ACTIVE LEARNING AT SHSU

THE 2019 QUALITY ENHANCEMENT PLAN

ON-SITE REVIEW: APRIL 8 – 11, 2019

Sam Houston State University
MEMBER THE TEXAS STATE UNIVERSITY SYSTEM

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I. EXECUTIVE SUMMARY

Across all disciplines and all levels within higher education, studies consistently indicate an increased and effective use of active learning methods in the classroom improves both student learning and student success. Yet, in spite of the overwhelming evidence of its benefit to students, faculty members nationwide are reluctant to incorporate these teaching methods into their daily pedagogy. The barriers faculty members identify preventing proper implementation are consistent: a lack of support, guidance, and the time to make the changes that have been shown to directly benefit their students.

In order to eliminate these barriers, the 2019-2024 QEP at Sam Houston State University will provide the resources, support, and motivation for full-time faculty members to integrate the evidence-based best practice of active learning in their classrooms. These will be provided through several varied faculty development opportunities. Some are new to our campus culture, while others have shown promise in smaller settings and are now ready to be scaled up and available to all faculty.

A carefully designed sequence of interventions will be available to all full-time faculty members, allowing them adequate time to develop from novice to expert in the application of active learning techniques. More flexible opportunities will be designed for faculty at all levels of active learning experience to include learning more about its use and sharing their successes. In addition, through physical classroom redesign and the availability of usable digital resources, faculty members at SHSU will lead the student-centered transformation of the campus.

Each year, up to 200 faculty members will have the opportunity to learn more about the benefits and use of active learning, which could impact every one of our almost 22,000 students. With a focus of this QEP on those critical first two years of coursework—degree attainment being linked inextricably to academic success—SHSU is well poised to prepare our graduates to enter tomorrow's workforce with a quality education.

Over five years, significant resources totaling $3.5 million will be available to accomplish the primary goals of the QEP:

1. Increase the use of active learning techniques in all levels and types of courses, **resulting in:**
   a. Increase of the total number of faculty members using active learning.
   b. Devotion of more class time to active learning techniques.
   c. Greater measures of student engagement, particularly within those classrooms in which more active learning is used.
2. Raise the demonstrated levels of undergraduate student success, **in order to:**
   a. Increase the number of students successfully completing all first-year courses.
   b. Improve success rates in first-year core courses.
3. Increase the demonstrated levels of undergraduate student learning, **so that:**
   a. Students, who encountered active learning in a prequel course, will perform better in the sequel course than those who did not.
   b. Students, who encountered active learning, will perform better on concept inventories than those who did not.

The twin pillars of this QEP—a shift in the university's culture as well as the collection and dissemination of evidence of student learning and success—are designed to be mutually reinforcing. The more faculty who choose to employ active learning in the classroom, the more evidence there will be of a positive impact on student learning and success; and the more evidence there is of improved learning and student success, the more reason faculty will have to incorporate active learning techniques in their classrooms. This QEP is designed to have a self-generating, lasting, positive impact on our students and the university.

II. SELECTING AND DEVELOPING THE QEP

The process of selecting the QEP at Sam Houston State University began in the spring of 2017. The Associate Vice President for Academic Affairs and SACSCOC Liaison provided key leadership groups with information pertaining to the institution's 2019 SACSCOC Reaffirmation. In February 2017, the SACSCOC Liaison attended meetings of the Council of Academic Deans, University Faculty Senate, and Academic Affairs Council, along with one-on-one meetings with the University President and other key administrators to discuss the institution's reaffirmation responsibilities. Specific attention was given to the requirements of the QEP to initiate informal, campus-wide consideration and discussion of the process.

In March 2017, institutional data relating to a broad range of student outcome measures including but not limited to critical thinking, quantitative reasoning, communication, student engagement, enrollment, retention, and graduation rates were published online and disseminated to the campus community for review as a precursor to more formalized QEP topic selection conversations. Shortly following the dissemination of key institutional data, a President and Provost Roundtable, an open forum designed to facilitate discussions on pre-selected topics pertinent to higher education, was held with the QEP as the topic. Participants were provided with an overview of the requirements for a successful QEP followed by a open discussion on specific student needs at SHSU and potential initiatives to address those needs. Participants were urged to discuss these needs with their colleagues and participate in the QEP selection process that would follow. Over the next two weeks, three town hall meetings were held to allow faculty, staff, and students to discuss SHSU's student outcomes data and potential ideas for QEP topics.

Following the town hall meetings, faculty and staff were invited to submit white papers describing their QEP topic ideas. White paper submissions were required to include a description of current research and best practices in the field, institutional data supporting the need for the initiative, resources required for implementation, institutional participants, and possible outcomes and challenges. Through April and May of 2017, six white papers were submitted for consideration by the SHSU community:

- Promoting Active Learning at SHSU
- Communication Course Redesign
- Generation Informed
- Get HIP (High Impact Practices)
- Learning and Engaging for Global Leadership
- Major Decisions: Empowering College Students to Make Timely and More Informed Decisions in Choosing their Major

In order to solicit campus-wide input regarding these submissions, in the Fall of 2017 faculty, staff, and members of the Student Government Association were invited to participate in a confidential, online survey. The survey prompted participants to review each of the six white papers and, for each, respond on a Likert scale to the following:

Faculty and Staff Prompts:

- The initiative is aimed at a legitimate student learning outcome.
- The initiative is supported by sufficient data to demonstrate student need in the area.
- The initiative represents a reasonable effort to address the student need.
- The initiative is one that the campus community will support.

Student Prompts:

- The initiative addresses a student learning need.
- The initiative represents a reasonable effort to address the student need.
- The initiative is one that the student body will embrace.

All respondents were also provided the opportunity to share any comments, questions, or suggestions they had relating to each of the white paper initiatives.

Through the Fall 2017 semester, the SACSCOC Leadership Committee, consisting of the members listed below, reviewed the white paper submissions, discussing the merits and feasibility of each. The Committee then reviewed and discussed the results of the campus-wide survey.

