questions guided this study:

1. What are perceptions of higher education learners regarding the learner-centered education concept?
2. What are perceptions of higher education educators regarding the learner-centered education concept?
3. What are perceptions of higher education learners regarding the learner-centered education strategies for higher education institutions?
4. What are perceptions of higher education educators regarding the learner-centered education strategies for higher education institutions?
5. How do higher education educators effectively implement the learner-centered education strategies for higher education institutions?

Design

This study was a qualitative research study. Its purpose was to explore the LCE phenomenon so that its concept, strategies, and implementation process could be understood. Per
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Creswell and Creswell (2018), exploring and understanding the attributes of a social or human problem is a qualitative approach. Furthermore, this study employed a qualitative case study, because LCE is a real-world contemporary phenomenon. Per Yin (2018), the case study is an empirical method that investigates a contemporary phenomenon in depth and in its real-world context. Unlike other research methods, a standard systematic description of the case study has not yet emerged (Yin, 2018). The design of this case study was a single case: the case of the LCE phenomenon. The intent of this study was to provide different perspectives of higher education learners and educators on the same issue of the LCE strategies implementation.

The procedure for conducting this case study included: (a) determining if a case study was an appropriate approach for studying the research problem, (b) identifying the intent of the study, (c) developing a procedure for conducting extensive data collection, (d) specifying an analysis approach on which the case description integrates with analysis themes and contextual information, and (e) reporting the case study and lessons learned by using case assertions. According to Yin (2018), the more the research questions seek to explain some contemporary issues such as the “what” and “how” questions, the more the case study research will be relevant. Because LCE is a real-world contemporary phenomenon and “what” and “how” questions were the research questions of this study, employing the case study research design was appropriate for studying the research problem.

Conceptual Framework and Theoretical Framework

In this study, the development of the conceptual framework, which followed the literature review, asserted relationships and perspectives about the literature reviewed; thus, the conceptual framework provided the connection between the research problem, the literature, and the methodology (Bloomberg & Volpe, 2016). The conceptual framework then became the structure
of this study. Furthermore, the terms conceptual framework and theoretical framework are often used interchangeably, and seldom is a clear distinction made.

**Conceptual Framework**

Because the term conceptual framework is used across several different contexts, including social science and applied science, its explicit definition and application can vary (Ravitch & Riggan, 2017). In simple form, my definition of conceptual framework was a framework that organizes interrelated concepts or abstract ideas of a phenomenon to achieve a certain research purpose. The concept of personalized learning was the conceptual framework for this study.

Personalized learning is a broad term. The concept, or principle, of personalized learning used in this study is defined by the U.S. Department of Education, Office of Educational Technology (2017):

> Personalized learning refers to instruction in which the pace of learning and the instructional approach are optimized for the needs of each learner. Learning objectives, instructional approaches, and instructional content (and its sequencing) all may vary based on learner needs. (p. 1)

In addition to this definition, personalized learning had varied definitions from different organizations.

According to Camacho and Legare (2016) and the Nellie Mae Education Foundation (n.d.), personalized learning is a concept that acknowledged learners must be involved in the learning process in different ways so their needs and interests can be addressed. According to the International Association for Online Learning (iNACOL):
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Personalized learning tailors learning to each student’s strengths, needs, and interests. Students have “voice and choice” in determining what, how, when, and where the learning occurs. Teachers provide the flexibility and supports to ensure mastery of the highest standards possible. (Friend et al., 2017, p. 2)

Researchers have admitted personalized learning is still an evolving term and does not have any widely accepted definition.

Regardless of its variety of definitions, the concept of personalized learning has been the core of LCE pedagogy. In the personalized learning space, educators consider individual learner needs in essential educational decisions rather than more favorable or administratively more comfortable for themselves (Camacho & Legare, 2016; Great Schools Partnership, 2015). In addition to the personalized learning conceptual framework, this study also leveraged John Dewey’s theoretical framework.

Theoretical Framework

In this study, I defined theoretical framework as the framework of any empirical theories of a social or psychological process that can be applied to the understanding of a phenomenon. This study leveraged educational theory from the American theorist John Dewey (1897) as the theoretical framework to frame the LCE concept. Dewey was one of the most distinguished American scholars for the first half of the 20th century (Hildebrand, 2018), and his ideas have drastically influenced U.S. education and social reforms. Dewey’s unforgettable impression on progressive education is still inspired in U.S. higher education to this current time and will likely continue to impact education in the future (Hopkins, 2017). There are many achievements of Dewey that included but are not limited to the establishment of functional psychology, the philosophy of pragmatism, and progressive education (Hopkins, 2017).
Dewey (1897) believed learners can grow in an environment where they have opportunities to make decisions about their own learning and are allowed to experience and interact with curricula. Furthermore, Dewey also had specific views on how education should take place in classrooms. He argued that for education to be most effective, content must be presented that permits learners to relate information to prior experiences so that the connection with new knowledge can become deeper. Dewey’s educational theory served as a lens through which ideas about LCE as a whole could be clarified, the process of data collection and data analysis could be focused, and the role of the researcher of the study (who serves as an investigator) could be justified (Anfara & Mertz, 2015).

Dewey’s (1897) educational theory has been embraced by several scholars. Neumann (2013) leveraged Dewey (1897)’s theory as the theoretical framework to advocate the LCE philosophy. Beckett (2018) also adopted John Dewey’s educational theory as the point of view to illuminate different aspects of education, to understand the educator–learner relationship, and to compare Dewey’s educational theory with other theories. Murdoch et al. (2021) used Dewey’s educational theory to discuss their research questions: What exactly is meant by quality education? In addition, under what conditions are quality educational experiences possible for all learners? The authors argued educator–learner relationships are necessary for fostering learning environments wherein all learners have access to quality educational experiences associated with the transformative learning process.

Education and learning are social and interactive processes; therefore, an educational institution itself is a social institution through which social reform should take place (Dewey, 1897). Schools or institutions should be the most effective instruments to reconstruct society and should reflect the community. Educators should be members of the community to properly assist
learners. This is the case of reform education in which LCE can be practiced. A learner who is to be educated is a social learner, and society is an organic element for learners.

According to Dewey (1897), to prepare learners for their future life, all learners should have opportunities to make decisions about their own learning. Learners should be able to use their capacities to their fullest extent. Learners should be developed in an environment where they are allowed to interact and take charge on their learning process. Per Dewey, instruction should focus on learners as a whole. Educators should not impose certain ideas or patterns on learners. Educators should empower and promote interests for learners. In addition, Dewey believed school curricula should reflect the real lives of learners. To learn formal subjects, learners should be comfortable and course content should be relevant to their lives. In other words, learners’ own activities should determine curricula.

Educators who have supported LCE pedagogy believed Dewey’s (1897) work was encouraging many of their beliefs about how learners learn (Williams, 2017). Indeed, in the LCE learning environment, people can witness much of Dewey’s educational theory in action. In the LCE environment, learners create their own personalized experiences. Per Williams (2017), in general, educational experiences should develop intellectual, social, emotional, physical, and spiritual capabilities for learners, not just academics. Also, according to Williams, in some classrooms throughout the United States and in other countries around the world, Dewey’s educational theory was definitely in existence.

Assumptions, Limitations, and Scope

In general, per Bloomberg and Volpe (2016), assumptions are something that a researcher holds true as they conduct a study and a set of ideas from which they believe they may be able to draw some conclusions. The premises of these assumptions may be unwarranted. Limitations are
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restricted conditions that may limit the scope of a study or may affect its findings. Scope refers to the parameters of a study.

Assumptions

I considered five primary assumptions, based on my knowledge and experience as an educator and senior systems engineer. First, this study assumed learners learn because they desire to learn, so their self-determination can be developed. No one or nothing can force learners to learn. Second, educators teach because they desire to teach, so they should be willing to adjust the curriculum and instruction to fit learners’ interests and needs. No one or nothing can force educators to teach. Third, the interpretation of data and information collected and analyzed from the case of this study, to a certain extent, is serving as representative of the findings of this study. Fourth, participants in this study who were higher education learners and educators may have answered all the interview questions truthfully to reflect their perceptions about the LCE phenomenon. Fifth, my philosophical assumptions as the researcher of this study may have existed in this research, including the epistemology. In a narrow sense, epistemology is the study of knowledge and justified belief. Epistemology focuses on the creation and dissemination of knowledge in particular areas of inquiry (Stanford Encyclopedia of Philosophy, 2020). Additionally, epistemology drove my desire in this study to understand the LCE strategy implementation in higher education institutions.

Limitations

All research has limitations because knowledge is unlimited, and researchers, with their limited capability, may only study a subset of knowledge. Limitations of this study included my assumptions as the researcher, limitations of qualitative research, challenge of the case study
design, and complexity of this study itself, including the challenges of understanding the LCE concept, LCE strategies, and LCE strategy implementation.

In this study, the researcher’s assumption included my interpretations of the findings, which may have been influenced by my background, including culture, economics, and social origin. Limitations of qualitative research includes participant reactivity and the constraint of generalizability. In this study, participant reactivity referred to participants behaving differently when they knew they were being interviewed. The constraint of generalizability of this study referred to the fact that generalizability was not the focus of this qualitative study; rather, the focus was on transferability, which is the ability to apply findings in similar contexts or settings (Bloomberg & Volpe, 2016).

The challenges of the case study design in this study included case identifying, constraints in terms of time and process, sampling strategy for gathering information about the case (Creswell & Poth, 2018), and a standard systematic description of the case study had not yet emerged (Yin, 2018). The complexity of this study referred to the existence of synonyms in the LCE concept across the literature, including the term personalized learning. The complexity of the LCE concept caused some constraints on the understanding of LCE strategies and the LCE strategy implementation process.

Scope

The scope of this study was within the capability of higher education learners and educators. To implement LCE strategies effectively, policy makers, administrators, educators, and others must be involved to support learners. However, the scope of this study only included learners and educators. Supporting LCE strategy implementation by local, state, and federal policymakers and education administrators could be future studies. In addition, LCE is being
used more and more in all levels of education, including universities, colleges, high schools, middle schools, and elementary schools (Crumly et al., 2014). However, the scope of this study was within higher education institutions, specifically only the southern California colleges and universities of the United States.

**Rationale and Significance**

According to Bloomberg and Volpe (2016), rationale is the justification for a study presented as a logical argument. Significance addresses the benefits that may be derived from conducting a study, and as a result, reaffirms the research purpose.

**Rationale**

The rationale or justification of this study originated from my desire to understand a real-world contemporary phenomenon, LCE pedagogy. In a dynamic world, high-quality education is critical to prepare learners to effectively deal with challenges created by constant changes. As the world evolves, learners also evolve. In this evolution process, learners tend to transform from passive listeners to active learners. This transformation requires a shift from teacher-centered learning to student-centered learning, also known as LCE. The aspiration to understand the concept behind the term LCE, its strategies, and how to implement these strategies effectively for the benefits of learners was truly the rationale for conducting this study.

Recently, educators, policymakers, and researchers have increasingly demanded LCE as a promising pedagogy to promote high quality education (Hoidn, 2017; Keiler, 2018; Luguetti et al., 2019; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017); however, the existing literature has shown there is a need for transparency in understanding the LCE phenomenon, particularly in how the LCE strategies can be implemented effectively (Hoidn, 2017; Sabah & Du, 2018;
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Starkey, 2019; Sweetman, 2017). This is another justification of why it was essential to carry out this study.

**Significance**

Several stakeholders may benefit from the findings of this study, including administrators, educators, learners, policymakers, and researchers. Understanding how LCE strategies can be effectively implemented, particularly in higher education institutions, could certainly strengthen current pedagogy. It could also increase the potential for learners to actively and authentically participate in their own learning. In the LCE environment, learners can make decisions on what to learn, why they learn, how to learn, and how to assess their own learning (Crumly et al., 2014; Green & Harrington, 2021; XQ, 2020). In this sense, effective teaching and learning practices that support deep conceptual understanding are revealed to learners (Bloomberg & Volpe, 2016). Moreover, this study has the potential to benefit society at large, because it investigates an important contemporary phenomenon, the LCE pedagogy. Ultimately, the purpose of LCE is to provide the fullest possible development for each learner.

**Summary**

The problem of this study was the lack of an effective strategy implementation of LCE in higher education institutions (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). The purpose of this qualitative single case study was to investigate perceptions of higher education learners and educators on LCE strategy implementation, including the LCE concept and strategies. In this study, LCE was described as a pedagogy where, based on suggestions from educators who serve as facilitators, learners can make decisions on what to learn, why they learn, how to learn, and how to assess their own learning (Crumly et al., 2014; Green & Harrington, 2021; XQ, 2020). The conceptual framework for this
study included, but was not limited to, personalized learning. The concepts of personalized learning have some overlapping principles; however, evidence exists that personalized learning constitutes the concept of the LCE phenomenon.

The remainder of this study is organized into four chapters. Chapter 2, Literature Review, includes details of the conceptual and theoretical frameworks; a review of relevant literature that included the LCE concept, LCE strategies, and background for LCE strategy implementation. Chapter 3, Methodology, includes the research design; population, participants, and sampling method; instrumentation and data collection; data analysis; limitations, delimitations, and ethical issues; and trustworthiness. The section on trustworthiness includes credibility, confirmability, dependability, and transferability. Chapter 4, Results, includes the data analysis method, presentation of findings, perceptions of the participants, and a summary. Chapter 5, Conclusion, includes the interpretations and importance of findings, implications, recommendations for action, recommendations for further studies, and a conclusion.
CHAPTER 2: LITERATURE REVIEW

Chapter 2 is focused on literature pertaining to the evolution of the learner-centered education (LCE) concept, LCE strategies, and the background of the LCE strategy implementation in higher education institutions. The content of this chapter includes the conceptual framework, theoretical framework, review of relevant literature, and summary. In the section of review of relevant literature, the following topics were included: the LCE concept that focused on personalized learning and LCE strategies that included but were not limited to active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning.

According to Creswell and Guetterman (2019), “A literature review is a written summary of journal articles, books, and other documents that describes the past and current state of information” (p. 79) on the topic of a research study. In addition to book reviews, this study mainly reviewed research reported in peer-reviewed journal articles. The main purpose of conducting a review of the literature in this study is to document what is known and what is not known about the LCE phenomenon with the intent to find answers for the research questions. Because the LCE concept is unclear and undertheorized (Starkey, 2019), the LCE strategies are often debatable (Sweetman, 2017), and the LCE strategy implementation process is lacking (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). The literature review for this study is critical because the concept, strategies, and strategy implementation process of the LCE phenomenon can be clarified and understood. As a result, this study can be added into the existing literature.

The process of conducting this literature review included six interrelated steps: (a) identifying keywords or descriptors directly related to the LCE concept, LCE strategies, and
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LCE strategy implementation; (b) searching relevant literature that described the past and present states of information, based on the keywords identified; (c) critically analyzing the literature based on their contents; (d) organizing the literature into topics related to LCE; (e) synthesizing the literature to understand the holistic view of the LCE phenomenon to provide new perspectives; and finally, (f) writing the literature review (Creswell & Guetterman, 2019).

Conceptual Framework and Theoretical Framework

The term conceptual framework crosses several different contexts, including social science and applied science, and, therefore, its explicit definition and application may vary. The terms conceptual framework and theoretical framework are often used interchangeably, and rarely is a clear differentiation made; however, this study distinguished between them.

Conceptual Framework

In a simple form, I defined conceptual framework as a framework that organizes interrelated concepts or abstract ideas of a phenomenon to achieve a certain research purpose. The concept that can be served as a conceptual framework for this study was rooted in personalized learning. The framework provided evidence constituting the LCE concept, LCE strategies, and the LCE strategy implementation.

Personalized learning is a broad term. The personalized learning concept used in this study is defined by the U.S. Department of Education (2017) as a concept in which the pace of learning is optimized for each learner’s needs. In addition, personalized learning has different definitions from different organizations. In practice, there have been significant differences in how states and districts planned and executed personalized learning, and their choices are often based on funding, location, and school size (U.S. Department of Education, 2017). Furthermore, it is very important to understand personalized learning does not require technology. Technology
is just a tool to promote personalized learning, such as accessing the learning information (U.S. Department of Education, 2017).

Per the Nellie Mae Education Foundation (n.d.), personalized learning is a concept that acknowledges learners must be involved in the learning process in different ways so their needs and interests can be addressed. Per the International Association for K–12 Online Learning (iNACOL), personalized learning adapts learning for each student. In the personalized learning environment, individuals make decisions on what to learn and how to learn, and educators support students to learn best (Friend et al., 2017). Because personalized learning has had such wide inferences, it is difficult to determine accurately what this term is referring to without clarification in a specific context. Generally, personalized learning was an alternative to the “one-size-fits-all” approach. For a given course, educators provide the same type of instruction, the same assignments, and the same assessments with little tailoring from learner to learner (Great Schools Partnership, 2015).

**Theoretical Framework**

In a simple form, I defined theoretical framework as a framework of any empirical theories of a social or psychological process that can be applied to the understanding of a phenomenon. A theory is the result of a process of thoughtfulness and reasoning about a phenomenon. This study employed the educational theory from Dewey (1897) as the theoretical framework that can frame the LCE phenomenon. This theory served as a lens through which ideas about LCE as a whole can be clarified, the process of data collection and data analysis can be focused, and the role of the researcher of this study can be rationalized (Anfara & Mertz, 2015).
John Dewey (1859–1952) was an American philosopher, psychologist, and educational reformer whose ideas have been influential in education and social reforms. John Dewey is one of the most distinguished American scholars for the first half of the twentieth century (Hildebrand, 2018). Dewey (1897) argued education and learning are social and interactive processes; therefore, the educational institution itself is a social institution through which social reforms can and should take place. This is the case of progressive education in which LCE can be implemented. Dewey also believed learners can grow in an environment where they are allowed to experience and interact with curricula, and all learners should have opportunities to take part in their own learning. This constituted the LCE concept. Furthermore, Dewey also had specific notions about how education should take place in classrooms. He argued for education to be most effective, content must be presented in a way that allows learners to relate the information to prior experiences, therefore deepening the connection with the new knowledge.

On what education is all about and what effect it should have on society, Dewey (1897) discussed a major conflicting school of thought on pedagogy. In traditional education, educators and curricula are at the center of the learning and teaching process, and the focus is almost solely on the subject matter to be taught. Dewey argued the major potential flaws of this line of thinking and the methodology of traditional education results in the inactivity of learners. To correct this problem, Dewey advocated for an educational structure that fixes a balance between delivering knowledge while also considering interests and experiences of learners. Currently, LCE strategies have been practiced widely by educators who have incorporated Dewey’s theory into active and authentic learning. As a result, Dewey’s collective work has informed the movement of LCE.
My Pedagogic Creed (Dewey, 1897) is broken into five sections, with each paragraph beginning with the phrase “I believe.” This article has been referenced over a thousand times since 1897, and continues to be referenced in recent publications as evidence of the lasting impact of an educational theory. The five sections of this text are “What Education Is,” “What the School Is,” “The Subject-Matter of Education,” “The Nature of Method,” and “The Schools and Social Progress.” In the article, Dewey (1897) noted, to prepare learners for their future lives, we must let them command themselves; this meant to train learners to have full use of all their capacities. Specifically, the theory in My Pedagogic Creed stated for education to be the most effective and progressive, educators should empower learners, promote interests, and allow learners to relate information to prior experiences so their connection to new knowledge can be strengthened. Indeed, the LCE concept and LCE strategies are in agreement with Dewey (1897)’s theory.