Results of the campus survey revealed greatest faculty and staff support for the "Promoting Active Learning at SHSU" topic with student feedback indicating similar levels of support across three

white paper topics: "Promoting Active Learning at SHSU", "Communication Course Redesign", and "Major Decisions." Based upon the campus feedback and committee evaluation, SACSCOC Leadership Committees selected "Promoting Active Learning at SHSU" as the sole finalist for the next QEP. The original author of the white paper (Dr. Brian Loft, Faculty Administrative Fellow and Director of the SHSU STEM Center) was then requested to provide additional details relating to the initiative's implementation strategies and resources. In early Spring of 2018, the SACSCOC Leadership Committee reconvened to review the white paper addendum and formally select the QEP topic.

SHSU SACSCOC Leadership Committee	
Dana Hoyt	President (Chair)
Richard Eglsaer	Provost (Co-Chair)
Somer Franklin	SACSCOC Liaison
Heather Thielemann	Vice President, Enrollment Management
Frank Parker	Vice President, Student Services
Carlos Hernandez	Vice President, Finance and Operations
Mark Adams	Vice President, Information Technology
Jeff Roberts	Director of Assessment
Jonathan Breazeale	Faculty Senate Representative

DEVELOPMENT OF THE QEP

THE QEP PLANNING COMMITTEE

Upon selection of the QEP topic, Dr. Brian Loft, as original author of the QEP white paper, was appointed as the QEP Director. Dr. Loft, in consultation with the Provost, was charged with developing a QEP Planning Committee comprised of a representative group of faculty members who would serve as active learning champions. The QEP Planning Committee is listed below:

SHSU QEP Planning Committee		
Doug Constance	Professor	Humanities and Social Sciences
Zach Doleshal	Lecturer	Humanities and Social Sciences
Ben Mitchell-Yellin	Asst. Professor	Humanities and Social Sciences
John Newbold	Professor	Business Administration
Ashly Smith	Asst. Professor	Business Administration
Eric Connolly	Assoc. Professor	Criminal Justice
Jamie Coyne	Asst. Professor	Education
Andrea Foster	Assoc. Professor	Education
Marilyn Rice	Professor	Education
Ashley Crane	Research & Inst. Librarian	Newton Gresham Library
Michael Henderson	Professor	Fine Arts and Mass Communication
Kiwon Seo	Asst. Professor	Fine Arts and Mass Communication
Simone Camel	Asst. Professor	Health Sciences
Brandy Doleshal	Assoc. Professor	Sciences & Engineering Technology
Taylor Martin	Asst. Professor	Sciences & Engineering Technology
Somer Franklin	Associate Vice President	Academic Planning and Assessment
Ken Hendrickson	Dean	Graduate Studies
Brian Loft, Chair	Faculty Admin. Fellow	Provost's Office
Todd Primm	Director	PACE Center
Jeff Roberts	Director of Assessment	Academic Planning and Assessment

The QEP Planning Committee met at least monthly between May 2018 and January 2019. These meetings included discussion of the goals, desired outcomes, scope, and scale of the QEP. As all committee members were current users and advocates of the use of active learning in their classrooms, several ideas for the interventions described below were proposed, developed, and decided upon. A comprehensive plan for assessment was developed, and plans for marketing the QEP to campus were proposed.

STUDENT FOCUS GROUPS

In order to receive input from students on the scale, scope, and focus of the QEP, two student focus groups were conducted in Fall 2018. Each focus group was comprised of a diverse group of 8-10 undergraduate students that were asked to offer guidance on the development of the QEP.

The moderators for each focus group used the following questions as prompts for the students, but allowed the student participants to lead the discussion in any direction relevant to the QEP topic.

1. In a typical week attending courses, how much time is spent listening to an instructor "lecture"?
2. Have there been courses (or particular instructors) in which time during class was spent on something other than listening to lectures?
3. If so, is this time well-spent?
4. What classroom delivery methods (lecturing, group work, etc.) are most engaging?
5. What classroom delivery methods (lecturing, group work, etc.) are most beneficial to learning?
6. What classroom delivery methods (lecturing, group work, etc.) do you prefer the most?
7. In your opinion, what teaching methods in the classroom are the most effective?
8. What can the SHSU faculty do differently to ensure students are learning the course material?
9. If more faculty spent less class time lecturing to students and more time with students actively involved in content-specific activities, what do you think the effects would be?

All discussions during each focus group were digitally recorded and transcribed by the QEP Director. Highlights of responses include:

How much time is spent in class listening to an instructor lecture?

> *"I would say about three-fourths. So some teachers will have in class assignments."*
>
> *"I'd say four out of five of the classes. Like 80 percent of the time."*

"Yeah. 80, 90 percent"

"Mine would probably be 90 percent. The only class where I actually have to turn in something will be my math… class."

"When I was in my minor you'd be looking at 100 percent. When I got into my major it was like probably still like 80 percent at least."

"I'd say for my classes this semester as far as lecture time of 15 hours, I would say about probably 13 and a half to 14 are pretty much listening to the teacher talk."

"I hate powerpoints. I hate when they just read off a screen because, and I know this is a thing, people, the publishers come up to the professors and they're like, 'hey, if you use our book will give you powerpoint presentations and notes for the power points.' I know that's something..."

Is the time instructors spend not lecturing worth the effort?

"Yeah. So it goes back to the time go[ing] by faster. It makes me actually comprehend what's going on rather than just sitting and listening to different people's learning styles are different, but I'm not like a vocalized learner."

"I mean I feel like if you have a professor that's always talking eventually you're just going to get bored. Like my god, you're always talking. Can we do something else?"

"Yeah, you zone out."

"Oh, for example, all the forensic science classes that are online, you can't learn that stuff online. You can't just have people tell it to you. You have to do like hands on like fingerprinting and stuff like that. You can't just have someone lecture that to you, but they only offered it online."

"But personally, I'm okay with lectures, I enjoy lectures. I enjoy just listening, people talking and asking questions and so I think as long as maybe there's a pause for questions and the professors kind of contextualize what they're saying and explain it well and I don't think the lecture style is necessarily a problem."

"So I just quit going to his class. He did everything online and his lectures weren't even relevant. I just feel like lectures aren't how everything should be."

What are some techniques that are useful in the classroom?

"I have a teacher who brings in a lot of guest speakers and I feel like that helps a lot. Like if we're learning about poaching, he'll bring in a game warden, like tell us about it, which I think is helpful because you're learning from an expert in the field someone who deals with it everyday and you can also talk to them about like going into that career, that's what you want to do."

"I have one teacher in ethnic studies, she had us sometimes get up and do skits so we kind of act out like a certain type of like term or what have you. So like us, really us getting up active in the classroom, talking to our peers like that. That helps you remember the concept."

"Teaching the class, like at least like the topic of your presentation, teaching the class, like helps you learn when you were explaining it to someone else rather than just reading it off a page. Going through flashcards, like having to explain it to another person makes it easy. ... It helps you learn."

"I think it's more rewarding as opposed to just sitting in a class and listening to a professor lecture the whole time and then like going home and doing it people more problems, you know, encourages people to work together and figure out a different, a difficult proof."

"So maybe if he has a lecture and they have like a worksheet or some type of assignment that we can kind of specifically take."

"So maybe I brought this up earlier but like my one class where it was just like entirely role play, where you were given roles and about like you've got to explore a historical setting through like as close to a first person's perspective as you would be able to see. But that would be difficult depending on your major. Like accounting. I don't know how you would role play accounting."

"Well I was just thinking of case studies and one of my classes, it is a case study class, it's political science, so we do real world case studies and do a discussion, I think that's very helpful."

"She gets to actually see stuff and apply what she's

learned in the classroom out of the classroom. Like, well that's actually pretty cool."

"These types [of instruction] need to be implemented because college as a whole isn't just about the kids who are in the 3000, 4000 level classes. It's about the kids who are in the core classes also because the core is something everyone has to take and so I think if you implement a core curriculum, you should at least try and make it as interesting as possible because you're essentially saying that no matter your major, you have to take xyz course. Even though these courses might not matter at all to your major what you plan on doing in life. And so I think for the freshmen and the sophomores, I think it matters to them too because you want to keep them in to make sure they become juniors and seniors and you want to make sure that students graduate from college with the real education and pretty much a purpose and a drive and a motivation to, like I said, become citizens of this world, the global world that we live in, you should want as a college first and foremost, no matter their major, no matter their grades, even if they made, C's the entire time or A's, make sure they become an informed citizen of the world who can be productive and who can aspire and dream."

STUDENT GRAPHIC DESIGNERS

In December 2018, several undergraduate students and two faculty members from the SHSU Department of Art—all graphic designers—led a design thinking exercise for the QEP Planning Committee. This exercise helped the designers develop a cohesive visual campaign, complete with the design elements present in this proposal as well as the promotional materials used for raising awareness of the QEP across campus.

OTHER QEPS WITH SIMILAR TOPICS

While active learning techniques are used in the university setting far less than current studies encourage (see Section V: Literature Review), there are several colleges and universities who have had success in promoting the use of these techniques on their campuses. In fact, while researching the topic the QEP Planning Committee found several other SACSCOC institutions with QEPs that have this as one of their primary goals.

When determining both the scale and scope of the interventions proposed in this QEP, the planning committee found it useful to examine the following similar programs across the country.

Tennessee Tech University

EDGE: Enhanced Discovery through Guided Exploration (2016)

Summary: establishes an undergraduate curriculum that encourages student success in creative inquiry

Similarities: faculty development component; recognition of both students and faculty

Differences: enhances co-curricular opportunities such as research opportunities

University of Tampa

Learning by Doing: Inquiry-Based Experiential Education (2015)

Summary: a focus on using inquiry-based approaches and outcomes to problem-solving through focused experiences and activities to educate students in first-year courses and enhanced discipline-skill based courses

Similarities: enhanced courses, faculty development

Differences: emphasis on first-year courses; uses undergraduate research and internships

University of North Carolina Wilmington

ETEAL: Experiencing Transformative Education through Applied Learning (2013)

Summary: employs enhanced applied learning experiences to reinforce student learning in three of eight learning goals: critical thinking, thoughtful expression, and inquiry; an auxiliary aim is to enrich the environment that supports student applied learning

Similarities: uses faculty development to enrich the learning environment and increase the use of HIPs; uses an Applied Learning Summer Institute, teaching communities, mini-grants

Differences: emphasis on undergraduate research rather than course redesign

Lenoire Rhyne University

Rise Up! Dig Deep! Nurturing a Culture of Inquiry at LRU (2012)

Summary: increases higher-level thinking (as

defined in Bloom's taxonomy) by challenging students to actively and creatively engage in guided and increasingly independent investigations of complex questions and problems under appropriately supportive conditions created by faculty and peers

Similarities: uses course redesign, faculty development, professional learning communities, and a faculty fellow program

Differences: institution is much smaller than SHSU

Mississippi University for Women

Think Outside the Books: Cultivating Intellectual Curiosity (2014)

Summary: implements Active Learning, Problem-Based Learning, and Inquiry-Based Learning (APIL) pedagogies to teach and reinforce the multiple learning skills needed to become an active learner

Similarities: active learning course redesign, faculty development to increase student engagement

Differences: institution is much smaller than SHSU

Northern Kentucky University

SEAL: Student Engagement in Active Learning (2009)

Summary: embeds discipline-appropriate active learning strategies in 12 general education courses

Similarities: integrates active learning into courses, aims to increase critical thinking

Differences: uses only specific courses, all in the general education core

III. IMPROVED STUDENT LEARNING AND SUCCESS

Sam Houston State University is a regional, comprehensive state institution located 70 miles from downtown Houston and less than a three hour drive from the Dallas/Fort Worth metroplex. The vast majority of our nearly 22,000 students are from this interstate corridor of East Texas.

Sam Houston State has enjoyed substantial growth in enrollment, more than doubling in size in less than 20 years. This growth has been consistent and well-managed. In the last five years, undergraduate enrollment has steadily increased by an average of 3.2% annually, with the lowest increase of 2.8% from 2016 to 2017.