In the summary of Dewey (1897), “Section 1 – What Education Is,” Dewey believed that education is a social process. Education exists by the participation of learners in social consciousness. If the social factor was eliminated from learners, education would be left with only an abstraction. If the learner factor is eliminated from society, then society is left only with an unconscious and lifeless group. Unless what is taught and how we teach relates to learners’ lives, otherwise learning can become stressful. A learner who is to be educated is a social learner. Society is an organic union of learners. Dewey also believed instruction must focus on learners as a whole; otherwise, we can never be sure where society will take them. The LCE’s learning environment aligns with Dewey’s educational theory because it is a societal process. In the LCE space, learners are social beings.
In “Section 2 – What the School Is,” Dewey (1897) believed school is primarily a social institution. School and education should be parts of society and reflect the community. Per Dewey, in traditional education, information is given, lessons are learned, and patterns are formed. This is not an effective education. Dewey also noted educators are not in the position to impose certain ideas or to form certain patterns on learners, but educators are members of the community who can properly assist learners. In the LCE learning environment, educators serve as facilitators, which aligns with the Dewey’s theory.

In “Section 3 – The Subject Matter of Education,” Dewey (1897) believed the subject-matter of school curricula should reflect learners’ real lives. Schools focus on too many subjects, which may not reflect learners’ actual experiences. Per Dewey, to learn formal subjects, learners must be comfortable, and subjects must be relevant to real life. Dewey also explained the learners’ own activities should determine curricula. Indeed, LCE is in agreement with Dewey’s theory because learners are part of curriculum development.

In “Section 4 – The Nature of Method,” Dewey (1897) believed the method of pedagogy should be focused on learners’ interests. This is exactly what LCE strategies are all about. Per Dewey, if learners are in a passive role, just receiving the information, the result is a waste of learners’ time. Dewey asserted active learning far surpasses passive learning because it impacts learners’ abilities to think and act actively. Dewey also noted it is educators’ responsibility to pay attention to learners’ interests and expand on them for learning experiences. In the LCE learning environment, educators use the same strategies, which focus on learners’ interests.

In “Section 5 – The School and Social Progress,” Dewey (1897) believed education is the fundamental method of the school and social progress. In this sense, school is the primary and most effective instrument to reconstruct society. Therefore, school must be provided the proper
resources to guide its learners. In summary, although the educational theory in Dewey had some overlapping principles, to a certain extent, they contribute to the understanding of the LCE phenomenon.

Many educators who supported the LCE pedagogy were motivated by Dewey’s work on how to practice teaching and learning (Williams, 2017). Indeed, in the LCE environment, people can practically realize much of John Dewey’s social and educational theories. In the LCE space, learners design their own learning through the concept of personalized learning.

**Review of Relevant Literature**

Reviewing literature is a form of research (Bloomberg & Volpe, 2016). Indeed, the review of related literature involves the systematic identification, location, and analysis of material related to the research problems. The purpose of literature review in this study was to provide a clear picture of current concepts, theories, and data relevant to LCE.

**The Learner-Centered Education Concept**

The term LCE has broad implications; therefore, it may be difficult to ascertain exactly what LCE is referring to without clarification. Hence, it is critical to thoroughly investigate how the term LCE is used in a specific educational contexts (Great Schools Partnership, 2014b). Therefore, a clearly defined set of concepts for LCE is essential to support a large-scale implementation. The term LCE concept refers to knowledge domains of the LCE phenomenon, which can be understood through experience, reasoning, visioning, or any combination. The concept of LCE focuses on the principles of personalized learning (Nellie Mae Education Foundation, n.d.).

Personalized learning has become a subject of discussion by leading educators and researchers in many communities. Indeed, personalized learning has accumulated significant
attention in recent years on comprehensive responses to the needs of learners at the state, district, and school levels (Netcoh, 2017). However, the discussion is often intensified by controversies about its definitions (Bishop et al., 2020). Indeed, there is no single agreement about the definition of personalized learning (National Forum on Education Statistics, 2019).

In this study, the formal definition of personalized learning has been provided by the U.S. Department of Education (2017) in the National Education Technology Plan:

Personalized learning is instruction in which the pace of learning and the instructional approach are optimized for the needs of each learner. Learning objectives, instructional approaches, and instructional content (and its sequencing) may all vary based on learner needs. (p. 1)

According to Camacho and Legare (2016), personalized learning considers instruction that is differentiated and paced to the needs of learners and shaped by the learning preferences and interests of the learners. Per Bishop et al. (2020), personalized learning refers to a number of instructional principles and practices that generally underlie a shift from educator direction to learner direction of the learning process. Personalized learning amplifies learning opportunities to integrate flexible pathways to graduation, including real-world, out-of-school learning. In addition, personalized learning has a variety of definitions which were described in the conceptual framework section. It is crucial to understand personalized learning does not require technology. Technology is just a way to foster personalized learning, such as accessing the learning information (U.S. Department of Education, 2017). In general, personalized learning is considered a replacement of traditional education where, for a given course, educators provide the same type of instruction, the same assignments, and the same assessments with few adjustments from learner to learner (Great Schools Partnership, 2015).
One of the key concepts of personalized learning is tailored instruction. This instruction includes providing corresponding instructions related to learners’ particular needs (National Forum on Education Statistics, 2019). In other words, personalized learning is supported by targeted instruction that is sufficiently flexible to align to a variety of specific learners’ needs. As educators adjust instructions, they may identify learners’ needs through direct interactions with learners. The relationship between an educator and learners is essential to tailored instructions; an educator cannot inspire learners if the educator does not understand learners (National Forum on Education Statistics, 2019). Additionally, to promote learners’ involvements, an educator can establish personalized surroundings so learners can take ownership of some particular features of their learning by aligning the curriculum with personal interests.

In a personalized learning environment, educators do not use standardized curriculum for instruction. Instead, the educator’s function is to support learners’ needs (Friend et al., 2017). Notably, educators tailor instructions daily or more regularly based on identified individual learner needs in a personalized learning space instead of constructing considerably structured material long in advance (Jenkins et al., 2016). Furthermore, personalized learning requires educators to really change their beliefs about teaching and learning. Educators must grow and learn in company with their learners. There are reasons institutions are changing from traditional education to more personalized learning. This transformation is ongoing as a response to critical questions about the purpose of education at the local, regional, and global level (Friend et al., 2017). Indeed, school districts, major cities, and states in the United States are adopting personalized learning as instructional reform that focuses on the co-construction of learning opportunities between educators and learners (Bishop et al., 2020).
Although there is much potential for personalized learning, schools are still a long way from making certain every learner experiences personalized learning (Friend et al., 2017). Personalized learning supports educators in understanding how to learn to evolve and listen to leaners’ feedback (Friend et al., 2017). Furthermore, it has been difficult to treat the LCE concept and curriculum in isolation because curriculum is an essential attribute of the LCE concept (Gilia, 2016). However, designing learner-centered curriculum is quite challenging because it involves different stakeholders, including educators and other educational specialists (Shrivastava & Shrivastava, 2020).

To successfully design a learner-centered curriculum, all stakeholders must be involved, collaborate, and agree upon the LCE concept. The current curricula do not support innovations in practicing LCE pedagogy (Cullen et al., 2012). If an institution is a truly behind LCE pedagogy, then all practices need to be LCE focused. Curriculum is no exception. Per Cullen et al. (2012), people may be frustrated because LCE change in higher education takes so long. The world is changing so quickly; thus, learner-centered experiences should be relevant and current as well. It is the right time for major change in the design of curricula because of the influence of LCE in the current social reality (Cullen et al., 2012). From the perspective of progressive education, a curriculum should not be a listing of school subjects, syllabi, courses of study, and lists of courses of specific discipline (Dewey, 1902). These can only be called curriculum if the written materials are actually derived from learners. If curricula are designed to deliberately express the schools’ culture, then the values to be learned are clearly not planned by learners.

Dewey (1902) believed learners can grow in a learning environment where they are allowed to experience and interact with curriculum, and all learners should have the opportunity to take part in their own learning. Furthermore, in the LCE curriculum, services are as important
as design. Advising, counselling, and assessment are the most important services that must be built into the LCE curriculum. These services must be based on learners’ needs and must enable the effectiveness of the environment for learners. In the LCE environment, learners should become curriculum’s contributors so that meaningful and authentic learning can take place (Neumann, 2013). Thus, without LCE curriculum, LCE cannot exist. However, implementing the LCE curriculum is quite challenging because it involves different stakeholders (Shrivastava & Shrivastava, 2020). To successfully implement the LCE curriculum, all stakeholders must be involved, collaborate, and agree upon the LCE approach.

Society needs creative and autonomous learners who can adjust rapidly to new situations and engage in lifelong learning; this is essential for today’s workforce. The freedom to make choices about what to learn and how to learn leads to enormous creative outputs. In fact, the LCE concept is about choice and about sharing power between educators and learners (Cullen et al., 2012). LCE pedagogy motivates learners by offering them control over their learning, fostering creativity and autonomy.

The Learner-Centered Education Strategies

The LCE strategies refer to a wide variety of instructional approaches or academic-support strategies that are intended to address distinct learning needs and interests of individual learners or groups of learners (Great Schools Partnership, 2014b). In this study, LCE strategies included, but were not limited to, active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning.

Active Learning

The definitions of active learning are broad. In general, active learning can be described as a method of learning in which learners are actively or experientially involved in the learning
process, and the activity level depends on the learner’s involvement. LCE strategies often include active learning (Ebert-May et al., 2015; Hartikainen et al., 2019; Weimer, 2013). Learners must do more than just passively listen. The active learning process relates to three learning domains, which have been referred to as knowledge, skills, and attitudes. The active participation of every learner is a necessary aspect of active learning. Active learning requires engaging learning environments so that its implementation can be successful.

The characteristics of the active learning environment can include (a) alignment with the principles of constructivism, a theory that recognizes the process of constructing new knowledge depending on learners’ previous knowledge; and (b) encouraging the self-construction of knowledge activities from learners (Hartikainen et al., 2019). The degree of educators guiding learners in an active learning environment may vary with the tasks at hand. Active learning is supported by evidence shown in research (Freeman et al., 2014). For instance, a comparison and analysis of 225 university learners in traditional conventional education settings and active learning classrooms of science, engineering, and math courses found active learning reduced the failure rates from 32% down to 21% and increased learners’ performance by 0.47 standard deviations (Freeman et al., 2014). The positive effects of active learning have been acknowledged when class sizes are under 50 learners in the science, technology, engineering, and mathematics subjects (Freeman et al., 2014).

**Authentic Learning**

There is no definitive description of authentic learning. However, in education, authentic learning refers to a wide variety of instructional strategies focused on connections between school and real-world matters and applications (Great Schools Partnership, 2013a). In particular, authentic learning is an instructional approach that allows learners to explore, discuss, and
meaningfully construct concepts in a context involving a real-world problem relevant to learners.

Authentic learning is a key element of LCE strategies (Nellie Mae Education Foundation, n.d.). However, educators must develop their own interpretations of what would be meaningful for learners. Per the Great Schools Partnership (2013a), authentic learning is much different from the traditional education approach in which knowledge is considered a collection of facts and procedures transmitted from educators to the learners. In the authentic learning space, learners no longer memorize facts in abstract theories, they experience and apply knowledge grounded in concrete practices. Authentic learning also takes a constructivist approach where learning is an active process (Lee & Branch, 2018). Knowledge construction is influenced by learners’ prior knowledge, and by the strategies that shape the learning environment. There are several authentic learning practices, including inquiry-based learning, problem-based learning, and project-based learning.

**Competency-Based Learning**

In this study, competency-based learning was defined as a strategy that focuses on learners’ advancements based on evidence they have mastered content and not specific requirements in a classroom (U.S. Department of Education, 2020; National Forum on Education Statistics, 2019; Nellie Mae Education Foundation, n.d.). According to Henri et al. (2017), competency-based learning can also be broadly defined as a pedagogy that focuses on mastery of measurable learning results. There has been a movement in U.S. education toward competency-based learning over the past decade (Henri et al., 2017).

The assessment of learners’ progress is based entirely on whether learners show mastery of competencies. In the competency-based learning space, mastery of competencies includes the ability to apply knowledge in practical situations, not only on theoretical or conceptual
understanding of the subject matter. Additionally, learners cannot be assessed for a new competency until they have acquired the prerequisite learning (Henri et al., 2017). Therefore, learners receive supports based on their own pace. In fact, competency-based learning has moved away from setting time limits for a certain amount of knowledge to be learned. Competency-based learning allows learners to progress at their own pace and confirms learners understand results before moving on to the next level.

The effectiveness of competency-based learning has been shown in federal policies released by the U.S. Department of Education in 2014. Recently, in response to industry urgings, competency-based learning has received recognition in education. Competency-based learning supports satisfying increasing requirements of the industry by making sure graduates have mastered required skills to be successful (Henri et al., 2017). Furthermore, competency-based learning is a LCE strategy form where learners progress to more advanced levels upon mastering required contents (Henri et al., 2017).

**Inquiry-Based Learning**

Inquiry-based learning is a form of active and authentic learning that begins by posing questions, problems, or scenarios (University of Manchester, 2010). Inquiry-based learning contrasts with traditional education, which relies on educators’ abilities to present facts and their own knowledge about subjects. Inquiry-based learning is often presented by a facilitator rather than an educator. Inquiry-based instruction is closely related to developments and practices of problem solving (Dostal, 2015). Commonly, there are several misconceptions about inquiry-based learning. Some people think inquiry learning is simply instructions that an educator teaches to follow a learning method. In fact, inquiry-based learning is not just about solving problems with specific, simple steps, but much more widely focuses on intellectual problem-
solving skills, which are developed throughout the learning process. Furthermore, not every hands-on task can be considered inquiry-based learning. Moreover, not every learner learns the same amount from an inquiry lesson. Educators must be able to ask learners questions to probe their thinking process and assess their learning goals.

Inquiry-based learning requires a lot of time, effort, and expertise; however, its benefits outweigh the costs if true inquiry-based learning can take place. It is fundamental for the development of higher thinking skills. In the inquiry-based learning environment, educators encourage learners to diversify their thinking and allow asking questions freely. Learners can learn effective strategies for discovering answers. To ensure inquiry-based learning is implemented correctly, there is a necessity for professional educator training when executing a new inquiry program, including year around professional development sessions such as weekly meetings and workshops. Inquiry-based learning takes a lot of planning before implementation. Assessments must be put in place for learners’ knowledge and performance to be evaluated and standards incorporated. It is educators’ responsibility during inquiry exercises to support and facilitate learning. A common mistake educators make is lacking vision of learners’ weaknesses. In the inquiry-based learning environment, educators do not assume learners use the same thinking process as professionals in specific disciplines.

**Problem-Based Learning**

Problem-based learning is one of the LCE strategies that fosters active learning and authentic learning (Dahms et al., 2016). In the problem-based learning environment, per Dahms et al. (2016), a problem is the starting point that directs the learning process. Particularly, learners can define their own learning objectives, brainstorm and construct hypothesis, clarify terminology, and define problems. Learners independently analyze and implement the solution
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before returning to the group to discuss and refine their acquired knowledge. Learners are responsible for their own learning process (Dahms et al., 2016). Therefore, problem-based learning is not about problem solving, but rather about developing knowledge and skills that can be used for future practices. Problem-based learning has been widely used in many applicable domains of learning.

The problem-based learning process usually involves learners working in small groups (8–10 learners) where each learner can take on a role in a group so all members of the group can have a role to play. The role can be alternated between learners. Problem-based learning helps learners identify what they already know, what they need to know, and how and where to access new information that may solve the problem. In the problem-based learning environment, the role of educators is to facilitate the learning process by monitoring, guiding, and supporting. Educators’ goals are to develop learners’ confidence by expanding their knowledge while solving a problem. Implementation structures of problem-based learning are very different with traditional education because they require more preparation time and resources to support small group learning. Problem-based learning can facilitate the learning and understanding of complex concepts and theories such as science, technology, engineering, and mathematics (Mo & Tang, 2017).

By utilizing collective groups’ intelligence, problem-based learning promotes different perspectives, which may offer different perceptions and solutions for a problem. Particularly, the advantages of problem-based learning include enhancing LCE, which in turn includes enriching educator-learner relationships, in-depth learning via constructivist approaches, self-motivating attitudes, and upholding lifelong learning. However, problem-based learning also faces some disadvantages. The disadvantages include how educators’ accessibility may be limited due to
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staff availability; learner confusion because the relevance of information may be overloaded; its resource-intensive nature because more computers, physical spaces, and staff are required to accommodate simultaneous smaller groups discussions and learnings; and how time-consuming it is for educators and learners.

Project-Based Learning

Project-based learning is one of the LCE strategies that involves a dynamic learning approach in which learners acquire deeper knowledge through active and authentic explorations of real-world challenges and problems (Edutopia, 2016). In the project-based learning environment, learners work for extended times to investigate and respond to complex challenges, questions, or problems (Buck Institute for Education, 2016). Project-based learning integrates knowing and doing. Individuals learn knowledge and apply it to solve authentic problems and produce outcomes that matter. Learners are not only taught from textbooks but are also activated through experiences. There are several benefits of project-based learning if it is implemented correctly, including a broader knowledge base, deeper understanding of concepts, enhanced leadership skills, improved communication and interpersonal skills, and increased creativity. Project-based learning emphasizes interdisciplinary education. Unlike traditional education, learners often organize their own tasks and manage their own time in project-based classrooms. In the project-based learning space, educators play the role of facilitators, assess carefully what individuals have learned from experiences, coach knowledge development and social skills, structure meaningful tasks, and work with learners to frame worthwhile questions. Indeed, project-based learning allows educators to facilitate and assess a deeper understanding rather than deliver factual information. Learners become active researchers and assessors of their own learning from the project-based learning process.
In summary, active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning have some overlapping principles, and they make up the LCE strategies. At its core concept, LCE aims to promote learning by encouraging individuals to actively and authentically engage independently in the study process for themselves (Crumly et al., 2014). In this sense, the learner’s voice is at the center of the teaching and learning process.

The Learner-Centered Education Strategy Implementation

The present literature does not provide much of the past and current state of the implementation process of LCE strategies. In addition, there has been some confusion between LCE strategies and the strategy implementation itself. What is known and what is not known about the implementation process of the LCE strategies are not clearly defined and understood yet. The process of LCE strategy implementation is still lacking (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). Thus, this study exists.

The process of LCE strategy implementation is one that focuses on a specific set of activities that are designed to put LCE strategies into action. In practice, although the LCE pedagogy has been promised for decades in higher education, the level of effort required for educators to implement the LCE strategies still remains in question. Specifically, researchers and practitioners still lack a complete framework to design, develop, and implement the LCE pedagogy (Lee & Hannafin, 2016). Moreover, the lack of maturity and enthusiasm from learners, which may be due to culture, also constitutes a challenge to LCE strategy implementation (Sabah & Du, 2018). Although developing a strategy is one of the first steps to organizational transformation, the implementation itself is critical to an organization’s success. Without an effective implementation process, the best strategy may not reach its desired outcome.
To implement LCE strategies effectively, in addition to defining practicable goals, tracking progress, extending support, considering feedback, and communicating challenges must exist to solve problems as needed (Luguetti et al., 2019). Additionally, educators should be able to establish a relationship of care with learners (Gilia, 2016). Learning is an identity formation process during which learners tend to develop a unique view of themselves. To create a mutual partnership between educators and learners, educators should give up some degree of control over the educational process (Neumann, 2013). However, the decrease of power over learners may be frightening for some educators. Furthermore, educators should be able to sense learners’ needs and how to guide their learning experiences accordingly (Gilia, 2016). Educators should let learners explore the information for themselves without any intervention. Educators should know when to focus on personal knowledge and skills rather than the content of curricula. Educators should also know when learners can be allowed to make decisions on what to learn, how to learn, and how to assess their own learning (Gilia, 2016). The education profession is designed to produce intelligence, skills, and character within each learner so the community is composed of citizens who can think and act intelligently and morally (Dewey, 1902).

To implement the LCE strategies effectively, regardless of the educators’ role in an institution, they must be open to new ideas and look for new ways to enhance learners’ educational experience (Cullen et al., 2012). Learners with high self-efficacy are more persistent in dealing with difficulties. These learners interpret failure as a challenge that can be conquered. Learners’ belief in their capacity can affect their motivation and, subsequently, their success in learning (Cullen et al., 2012). Moreover, the mindset of power of choice or sharing power with learners is a key element in the LCE strategies implementation (Cullen et al., 2012). Giving learners opportunities to choose promotes engagement with content and helps learners find
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relevant activities. Less structure and constraint relate to creative productivity. Sharing power, at least to some degree, increases learners’ motivation, and motivation and persistence are keys to innovation (Cullen et al., 2012). In addition, the change in the LCE environment cannot rely on individual classroom efforts. Learners deserve more than an occasional LCE experience. They should be able to participate in LCE learning approaches as a whole, where how to learn is just important as what to learn. To implement the LCE approach effectively, the LCE agenda must be pushed forwarded at the institutional level.

Challenges of the LCE strategy implementation include challenges from the learners’ and educators’ perspectives (Shrivastava & Shrivastava, 2020). From the learners’ perspective, not all individuals can learn at the same pace, and some may not prefer to work as a team. In these cases, it becomes extremely difficult to support a LCE strategy in terms of time and resources. In addition, if the learning approach is not very structured, learners may be confused and overwhelmed with the given responsibilities. If learners lack interest in the LCE approach, the entire process of implementing the LCE strategy can be ineffective. From the educators’ perspective, serving as facilitators is challenging because they are used to traditional education, allowing educators to control the teaching and learning process. Furthermore, because of the time and effort, educators may not appreciate the LCE approach and may not withstand it. Moreover, to implement the LCE strategy effectively, the educators’ competency and administrative support must be in place. The process of LCE strategy implementation is detailed in Chapter 4, Presentation of Findings.

Summary

This literature review addressed the process of exploring and understanding the LCE concept, LCE strategies, and the background of LCE strategy implementation in higher
education institutions. The conceptual and theoretical frameworks are informed by the literature review. The conceptual framework of this study is reflected in the concept of personalized learning. Dewey’s (1897) theory, in which the subject matter of education, the nature of teaching and learning methods, and schools and social progress are discussed. The conceptual and theoretical frameworks have some overlapping principles, and they can provide evidence to understanding of LCE pedagogy.

The key concept and strategies of the LCE phenomenon have evolved and emerged, underpinning the educational effectiveness of the 21st century. The review of the literature indicated the LCE concept and strategies are evolving and continue to take many different perspectives. To learn, learners must do much more than just listening. Educators must promote learning by encouraging individuals to actively and independently engage in the study process for themselves (Crumly et al., 2014). Furthermore, educators must also establish a relationship of care with learners (Gilia, 2016) and give up some degree of control over the educational process (Neumann, 2013). The mindset of power of choice or sharing power with learners (Cullen et al., 2012) and the learners’ self-efficacy (Dweck, 2000) are key elements in LCE practices. In this sense, the learner’s voice is at the center of the teaching and learning process. If an institution truly follows LCE pedagogy, then all its practices need to be LCE, including curricula. To implement the learner-centered curriculum successfully, all stakeholders must be involved, collaborate, and agree upon the LCE strategies.

The change of the learner-centered environment cannot rely on just the individual classroom effort. To implement LCE strategies effectively, the learner-centered agenda must be pushed forwarded at the institutional level. What was known and what had been investigated about the LCE concept, LCE strategies, and LCE strategy implementation were initially
understood. What is not known and what has not been investigated suggested the knowledge gaps related to LCE and its educational effectiveness.
CHAPTER 3: METHODOLOGY

The focus of this qualitative single case study was to investigate the perceptions of higher education learners and educators regarding learner-centered education (LCE) strategy implementation. Generally, LCE is described as the pedagogy in which, based on suggestions of educators who serve as facilitators, learners make decisions on what to learn, why to learn, how to learn, and how to assess their own learning (Crumly et al., 2014; Green & Harrington, 2021; XQ, 2020). The problem addressed in this study was the lack of an effective strategy implementation of the LCE approach in higher education institutions (Hoidn, 2017; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). The content of Chapter 3 includes the introduction; research design; population, participants, and sampling method; instrumentation and data collection; data analysis; limitations, delimitations, and ethical issues; trustworthiness, including credibility, confirmability, dependability, and transferability; and summary.

Research Design

This study employed the qualitative single case study research design because LCE is a real-world contemporary phenomenon. Case study is “an empirical method that investigates a contemporary phenomenon (the “case”) in depth and within its real-world context, especially when the boundaries between the phenomenon and its context may not be clearly evident” (Yin, 2018, p. 15). Unlike other research methods, a standard systematic list of case study research designs has not yet emerged (Yin, 2018). The research design of this case study was a single case, which is the case of the LCE pedagogy in higher education, with the intent to show different perspectives on the same issue. The data for this study included primarily the interviews of participants.
Case study research has a long and distinguished history across many disciplines (Creswell & Poth, 2018). Case studies support both quantitative and qualitative research (Yin, 2018). In qualitative research, case studies explain, explore, and describe a phenomenon. Participants were from different educational institutions in the state of California, United States.

Several procedures have been available for conducting a case study (Merriam & Tisdell, 2016; Yin, 2018). This study used the procedure for conducting a case study by Stake (1995) and Yin (2018), which includes (a) determining if a case study research is appropriate for studying the research problem, (b) identifying the intent of the study (c) developing a procedure for conducting the extensive data collection, (d) specifying an analysis approach where the case description integrates with analysis themes and contextual information, and (e) reporting the case study and lessons learned by using case assertions.

**Population, Participants, and Sampling Method**

In this study, the individuals selected compose a sample and the larger group of these participants is the population. Sampling method was the process of selecting a number of individuals in a way that the individuals represented the larger group from which they were selected (Roberts & Hyatt, 2019).

**Population**

The population of this qualitative single case study was individuals in higher education institutions in southern California, United States. These institutions are well-respected colleges and universities, which are classified among high research institutions. Specifically, in reference to the purpose and research questions, the target population of this study was higher education learners and educators as described in detail in the following sections.
Participants

The participants of this study were higher education learners and educators. Learners are those who can actively and authentically learn and take more responsibility over what they learn, how they learn, and how they assess their own learning. Educators are those who can provide intellectual, moral, and social instructions to learners. The participants were recruited via public social media platforms, including Facebook, Instagram, Twitter, and LinkedIn. The criteria for selecting participants were as follows:

- Learners had to be current or former students in colleges or universities of California.
- Educators had to be current or former instructors or professors in colleges or universities of California.
- Both learners and educators had to volunteer to participate in this study.

It is important in the research process to find participants to whom the researcher can gain access and build relationships so they can provide reliable data (Creswell & Poth, 2018). Per Creswell and Poth (2018) and Yin (2018), researchers typically choose no more than four or five participants for a qualitative case study. The final sample size of this study was nine participants, including five learners and four educators, which provided data saturation and a sufficient opportunity to identify themes or categories and conduct cross-theme analysis so a thorough understanding of the LCE phenomenon could be developed.

Sampling Method

The sampling method of this study was purposeful sampling, which is the primary sampling strategy used in qualitative research (Creswell & Poth, 2018). It is the opposite of the random sampling method that signalizes quantitative research (Bloomberg & Volpe, 2016). In qualitative research, the purpose is not to generalize to a population but rather to advance an in-
depth investigation of a central phenomenon (Creswell & Guetterman, 2019). Therefore, to best learn and understand the LCE phenomenon, the researcher of this study purposefully or intentionally selected or sampled specific participants for the data collection process, who, to a certain extent, had some connection with the LCE phenomenon. The logic of the purposeful sampling is based on the value of the in-depth information that may be not available via random sampling (Bloomberg & Volpe, 2016).

The purposeful sampling strategy used in this study was maximal variation sampling. Maximal variation sampling is a purposeful sampling strategy in which a researcher samples participants who differ on some characteristics (Creswell & Guetterman, 2019). The differences between participants in this study included age and knowledge about the LCE phenomenon, which are shown in Chapter 4. In this research, my intent was to explore in depth and develop many perspectives and insights on the LCE pedagogy. My intent was not to generalize findings to another context or population. Therefore, the maximal variation sampling method was the appropriate sampling strategy for this study because it served the purpose of this research and presented multiple perspectives of educators and learners to represent the complexity of the LCE phenomenon.

**Instrumentation and Data Collection**

Instrumentation refers to the tool or tools used to collect research data. Per Roberts and Hyatt (2019), for qualitative research, (a) alignment of an instrument should be done relative to participants who may inform the research questions, (b) the interview questions should be appropriate type that are best suited for the study, (c) the credibility and dependability of the instrument should be considered, and (d) the strategies used to collect interview data should be
clearly defined. Data collection is a critical process because it may significantly affect the response rate; therefore, it is important to consider the availability of the population.

**Instrumentation**

In qualitative research, the researcher is the main research instrument due to their responsibility of collecting, measuring, and analyzing data related to research interests. The research instrument is usually determined by researchers and is related to the methodology. Generally, a research instrument can include interviews, surveys, or checklists. The research instrument of this study was interviews of higher education learners and educators. The interview questions consisted of two sets of questions, one set for learners and the other set for educators. These were primarily open-ended questions, and they focused on an understanding of the central phenomenon, including the LCE concept, LCE strategies, and LCE strategy implementation. The interview questions were aligned with the research questions. Specifically, the interview questions for learners included four general questions and five primary questions. The interview questions for educators included four professional background questions, three general questions, and six primary questions. The interviews were one-to-one and semi-structured, which are described in more detail in the next section.

**Data Collection**

I planned ahead by arranging for the best opportunity to successfully collect the research data. Semi-structured interviews were the data collection method of this qualitative single case study. In this study, the interview was considered the interaction of verbal questions presented by an interviewer to obtain verbal responses from an interviewee. This type of interview was the semi-structured interview, which allowed new ideas to be considered and explored within themes, while a formal set of interview questions were presented to each interviewee. The
interviews were recorded using a standardized procedure. Semi-structured interviews are often used in qualitative research to facilitate a more focused exploration of a specific subject (Bloomberg & Volpe, 2016). Interviews in this study took place online via the Zoom meeting application. The interviews were one-to-one interviews. The process of questioning during interviews included asking the interview questions. I was mindful about the interview process, and I took care to create an environment as pleasant as possible to inspire participants to discuss freely. Based on Creswell and Poth (2018), the procedure for preparing and conducting interviews in this study included:

- Determining two sets of interview questions, one for learners and one for educators, most of which were open-ended questions, and focusing on understanding of the central phenomenon of the study, which included the LCE concept, LCE strategies, and LCE strategy implementation.
- Identifying interviewees (i.e., learners and educators) who can best answer the interview questions based on the purposeful sampling method mentioned in the preceding discussion.
- Using Zoom as an appropriate recording method for conducting one-on-one interviews.
- Locating a distraction-free place for conducting virtual interviews, which was the home office of the researcher of this study.
- Providing the Information Sheet (see Appendix D to participants in advance of interviews and reviewing it with participants at the beginning of each interview so some essential information related to the study could be disclosed. The information included the purpose of the study, the amount of time needed to complete the interview, the right to withdraw from the study, and the right to use results from the interview.
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- Staying within the study boundary (LCE strategy implementation, the LCE concept, and the LCE strategies) and being respectful of the participants.

The interview questions included questions related to the LCE concept, LCE strategies, and LCE strategy implementation. Interview data were captioned and transcribed into text using Zoom features for captions and transcription. These functions saved large amounts of time that would have been spent typing during the interviews.

This study used member checking and triangulation to validate findings, which means to determine credibility of the findings. This study was interpretive, and my personality may have shaped my interpretations. Therefore, credibility of findings was extremely important. Triangulation is the process of confirming evidence of data (Creswell & Creswell, 2018; Creswell & Guetterman, 2019). Triangulation helped warrant this study as reliable because the information in the transcripts was collected and confirmed from different participants through different interviews. I also inspected the findings with participants to ascertain the findings were error free. Member checking is the process of the researcher asking one or more participants to examine the rightness of the findings (Creswell & Guetterman, 2019). The member checking of this study included examination of whether the descriptions of the LCE phenomenon were complete and logical, the themes were appropriately included, and the interpretations of the findings were objective and representative.

Data Analysis

Although there have been some suggestions, there is no single, agreed-upon approach for analyzing qualitative data. This study employed the process of data analysis described by Creswell and Guetterman (2019), which included five steps as follows: (a) preparing and organizing research data for analysis, (b) inspecting the data and creating codes through the
coding process, (c) developing descriptions and themes by using the codes, (d) representing findings through narratives and visuals, and (e) interpreting the findings. In this qualitative research study, code is defined as a word that symbolically designates the summative, important, and expressive characteristics for a section of text-based data (Saldaña, 2021).

**Preparing and Organizing Research Data for Analysis**

Preparing and organizing research data for analysis in this study consisted of transferring large amounts of data from interviews into file folders. The interview data were prepared and organized for each participant. The data analysis process began by listening to the interview recordings. The Zoom transcription feature was used to transcribe interview recordings into texts. The task of reviewing and editing interview transcripts was labor intensive and required some time. Ultimately, all the transcripts were completed and verified for accuracy by participants.

**Inspecting Data and Creating Codes Through the Coding Process**

The process of inspecting data was achieved by examining the interview transcripts with the purpose of capturing the original responses from the participants so the LCE phenomenon can be understood. Creating codes through the coding process was the next step. ATLAS.ti, a computer program, was used to facilitate the process of analyzing and presenting findings of the data. The purpose of the coding process was to make sense out of the text data. As a result, a list of 40 codes was created. Chapter 4 includes the list of 40 manageable codes used in this study.

**Developing Descriptions and Themes by Using Codes**

Developing descriptions and themes from codes in this study consisted of forming an in-depth understanding of the LCE phenomenon so the research questions could be answered. The goal of this study was to develop themes from the small list of codes and to provide detailed
descriptions about LCE pedagogy so readers could understand the phenomenon better. Themes were associated codes combined together to form major unique knowledge categories of the LCE phenomenon (Creswell & Guetterman, 2019). Just like the 40 codes, labels of nine themes in this study were as short as possible to achieve conciseness.

In general, there are several types of themes in a study, including major themes, minor themes, and other themes. Major and minor themes are themes that represent major and minor knowledge of a phenomenon (Creswell & Guetterman, 2019). Depending on results of the data analysis, this study was expected to have some major themes and minor themes.

**Representing Findings Through Narratives and Visuals**

Representing findings in this study consisted of figures and tables so the research questions could be answered. This study also included narrative discussions to summarize the findings in detail. Some dialogue and quotes from the interview transcripts were included to support the development of codes and themes.

**Interpreting Findings**

Interpreting findings in this study included a review of the significant findings and how the research questions were answered. This interpretation was based on the results of the data analysis and personal reflections about the meaning of the findings. To accomplish this goal, the research questions were stated, and the findings were provided. Personal reflections about the meaning of the findings were based on my experiences and insights.

**Limitations, Delimitations, and Ethical Issues**

According to Bloomberg and Volpe (2016), limitations are external conditions that constrain the scope of a study or may affect its results. Alternatively, delimitations are conditions the researcher intentionally forces to limit the scope of a study. There are some unique ethical
issues relating to qualitative research because of its emergent and flexible design. Indeed, ethical issues can arise in all phases of a research process.

Limitations

Limitations in this study included my assumptions, the limitations of qualitative research, the challenges of case study design, and the complexity of this study. My assumptions refers to my interpretations of the findings, which was sometimes influenced by my background, including my culture and socioeconomic origin. The limitation of qualitative research in this study consisted of the participants’ reactivity and the constraints of generalizability. The participants’ reactivity in this study refers to the fact that people often behave differently when they know they are being interviewed. The constraints of generalizability in this study referred to generalizability not being the focus of this study; rather, the focus was on transferability, which is the ability to apply findings in similar contexts or settings (Bloomberg & Volpe, 2016). The challenges of this case study design included boundaries between the LCE phenomenon and its context, which was not clearly evident, and, unlike other research methods, a standard systematic case study design has not yet emerged. The complexity was complex because LCE is a real-world contemporary phenomenon. The concept, strategies, and the process of its strategy implementation were still not yet clearly defined across the literature.

Delimitations

Delimitations are the initial selections made about the overall design of research; these should not be confused with documenting the limitations of a study uncovered after the study has been finished (Bloomberg & Volpe, 2016). The delimitations in this study included narrowing down its scope and focusing on a specific population and sample. In practice, the LCE pedagogy was being used more and more in all levels of education, including university, college, high
school, middle school, and elementary school (Crumly et al., 2014). The scope of this study, however, targeted only higher education institutions. Moreover, the LCE pedagogy requires self-determination from learners (Starkey, 2019); therefore, this study was more applicable to the population of higher education learners, where learners can freely take charge over their own learning without any external interference. Furthermore, to implement LCE strategies effectively, policymakers, education administrators, and educators must support learners. However, this study only included learners and educators as participants. Supporting the LCE strategy implementation by education administrators and by local, state, and federal policymakers could be future studies.

**Ethical Issues**

As the researcher, I was morally bound to conduct this research in a manner that minimized potential harm to participants. The objective of this study was to promote the integrity of the research; however, ethical issues can occur anywhere in a study. Indeed, ethical issues can happen prior to conducting a study; at the beginning of a study; during the data collection, analysis, and reporting process; and even in publishing a study. To manage ethical issues, I employed some specific ethical best practices, including but not limited to implementing codes of ethics, selecting participants without vested interest, respecting the norms and cultures of participants, avoiding deceiving participants by disclosing in advance the purpose of the study and the use of the case study, avoiding the exploitation of participants, avoiding reciprocity with participants for their willingness to provide data, avoiding collecting harmful information from participants, and avoiding disclosing only positive results. Specifically, the Information Sheet was sent to each participant prior to interviews. I reviewed the content of the Information Sheet prior to the interviews with each participant and answered any questions or concerns they may
have had. I also asked the participants giving consent to participate to verbally acknowledge that they would like to voluntarily proceed with the interview. The Information Sheet specified the reasons for recruitment, conditions for research, possible risks and benefits of taking part in this study, confidentiality, and others.

This study also leveraged the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979) as the ethical principles and guidelines for the protection of human subjects. In this study, the human subjects were the higher education learners and educators who participated in the interview process. The intent here was to assure the research was carried out in an ethical manner.

The Belmont Report took its name from the Belmont Conference Center where the document was drafted. The Belmont Report outlined broad ethical principles and guidelines which served as an ethical framework for this study. This framework was used to guide the determination of the ethical matters emerging from this research. There were three basic and comprehensive ethical principles in the Belmont Report, including respect for persons, beneficence, and justice. It was important to remember these principles cannot always be applied to settle any ethical matters (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

Respect for persons, per the Belmont Report, included two ethical judgements: Participants should be treated as autonomous agents, and participants with diminished autonomy should be entitled to protection. “An autonomous person is an individual capable of deliberation about personal goals and of acting under the direction of such deliberation” (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979, p. 4). This study considered and recognized the autonomy or self-determination of the
participants, including their opinions, judgments, and choices. This study did not involve any withholding of information necessary for participants to make logical decisions. This study also involved the respect and protection of participants by making sure they undertook activities willingly. The goal here was to make sure participants entered into this research freely and with sufficient information. This study did not have any participants with diminished or incapacitated autonomy.