Because of this enrollment growth, over the past decade the university has established two new colleges, constructed additional residence halls, academic buildings, and facilities for the performing and creative arts. This support has resulted in several initiatives yielding increases in student success and learning. The following are examples of how SHSU has repeatedly excelled at using data to identify and achieve student learning goals in response to enrollment growth and student needs. From establishing a leading program in digital education to redesigning the academic advising process, SHSU will continue data-driven decisions that support a student-centered institution.

SHSU Online, formerly DELTA (Distance Education Learning Technologies for Academics) was established in 2009 in response to a growing external demand for online courses and an internal interest in innovative teaching technology.

Even though the first online classes taught at SHSU were delivered in the late nineties, it was not until the inception of SHSU Online that formalized support was established in order to assist faculty and students engaged in online education. SHSU Online serves the needs of the larger institution related to online teaching, learning, course development, faculty development, and program growth.

The mission of SHSU Online is to …

- provide a single point of presence for online education at SHSU
- review and recommend instructional software applications for academic use in online education
- provide management and technical/troubleshooting support for online teaching and learning applications, including the Learning Management System (LMS)
- improve the quality of online courses and programs through rigorous assessment and continuous quality improvement
- offer high-quality course development services and online faculty development
- advance the university's goals in online education

As of Fall 2018, SHSU offers 49 online degree programs at the undergraduate and graduate levels, many of which have received notable recognition due to research-based best practices in online pedagogy to improve learning outcomes for students online.

Based on U.S. News & World Report's Best Online Programs rankings—SHSU Online has been ranked consistently in the top three nationally for online graduate criminal justice programs, 28th for online graduate computer information technology programs, and among the top 50 for online graduate education programs.

Approximately 3,500 students at SHSU are taking 100% of their courses online. More than half of current students are enrolled in at least one online course. Total online enrollment accounts for 24% of total credit hour production, approximately 60,000 of the total 252,000 semester credit hours.

Whether learning takes place online or through traditional, face-to-face modalities of education, SHSU adheres to a century old foundational value of student success. As part of this commitment, the Student Advising and Mentoring Center (SAM Center) was launched in 2002. Innovative for that time period, this centralized model for academic advising and mentoring was recognized for excellence several times by the National Academic Advising Association (NACADA).

Around the time the SAM Center was launched, enrollment began to experience rapid growth—more than doubling to today's level. As it became increasingly difficult for a centralized advising and mentoring model of full-time, professional advisors to meet the demand,

the model became more decentralized, offering students advisement from professional advisors and part-time faculty in the SAM Center or from faculty members with little to no association with the Center. Because this decentralization presented challenges to both communication and accountability, a new model was developed.

In late Fall 2016, SHSU became a member of the Frontier Set, a collaborative of more than 30 two- and four-year colleges, universities and state systems of higher education committed to increasing student success. Through 2021, the Frontier Set institutions will use funding, guidance, and support from the Bill & Melinda Gates Foundation and the American Association of State Colleges and Universities (AASCU) to:

- redesign the academic advising process, policies and procedures
- improve developmental education to ensure college preparedness
- enhance digital learning to make higher education accessible to more students

The SAM Center took full advantage of the resources and guidance of the Frontier Set collaborative to update the design of academic advising and student mentoring to better fulfill the needs of a large, comprehensive state institution. Currently in the second of a three-year plan to centralize the academic advising process at SHSU, the SAM Center is well on its way to serving the students of our institution in an efficient, comprehensive manner.

In addition, SHSU was chosen as one of 40 member institutions of the American Association of State Colleges and Universities (AASCU) Re-Imagining the First Year (RFY) project. This group of 4-year institutions made a commitment to update, reinforce, and institutionalize the way student success initiatives are proposed, developed, and funded. From 2016 through 2018, several dozen faculty, staff, administrators, and students met every other week to propose and discuss initiatives that would improve the experience of our first-year students. Each year, several ideas were formally proposed to our senior leadership for funding as new student success initiatives. Some of these ideas included:

- integrating career advising into the newly designed academic advising curriculum
- enhancing Welcome Week for first-year students
- encouraging and fostering the use of open education resources in more classrooms
- establishing pathways between students and the core math course in each degree plan
- incorporating a 4-year degree planning component within campus advising software

The RFY program was so successful in improving the process by which first-year student success initiatives were proposed, accepted, and funded that SHSU will continue using its design beyond the period of support by AASCU. Through the coming years, this new design will also expand the scope of RFY beyond the first-year experience of our students and directly impact the entire student body.

Included as part of both the RFY and Frontier Set programs was a process to regularly collect, analyze, and compare data pertinent to student learning and success. Collecting this data has provided the Frontier Set and RFY teams (and the Division of Academic Affairs in general) often immediate access to data required to make decisions, in particular the assessment important to this QEP.

MEASURING STUDENT LEARNING OUTCOMES

Student learning outcomes may be measured directly (through critical learning or writing assessments, for example) or indirectly (using course grades). Implementation of this QEP will result in increases in both types of student learning outcomes across campus, in particular from courses taught by faculty who participate in the QEP initiatives described in Section VI.

While general retention of first-year students into their second year has historically been 77-78%, the success rate of students in core first-year courses and disciplines is low. Because success in first-year courses is inextricably linked to retention to the second year, this QEP is particularly interested in improving student performance in these critical core courses. The passing rates of several first- and second-year core courses over the last 10 long semesters are presented in the following table.

% of grades C and above, Fall 2014-Fall 2017		
BANA 2371	Business Analysis	56%
ECON 2301	Principles of Macroeconomics	61%
ECON 2302	Principles of Microeconomics	63%
PHIL 2303	Critical Thinking	68%
PHIL 2306	Contemporary Moral Issues	70%
MATH 1314	College Algebra	62%
MATH 1324	Mathematics for Business	61%
MATH 1332	College Mathematics	69%
MATH 1410	Pre-calculus	47%
MATH 1420	Differential Calculus	52%
BIOL 2440	Introduction to Cell Biology	62%
CHEM 1411	General Chemistry I	53%
CHEM 1422	General Chemistry II	57%

With more online degree options available for students, more sections of online courses are offered each year. However, the success of students in these online sections are not always as high as students in the traditionally taught, face-to-face sections. There are several courses offered online whose online passing rates are consistently lower than the passing rates of face-to-face sections.