Beneficence, per the Belmont Report, refers to the obligation to protect participants’ well-being, including doing no harm, maximizing possible benefits, and minimizing possible harm. In this study, participants were not intentionally harmed because there was no risk in participating. Justice, per the Belmont Report, is fairness in benefit and burden. When a person is entitled to some benefit, this person should be allowed to receive it. When some burden is put on someone, it should be properly imposed. Per the Belmont Report, there are many broadly accepted ways to distribute benefit and burden that depended on individual need, individual effort, individual societal contribution, and individual merit. In this study, although there was no benefit and burden to participants, every participant was still treated equally.

**Trustworthiness**

In qualitative research, trustworthiness is any effort by a researcher to exhibit the research is carried out in a faithful, unbiased, dependable, transferable, and comprehensive manner. Researchers do this through revealing sufficient detail to allow readers to determine whether the research produces significant and valuable outcomes (Nowell et al., 2017). The criteria for qualitative research to be considered trustworthy relates to credibility, confirmability, dependability, and transferability (Bloomberg & Volpe, 2016). These criteria overlapped in some
ways, and they provided evidence that constituted, argued, and advocated for the trustworthiness of this study.

Credibility

Credibility refers to whether the findings are credible from the viewpoint of a researcher, participants, and readers (Creswell & Creswell, 2018). Credibility is the confidence that can be placed in the truth of research findings. Credibility constructs whether research findings derived from participants’ original data and interpretations came from participants’ original viewpoints (Korstjens & Moser, 2018).

This study included multiple procedures to assess the accuracy of findings and interpretations so its credibility can be ensured. Based on suggestions from Creswell and Creswell (2018), the procedures employed in this study included member checking, epoche (or bracketing), and peer debriefing.

Member checking was used during the interview process and at the conclusion of the study to allow participants to examine the transcripts for their accuracy and completeness and to critically comment whether the descriptions of the LCE phenomenon were logical, the themes were appropriately included, and the interpretations of the findings were objective and representative. All the transcripts were sent to all the participants, and two of them, including one learner and one educator, suggested some minor changes. In modern philosophy of phenomenology, epoche, or bracketing, is described as a process of setting aside or blocking bias and assumption as much as possible to best understand the experience of participants in a study, although it is difficult to achieve (Creswell & Poth, 2018). This can be difficult because the interpretation of data most likely contains assumptions when the researcher conducts a study (van Manen, 2014). I focused on bracketing to suspend my judgment in a reflective way to
explain the LCE phenomenon with a fresh perspective in terms of its own meaning and how it presented itself in the world of participants. Finally, peer debriefing included peer reviews found in this study to ensure accuracy with people other than the researcher. In addition, this study also included reviewing and discussing the findings with professional colleagues to ensure the information received from participants was appropriately reflected in the findings.

**Confirmability**

Confirmability refers to the concept of objectivity, which implies findings are outcomes of the research, rather than from bias, subjectivity, or the imagination of the researcher (Bloomberg & Volpe, 2016; Nowell et al., 2017). In other words, confirmability is the ability to confirm findings of research by other researchers. Although fulfilling objectivity is challenging, I established and revealed the rationale of decisions made throughout the entire study so readers could understand why the decisions were constructed. The rationales included conceptual, theoretical, and methodological discussions. These rationales, together with records of data, memos, transcripts, and other auditable records, can form an audit trail, which provides readers an opportunity to cross-reference, judge, and confirm the findings.

The rationale for why the concept of personalized learning served as the conceptual framework for this study was because it provided evidence that constituted the LCE pedagogy (Ebert-May et al., 2015; Hartikainen et al., 2019). The goal of personalized learning is to make individual learning needs the top-priority in crucial educational decisions, rather than decisions based on what is more pleasing or more comfortable for educators (Great Schools Partnership, 2015). The rationale for the educational theory from Dewey (1897) serving as the theoretical framework of this study was because this theory provided a lens through which ideas about the
LCE pedagogy as a whole could be clarified, the process of data collection and analysis could be focused, and the researcher’s role of this study could be rationalized (Anfara & Mertz, 2015).

The rationale for why the research design of this study was a qualitative single case study was because LCE is a real-world, contemporary phenomenon. The case study is an empirical method that investigates a contemporary phenomenon in depth and in its real-world context (Yin, 2018), and the LCE phenomenon is the only case of this particular case study. Additionally, according to Yin (2018), the more the research questions seek to explain some contemporary issues, such as the “what” or “how” questions, the more the case study research will be relevant. The “what” and “how” questions were some of the research questions of this study. Indeed, employing the qualitative single case study research design was appropriate for studying the research problem of this study.

**Dependability**

Dependability refers to the reliability that research findings can be reproduced by other similar studies (Bloomberg & Volpe, 2016). Dependability involves consistency, and this means the research findings are consistent with the data collected (Bloomberg & Volpe, 2016; Korstjens & Moser, 2018). Generally, dependability is the ability to depend on the quality of being reliable. As mentioned previously, this study involved an audit trail to document the rationales for all the decisions made throughout the research process, including detailed descriptions of how the data were analyzed and interpreted. The audit trail can allow readers to acquire, inspect, and determine the transparency, traceability, reliability, and, therefore, dependability of this research.

**Transferability**

Transferability is the degree to which the results of qualitative research can be transferred to other comparable, but not identical, contexts or settings (Ness, 2020). Transferability implies
applicability. In general, transferability is the ability to be transferred from one thing to something else. It is the way readers can decide whether and to what extent this specific phenomenon in this specific context can transfer to another context (Bloomberg & Volpe, 2016). To accomplish transferability, this study employed detailed descriptions of the research context to render the underlying of this study for some relevant and larger contexts. Detailed descriptions allow readers to evaluate and judge whether the research findings of this study can be transferable to their own studies or something else.

Summary

The purpose of this qualitative single case study was to investigate the perceptions of higher education learners and educators regarding the LCE strategy implementation, including the LCE concept and LCE strategies. LCE was generally described as the pedagogy where, based on recommendations from educators who serve as facilitators, learners can make decisions on what to learn, why learn, how to learn, and how to assess their own learning (Crumly et al., 2014; Green & Harrington, 2021; XQ, 2020). In the LCE space, learners take an active role and educators take a passive role (Amick, 2019; Lee & Branch, 2018). In other words, learners are independently engaged in the learning process (Crumly et al., 2014) and have opportunities to contribute to the design of the LCE pedagogy (Great Schools Partnership, 2014a). Indeed, LCE puts the learner interests first and acknowledges the learner’s voice as the center of the educational process.

This chapter addressed the qualitative single case study as the research design and procedure for conducting this case study. The population included people in southern Californian higher education institutions. Participants were learners and educators, and the sampling method was purposeful sampling using maximal variation sampling. The research instrument included
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interviews, the data collection was through semi-structured interviews, and the procedures for preparing and conducting an interview were addressed. To validate research findings, this study employed member checking and triangulation. The process of data analysis was also addressed, which included preparing and organizing research data for analysis, inspecting the data and creating codes, developing descriptions and themes by using the codes, representing findings through narratives and visuals, and interpreting the findings. Themes included three major and six minor themes.

This chapter also addressed limitations, delimitations, and ethical issues. The limitations included my assumptions, the limitations of qualitative research, the challenges of the case study design, and the complexity of this study. The delimitations included narrowing down the scope of this study and focusing on a specific population and sample. Ethical issues focused on employing some specific ethical best practices and leveraging the Belmont Report to deal with ethical matters. Furthermore, this study used multiple procedures to assess findings so their trustworthiness could be ensured. In addition to triangulation of data and member checking, the procedures of epoche (i.e., bracketing) and peer debriefing were also included. Ultimately, what was known and what was investigated about the LCE strategy implementation, including the LCE concept and LCE strategies, were initially understood.
CHAPTER 4: RESULTS

The problem in this qualitative single case study was the lack of an effective strategy implementation of learner-centered education in higher education institutions (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). The purpose of the study was to investigate perceptions of higher education learners and educators regarding the learner-centered education (LCE) strategy implementation. LCE is a pedagogy in which learners make decisions on what to learn, how to learn, and how to evaluate their learning (Crumly et al., 2014; Green & Harrington, 2021; XQ, 2020). Strategy implementation in this study was the process of turning the LCE strategies into actions to reach desired outcomes. Without an effective implementation process, the best strategy may not reach a desired effect (Miller, 2020).

In this study, LCE strategies were driven by the LCE concept because the LCE strategies were oriented and integrated by the LCE concept in which the LCE pedagogy was understood. The LCE concept included but was not limited to personalized learning. The LCE strategies consisted of but were not restricted to active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning.

The research questions that guided this study were narrowed down to a few comprehensive central questions as follows:

1. What are perceptions of higher education learners regarding the learner-centered education concept?
2. What are perceptions of higher education educators regarding the learner-centered education concept?
3. What are perceptions of higher education learners regarding the learner-centered education strategies for higher education institutions?
4. What are perceptions of higher education educators regarding the learner-centered education strategies for higher education institutions?

5. How do higher education educators effectively implement the learner-centered education strategies for higher education institutions?

This study employed a qualitative case study research design because LCE is a real-world contemporary phenomenon. Furthermore, the case study research design of this study was a single case, which is the case of the LCE pedagogy in higher education. The intent of this case study was to show different perspectives from participants on the same LCE issue. Data collection included interviews of participants. The target population was individuals in higher education institutions in the state of California in the United States. The participants were higher education learners and educators. The sampling method was purposeful sampling that used the maximal variation sampling method. The research instrument of this study was interviews, specifically semi-structured interviews, as new ideas were allowed to be considered and explored within themes.

This study used the process of data analysis described by Creswell and Guetterman (2019), which consisted of five steps: (a) preparing and organizing research data for analysis, (b) inspecting the data and creating codes through the coding process, (c) developing descriptions and themes by using the codes, (d) representing findings through narratives and visuals, and (e) interpreting the findings. I iteratively and simultaneously executed these steps. The chapter includes an introduction, the data analysis method, the presentation of findings or results, and a summary.

There were nine participants, including five learners and four educators. Educators consisted of three professors and one instructor. Learner participants were between the ages of
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22 to 40, and educator participants were between the ages of 51 to 60. There were three female learners, two male learners, three female educators, and one male educator. The majors and subject specialties associated with participants were agriculture, business, data science, education, mathematics, mechanical engineering, political science, and systems engineering. Table 1 shows demographic information for participants in this study, including age, sex, major, and type of participant.

Table 1
The Demographics of the Participants of the Learner-Centered Education Study

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
<th>Sex</th>
<th>Major</th>
<th>Type of participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>22</td>
<td>Male</td>
<td>Data science</td>
<td>Learner</td>
</tr>
<tr>
<td>J</td>
<td>36</td>
<td>Female</td>
<td>Education</td>
<td>Learner</td>
</tr>
<tr>
<td>N</td>
<td>40</td>
<td>Female</td>
<td>Political science</td>
<td>Learner</td>
</tr>
<tr>
<td>T</td>
<td>32</td>
<td>Female</td>
<td>Mechanical engineering</td>
<td>Learner</td>
</tr>
<tr>
<td>V</td>
<td>27</td>
<td>Male</td>
<td>Agriculture</td>
<td>Learner</td>
</tr>
<tr>
<td>B</td>
<td>51</td>
<td>Female</td>
<td>Systems engineering</td>
<td>Educator</td>
</tr>
<tr>
<td>D</td>
<td>Unknown</td>
<td>Male</td>
<td>Business</td>
<td>Educator</td>
</tr>
<tr>
<td>R</td>
<td>56</td>
<td>Female</td>
<td>Systems engineering</td>
<td>Educator</td>
</tr>
<tr>
<td>V</td>
<td>Unknown</td>
<td>Female</td>
<td>Math</td>
<td>Educator</td>
</tr>
</tbody>
</table>

Note. Letters C, J, N, T, V, B, D, R, and V were the pseudonyms assigned to participants for the purpose of data confidentiality. The phrase “The Learner-Centered Education Study” in the titles of the figures and tables in this study was referring to this study itself. The title “Perceptions of Higher Education Learners and Educators Regarding the Learner-Centered Strategy Implementation: A Qualitative Single Case Study” is too long to be included into the titles of figures and tables.
Data Analysis Method

The data analysis method of this study included five steps as previously mentioned: (a) preparing and organizing the transcript data for analysis, (b) inspecting the transcripts and creating codes through the coding process, (c) developing descriptions and themes by using the codes, (d) representing findings through narratives and visuals, and (e) interpreting the findings. The data analysis process was a form of inductive reasoning, synthesized from the transcript data to the general principles of codes and themes. Indeed, inductive reasoning supported a goal of this study, where knowledge about the LCE phenomenon was accumulated through the data analysis process. In this study, a code was defined as a word that symbolically designates the summative, important, and expressive characteristics for a section of a text-based data (Saldaña, 2021). A theme was defined as associated codes aggregated together to form unique knowledge about the LCE phenomenon.

The data analysis method of this study also incorporated the concurrent process of data collection and data analysis. While I gathered the data, I also analyzed the previously collected data and looked for major ideas. The data collection and data analysis steps in this study were also iterative, which means I could repeat the steps as needed. Indeed, I returned to the participants for additional information while reviewing and examining their transcript data so unclear information could be clarified and missing information could be fulfilled. Moreover, I read and analyzed each transcript multiple times because of this iterative process. Figure 1 shows the five major steps of the data analysis process of this qualitative research study. A code in this study was a word that symbolically designated the summative, important, and expressive characteristics for a section of the transcript.
Figure 1

*The Data Analysis Process of the Learner-Centered Education Study*

Note. In practice, I also employed the iterative and concurrent process at other steps of the data analysis process.

**Preparing and Organizing Research Data for Analysis**

Preparing and organizing research data for analysis in this study included transferring large amounts of interview data into file folders. The interview data were prepared and organized by each participant. The data analysis process began by listening to the interview recordings. Then, all interview recordings were transcribed into text using the Zoom transcription service.
The tasks of reviewing and editing the interview transcripts was labor intensive and required a lot of time. As a result, by using member checking, all the transcripts were completed and verified for their accuracy by all participants.

**Inspecting Data and Creating Codes Through the Coding Process**

The inspecting data process in this study began by reading the interview transcripts to get a sense of what the participants were saying so the LCE phenomenon could be understood. The next step was creating codes through the coding process. This study leveraged ATLAS.ti as a qualitative data analysis software application to facilitate the process of analyzing and presenting the findings of this study. Table 2 shows an example of the codes and quotations of this study.

**Table 2**

*The Overall Codes and Quotations of the Learner-Centered Education Study*

<table>
<thead>
<tr>
<th>ID</th>
<th>Quotation name</th>
<th>Document group</th>
<th>Quotation content</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:2</td>
<td>12:29:44 Students classroom as much as it's mine. So, I encourage them...</td>
<td>Interview with Educator B</td>
<td>Educator group</td>
<td>12:29:44 Students classroom as much as it's mine. So, I encourage them to, you know, talk to and to ask questions to share their ideas in class. And then also, you know, outside of class through email and, and stuff like that so I tried to be really encouraging.</td>
</tr>
<tr>
<td>1:3</td>
<td>12:20:38 Um, you know as a student, I did enjoy some of those classes...</td>
<td>Interview with Educator B</td>
<td>Educator group</td>
<td>12:20:38 Um, you know as a student, I did enjoy some of those classes so I'm not going to completely say that's a bad style but it's not my style. My style is more like everybody can come together, everybody can learn, everybody can learn every time, but...</td>
</tr>
<tr>
<td>1:4</td>
<td>12:21:39 So part of it comes from my own experiences is having been a...</td>
<td>Interview with Educator B</td>
<td>Educator group</td>
<td>12:21:39 So part of it comes from my own experiences is having been a student.</td>
</tr>
</tbody>
</table>
**LEARNER-CENTERED EDUCATION STRATEGY IMPLEMENTATION**

<table>
<thead>
<tr>
<th>ID</th>
<th>Quotation name</th>
<th>Document group</th>
<th>Quotation content</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:5</td>
<td>12:26:10 So, I think I</td>
<td>Interview with Educator B</td>
<td>12:26:10 So, I think I really always enjoy being a student, I really liked to wealth school, I like learning new things.</td>
<td>school student</td>
</tr>
<tr>
<td></td>
<td>really always enjoy being a student, I really . . .</td>
<td>Educator group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:6</td>
<td>12:40:15 So that's another one of one of the methods that I use again. . .</td>
<td>Interview with Educator B</td>
<td>12:40:15 So that's another one of one of the methods that I use again to kind of build ownership on those students. So that's kind of how those are my normal lecture classes, and then my capstone class which is where I advise a student, or a group.</td>
<td>group student</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Educator group</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* The first number of an ID is the document order. The second number of an ID is just the ordered sequence.

There were nine transcript documents, including four educators’ transcripts and five learners’ transcripts. In total, this study produced 40 finalized codes and 1,817 quotations. The coding process included several steps, some of which were already discussed during the data analysis. The purpose of the coding process was to make sense of the text data. In this study, a code was defined as a word that symbolically designates the summative, important, and expressive characteristics for a section of a text-based data (Saldaña, 2021). In practice, a researcher can express a code in their own terms. However, I used in vivo codes, which means the names of the codes were the same as the actual words used by participants. The coding process included eight steps in four cycles as follows:

1. I selected one transcript document and examined it to consider its underlying meaning.

   This activity was considered pre-coding (Saldaña, 2021), or preliminary analysis, as the interview transcripts were examined for a general sense of the interview data, and I considered whether more data were needed.

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2. Step 1 was applied to the rest of the transcripts. There were nine transcripts in total. This step completed the first cycle of coding.

3. Each transcript was divided into sections based on concepts or ideas. A code was assigned to each section to unambiguously describe the meaning of the text in that section.

4. Step 3 was applied to the rest of the transcripts to complete the second cycle of coding.

5. A large group of more than a thousand codes was created based on the number of times a code appeared across the transcripts. This large group of codes was reduced to a smaller group of hundreds by the exclusion of redundant codes.

6. The smaller group was further reduced to a manageable list of codes based on significant and meaningful characteristics that were directly related to the LCE phenomenon. This step completed the third cycle of coding.

7. A list of themes and descriptions were created based on the summative, important, and expressive characteristics and quantity of the codes that supported each theme.

8. Themes were further divided to three different types based on how the themes formed the knowledge of the LCE phenomenon. This step completed the last cycle of coding.

Figure 2 shows the coding process of this study, which included eight steps.
Through the 8-step coding process, a list of 40 manageable codes was created. Figure 3 shows the list of manageable codes and their grounded number, or number of occurrences, across the transcripts. The list was created in the ATLAS.ti computer program. The code that had the greatest number of occurrences across the literatures was “learner” with 430 counts.
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Figure 3

The List of Manageable Codes Used in the Learner-Centered Education Study

<table>
<thead>
<tr>
<th>Name</th>
<th>Grounded</th>
<th>Created by</th>
<th>Created</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>learner</td>
<td>430</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>learning</td>
<td>397</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>question</td>
<td>240</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>educator</td>
<td>218</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>problem</td>
<td>110</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>teacher</td>
<td>99</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>project</td>
<td>99</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>strategy</td>
<td>96</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>feedback</td>
<td>94</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>experience</td>
<td>81</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>group</td>
<td>81</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>understanding</td>
<td>76</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>teaching</td>
<td>72</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>need</td>
<td>70</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>decision</td>
<td>65</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>role</td>
<td>64</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>choice</td>
<td>50</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
<tr>
<td>environment</td>
<td>48</td>
<td>Ngo Tran</td>
<td>2/3/2022 2:02 PM</td>
<td>2/3/2022 2:02 PM</td>
</tr>
</tbody>
</table>

Note. The snapshot shows the learner code with 430 occurrences across the nine transcripts. The Code Distribution by Document section shows the clustered column charts of the learner code distributed across the nine transcripts.

As discussed, the list of 40 manageable codes was generated through the coding process. There were six codes with a number of occurrences more than 100. The code with the greatest number of occurrences was “student” with 452 quotations, followed by “learner” with 430 quotations, “learning” with 397 quotations, “question” with 240 quotations, “educator” with 218 quotations, and “problem” with 110 quotations. Figure 4 shows a clustered bar chart of the top
six codes with the number of occurrences more than 100 in increasing order. The number of occurrences is the quotations that occurred across the nine transcripts.

**Figure 4**

*A Clustered Bar Chart of the Top Six Codes of the Learner-Centered Education Study*

Note. The numbers 110, 218, 240, 397, 430, and 452 are the quotations that occurred across the nine transcripts.

**Developing Descriptions and Themes by Using Codes**

Developing descriptions and themes by using codes in this study consisted of forming detailed descriptions and general themes about the LCE phenomenon so the research questions could be answered. In this study, a large group of codes was created based on the number of times the code appeared across the transcripts. This large group of codes was diminished to a smaller group of hundreds by the exclusion of redundant codes. The smaller group was decreased to a manageable list of codes based on their importance and expressive characteristics directly associated with the LCE phenomenon. A list of themes and descriptions were created by
using codes based on their characteristics. Themes were further separated into two different
categories based on the quantity and characteristics of the codes that supported each theme. A
theme in this study consisted of associated codes aggregated together to form unique knowledge
about the LCE phenomenon. Just like codes, labels of themes were as short as possible to support
conciseness.

The goal of this study was to provide different perspectives from different participants
because different perspectives were essential to understanding the complexity of the LCE
phenomenon. At the end of the data analysis process, this study reached a saturation point of
theme development, where major themes had been established, and no new information could be
added. In general, there are several types of themes, including major themes, minor themes, and
other themes (Creswell & Guetterman, 2019). After themes were developed by using codes,
personalized learning was discovered as the LCE concept; active learning, authentic learning,
competency-based learning, inquiry-based learning, problem-based learning, and project-based
learning were discovered as the LCE strategies. This study consisted of three major themes,
which included the LCE Concept–Personalized Learning, the LCE Strategies, and LCE Strategy
Implementation; and six minor themes, which included Active Learning, Authentic Learning,
Competency-Based Learning, Inquiry-Based Learning, Problem-Based Learning, and Project-
Based Learning.

The process of developing descriptions and themes using codes started with the
associated codes, which were combined to form nine themes based on how the themes formed
knowledge of the LCE phenomenon. The differences between themes were based on the quantity
and characteristics of the codes directly connected to the LCE phenomenon. As a result of the
descriptive analyses, nine transcripts served as the first layer of the layered structure of this
study, the 40 manageable codes served as the second layer, the minor themes served as the third layer, and the major themes served as the fourth layer. All themes were organized into layers from simple themes to more complex themes by using interconnected levels of themes. The minor themes were included in the major themes.

Figure 5 shows the structure of the four layers of the interview transcripts, codes, and themes of this study. Table 3 shows the five research questions, nine themes, codes that supported each theme, and two types of themes of this study. As previously stated, a theme in this study was defined as associated codes aggregated together to form unique knowledge about the LCE phenomenon. The six minor themes including Active Learning, Authentic Learning, Competency-Based Learning, Inquiry-Based Learning, Problem-Based Learning, and Project-Based Learning are under the LCE Strategies major theme.
Figure 5

*The Structure of Layers of Interview Transcripts, Codes, and Themes of the Learner-Centered Education Study*

*Note.* (9) refers to the nine transcripts. (40) refers to the 40 codes.
**Table 3**

*The Themes of the Learner-Centered Education Study*

<table>
<thead>
<tr>
<th>Research question</th>
<th>Theme</th>
<th>Codes supported theme</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are perceptions of higher education learners regarding the LCE concept?</td>
<td>LCE Concept - Personalized Learning</td>
<td>background, educator, interest, learner, learning, need, student, support, teacher.</td>
<td>Major theme</td>
</tr>
<tr>
<td>2. What are perceptions of higher education educators regarding the LCE concept?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. What are perceptions of higher education learners regarding the LCE strategies for higher education institutions?</td>
<td>LCE Strategies</td>
<td>assessment, competency, educator, environment, experience, grade, group, inquiry, interest, learner, learning, mastery, mentor, practice, participation, problem, question, skill, student, teacher.</td>
<td>Major theme</td>
</tr>
<tr>
<td>4. What are perceptions of higher education educators regarding the LCE strategies for higher education institutions?</td>
<td>Active Learning</td>
<td>educator, experience, learner, learning, participation, student, teacher.</td>
<td>Minor theme</td>
</tr>
<tr>
<td></td>
<td>Authentic Learning</td>
<td>educator, interest, learner, learning, practice, problem, student, teacher.</td>
<td>Minor theme</td>
</tr>
<tr>
<td></td>
<td>Competency-Based Learning</td>
<td>assessment, competency, educator, grade, learner, learning, mastery, student, teacher, understanding.</td>
<td>Minor theme</td>
</tr>
<tr>
<td></td>
<td>Inquiry-Based Learning</td>
<td>inquiry, learning, mentor, practice, problem, question.</td>
<td>Minor theme</td>
</tr>
<tr>
<td></td>
<td>Problem-Based Learning</td>
<td>environment, group, learner, learning, practice, problem, skill.</td>
<td>Minor theme</td>
</tr>
<tr>
<td></td>
<td>Project-Based Learning</td>
<td>environment, experience, learner, learning, problem, student.</td>
<td>Minor theme</td>
</tr>
<tr>
<td>5. How do higher education educators effectively implement the LCE strategies for higher education institutions?</td>
<td>LCE Strategy Implementation Process</td>
<td>educator, feedback, learner, practice, problem, role, strategy, student, support, teacher.</td>
<td>Major theme</td>
</tr>
</tbody>
</table>

*Note.* The major and minor themes represented the major and minor knowledge of LCE respectively, which was mostly based on the characteristics of the codes that supported the theme.
The LCE Concept–Personalized Learning major theme addressed the first and second research questions: What are perceptions of higher education learners regarding the LCE concept? What are perceptions of higher education educators regarding the LCE concept? The six minor themes including Active Learning, Authentic Learning, Competency-Based Learning, Inquiry-Based Learning, Problem-Based Learning, and Project-Based Learning were subthemes of the LCE Strategies major theme, which addressed the third and fourth research questions: What are perceptions of higher education learners regarding the LCE strategies for higher education institutions? What are perceptions of higher education educators regarding the LCE strategies for higher education institutions? The LCE Strategy Implementation Process major theme addressed the research question: How do higher education educators effectively implement the LCE strategies for higher education institutions?

The themes in this study were described as follows:

1. The LCE Concept–Personalized Learning major theme: Personalized learning in this study was a concept in which the pace of learning is optimized for the needs of each learner because learners may have distinct cultural backgrounds, desires, interests, strengths, and learning needs. Educators should make the needs of individual learners the predominant consideration in essential educational decisions.

2. The LCE Strategies major theme: The LCE strategies in this study referred to a wide variety of instructional or academic-support approaches that intend to address distinct learning needs of individual learners or groups of learners. The LCE Strategies major theme in this study included the six minor themes: Active Learning, Authentic Learning, Competency-Based Learning, Inquiry-Based Learning, Problem-Based Learning, and Project-Based Learning.
3. The Active Learning minor theme was a subtheme of the LCE Strategies major theme, referring to a method of teaching and learning where educators facilitated the process of constructing active knowledge and involvement in learning through participation for their learners.

4. The Authentic Learning minor theme was a subtheme of the LCE Strategies major theme; this was an instructional strategy where school and real-world matters were connected in such a way that learners explore, discuss, and meaningfully construct concepts in relevant contexts.

5. The Competency-Based Learning minor theme was a subtheme of the LCE Strategies major theme; this was an approach where learners progressed based on evidence they have learned or mastered a concept, and not only based on specific requirements in a classroom such as grades.

6. The Inquiry-Based Learning minor theme was a subtheme of the LCE Strategies major theme; this was an instructional strategy where educators fostered the development and practice of thinking and problem solving by facilitating and advising learners through posing questions.

7. The Problem-Based Learning minor theme was a subtheme of the LCE Strategies major theme; this was an instructional strategy where educators encouraged learners to use problems as a starting point for the learning process to develop knowledge and skills.

8. The Project-Based Learning minor theme was a subtheme of the LCE Strategies major theme; this was an instructional strategy where educators fostered integration between learning and doing in group projects so learners can acquire deeper experience and knowledge and produce outcomes that matter for themselves.
9. The LCE Strategy Implementation Process major theme referred to a process that included setting practicable goals; determining relationships and roles for educators and learners; executing strategies; monitoring progress, providing continued supports, listening to feedback, and addressing challenges; taking corrective actions; reviewing the entire implementation process; and reflecting on lessons learned.

Figure 6 shows the relationships between the learner codes, educator codes, and other essential codes that reflected the major theme of LCE Strategies. The other codes in this figure included assessment, competency, environment, experience, grade, group, inquiry, interest, learning, mastery, mentor, participation, practice, problem, project, question, skill, student, support, teacher, and understanding.

**Figure 6**

*The Relationships Between the Essential Codes and the Learner-Centered Education Strategies Theme*
Note. The relationships were more complex than pictured in this figure; relationships are simplified in this figure for readability.

Figure 6 shows how the codes were used to develop the minor themes, which, in turn, constituted the LCE Strategies major themes of this study. Figure 6 can be interpreted as follows:

- Learner is a cause of support, support is a property of educator, and educator is associated with learner. Educator is also a mentor, and mentor is also associated with learner. Therefore, a learner and an educator should have a mutual relationship and an educator should support learners as a mentor.

- Participation is a property of learner. Educator is a mentor, and mentor is associated with learner. Therefore, an educator as a mentor, should facilitate the learning process so that learners are able to actively participate in the learning process.

- Assessment is a property of learner. Understanding is part of mastery, mastery is a cause of competency, and competency is a property of learner. Grade may not be a real competency of learner. Educator is a mentor, and mentor is associated with learner. Therefore, an educator as a mentor should assess learners’ progress based on evidence learners have understood a concept, or mastered a context, and not on specific requirements in a classroom such as grades.

- Question is part of inquiry, and inquiry is a property of learner. Learning is also a property of learner. Educator is a mentor, and mentor is associated with learner. Therefore, an educator as a mentor should advise learning by posing questions to inquire about knowledge.
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- Problem is a cause of practice, skill is also a property of practice, practice is a property of learning, and learning is a property of learner. Educator is a mentor, and mentor is associated with learner. Therefore, an educator as a mentor should foster the learning process where learners use problems as a starting point to direct their learning. Learners should identify and define problems that are interesting to them.

- Project is part of environment, group is also part of environment, environment is part learning, and learning is a property of learner. Educator is a mentor, and mentor is associated with learner. Therefore, an educator as a mentor should foster the learning environment in which learners integrate learning with doing within group projects to produce outcomes that matter for learners.

Figure 7 shows the relationships between the learner codes, educator codes, strategy implementation codes, and other essential codes reflecting the major theme, the LCE Strategy Implementation Process.
Figure 7

The Relationships Between the Essential Codes and the Learner-Centered Education Strategy Implementation Theme

Note. The relationships were more complex than pictured in this figure; relationships are simplified in this figure for readability.

Figure 7 shows how the codes were used to develop the major theme, the LCE Strategy Implementation Process of this study. Figure 7 can be interpreted as follows:

- Learner is a cause of support, support is a property of educator, and educator is associated with learner. Educator is a mentor, and mentor is also associated with learner. Therefore, a learner and an educator should have a mutual relationship and an educator should support learners as a mentor.
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- Goal is a property of strategy implementation, strategy implementation is a property of education, and education is a property of learner. Educator is a mentor, and mentor is associated with learner. Learner is a cause of strategy implementation. Therefore, an educator as a mentor should set practicable goals to proceed with the strategy implementation process.

- Role is a part of learner and a part of educator; role is also a property of strategy implementation. Educator is a mentor, mentor is associated with learner, and learner is a cause of strategy implementation. Therefore, an educator as a mentor should determine roles for themselves and for learners to proceed with the strategy implementation process.

- Strategy is a property of strategy implementation. Educator is a mentor, mentor is associated with learner, and learner is a cause of strategy implementation. Therefore, an educator as a mentor should execute strategies to complete the implementation process.

- Challenge, feedback, and progress are properties of strategy implementation. Educator is a mentor, mentor is associated with learner, and learner is a cause of strategy implementation. Therefore, an educator as a mentor should address challenges, listen to feedback, and monitor progress to complete the strategy implementation process.

- Correction is a property of strategy implementation. Educator is a mentor, mentor is associated with learner, and learner is a cause of strategy implementation. Therefore, an educator as a mentor should perform corrective action to complete the strategy implementation process.

- Lesson–learned is a property of review, review is a property of strategy implementation. Educator is a mentor, mentor is associated with learner, and learner is a cause of strategy implementation. Therefore, an educator as a mentor should review the entire
implementation process and reflect on lessons learned to complete the strategy implementation process.

**Representing Findings Through Narratives and Visuals**

Representing findings in this study included narratives and visuals. The purpose of narratives was to summarize the findings in detail. Some of the dialogue and quotes from the interview transcripts were included to support the codes and themes so the research questions could be answered. The visuals included figures and tables. Figures were all types of graphic displays other than tables. In this study, figures also included memos and reports.

**Interpreting Findings**

Interpreting findings in this study involved making sense of the transcript data to establish some larger meaning about the LCE phenomenon. The interpretation process includes a review of significant findings, how research questions are answered based on research data, and personal reflections about the meaning of the findings (Creswell & Guetterman, 2019). Personal reflections about the meaning of the findings were based on my experiences and insights. Because I was the principal investigator of this study, I was in an appropriate position to reflect and comment on the larger meaning of the findings.

**Presentation of Findings**

The presentation of findings or results depends on the nature of research. In this qualitative single case study, the data were organized by the research questions (see Table 3). I believed organizing the data by the research questions was a proper way to clearly discuss the findings and sustain the consistency among the chapters (Roberts & Hyatt, 2019).

The findings in this study were represented in narrative and visual forms. The research data were organized into codes and themes with figures and tables that enhanced and clarified
the large amount of data. The goal of this section was to emphasize and address only the most important findings of this study; at the same time, I wanted to ensure the logic, depth, and breadth of the arguments were sufficient. The intent of this study was to leave opportunities open so other researchers could tell different stories given the same set of data. I also acknowledge there are multiple ways of interpreting data because that is the subjective nature of qualitative research (Bloomberg & Volpe, 2016).

The summary of findings provided an overview to complement the more detailed descriptions in this section. The major findings of this qualitative single case study included the possibility of a better understanding about the LCE phenomenon, which consisted of the concept, strategies, and strategy implementation. The intent of this study was to provide sufficient descriptive information about the LCE phenomenon so readers could make their own independent judgements about it. Through the findings, I offered speculation regarding the LCE phenomenon by recognizing and confirming the LCE concept, including personalized learning. In addition, I also suggested strategies for the LCE pedagogy by identifying, acknowledging, and confirming these strategies. The strategies were suggested to include active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning.

Through the findings, I also recommended the implementation process for LCE strategies. The implementation process recommended but was not limited to setting practicable goals, determining relationships and roles for educators and learners, executing strategies, monitoring progress and providing continued supports, listening to feedback and addressing challenges, taking corrective action by adjusting or revising as necessary, and conducting reviews of the entire implementation process and lessons learned (Miller, 2020; Zhang et al.,
2021). The reasonings for the existence of the findings were provided in the section where they are discussed in detail. Specifically, the findings of this study were as follows:

- LCE is a philosophy of education that places learners and their needs at the center of the educational process. The LCE concept is constituted by the concept of personalized learning, where the pace of learning is optimized for the needs of each learner. The one-size-fits-all model does not work for all learners because it is simply not designed to be adequately adjusted for each learner’s needs. In the LCE environment, learners are empowered to make educational decisions for themselves, including decisions related to curricula. Specifically, learners have voice and choice in determining what to learn, how to learn, and how to assess their own learning. In the LCE environment, educators serve as mentors or facilitators who always put learners’ interests and needs first.

- The LCE strategies refer to educational approaches that intend to address distinct learning needs of individual learners or groups of learners. The LCE strategies are constituted by the approaches of active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning. Specifically, the LCE strategies are approaches allowing learners to actively participate in the learning process and to connect to relevant real-world matters. The LCE strategies are approaches in which learners’ performance is assessed based on evidence they have learned a concept or mastered a content, and not based on a specific set of requirements. The LCE strategies are also approaches where learners learn by asking questions about knowledge, understanding problems that are interesting to them, and integrating learning with doing to produce outcomes that matter to them.
To effectively implement the LCE strategies, educators need a process that turns the LCE strategies into actions to reach desired outcomes. This process includes defining practicable goals; establishing roles and responsibilities for educators and learners; carrying out strategies; tracking progress, extending support, considering feedback, and communicating challenges; performing corrective action, including adjusting or revising as necessary; reviewing the entire strategy implementation process; and reflecting on lessons learned.

**Detailed Discussions of the Findings**

The detailed discussion of the findings supported the summary of the findings. What was known and what was not known about the process of the LCE strategy implementation, including the LCE concept and the LCE strategies, were not yet clearly defined and understood. Therefore, it was important for this study to investigate exactly, in a particular educational context, how the LCE term was being used and what it was referring to.

I did an extensive cross-case analysis, which may help readers follow the findings and judge whether the findings are acceptable. After the data coding process was done, a list of themes was created. Themes were further separated into two different categories, major and minor themes, which were based on the characteristics of the codes supporting each theme. The themes in this study included three major themes and six minor themes. The three major themes consisted of the LCE Concept–Personalized Learning, LCE Strategies, and LCE Strategy Implementation. The six minor themes consisted of Active Learning, Authentic Learning, Competency-Based Learning, Inquiry-Based Learning, Problem-Based Learning, and Project-Based Learning. The findings from the current research study contributed to the current knowledge base regarding the LCE concept, including personalized learning, and went beyond
the literature by breaking the new ground. One of the differences between this study and the previous studies regarding LCE (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017) was that it clearly distinguished the differences between the concept of the LCE phenomenon, the strategies of the LCE pedagogy, and the implementation process of LCE strategies. Following are discussions of the themes from the perspectives of the participants through interview questions.

Theme 1: The LCE Concept—Personalized Learning

Theme 1 is a major theme. In this study, LCE concept was defined as knowledge domains of the LCE phenomenon, which can be understood through experience, reasoning, visioning, or any combination. Specifically, LCE is a philosophy of education that places learners and their needs at the center of the educational process. The theme LCE concept answered the research questions: What are perceptions of higher education learners regarding the LCE concept? What are perceptions of higher education educators regarding the LCE concept? In this study, the LCE concept was developed from the concept of personalized learning.