% of grades C and above, online vs. trad. taught				
Fall 2014-Fall 2017		Face-to-Face	Online	Diff.
BIOL 2440	Introduction to Cell Biology	72%	39%	33%
GEOG 1401	Weather and Climate	85%	52%	33%
MATH 1332	College Mathematics	73%	47%	26%
ENGL 1301	Composition I	79%	58%	21%
BUAD 1305	Electronic Communications	90%	70%	20%
BANA 2371	Business Analysis	60%	41%	19%
MATH 1324	Mathematics for Business	62%	45%	17%
ENGL 1302	Composition II	80%	64%	16%
ECON 2300	Introduction to Economics	76%	67%	9%

By creating a method by which faculty at all levels and ranks can become experts in the evidence-based best practice of active learning, student learning will increase in both online and face-to-face settings. Success in critical first- and second year courses will improve by including full-time lecturers, clinical and adjunct faculty in the support and developmental opportunities of this QEP. For a more detailed description of the plan for assessment of student learning outcomes, see Section X: Assessment.

Success in critical first- and second year courses will improve by including full-time lecturers, clinical and adjunct faculty in the support and developmental opportunities of this QEP.

MEASURING STUDENT SUCCESS

There are several examples of past student success data, which indicate progress but room for improvement: success rates of students in core first-year courses, credit accumulation in the first year, and first- to second-year retention. Some of these indicators have seen increases in recent years, while other metrics have proven more difficult to move in the positive direction.

In particular, student success as measured by course completion and credit accumulation has seen modest increases recently, while first-year retention has decreased slightly. Using the average of the previous two years as baseline data, the table below summarizes these metrics:

	Baseline	2016-17
% first-year students passing all completed courses	48.4%	56.1%
Average number of credits accumulated in first year	23.3	23.4
First- to second-year retention rate of full-time students	78.4%	77.0%
% students who earned degree in four years	26%	29%
% students who earned degree in six years	49%	51%

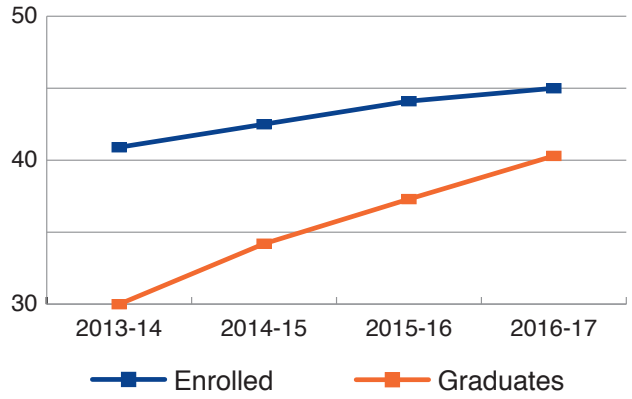
We have also seen recent increases in student success metrics related to graduation rates. The amount of time required by first-time students to earn an undergraduate degree has steadily decreased from 4.9 years in 2014 to 4.4 years in 2017. In four years, SHSU has effectively eliminated an entire semester of time required of our students to earn a degree, saving them both time and money.

In four years, SHSU has effectively eliminated an entire semester of time required of our students to earn a degree, saving them both time and money.

Each year we have seen a steady rise in the number of bachelor's degrees awarded, with an average increase of 4.1 percent. This is higher than the 3.2 percent average enrollment increases over the same time period.

Additionally, SHSU has seen impressive growth in the number of degrees awarded to minority students—an increase of 50 percent in three years. In the 2013-14 academic year, 30 percent of bachelor's degrees were earned by minority students at SHSU. Just three years later, that percentage increased to 40.3. During the same time period, minority student enrollment increased from 40 percent to 45 percent.

PERCENTAGE MINORITY STUDENTS AT SHSU



Because of improved academic advising and a successful minority male mentoring initiative (SH ELITE), SHSU is on a path to closing the achievement gap for minority students, effectively cutting it in half in just three years.

While recent improvements in student success are encouraging, there is still much work to be done. Metrics associated with first-year retention and student success in first-year courses will be positively impacted by the implementation of this QEP.

The use of evidence-based best practices such as active learning in the classroom has been shown (see Section V) to increase student engagement, success, and learning outcomes. By providing SHSU faculty with the guidance, resources, and encouragement to integrate these techniques and strategies into their courses—in particular, first-year gateway courses—students will learn more and learn better.

Because of the scale and the scope of this QEP, the following student success metrics will see improvement over the course of the QEP. (A more detailed description of the reporting and analysis of these metrics is included below in Section X: Assessment.)

COURSE COMPLETION RATIO

More students will earn a passing grade in all completed courses, increasing the three-year 2014-2017 average from 50% to over 65% by the end of the QEP. That is, more than 65% of those students enrolled as first-time, first-year students in Fall 2024 will earn a grade of C or better in each of the courses they receive a course grade. This increase will affect several other student success metrics (retention to the second year, credit accumulation, and, ultimately four- and six-year graduation rates).

RETENTION

As a direct consequence of increases in credit accumulation and course completion, the number of first-year students who return for a second year will increase. This first- to second-year rate of retention will increase from a three-year baseline average of just under 78% to over 83% by the end of the QEP. That is, the proportion of first-year students enrolled in Fall 2024 and return for Fall 2025 will be at least 83%.

IV. WHY ACTIVE LEARNING?

While there are several opportunities for an institution of higher education to increase student learning and success, direct involvement of faculty at all stages of development is essential. A study (Umbach & Wawrzynski, 2005) sponsored by the National Survey for Student Engagement (NSSE) used two national data sets to explore the relationship between faculty practices and student engagement. Their findings indicate student perceptions of learning and engagement are higher when faculty are more involved in the learning process. More specifically, "[a]ctive and collaborative learning techniques were positively related with levels academic challenge and student-faculty interactions for both first year and senior students, even after all controls are included in the models" (p. 165).

The perceived level of importance of faculty involvement is not limited to students. Interviews (EAB, 2016) with 120 higher education leaders indicate that without engagement from faculty, "most top-down student success initiatives are doomed to fail, either through outright opposition or because of a limited reach" (p. 3).

When developing a campus-wide plan to increase student success and learning, the involvement of faculty is essential, from the stages of planning and development to its implementation and assessment. At regional comprehensive state institutions like SHSU, the primary opportunity for student-faculty interface is in the classroom. Consequently, this QEP will increase the prevalence of those strategies faculty can use in their classrooms to increase student learning and success.

PAST USE OF ACTIVE LEARNING AT SHSU

This QEP builds on some existing institutional strengths, as there are groups of faculty members in several departments who have successfully incorporated active learning in their classrooms.

HUMANITIES AND SOCIAL SCIENCES

Inaugurated by the College of Humanities and Social Sciences (CHSS) in 2010, the Ethics, Western Civilization, and American Traditions (EWCAT) model is an undergraduate curriculum designed to enhance critical thinking and basic research skills, promote strong written and verbal communication skills, and to enhance the ability to solve problems in groups. There is an increasing number of courses throughout CHSS already designed in the sequence, each of which encourages student ownership of learning and engagement with original texts. A new minor in Applied Ethics and Critical Thinking was approved in 2017, consisting of both new first-year and capstone courses as well as EWCAT versions of existing courses in CHSS.

A classroom applying the EWCAT model differs from a traditional classroom in three ways, each of which meets the generally accepted characteristics of active learning. First, EWCAT courses employ small group learning and peer-led team learning techniques to teach students that enhanced skills for small group learning are themselves important outcomes. Second, EWCAT courses seek to cultivate peer teaching assistants who work from within a current course or return as veterans of a previous course to lead active small groups. Third, EWCAT courses review traditional texts in diverse humanities and social science fields, while dedicating equal time to other documentary sources to empower other voices. The combined emphasis on peer-led learning and problem-based teaching techniques promote critical thinking skills, group problem solving, and increase reflection among students. Changing the classroom in these ways has helped students engage with newly discovered ideas and cultivate a reflective intellectual life.

When developing a campus-wide plan to increase student success and learning, the involvement of faculty is essential, from the stages of planning and development to its implementation and assessment.

Over the academic years 2012 – 2014, the College of Humanities and Social Sciences conducted a study in the efficacy of EWCAT-style courses versus similar courses delivered by traditional methods. Classes of freshman English Composition comprised the sampling pool. Students in both EWCAT and traditional sections were asked to participate in three specific instruments of assessment: compositional skills pre/post testing; the Critical Thinking Motivational Scale (CTMS); and the Service Learning Benefits Scale (SELEB). Additionally, the EWCAT and control sections were compared for outcomes in the usual instructor evaluation (using the IDEA system) and in attendance. The study found that in 2012 and 2013, EWCAT sections showed markedly improved performance across all measures. Students reported greater motivation to engage in critical

thinking, saw more relevance in their studies for civic life, rated their instructors higher (even for instructors teaching in both kinds of sections), and reported lower absenteeism. Most importantly, students in EWCAT sections demonstrated pronounced improvement in compositional skills, while students taking traditional sections showed little or no improvement (nationally, a common outcome for freshman composition courses).

By 2014, enthusiasm as measured by the CTMS and SELEB had waned to equivalent levels with traditional control sections. However, compositional learning outcomes and attendance in EWCAT sections continued to outpace traditional sections. This particular result was very important in that it suggested improved learning outcomes in EWCAT sections occur consistently across the tides of student emotional response to the course.

The PACE center will serve as the central hub of the initiatives either continued or established through the QEP.

STEM DISCIPLINES

Several faculty members in the College of Sciences and Engineering Technology (CoSET) use active learning techniques regularly, if not exclusively. From Inquiry-based Learning techniques in mathematics courses to Process-Oriented Guided Inquiry Learning incorporated into chemistry or engineering technology courses, active learning has been part of the CoSET curriculum for several years.

In 2017, the National Science Foundation awarded $2.1 million to SHSU to establish a STEM Center (Due No. 1725674) on campus over five years. Through the Improving Undergraduate STEM Education program, the STEM Center will increase both the quantity and quality of STEM undergraduate degree recipients. This will be accomplished by improving the academic preparation of incoming STEM majors; by incorporating research early into the undergraduate curriculum; and by providing faculty with the resources and guidance to adopt evidence-based best practices—namely active learning—into their classrooms.

Using mini-grants (similar to the ones proposed in this QEP), workshops (similar to the Active Learning Summer Institute described below) and a cohort model of faculty development, the STEM Center increases the amount of active learning integrated into the courses taught in CoSET. The resources of the STEM Center will be used to support the budget of the QEP, in particular the faculty travel grants.

SUPPORT OF ACTIVE LEARNING AT SHSU

There are several examples of campus support structures which have been established explicitly for the development of faculty efforts to incorporate classroom best practices. These structures range from offering broad support for all faculty and staff (the PACE Center); offering short-term, grant-supported assistance for particular extracurricular practices directly involving students (EURECA); and providing comprehensive support to faculty for a specific strategy (through the Center for Community Engagement). Each of these, described below, will cooperate with the QEP in giving faculty several options to integrate active learning techniques in their classrooms.

The Professional and Academic Center for Excellence (PACE) is dedicated to providing a broad range of professional development for university administration, faculty, staff, and students. Using programs and services founded on evidence-based teaching and leadership strategies, its ultimate goal is effective student learning and development. The services offered by PACE include several that are either incorporated into the QEP, or will coordinate with its components:

- the annual Teaching and Learning Conference
- Teaching Innovation Grants as described in Section VI
- coordination of cohorts of faculty to participate in the ACUE Course in Effective Teaching Practices, described in Section VI
- the Writing in the Disciplines program

The PACE center will serve as the central hub of the initiatives either continued or established through the QEP. Currently operated by a single half-time faculty director, the PACE center will expand using QEP resources to include two more half-time faculty associate directors, all devoting time and effort to promoting and directing and assessing the QEP components described below.