The findings of this research study supported the literature review’s journal articles, which included but were not limited to Bishop et al. (2020), Friend et al. (2017), Hughey (2020), Jenkins et al. (2016), and the National Forum on Education Statistics (2019). These articles discussed the conception of personalized learning that aligned with the LCE concept in this study. Per Hughey (2020), the definitions of personalized learning varied depending on framework of the author; however, common themes that described personalized learning are student-centered learning or LCE, which focuses on a holistic view of the whole learner. The National Forum on Education Statistics (2019) and Hughey (2020) used the definition of personalized learning provided by the U.S. Department of Education (2017) as “the pace of
learning and instructional approach are optimized for the needs of each learner” (p. 1), which agreed with the findings of this research study. Per Friend et al. (2017), personalized learning is tailored to each learner’s strengths, needs, and interests. Learners should have voice and choice in determining what, how, when, and where to learn. Educators should provide flexibility and support to ensure learners’ mastery of the highest standards possible (Friend et al., 2017). These concepts were indicated in the findings of this research study.

Research Question 1 (What are perceptions of higher education learners regarding the LCE concept?) directly related to the interview question regarding an understanding about personalized learning. In this study, the LCE concept was composed of the ideas surrounding personalized learning. According to the International Association for Online Learning (iNACOL), personalized learning means adjusting for each learner so they can control their own understandings (Friend et al., 2017), which aligned with what most of the learners said about personalized learning. In fact, when asked the question regarding an understanding about personalized learning, Learner C said, “Learning is more tailored to each learner’s needs and wants,” Learner J stated, “the learner’s pace does not really need to go at the same pace as other learner,” Learner N remarked, “the learner would be in control of what and how much they learn and what type of resource they could use,” and Learner T noted, “It is probably a curriculum that is tailored to a learner’s interests and needs.” Per the Nellie Mae Education Foundation (n.d.), personalized learning is a concept that acknowledges learners must be involved in the learning process in different ways so their needs and interests can be addressed, which was indicated by Learner V, “Every learner learns differently. Learners have their own preferred learning method.” Furthermore, one of the findings of this research study agreed with Great Schools Partnership (2015) personalized learning was an alternative to the “one-size-fits-all” approach.
The one-size-fits-all approach takes place when, for a given course, educators provide the same type of instruction, assignments, and assessments to everyone with little tailoring (Great Schools Partnership, 2015). Indeed, the one-size-fits-all model does not work for all learners because it is simply not designed to be adjustable and operated based on each learner’s needs.

The findings of this research study recognized and confirmed the LCE concept is constituted of the concept of personalized learning. Indeed, according to Green and Harrington (2021), in the LCE space, educators and learners work collaboratively to co-create a personalized learning model that best fits each individual learner’s needs. This is aligned to what learners said about LCE and personalized learning. In fact, when asked the question regarding an understanding about LCE, also known as student-centered learning and personalized learning, Learner C remarked LCE is where learners are at the center of the learning process, and they make pretty much almost all educational decisions. He added, “I think it is good to incorporate” the LCE pedagogy into the learning process, because learning “was like a two-way street. [ . . . ] We need input and decision making from both parties.” These two parties dominate each end of the street: educators at one end, and learners at other end. Learner J noted learners can choose what and how they learn and what learning resources are used to complete learning activities. She added learners are actively and independently participating and in charge of the learning process, including exploring and remaining curious. Educators should create a “fun learning environment” so learners can “develop self-efficacy,” and LCE puts learners at the center of the learning process. This agreed with the conceptions of personalized learning by Bishop et al. (2020), Friend et al. (2017), and Hughey (2020) in their research. Learner T said that LCE is when a “learning experience is driven by learners.” Learners make decisions on what and how they learn, and LCE focuses on individuals. She added LCE “is a way to ensure everyone is
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learning to the best of their ability.” She also commented that LCE recognizes everyone is different, so “one size cannot fit all.” Learner T continued, “Every learner will get a more thorough and worthwhile education if it is personalized and driven by learners.” Learner T was one of the participants who had a deep understanding about the LCE pedagogy, although it was not yet clearly defined (Starkey, 2019). Moreover, Learner N remarked, “When I was in college, the LCE pedagogy really did not exist. However, I think it is important to implement the LCE pedagogy.” Learner V commented:

It is difficult for me to answer because I never experienced LCE myself. I do not have any first-hand knowledge on LCE. However, I can say LCE is where [the] learner is the focus with a mentor who can facilitate the learning process. LCE fosters creative thinking.

Research Question 2 (What are perceptions of higher education educators regarding the LCE concept?) was directly related to the interview question, “What is your understanding about personalized learning?” As previously stated, the LCE concept in this study was composed of the concept of personalized learning. When asked the question regarding an understanding about personalized learning, Educator B commented it is learning that “accounts for personal skills and personal interests of each individual learner,” because “each person learns a little bit differently, although there’s probably different categories of learners that each person has.” She added that to a certain extent, “I have optimized the learning pace for the needs of each learner.” Educator D said, “We should make the most effective use of the learning pace for the needs of each individual learner.” The comments of Educators B and D agreed with the conceptions of personalized learning by Jenkins et al. (2016). Furthermore, Educator R remarked, “I have heard about it before but had not really thought about it. [. . .] I guess I am doing it partially.”
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However, Educator R remarked, “It is hard to do within our constraints” because “we have to cover a certain number of materials in the course.” When asked the question regarding an understanding about LCE and personalized learning, Educator B noted LCE is “like personalized learning” and it “could be a big overlap,” which was aligned with Hughey (2020). She added LCE is “where students have power over [the] learning process and decision-making process.” She also remarked it is critical to use the LCE approach “at the graduate level” because we want learners “to become lifelong learners.” However, Educator B also noted, “It depends on amount of time and number of learners we have. We try to meet individual learning needs to the best of our abilities within a timeframe.” Educator D stated LCE is where “learners are at center of the learning process. They are empowered to make decisions in what to learn and how to learn,” which agreed with the National Forum on Education Statistics (2019). In addition, Educator R noted, “It is a great idea, [... ] to an extent practicable, [... ] I think I am partially doing this.” However, Educator R added, “There is a balance” because “I have to accommodate a lot of learners, and I have to adhere to a tight work schedule.”

Personalized learning has had multiple meanings, which means there is no single agreed-upon definition of it (Bishop et al., 2020; National Forum on Education Statistics, 2019), and there was little empirical research to demonstrate how the applications of personalized learning played out in practice (Bishop et al., 2020). Therefore, it was difficult for the participants to ascertain unambiguously what this term was referring to without clarification in a specific context. However, all learners agreed the pace of learning should be optimized for the needs of each learner. In contrast, Educator V said, “only if we have one-on-one support” and “if it is in a very small group such as special education class.” Regardless, all participants concurred that learners may have distinct cultural backgrounds, desires, interests, strengths, and learning needs.
Moreover, all participants acknowledged learners should have voice and choice in determining what, how, why, when, and where to learn, which was also indicated by Friend et al. (2017). In addition, all participants recognized educators should make the needs of each individual learner become the predominant consideration in essential educational decisions, which was supported by Crumly et al. (2014), Green and Harrington (2021), and XQ (2020). Learner T added, “If we want to promote good learning, then that would be the best way to go.” However, Educator V noted, “It is very theoretical.” She added LCE can “work in a very small group, it definitely is used in special education, whether or not it works in higher ed, it really depends on discipline and class size.”

**Theme 2: LCE Strategies**

Theme 2 is a major theme. The LCE strategies in this study included a wide variety of instructional, academic-support, or learning approaches intended to address distinct learning needs and the interests of individual learners or groups of learners (Great Schools Partnership, 2014a). The learning approaches identified, acknowledged, and confirmed via the findings of this research study included active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning, all supported by Dahms et al. (2016), Ebert-May et al. (2015), Edutopia (2016), Hartikainen et al. (2019), Henri et al. (2017), the Nellie Mae Education Foundation (n.d.), and Weimer (2013) in their research.

Research Question 3 (What are perceptions of higher education learners regarding the LCE strategies for higher education institutions?) was directly connected to the interview question regarding an understanding about the LCE strategies. In fact, when asked the question, “What is your understanding about the LCE strategies, if at all?” Learner J remarked LCE strategies relate to inquiry-based learning, problem-based learning, and project-based learning,
which was indicated by Dahms et al. (2016) and Edutopia (2016) in their research. Moreover, Learner N answered LCE strategies are those that allow learners to have more real-world experience. However, Learner C commented, “I am not really experienced in it,” and Learner T stated, “I am not aware of them.” Because the learning approaches had no definitive descriptions and were often debatable (Lee & Hannafin, 2016; Starkey, 2019), the participants had a difficult time understanding them. However, to a certain extent, participants agreed on the method of each learning approach.

Research Question 4 (What are perceptions of higher education educators regarding the LCE strategies for higher education institutions?) was directly linked to the interview question regarding an understanding about the LCE strategies. In fact, when asked the question, “What is your understanding about the LCE strategies, if at all?” Educator B replied LCE strategies are those requiring “learners’ interaction,” and learners are “taking ownership” of what they learned. She added strategies need to be “tailored to education level and subject,” whereas Educator D responded LCE strategies combine the learning approaches, including active learning, authentic learning, and competency-based learning. Educator R commented LCE strategies refer to a variety of academic-support approaches that address individual learner needs and interests. The comments of Educator B, Educator D, and Educator R agreed with the Nellie Mae Education Foundation (n.d.) and Weimer (2013) in their research.

The literature indicated LCE strategies have been evolving and continue to take many different appearances (Sweetman, 2017). Per Hoidn (2017), there was a significant agreement LCE was rooted in a constructivist view of learning as deep conceptual understanding can be supported; however, there is a significant controversy and uncertainty about the LCE strategies. According to Sweetman (2017), educational reformers have claimed that by promoting LCE,
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educators can improve teaching and learning in higher education. However, strategies of promoting LCE have often been debatable, making it difficult for some participants to understand them. Furthermore, because a strategy typically involves an implementation process, sometimes researchers have been confused between implementation of the LCE strategy and the LCE strategy itself.

Regardless, participants acknowledged and confirmed the LCE strategies referred to educational approaches that intend to address distinct learning needs of individuals or groups of learners, and the LCE strategies are constituted of the approaches of active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning. Specifically, participants acknowledged and confirmed the LCE strategies were approaches allowing learners to actively participate in the learning process and to connect to relevant, real-world matters. Furthermore, the participants acknowledged and confirmed the LCE strategies are approaches where learners’ performance is assessed based on evidence they have learned a concept or mastered content, and it is not based on a specific set of requirements. LCE strategies are approaches where individuals learn by asking questions to inquire about knowledge, understand problems that are interesting to them, and integrate learning with doing to produce outcomes that matter to them. The LCE strategies’ major theme is discussed in detail in a following section.

Theme 3: Active Learning

Theme 3 is a minor theme. Active learning is a broad concept. In this study, as previously stated, active learning was described as a method of teaching and learning in which learners are actively or experientially constructing their knowledge, and the activity level depends on the learner’s involvement (Carr et al., 2015). Because the LCE strategies often include active
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learning (Ebert-May et al., 2015; Hartikainen et al., 2019; Weimer, 2013), the interview question regarding an understanding about active learning was directly related to the two research questions: What are perceptions of higher education learners regarding the LCE strategies for higher education institutions? What are perceptions of higher education educators regarding the LCE strategies for higher education institutions?

When asked, “What is your understanding about active learning?” most of the participants were able to describe active learning. However, Educator B said, “I am not familiar with it,” whereas Educator D commented active learning is a type of learning in which “learners actively participate.” Educator R noted, “Learners are really engaged as opposed to passive learning,” and Educator V remarked active learning is where “learners are actively involved in the learning process.” Learners were asked the same question, “What is your understanding about active learning?” Learner C stated, “I am not sure” about active learning, whereas Learner J commented, “Learners are actively participating in the learning process.” Learner N noted active learning is where “learners are actively learning by participating,” Learner T remarked, “Learners seek out opportunity to learn,” and Learner V said that active learning is “active participation. Learner has a dialogue with educator.” Regardless, all participants agreed learners should be actively involved in the learning process.

The participants acknowledged and confirmed LCE strategies are those allowing learners to actively participate in the learning process, which was aligned with the conception of active learning (Carr et al., 2015). In particular, participants acknowledged and confirmed learners must do more than just passively listen, the active participation of everyone is a necessary aspect of active learning, and active learning requires engaging environments so its implementation can be successful (Weimer, 2013). In practice, the degree of educators guiding learners in an active
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learning environment may vary per the tasks at hand. The positive effect of active learning was acknowledged when the class size was under 50 learners in science, technology, engineering, and mathematics subjects (Freeman et al., 2014).

**Theme 4: Authentic Learning**

Theme 4 is a minor theme. There is no definitive description of authentic learning. However, in this study, authentic learning referred to a wide variety of instructional strategies focused on connecting school, real-world matters, and applications (Great Schools Partnership, 2013a) so learners can explore, discuss, and meaningfully construct concepts in contexts that are relevant to them. Because authentic learning is a key element of the LCE strategies (Nellie Mae Education Foundation, n.d.), the interview question about authentic learning was directly tied to the two research questions: What are perceptions of higher education learners regarding the LCE strategies for higher education institutions? What are perceptions of higher education educators regarding the LCE strategies for higher education institutions? When asked the question, “What is your understanding about authentic learning?” Educator D stated authentic learning is where “learners learn real-world problems,” whereas Educator B said, “I am not familiar with it,” Educator R commented, “The word authentic is sort of loaded. I am not sure,” and Educator V noted, “I do not know.” The same question, “What is your understanding about authentic learning?” was asked, and Learner J remarked, “Authentic learning applies learning in a classroom to the real world,” whereas Learner C, Learner N, Learner T, and Learner V all said they did not know or they were not sure. Because authentic learning had no definitive description, most of the participants, both educators and learners, had problems describing it. However, all participants agreed school and real-world applications should be connected to allow learners to investigate, discuss, and establish concepts in contexts that are applicable to them.
Participants acknowledged and confirmed the LCE strategies are approaches allowing learners to connect to real-world matters that are relevant to them, which agreed with the conception of authentic learning (Great Schools Partnership, 2013a). In practice, authentic learning also took a constructivist approach as learning is an active process (Lee & Branch, 2018), and knowledge construction is influenced by learners’ prior knowledge and strategies shaping the environment.

**Theme 5: Competency-Based Learning**

Theme 5 is a minor theme. In this study, competency-based learning, also known as mastery-based learning, performance-based learning, or proficiency-based learning, is an approach focusing on learners’ advancements based on evidence they have mastered content and not on specific requirements in a classroom (National Forum on Education Statistics, 2019; Nellie Mae Education Foundation, n.d., U.S. Department of Education, 2020). According to Henri et al. (2017), competency-based learning can be widely defined as a pedagogy that focuses on mastery of measurable learning results. There has been a movement in U.S. education systems toward competency-based learning over the past decade (Henri et al., 2017). Per Jenkins et al. (2016), personalized learning requires a different learning design than what exists in most traditional classrooms and teacher-led paradigms, so educators should allow learners to accelerate or take additional time based on their level of mastery.

The interview question about competency-based learning was directly coupled to the two research questions: What are perceptions of higher education learners regarding the LCE strategies for higher education institutions? What are perceptions of higher education educators regarding the LCE strategies for higher education institutions? Competency-based learning is a LCE strategy that describes learners progress to more advanced levels upon mastering the
required contents (Henri et al., 2017). When asked the question, “What is your understanding about competency-based learning?” Educator D stated, “Learners are assessed based on mastery over content.” However, Educator R and Educator V were not sure about competency-based learning.

Learners were asked the same question, “What is your understanding about competency-based learning?” and Learner C remarked, “Learners are assessed based on their mastery of a subject.” Learner J commented that learners need to “master content before moving on” to a more difficult or more complex skill. She added, “It is not something that most schools do.” Whereas Learner N noted learners’ assessments should be based on performance or mastery over content, Learner T stated, “It is based on task performance,” and Learner V remarked learners “should be a subject matter expert of a topic.” These comments agreed with the U.S. Department of Education (2020), the National Forum on Education Statistics (2019), and the Nellie Mae Education Foundation (n.d.). All participants agreed learners’ progress should be based on evidence they have mastered over content. However, Educator B, Educator R, and Educator V all concurred that it depends on some constraints such as educational level and subject.

The participants acknowledged and confirmed the LCE strategies are approaches allowing learners to progress based entirely on whether they show mastery of competencies, corresponding with competency-based learning (Henri et al., 2017). In other words, the participants’ acknowledged and confirmed learners cannot be assessed for a new subject until they have acquired the prerequisite understandings. Therefore, learners should receive supports based on their own pace of learning and confirm they understand outcomes before moving on to the next level. Indeed, competency-based learning has moved away from setting time limits for a certain amount of knowledge to be learned. In the competency-based learning environment,
mastery of competencies should include the ability of learners to apply knowledge in practical situations, not only to theoretical or conceptual understandings of subject matter. In practice, the effectiveness of competency-based learning is shown in federal policies, which were released by the U.S. Department of Education in 2014. Recently, competency-based learning received recognition in education in response to industry demands. Indeed, competency-based learning supported requirements of the industry by making sure graduates were masters of required skills to be successful (Henri et al., 2017).

**Theme 6: Inquiry-Based Learning**

Theme 6 is a minor theme. Inquiry-based learning in this study referred to an instructional strategy where educators foster development and practice of thinking and problem solving by facilitating and advising learners through posing questions and inquiring about knowledge (Lazonder & Harmsen, 2016). Because inquiry-based learning is a form of active learning and authentic learning (University of Manchester, 2010), the interview question about inquiry-based learning was directly attached to the two research questions: (1) What are perceptions of higher education learners regarding the LCE strategies for higher education institutions? and (2) What are perceptions of higher education educators regarding the LCE strategies for higher education institutions? Regarding the question, “What is your understanding about inquiry-based learning?” Educator B commented inquiry-based learning is a type of learning where “learners pose questions to learn,” and Educator D noted, “Learners learn by asking questions,” which were aligned with the definition from the University of Manchester (2010). However, Educator R and Educator V were not sure about inquiry-based learning.

Learners were asked the same question, “What is your understanding about inquiry-based learning?” and Learner J responded inquiry-based learning is a type of learning where learners
can develop questions, research, and reflect on a topic they are interested in. Whereas Learner C, Learner N, Learner T, and Learner V all replied that they were not familiar with it, they did not really know, they were not aware of it, or they were not sure about it. Because the term inquiry-based learning has not yet been clearly defined, most of the participants had trouble understanding it. However, all the participants, both educators and learners, agreed inquiry-based learning was a form of learning that begins the learning process by posing questions.

The participants acknowledged and confirmed the LCE strategies are approaches allowing learners to pose questions, which was parallel with inquiry-based learning (Dostal, 2015). In practice, there were several misconceptions regarding inquiry-based learning. It is not just about solving problems in specific steps by asking questions but much more widely focuses on intellectual problem-solving skills developed throughout the learning process. Indeed, inquiry-based learning is a fundamental for the development of higher thinking skills. The perceptions of the participants also acknowledged and confirmed that in the inquiry-based environment, educators encourage learners to diversify their thinking. Educators allow asking questions openly. Indeed, individuals learn effectively by posing questions and discovering answers. In the inquiry-based environment, educators should not assume learners use the same thinking process as professionals in specific disciplines.

**Theme 7: Problem-Based Learning**

Theme 7 is a minor theme. Problem-based learning in this study referred to an instructional strategy where educators encourage learners using problems as a starting point; this directs the learning process so learners can effectively develop knowledge and skills (Dahms et al., 2016). Because problem-based learning fosters active and authentic learning (Dahms et al., 2016), the interview question about problem-based learning was directly bonded to the two
research questions: What are perceptions of higher education learners regarding the LCE strategies for higher education institutions? What are perceptions of higher education educators regarding the LCE strategies for higher education institutions? When asked, “What is your understanding about problem-based learning?” Educator B answered learners start with a problem and understand it before determining a solution for it. Educator D commented, “Learners identify and define problems that are interesting to them,” and Educator R noted, “Learners begin with a problem and define it.” However, Educator V was not sure about problem-based learning.

The same question, “What is your understanding about problem-based learning?” was asked to learners, and Learner J remarked problem-based learning is like inquiry-based learning as individuals learn by identifying and defining a problem that is of interest to them. Then, they investigate it and come up with a potential solution. She added, “It is a LCE approach.” Learner C, Learner N, Learner T, and Learner V all answered they were not familiar with it, they did not really know, they were not aware of it, or they were not sure. Because the term problem-based learning was a broad term, learners had issues conceptualizing it. However, all the participants, both educators and learners, concurred that problem-based learning is a type of learning where problems are a starting point that directs learners’ educational process.

The participants acknowledged and confirmed the LCE strategies are approaches allowing learners to define important problems by determining their own learning objectives, brainstorming and constructing hypotheses, and clarifying terminology. These approaches were comparable with the concept of problem-based learning (Dahms et al., 2016). In practice, learners may independently analyze and implement solutions before returning to small groups (less than 10 learners) to discuss and refine their acquired knowledge. Therefore, problem-based
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learning is not about problem solving but rather developing knowledge and skills that can be used for future practices. The participants also acknowledged and confirmed problem-based learning helps individuals identify what they already know, what they need to know, and how and where to access new information that may solve the problem (Dahms et al., 2016). In the problem-based learning environment, the role of educators is to facilitate the learning process by monitoring, guiding, and supporting. Educators’ goals are to develop learners’ confidence by expanding their knowledge while solving a problem (Dahms et al., 2016; Waite et al., 2020). In fact, problem-based learning can support individuals in learning and understanding complex concepts and theories such as science, technology, engineering, and mathematics (Mo & Tang, 2017). By using collective groups’ intelligence, problem-based learning can promote different perspectives, which may offer different perceptions and solutions for a problem.

Theme 8: Project-Based Learning

Theme 8 is a minor theme. Project-based learning in this study referred to an instructional strategy where educators foster integration between learning and doing as group projects so learners can acquire deeper experience and knowledge and produce outcomes that matter for themselves (Edutopia, 2016). Because project-based learning involves a dynamic learning approach where learners acquire extensive knowledge through active and authentic explorations of real-world challenges and problems (Edutopia, 2016), the interview question about project-based learning was directly connected to the two research questions: What are perceptions of higher education learners regarding the LCE strategies for higher education institutions? What are perceptions of higher education educators regarding the LCE strategies for higher education institutions? When asked the question, “What is your understanding about project-based learning?” Educator B replied project-based learning is a type of learning where “learners
integrate learning with doing,” Educator D responded, “Learners learn by doing,” and Educator R answered, “It is an approach that connects school and real-world problems.” These comments were aligned with the Buck Institute for Education (2016).

The same question for learners, “What is your understanding about project-based learning?” was asked, and Learner J commented project-based learning is a LCE strategy. She added, “It is similar to inquiry-based learning and problem-based learning.” However, Learner C, Learner N, Learner T, and Learner V all noted they were not familiar with it, they did not really know, they were not aware of it, or they were not sure. Because the term project-based learning was not yet established, most of the learners could not interpret it completely. However, all participants agreed project-based learning is a type of learning that integrates learning and doing together to produce outcomes that matter to learners.

The participants’ acknowledged and confirmed the LCE strategies are approaches allowing learners to integrate learning with doing to acquire profound knowledge, which was consistent with project-based learning (Edutopia, 2016). Indeed, learners are not only taught from textbooks but are also activated through experiences. Additionally, project-based learning strengthens interdisciplinary education. In the project-based learning space, educators serve as facilitators, evaluate carefully what individuals have learned, coach knowledge development and social skills, structure significant tasks, and work with learners to shape worthwhile questions (Buck Institute for Education, 2016). Indeed, project-based learning allows educators to facilitate and assess intense understanding rather than deliver factual information. Learners become active researchers and assessors of their own learning from the project-based learning process (Edutopia, 2016).
Theme 9: The LCE Strategy Implementation Process

Theme 9 is a major theme. The LCE strategy implementation in this study, as previously stated, referred to the process of turning LCE strategies into actions to reach desired outcomes. The current literature indicated the process of LCE strategy implementation has been evolving and continues to take different viewpoints (Hoidn, 2017; Lee & Hannafin, 2016; Starkey, 2019; Sweetman, 2017). What is known and what is not known about the implementation of LCE strategies has not yet been clearly defined and understood. Per Sabah and Du (2018), although LCE had been promised for decades in higher education, the level of effort educators were expending to implement LCE strategies remains in question. According to Starkey (2019), the LCE strategies were found to be lacking in specificity of implementation, which can affect their effectiveness. Furthermore, the lack of maturity and enthusiasm from learners, which may be due to culture, also created a challenge for LCE strategy implementation (Sabah & Du, 2018). Moreover, because a strategy typically involves an implementation process, sometimes researchers have been confused between implementation of the LCE strategy and the LCE strategy itself.

Research Question 5 (How do higher education educators effectively implement the LCE strategies for higher education institutions?) directly connected to the interview question about implementing the LCE strategies. In fact, when asked the question, “How can you effectively implement the LCE strategies, if at all?” Educator B commented the LCE strategy implementation’s process consists of defining goals, establishing roles and responsibilities, implementing strategies, and following up the implementation process, which was indicated by Miller (2020) and Zhang et al. (2021) in their research. However, because the field still lacks a complete framework for designing, developing, and implementing the strategies of the LCE
pedagogy (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017), Educator D, Educator R, and Educator V were not sure whether they fully or partially implemented the LCE strategies.

Although the literature did not provide much of the past and current state of the implementation process of LCE strategies, to a certain extent, participants recommended the implementation process for the LCE strategies: defining goals, establishing roles and responsibilities, executing strategies, and following up the strategy implementation process. Specifically, the process of LCE strategy implementation in this study focused on a specific set of activities, which included but was not limited to setting practical goals; determining relationships and roles for educators and learners; implementing strategies; monitoring progress, providing continued supports, listening to feedback, and addressing challenges; taking corrective actions; reviewing the entire implementation process; and reflecting on lessons learned (Miller, 2020; Zhang et al., 2021). Although developing a strategy is one of the first steps to organizational transformation, the implementation itself is critical to an organization’s success. Without an effective implementation process, the best strategy may not reach a desired outcome (Miller, 2020).

**Perceptions of the Participants**

Perceptions of the participants included learners’ and educators’ perceptions of the LCE concept, LCE strategies, and LCE strategy implementation.

**Perceptions of the Participants Regarding the Learner-Centered Education Concept**

The perceptions of the participants regarding the LCE concept included how learners should be at the center of the learning process. The pace of learning should be optimized for the needs of each learner. In the LCE environment, every learner is different. One size of educational
model cannot fit all. However, the optimization of the learning pace depends on some constraints, including curriculum, class size, and discipline. In addition, learners should be empowered so they can make most of educational decisions. Specifically, they should be able to choose what to learn and how to learn. The learning experience should be driven by learners, and they should be actively participating in the educational process. LCE should be a way for every learner to learn to the best of their ability.

Educators should focus on learners. Particularly, educators should make the needs of each learner become a predominant consideration in important educational decisions. Although LCE is a great concept, it is still very theoretical. LCE can work in small groups such as special education classes.

Perceptions of the Participants Regarding the Learner-Centered Education Strategies

The perceptions of the participants regarding the LCE strategies included how learners should be actively involved in the learning process. School and real-world matters should be connected to allow learners to construct concepts in relevant contexts. Furthermore, a learner’s progress should be based on evidence they have learned or mastered a concept; progress should not be based purely on specific requirements in a classroom such as grades. However, the way to determine learner’s progress may be dependent on education level and subject such as hard science versus soft science. In addition, learners should be able to learn by posing questions. Problems should be serving as a starting point directing learners’ educational process. In particular, learners should be able to identify and define problems that are interesting to them. Learning should be integrated with doing to produce outcomes that matter for learners. All participants agreed the LCE strategies are a variety of academic-support approaches that address
the unique learning needs of each learner. However, the strategies need to be tailored to education level and subject.

**Perceptions of Educators Regarding Learner-Centered Education Strategy Implementation**

The perceptions of educators regarding LCE strategy implementation included the way educators should set goals to implement LCE strategies by making commitments to serving their learners. Educators should determine roles and responsibilities for themselves and for their learners via the syllabus so learners will know exactly what they are supposed to do in the educational process. Furthermore, educators should monitor the strategy implementation process by listening, communicating, and providing feedback to learners. Educators should take corrective action by adjusting or revising the strategy implementation process as necessary. Moreover, educators should review the entire strategy implementation process and reflect on lessons learned through learner feedback. In practice, it is difficult to implement the LCE strategies because educators must work within constraints, including curriculum, time, class size, and work schedule.

**Summary**

It appeared the findings of this qualitative single case study were logically linked to the problem and purpose of the study. The major findings of this study included a potentially better understanding about the LCE phenomenon in higher education institutions, which comprised the concept, strategies, and strategy implementation. The intent of this study was to provide sufficient descriptive information about the LCE phenomenon so readers can make their own independent judgements about LCE. The findings of the concepts, strategies, and strategy implementation of the LCE phenomenon in higher education was definitely connected to the problem and the purpose of this study.
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Through the findings, the researcher of this study offered speculation about the LCE by recognizing and confirming personalized learning as a concept of the LCE phenomenon. The findings also show my suggestions about the strategies of LCE pedagogy through the process of identifying, acknowledging, and confirming the strategies. The suggested strategies were learning approaches including but not limited to active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning. Furthermore, through the findings, I also recommended the implementation process for the LCE strategies. This recommended implementation process includes but is not limited to setting practical goals; determining relationships and roles for educators and learners; executing strategies; monitoring progress, providing continued support, listening to feedback, and addressing challenges; taking corrective action by adjusting or revising as necessary; conducting reviews of the entire implementation process; and reflecting lessons learned (Miller, 2020; Zhang et al., 2021).

In this study, the LCE phenomenon was a philosophy of education that was built on personalized learning and placed learners and their needs at the center of the educational process. Although the definitions and approaches of personalized learning may have some overlaps, through the data analysis process, it appears the concept of personalized learning can make up the key concept of the LCE phenomenon. These learning approaches can compose the LCE strategies. The recommended process of LCE strategy implementation is a process focusing on a specific set of activities designed to put LCE strategies into action. Without an effective implementation process, the best strategy may not reach a desired outcome.

Based on experience and insight, I strongly believe it was very difficult to effectively discuss the implementation of a strategy without an understanding of the strategy itself. Also, it
was very challenging to discuss the strategy of something without an understanding of its concept. Therefore, in this study, the LCE concept was discussed and established first, then followed by the LCE strategies. Once the LCE strategies were driven by the LCE concept, then the process of LCE strategy implementation could be explored and developed. However, the complexity and poorly defined LCE concept caused some constraints with the understanding of LCE strategies and LCE strategy implementation. I really hope this study imparted an informed discussion so it can make a worthwhile contribution to the academic discipline.
CHAPTER 5: CONCLUSION

The purpose of this qualitative single case study was to investigate the perceptions of higher education learners and educators regarding learner-centered education (LCE) strategy implementation because there was a lack of effective LCE strategy implementation in higher education institutions (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). To effectively discuss the LCE strategy implementation, the LCE concept and strategies needed to be discussed as well. Brief background information about the LCE phenomenon is again provided below to offer a complete picture of this study.

The U.S. public education system, referred to as traditional or conventional education, has provided knowledge and skills to millions of learners and, to a certain extent, has fulfilled the demand for a competent workforce. However, although traditional education works for some learners, it does not work for all learners (Green & Harrington, 2021) because it is simply not designed to be adjustable and operated on each learner’s needs. The traditional education system is based on a standardized, one-size-fits-all model (Education Reimagined, 2015; Sullivan & Downey, 2015), in which learners with different backgrounds are expected to fit into the same model designed to just pass on knowledge, and many academic decisions are made that are not necessarily best for learners (Green & Harrington, 2021). Educators have sometimes attempted to individualize differences between learners; however, chances for accommodating learning content and teaching methodologies have been limited. Grading was mainly developed to evaluate learning outcomes, not to improve learning outcomes (Education Reimagined, 2015). As a result, the traditional school system is not providing the best learning environment for every learner’s success (Nellie Mae Education Foundation, n.d.).
Although the one-size-fits-all school model persists, the world is evolving, including societies and workforces. With the unprecedented and rapid development of technology, traditional education’s rote learning methodology is no longer applicable (Education Reimagined, 2015). The opposite of traditional education is progressive education. Progressive education is focused less on how educators prepare learners for jobs and more on what learners are excited about, including topics that have practical relevance (Hopkins, 2017). Student-centered learning, also known as learner-centered education (LCE), is a more progressive education, whereas teacher-centered learning is a more traditional education (Lathan, n.d.).

In some instances, the LCE term may have a very specific meaning, but in others, it may be unclear, which is difficult for others to understand (Great Schools Partnership, 2014b). Because of this reason, it is important to explore exactly, in a specific educational context, how the LCE term is being used. In this study, the LCE phenomenon was a philosophy of education placing learners and their needs at the center of the educational process where individuals actively engage in their own learning. More specifically, LCE is a pedagogy where learners can make decisions about what material they learn and how they learn it (XQ, 2020). Because the term LCE has extensive connections, it is inappropriate to ascertain exactly what LCE means without clarification. In this study, the term LCE concept referred to knowledge domains of the LCE phenomenon, which can be understood through experience, reasoning, visioning, or any combination of them. The term LCE strategies referred to a wide variety of instructional or academic-support approaches intended to address distinct learning needs of individuals or groups of learners. The phrase LCE strategy implementation referred to the process of turning the LCE strategies into actions to reach desired outcomes. This chapter includes the interpretation of
findings, discipline-specific implications, recommendations for action, recommendations for further study, and concluding remarks.

**Interpretations and Importance of Findings**

Interpreting the importance of findings of this study involved making sense of the research data to establish some larger meaning about the LCE phenomenon. The interpretation process of the findings included a review of significant findings and how the research questions were answered based on the data and personal reflections about the findings’ meaning (Creswell & Guetterman, 2019). Because I was the principal investigator of this study, I was in a proper position to reflect and comment on the larger meaning of the findings.

The major findings of this study included the potential for a better understanding about the LCE phenomenon, consisting of the LCE concept, strategies, and strategy implementation. Particularly, through the findings, I offer speculation by recognizing and confirming personalized learning as a concept of the LCE phenomenon. In addition, via the findings, I also suggest strategies for the LCE pedagogy by identifying, acknowledging, and confirming these strategies. The suggested strategies include but are not limited to active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning. Moreover, because of the findings, I also recommend an implementation process for the LCE strategies. The recommended implementation process includes but is not limited to setting practicable goals; determining relationships and roles for educators and learners; executing strategies; monitoring progress, providing continued support, listening to feedback and addressing challenges; taking corrective action by adjusting or revising as necessary; conducting reviews of the entire implementation process; and reflecting on lessons learned (Miller, 2020; Zhang et al., 2021).
The research questions of this study formed its foundation, and the findings of this study answered these questions. Because the research questions were interconnected, and the findings were the answers to the research questions, the findings and interpretation statements are also interconnected. As a result, the conclusions were logically and meaningfully related to each other.

**Interpretations and Importance of Findings of the Learner-Centered Education Concept**

The interpretations of the findings of the LCE concept included the following: (a) LCE puts learners at center of the learning and teaching process: The LCE concept refers to one in which the pace of learning is optimized for the needs of each learner because the educational one-size-fits-all model does not work for all learners; (b) in the LCE environment, each learner is recognized to have a distinct cultural background, interest, need, and strength; (c) in the LCE environment, learners have voice and choice in determining what, how, why, when, and where to learn; and (d) in the LCE environment, educators serve as mentors who make the needs of individuals or groups of learners the predominant consideration in essential educational decisions.

**Interpretations and Importance of Findings of the Learner-Centered Education Strategies**

The LCE strategies included but were not limited to active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning. Specifically, these learning approaches allow learners to be involved in the learning process; learners’ assessment is based on learners’ performance or proficiency and not on a specific set of requirements; and learners learn by asking questions to inquire about knowledge, understanding problems that are interesting to them, and integrating learning with doing to produce outcomes that matter for them.
Interpretations and Importance of Findings of the Learner-Centered Education Strategy Implementation

The LCE strategy implementation included but was not limited to defining practicable goals; establishing roles and responsibilities for educators and learners; carrying out strategies; tracking progress, extending support, considering feedback, and communicating challenges; performing corrective action, including adjusting or revising as necessary; and reviewing the entire strategy implementation process to reflect on lessons learned.

In practice, it is difficult to implement LCE strategies within constraints such as standardized curricula, a large group of learners, critical subjects, and low levels of support from administrators, educators, and policies. As stated in Chapter 1, the scope of this study was within the ability of higher education learners and educators. To implement the LCE strategies effectively, policymakers, administrators, educators, and others must be involved to assist learners.

The interpretations and importance of the findings of this study were directly related to the conceptual framework. The concept that served as a framework of this study was personalized learning. As stated previously, personalized learning is a broad term. The concept of personalized learning used in this study was defined as instruction in which the pace of learning is optimized for the needs of each learner (U.S. Department of Education, 2017). Per the U.S. Department of Education, learning objectives and instructional content all may vary based on learners’ needs. In addition to this definition, personalized learning had varied definitions from different organizations. However, regardless of its variety of definitions, through the findings, I offer consideration for LCE by recognizing and confirming the concept of
personalized learning as a core concept of the LCE phenomenon. In addition to the personalized learning conceptual framework, this study also leveraged Dewey’s (1897) theoretical framework.

The interpretations and importance of the findings of this study were also directly related to the theoretical framework. The educational theory that served as a theoretical framework for this study was from the U.S. theorist John Dewey (1897). This educational theory served as a lens through which the findings of the LCE concept could be clarified, and my role as researcher in this study could be justified. Educators who have supported LCE pedagogy believe Dewey’s work encouraged many of their beliefs about how learners learn (Williams, 2017). The interpretation and importance of the findings of this study were related to the theoretical framework as follows:

- Learners should design their own learning through personalized learning, because if learners are in a passive role, just receiving information, the result could be a waste of learners’ time. Active learning far outperformed passive learning because it influenced learners’ abilities to think and act effectively (Dewey, 1897).

- Every learner is possibly distinctive. Educators’ responsibilities should be concentrated on learners’ interests and extend these for learning experiences. To learn formal subjects, learning should be enjoyable, and subjects should be applicable to individuals’ lives (Dewey, 1897).

- Learners should be evolved in an environment where they are provided opportunities to decide on their own education and to experience and interact with curricula. Indeed, learners’ own activities should influence curricula. To prepare learners for their future lives, educators should allow them to command themselves, which means educating learners so they have complete use of their capacities (Dewey, 1897).
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Implications

The findings of this study have implications on the LCE concept, strategies, and strategy implementation. Although recently educators and researchers have increasingly demanded LCE as a promising pedagogy to promote high quality education (Hoidn, 2017; Keiler, 2018; Luguetti et al., 2018; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017), the existing literature has shown there is still a need for transparency in understanding the LCE phenomenon, particularly in how LCE strategies can be implemented effectively (Hoidn, 2017; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). The findings, interpretations, and conclusions of this study have shown LCE is a philosophy of education that places learners and their needs at the center of the education process, and the LCE concept is constituted of the concept of personalized learning. Therefore, the findings of this study may add to the large body of literature about the LCE phenomenon.