While the PACE Center offers comprehensive support for faculty and staff interested in improving student learning and development across several fronts, there is another center on campus providing support for a specific extracurricular intervention. The Center for

Enhancing Undergraduate Research Experiences and Creative Activities (EURECA) allows faculty to engage students in a research or creative project that enhances their academic experience.

Through annual mini-grants awarded to faculty and students, EURECA provides opportunities for creative and scholarly activities to develop over a semester, a summer, or an academic year. Students gain experience working closely with a faculty advisor in developing and completing a research or creative project. Financial support is available for supplies and travel costs in order to disseminate the knowledge obtained at local, regional, or national conferences.

While EURECA helps faculty involve undergraduate students in their research and creative endeavors, and PACE provides instructors with comprehensive faculty development opportunities; a third, nationally recognized center on campus provides faculty with the guidance and resources to incorporate a specific active learning technique into their classrooms. Since 2012, the Center for Community Engagement has supported faculty, staff, and students to become engaged partners with the community (locally, nationally, and internationally) through academic experiences.

Faculty using the Academic Community Engagement (ACE) teaching method, require students to use the skills, knowledge, and dispositions learned in the classroom to make a difference and improve quality of life by understanding their roles as community members. These ACE-designated courses require identification of course objectives students will address in their ACE experience, a reflection assignment by the students at the end of the course, and a minimum of 3 hours dedicated to the ACE experience for each semester credit-hour of the course. These rigorous requirements of the designation are not a deterrent, as approximately 200 courses with the ACE designation are offered each semester at SHSU.

As a result of their efforts, in 2010 the Carnegie Foundation for the Advancement of Teaching recognized the university with a Community Engagement Classification. As one of only 115 institutions to receive this elective classification from the Carnegie Foundation, SHSU is recognized for its commitment to serving local, national, and global communities. The classification involves data collection and documentation of important aspects of institutional mission, identity and commitments, and requires substantial effort invested by participating institutions.

Because of its continued commitment to our community, the Center for Community Engagement plans to seek the classification again in 2020, the next opportunity to apply. Through its advisory board of local leaders and public servants, the Center for Community Engagement provides opportunities for hundreds of students each semester to actively engage with the community while earning a degree from SHSU.

> *"Academic Community Engagement is an essential part of who we are and what we are about. We firmly believe that the role of a regional comprehensive university is to actively contribute to the well-being of the communities it serves. In the seven academic colleges, and indeed in every department across campus, our curriculum provides varied opportunities to gain and apply knowledge and skills to make life better. We have many inspiring examples of SHSU students, faculty and staff making a difference. While students are on our campuses, and then as they continue their professional and personal lives, we encourage and challenge them to live our motto; "The measure of a Life is its Service.' "*
>
> *—Dr. Dana Hoyt, SHSU president*

While successful in their own right, the several examples described above of faculty incorporating evidence-based best practices into their classroom pedagogy lack the cohesive, institution-wide change in instructional culture this QEP hopes to foster. These changes will be accomplished through these defined goals, measurable objectives, and outcomes.

QEP GOALS AND MEASURABLE OBJECTIVES

In order to demonstrate improvements in student learning and success, the QEP will use the evidence referenced in the next section to accomplish the following goals.

PRIMARY GOALS

1. increase the use of active learning techniques in all levels and types of courses
2. increase the demonstrated levels of undergraduate student success
3. increase the demonstrated levels of undergraduate student learning

SECONDARY GOALS

1. removing existing barriers that prevent faculty from receiving the evaluation and recognition for integrating active learning in their classes
2. creating a platform of resources and guidance faculty can use to integrate active learning into their classrooms, including, but not limited to, classrooms specially designed for the use of active learning and readily available curricula and instructional resources designed by peers who are willing to provide guidance

The primary goals are further defined by several objectives and measurable outcomes, described in more detail in Section X: Assessment.

Objective 1. The use of active learning techniques will increase in undergraduate courses across campus, with a particular focus on lower-division, general education courses.

Outcome 1a: The total number of faculty members using active learning will increase.

Outcome 1b: More class time will be devoted to active learning techniques.

Outcome 1c: Measures of student engagement will be greater, particularly within those classrooms in which more active learning is used.

Objective 2. The greater use of active learning techniques will result in increases in student success.

Outcome 2a: The number of students successfully completing all first-year courses will increase.

Outcome 2b: Success rates in first-year core courses will improve.

Objective 3. The greater use of active learning techniques will result in increases in student learning, in particular as it relates to SHSU's general education outcomes.

Outcome 3a: Students who encountered active learning in a prequel course will perform better in the sequel course than those who did not.

Outcome 3b: Students who encountered active learning will perform better on concept inventories than those who did not.

V. LITERATURE REVIEW AND BEST PRACTICES

Faculty-student interactions are the key factor governing student success at a university, and active learning techniques have shown to be effective tools for student learning, engagement, and success. Accordingly, the first primary goal of this QEP is for faculty to increase the use of active learning techniques across all courses and disciplines. However, because active learning covers such a variety of methods, it can be hard to define. Shared by all methods is a philosophical basis on the constructivist theory of learning. This theory states that learning is an active, contextualized process of constructing a network of knowledge rather than simply acquiring information (Ertmer & Newby, 2008). The learner is not a blank slate to which facts are added, but instead an active participant in constructing their functional knowledge. The learner's past experiences and cultural factors affect their knowledge construction.

By applying active learning, the learner is not simply (or even primarily) being physically active, but is focused on activities that stimulate information processing, organization, and/or recall.

Consequently, learning environments which involve learners in intentionally designed active experiences where they are thinking about their own learning should enhance their construction of knowledge, and help to address misconceptions and other limitations from their past experiences. Thus, the constructivist theory of knowledge influences the pedagogical approach used in active learning. By applying active learning, the learner is not simply (or even primarily) being physically active, but is focused on activities that stimulate information processing, organization, and/or recall. In addition, active learning often includes elements of formative assessment in order to help the instructor guide the process.