The findings of this study also have implications on future practices. Several professionals may likely benefit from the findings of this study, including administrators, educators, policymakers, and researchers. Understanding how LCE strategies can be effectively implemented, particularly in higher education institutions, should reinforce the current pedagogy. In addition, the understanding of LCE strategies also increases the potential for learners to participate in their own learning actively and authentically. The findings, interpretations, and conclusions of this study have shown that in the LCE environment, every learner is acknowledged to be different in their own way, and learners are able to make educational decisions for themselves, including decisions about curricula. Additionally, in the LCE space, educators serve as mentors or facilitators who always put learners’ interests and needs first. In this sense, effective teaching and learning practices that foster deep conceptual understanding are
disclosed to learners. Moreover, this study has the potential to benefit society at large because it investigated an important educational contemporary phenomenon, the LCE pedagogy.

**Recommendations for Actions**

The recommendations for actions of this study were firmly based on the findings and their interpretations. Although the findings of this study offered a range of effectiveness, the recommendations are limited only to those that had an essential influence and, to the best of my knowledge, are actionable. Given there were multiple factors affecting the LCE concept, the LCE strategies, and the LCE strategy implementation’s process, recommendations for actions for educational administrators and educators are as follows:

- Administrators and educators should serve learners as mentors or facilitators and should focus on learners, including their interests and needs, by empowering learners to interact and take charge of their educational process, including the curriculum.

- Administrators and educators should acknowledge every learner is distinctive by taking learners’ differences into consideration while making essential educational decisions. The differences between learners include but are not limited to cultural backgrounds, interests, needs, and strengths.

- Administrators and educators should design and use instructions where the pace of learning is optimized for the needs of each learner. The instructions should be designed in such a way that allow for adequate adjustability and operability on each learner’s needs.

- Educators should assess learners’ performance based on mastery or proficiency, by establishing evidence learners have mastered a concept or content, and not based on a specific set of educational requirements such as grades.
Educators should implement LCE strategies thoroughly by clearly defining practical goals, roles, and responsibilities for themselves and their learners; tracking the implementation progress, extending support, providing feedback to learners, and addressing challenges if any; performing corrective action, including adjusting or revising as necessary; reviewing the entire strategy implementation process; and reflecting on lessons learned.

**Recommendations for Further Studies**

The recommendations for further studies were strongly based on the findings and their interpretations. This study can be advanced into future research in the field of education and should be conducted to develop a larger source of information so the future research can extend a more comprehensive understanding of the LCE concept, LCE strategies, and LCE strategy implementation. In view of this, recommendations for further studies are as follows:

- A larger population of people, including people in higher education institutions in other states besides California and those in K–12 schools, should be considered for future studies because the scope of this study only included people in higher education institutions in California.
- A wider range of participants, including local, state, and federal policymakers and educational administrators, should be considered for future studies because the scope of this study only included higher education educators and learners.
- A larger sample of educator and learner participants should be invited to future studies to evaluate the extent to which the same, similar, or different findings may be discovered.
- A further similar study using the same criteria (defining the LCE concept, LCE strategies, and LCE strategy implementation) should be considered among educators and learners to
investigate social and emotional supports for learners and implications for success or failure in the process of implementing LCE strategies.

- A mixed method research design should be considered for future studies if time and resources allow to develop a broader understanding of the complexity of the LCE phenomenon. There is more insight into the research problem with the integration of quantitative and qualitative research data than by one methodology alone.

**Conclusion**

The problem to be addressed in this qualitative single case study was the lack of an effective strategy implementation of learner-centered education in higher education institutions (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). The purpose of the study was to investigate perceptions of higher education learners and educators regarding LCE strategy implementation. The research questions that guided this study were reduced to a few comprehensive central questions:

1. What are perceptions of higher education learners regarding the learner-centered education concept?
2. What are perceptions of higher education educators regarding the learner-centered education concept?
3. What are perceptions of higher education learners regarding the learner-centered education strategies for higher education institutions?
4. What are perceptions of higher education educators regarding the learner-centered education strategies for higher education institutions?
5. How do higher education educators effectively implement the learner-centered education strategies for higher education institutions?
The literature review of this study focused on related literature pertaining to the evolution of the LCE concept, LCE strategies, and the background of LCE strategy implementation in higher education institutions. The concept that served as a framework for this study was rooted in the concept of personalized learning. This study employed educational theory from Dewey (1897) as the theoretical framework that served as a lens through which ideas about LCE as a pedagogy could be clarified. Per Dewey (1897), educators should focus on learners. Learners should be developed in an environment where they are allowed to interact and take charge of their educational process. Pedagogy should be focused on learners’ interests and needs.

Through reviewing the relevant literature, it appeared the term LCE had broad implications. In this study, the term LCE concept referred to knowledge domains related to the LCE phenomenon, which was understood through experience, reasoning, visioning, or any combination. Specifically, the concept of the LCE phenomenon in this study focused on the fundamentals of personalized learning (Nellie Mae Education Foundation, n.d.). The LCE strategies in this study referred to a wide variety of instructional or academic-support approaches that are intended to address distinct learning needs and interests of individuals or groups of learners (Great Schools Partnership, 2014a). Particularly, the LCE strategies in this study focused on active learning, authentic learning, competency-based learning, inquiry-based learning, problem-based learning, and project-based learning.

The present literature did not provide much of the past and current state of the implementation process of LCE strategies. It appeared that what was known and what was not known about the implementation process of LCE strategies were not yet clearly defined and understood (Hoidn, 2017; Lee & Hannafin, 2016; Sabah & Du, 2018; Starkey, 2019; Sweetman, 2017). Also, through reviewing the literature, there was some confusion between the LCE
strategies and LCE strategy implementation. In this study, LCE strategy implementation was a process focusing on a specific set of activities designed to put LCE strategies into action to reach their desired outcomes.

The major findings of this study included the possibility of a better understanding regarding the LCE phenomenon, which comprised the LCE concept, LCE strategies, and LCE strategy implementation. Particularly, through the findings, I offered speculation about the LCE concept, constituted of the concept of personalized learning. Furthermore, via the findings, I also recommended strategies for the LCE pedagogy. Through the findings, I also suggested the implementation process for LCE strategies, which included but was not limited to setting practicable goals; determining relationships and roles; executing strategies; monitoring progresses, continuing supports, listening to feedback, and addressing challenges; taking corrective action; and reviewing the entire implementation process and reflecting on lessons learned (Miller, 2020; Zhang et al., 2021).

Recommendations were made about actions and future studies. The recommendations for actions included: (a) Administrators and educators should serve learners as mentors and should focus on learners as a whole, (b) administrators and educators should acknowledge every learner is distinctive; (c) administrators and educators should design and use instructions in which the pace of learning is optimized for the needs of each learner; (d) educators should assess learners’ performance based on evidence they have learned a concept or mastered content and not based on a specific set of educational requirements such as grades; and (e) educators should implement the LCE strategies thoroughly by clearly defining practicable goals and roles and responsibilities, tracking the implementation progress, extending support, providing feedback to learners,
addressing challenges (if any), performing corrective action, reviewing the entire strategy implementation process, and reflecting on lessons learned.

This study can be advanced into future studies in the field of education.

Recommendations for further studies included but were not limited to:

- A larger population of people, including higher education institutions in other states beside California and people in K-12 schools, should be considered for future studies.
- A wider range of participants, including policymakers and educational administrators, should be considered for future studies.
- A larger sample of educator and learner participants should be carried out for future studies.
- A further similar study using the same criteria, but with a different investigation, should be considered among educators and learners.
- A mixed method research design should be considered for future studies if time and resources allow.

The educational experience should comprehensively include emotional, intellectual, physical, spiritual, and social development for learners, not just academic development (William, 2017). Some synonyms related to the LCE concept were found across the literature, including personalized learning, which contributed to this study’s complexity. The complexity of the LCE concept conclusively caused some confusion about LCE strategies and LCE strategy implementation. I hope this study has provided an informed discussion so that it can make a worthwhile contribution to the academic discipline.
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APPENDICES

APPENDIX A—INTERVIEW QUESTIONS

The interview questions in this study consisted of two sets of questions, one set for learners and the other set for educators.

**Interview Questions for Learners**

For learners, the interview questions included four general questions and five primary questions.

**General Questions**

1. How do you learn best (e.g., learn best with visualization and hands-on rather than memorization)?
2. What are the roles of a learner?
3. How do you experience your interactions with educators (e.g., power relations, including participation in class’s decision-making process)?
4. How do you motivate yourself?

**Primary Questions**

1. What is your understanding about personalized learning?
2. What is your understanding about competency-based learning, also known as performance-based learning, mastery-based learning, or proficiency-based learning?
3. What is your understanding about active learning?
4. What is your understanding about authentic learning?
5. What is your understanding about the learner-centered education (LCE) strategies, if at all? To what extent are you experienced challenges in your role as it relates to the LCE strategy implementation, if any? And if so, how did you respond to these challenges? Do
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you realize any success as higher education institutions made the shift from the teacher-centered learning to the LCE pedagogy, if any?

Interview Questions for Educators

For educators, the interview questions included four professional background questions, three general questions, and six primary questions.

Professional Background Questions

1. How long have you been teaching in higher education? And what are the subjects?
2. What are your current job responsibilities?
3. What are your beliefs about learners, learning, and teaching, if any? What teaching methods do you employ (such as learners’ feedback, workshop from experts, supervisors and peers, personal research)?
4. How are you motivated to become an educator? What philosophical principles, if any, influence your teaching style?

General Questions

1. How do you experience the social relationship with your learners, in terms of power relationship in constructive ways, including participation in the classroom’s decision-making process? And how do you describe your best and worst class?
2. How would you describe your role as an educator? And what objectives do you seek?
3. What do you suggest that should be different, if any, in the future regarding your class? And regarding the context of your teaching, is there anything else you can think of that would facilitate your teaching?

Primary Questions

1. What is your understanding about personalized learning?
2. What is your understanding about competency-based learning, also known as performance-based learning, mastery-based learning, or proficiency-based learning?

3. What is your understanding about student-centered learning, also known as learner-centered education (LCE)? And what are the important characteristics of LCE in your opinion, if at all?

4. What is your understanding about active learning?

5. What is your understanding about authentic learning?

6. What is your understanding about the LCE strategies, if at all? And how can you effectively implement the LCE strategies, if at all?
Re: Perceptions of Higher Education Learners and Educators Regarding the Learner-Centered Strategy Implementation: A Qualitative Single Case Study

Dear Educator/Learner X:

I am writing to let you know about an opportunity to participate in a research study about the learner-centered education (LCE) strategy implementation. This study is being conducted by Ngo T. Tran at the University of New England (UNE), College of Graduate and Professional Studies, Doctor of Education Program. This research plays an important role in advancing our understanding about the LCE concepts, the LCE strategies, and the LCE strategy implementation; so that the current pedagogy can be strengthened, the learners can actively and authentically participate in their own learning, and future policies about education at the state and federal level can be informed.

LCE is a broad term. However, at its core concepts, LCE is referred to as a philosophy of education which places learners and their needs at the center of the education process. In this sense, educators are facilitators or mentors. Learners can make decisions on what they learn, why they learn, how they learn, and how they assess their own learning. The purpose of this qualitative single case study is to investigate the perceptions of higher education learners and educators regarding the LCE strategy implementation. In this study, strategy implementation refers to the process of turning the LCE strategies into actions to reach their desired outcomes.

The participant requirements include:

- Learners must be current or former students in colleges or universities of California of the United States and must be English language speaking.
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- Educators must be current or former instructors or professors in colleges or universities of California of the U.S. and must be English language speaking.
- Both learners and educators must volunteer to participate in this study.

Participation will consist of an interview of approximately 30-60 minutes. All participants will be given an opportunity to review findings before publication. Interviews will be conducted via an online meeting application such as Zoom, Microsoft Team Meeting, Google Meet, or Skype. The names of all participants will remain confidential without any identification. Additionally, there is no cost whatsoever to participants.

If you are interested in participating in this study or would like additional information about this study, please contact Ngo Tran at xxxxxx@une.edu. I will send you the Information Sheet, which describes this study in more details for you to review. Thank you for considering this research opportunity.

Sincerely,

Ngo Tran
APPENDIX C—RECRUITMENT FLYER

Seeking Volunteers for a Research Study on Learner-Centered Strategy Implementation
Do you realize the traditional education approach works for some learners; however, it does not work for all learners, since educators control the entire teaching and learning process? Do you realize in an environment called learner-centered education (LCE), learner can make decisions on what they learn, why they learn, how they learn, and how they assess their own learning? The LCE strategies are constituted by numerous instructional or academic-support approaches that need to be properly implemented to be effective.

The Problem Statement:
The problem to be addressed in this study is the lack of an effective strategy implementation of the LCE approach in higher education institutions.

The Purpose Statement:
The purpose of this qualitative single case study is to investigate the perceptions of higher education learners and educators regarding the LCE strategy implementation.

Participation Information:
- Learners must be current or former students within colleges or universities of California of the United States (U.S.), and must be English language speaking.
- Educators must be current or former instructors or professors within colleges or universities of California of the U.S., and must be English language speaking.
- Both learners and educators must volunteer to participate in this study.
- Volunteers will partake in a recorded video interview via Zoom, Microsoft Team Meeting, Google Meet, or Skype.
- The approximate time commitment for an interview is between 30-60 minutes.

For More Information:
Ngo Tran is the Principal Investigator and he is an Ed.D. doctoral candidate at University of New England (UNE). He can be contacted at 951-216-4637 or ntran3@une.edu for more info.
APPENDIX D—INFORMATION SHEET

Project Title: Perceptions of Higher Education Learners and Educators Regarding the Learner-Centered Strategy Implementation: A Qualitative Single Case Study

Principal Investigator(s): Ngo T. Tran, Graduate Student, University of New England, xxxxxx@une.edu, xxx-xxx-xxxx

Introduction: Please read this form. You may also request that the form is read to you. The purpose of this form is to give you information about this research study.

You are encouraged to ask any questions that you may have about this study, now, during, or after the project is completed. You can take as much time as you need to decide whether or not you want to participate. Your participation is voluntary.

Why is this research study being done? This research is being done because the researcher of this study wants to investigate the lack of an effective strategy implementation of the learner-centered education (LCE) approach in higher education institutions. The investigation will be based on perceptions of higher education learners and educators regarding the LCE strategy implementation.

Who will be in this study? Participants in this study will be higher education learners and educators. The inclusion criteria for learners and educators consist of the following:

• Learners must be current or former students in colleges or universities of California of the United States and must be English language speaking.
• Educators must be current or former instructors or professors in colleges or universities of California of the U.S. and must be English language speaking.
• Both learners and educators must volunteer to participate in this study.

What will I be asked to do? Participants will be asked to:

• Voluntarily participate in this study.
• Read this form or request this form is read to you.
• Participate in a 30 to 60 minutes, one-to-one, online semi-structured interview via an online meeting application such as Zoom, Microsoft Teams Meeting, Google Meet, or Skype.
• Give permission to record the interview.
• Review and provide feedback as needed to the transcript after the interview to ensure its accuracy.

What are the possible risks of taking part in this study? There are no physical, psychological, social, or economic risks as a result of taking part in this study; because the purpose of this study is to investigate the perceptions of higher education
learners and educators regarding the LCE strategy implementation, and the method of data collection of this study is via online interviews. However, there is still a slight risk of a break of confidentiality. But this risk will be minimized by safeguarding the data via password protection.

**What are the possible benefits of taking part in this study?**
Although there are no benefits that can be measured in financial terms as a result of taking part in this study, there may be some benefits to the society. Understanding how the LCE strategies can be effectively implemented, particularly in higher education institutions, certainly strengthen the current pedagogy. It also increases the potential for learners to actively and authentically participate in their own learning. Moreover, by taking part in this study, participants will contribute to the potential of benefit the society at large. Indeed, this study investigates an important contemporary phenomenon, the LCE strategy implementation, which includes the LCE concepts and the LCE strategies.

**What will it cost me?**
There is no cost to participants. There is only commitment of the participant’s time to complete an online interview.

**How will my privacy be protected, and my data be kept confidential?**
The participant’s privacy and confidentiality will be protected by the following:
- For video interviews, participants will be informed that they have an option to not turn on their camera if they choose. This option is provided as a measure to protect the participant’s privacy.
- Interview will be conducted in a private setting to ensure that others will not be able to listen to the conversation.
- The master list, which store identifiable information collected on each participant during recruitment such as name, e-mail address, institution, learner or educator will be stored separately from other study data. This master list will be destroyed after transcription has been completed and verified by the participant.
- Pseudonym will be assigned to all participants.
- All personally identifiable information of participants will be removed from the transcript.
- The interview’s data and information will be stored in a secured personal laptop, which uses password protection, and only the researcher of this study will have access to it.
- Using encryption for electronic documents such as transcripts.
- Destroying audio and video recordings after the transcription is completed and verified to be accurate.

**What are my rights as a research participant?**
Research participants in this study have rights as follows:
- To skip or refuse to answer any question for any reason.
- To withdraw from this research study at any time for any reason. If the participant decides to withdraw from the study, the data collected will be deleted and will not be used in the study.
Whom may I contact with questions?
The information that participants may contact with questions as follows:
- The researcher conducting this study: Ngo T. Tran, at xxxxx@une.edu.
APPENDIX E—COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI) CERTIFICATION

This is to certify that:

Ngo Tran

Has completed the following CITI Program course:

Human Research
(Curriculum Group)
Social & Behavioral Research Investigators
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

University of New England

Verify at www.citiprogram.org/verify/?wd8f5773e-71ba-4e7a-bbe2-b659de5da47c-42674104
APPENDIX F—INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL LETTER

Institutional Review Board
Mary DeSilva, Chair

Biddeford Campus
11 Hills Beach Road
Biddeford, ME 04005
(207) 602-2244 T
(207) 602-5805 F
Portland Campus
716 Stevens Avenue
Portland, ME 04103

DATE OF LETTER: December 14, 2021

PRINCIPAL INVESTIGATOR: Ngo Tran
FACULTY ADVISOR: Jennifer Scott, EdD

PROJECT NUMBER: 1121-05
PROJECT TITLE: Perceptions of Higher Education Learners and Educators Regarding the Learner-Centered Education Strategy Implementation: A Qualitative Single Case Study

SUBMISSION TYPE: Exempt Project
SUBMISSION DATE: 11/15/2021

ACTION: Determination of Exempt Status
DECISION DATE: 12/14/2021

REVIEW CATEGORY: Exemption Category # 2(ii)

The UNE Institutional Review Board (IRB) for the Protection of Human Subjects has reviewed the materials submitted in connection with the above referenced project and has determined that the proposed work is exempt from IRB review and oversight as defined by 45 CFR 46.104.

Additional IRB review is not required for this project as submitted. However, if any changes to the design of the study are contemplated (e.g., revision to the protocol, data collection instruments, interview/survey questions, recruitment materials, participant information sheet, and/or other IRB-reviewed documents), the Principal Investigator must submit an amendment to the IRB to ensure the requested change(s) will not alter the exempt status of the project.

Please feel free to contact me at (207) 602-2244 or irb@une.edu with any questions.

Best Regards,

Bob Kennedy, MS
Director, Research Integrity