The breadth of educational literature citing these benefits of active learning in certain disciplines is expansive. Abundant evidence from educational research and psychology of learning studies clearly demonstrates that an active approach in the classroom leads to improved student learning and academic success (Bain, 2004; Bransford, Brown, & Cocking, 2000; Brown, Roediger, & McDaniel, 2014; Kuh, 2008)

In particular, a landmark meta-analysis published in 2014 by Freeman et al., analyzed 225 studies which compared active learning versus exposition-centered teaching in STEM disciplines. Collectively, this meta-analysis included over 50,000 students in STEM courses. Student performance on exams increased by about half a standard deviation (weighted standardized mean difference of 0.47, $Z = 9.78$, $p < 0.001$) in active learning classrooms. This corresponds to an approximate increase in letter grade of one-third. Students in lecture-based classrooms were 1.5 times more likely to earn a D, F or drop than with active learning (failure rates were 33.8% and 21.8% respectively). This represents a 55% increase in student failure rates from lecturing. Heterogeneity analyses indicated no statistically significant differences between the disciplines in STEM. Active learning effect size was larger with courses of less than 50 students, but effects were observed across all course sizes. As grades are a localized measure of learning, some studies also included concept inventories as standardized instruments tested for validity and reliability. The effect size with concept inventories was not lower, thus differences in faculty grading were not an explanation for student performance gains from active learning.

Notably, this study used a broad definition of active learning, and techniques counted as such were often mixed with instructor exposition. This strengthens the finding that a variety of active learning methods have a significant effect. To illustrate, the data predicts that in a STEM course with 100 students enrolled, 34 would fail with a transmission-intensive, teacher-centric approach while only 22 would fail with an active constructivist, student-centric approach (Freeman et al., 2014).

Students in lecture-based classrooms were 1.5 times more likely to earn a D, F or drop than with active learning (failure rates were 33.8% and 21.8% respectively).

Recent studies have indicated that the benefits of active learning are even more pronounced at regional, comprehensive universities like SHSU. A comprehensive study (Laursen, 2011) of Inquiry-based Learning (IBL) in mathematics provided evidence that the students who received the largest benefit from the IBL technique were women and students who began their semester

underprepared. In particular, there was no evidence of harm done to students deemed high-achieving at the start of the semesters, and previously low-achieving students saw striking improvements, particularly those students planning on becoming teachers. These results indicate that expanded use of the IBL method at regional, comprehensive universities similar to SHSU can have a dramatic and lasting effect on the STEM culture, from students planning on graduate study in STEM to those planning on teaching future STEM students.

In spite of the overwhelming evidence of the benefits of active learning and no shortage of print resources available to faculty, the use of active learning is not as ubiquitous as one would expect. This is true, not just generally, but at SHSU in particular. And it further demonstrates the potential positive impact of this QEP on student learning and success, as well as university culture.

Despite the abundance of convincing evidence, an extensive study (Stains et al., 2018) involving 2008 course observations from 709 STEM courses taught by 548 individual faculty across 25 universities found that faculty spent 75 ± 28% of their time on dyadic lecturing, with the students correspondingly spending 87 ± 21% of their time listening to lecture. Thus, to date, the educational literature on the clear benefits of active learning have not yet been translated to STEM faculty practice. There are multiple variables contributing to faculty resistance against adopting more active learning methods. Among nine physiology faculty at the University of Louisville, the most common barriers included lack of class time, a high comfort level with traditional lecture, and insufficient time to develop materials (Miller & Metz, 2014; Worthen, 2015). In the same department, use of active learning increased student performance on exams. The authors recommended to increase professional development for faculty to support deployment of active learning.

Other faculty concerns over using active learning methods include lower student evaluation scores or lack of recognition in merit and reward policies. A publicized example of faculty resistance to active learning methodology appeared as an op-ed piece in the New York Times in 2015 written by Molly Worthen, a history professor at UNC-Chapel Hill (Worthen, 2015). In it, she terms active learning as a "craze" and "vogue." However, given that she argues for lecture "combined with small weekly discussion sections," she is inadvertently advocating for one approach to active learning.

Because of the large amount of literature demonstrating the link between active learning and increased student learning, there is no shortage of guidebooks on its use (Faust & Paulsen, 1998; Barkly, Cross, & Major, 2005). There are many discipline-specific (Booth, 2013; Hinde & Kovac, 2001; Robinson, 2000; Calder, 2006) resources as well as guides for integrating a particular active learning strategy (DeNeve & Heppner, 1997; Hamlin & Janssen, 1987) in a variety of disciplines.

In spite of the overwhelming evidence of the benefits of active learning and no shortage of print resources available to faculty, the use of active learning is not as ubiquitous as one would expect. This is true, not just generally, but at SHSU in particular. And it further demonstrates the potential positive impact of this QEP on student learning and success, as well as university culture.

In 2018, a survey was distributed to more than 800 full-time faculty at SHSU for the purpose of gathering preliminary data on views related to active learning methods and perceived barriers to active learning. The response rate was particularly encouraging: 336 (or 42%) of more than 800 faculty members responded.

Of these participants, 81.5% indicated they were familiar with active learning techniques, with a mean self-scoring of 7.8 on a ten-point Likert scale. When asked how much time in a typical three-hour course was spent lecturing, the response was just below 50%. When asked if they were interested in using more active learning techniques, 74.1% answered "yes". Of the 85 that answered "no", reasons given included already using sufficient active learning (n=27), does not fit my discipline (n=11), too time consuming (n=10), does not work (n=5), a confusion that active learning is only one particular approach (n=5), and courses too large (n=3).

When asked what resources are needed for faculty to incorporate more active learning, the responses included more professional development (n=79), specific tools such as clickers or classroom redesign (n=45), time to make activities (n=12), and smaller course sizes (n=7). Responses from SHSU faculty are not very different from national data. Therefore, this QEP project designed to equip faculty and promote more active learning methods will likely yield insights that can be applied more broadly across academia.

VI. ACTION PLAN

Like any university as large as SHSU, the varied levels of teaching experience obtained by incoming faculty are as diverse as the faculty themselves. This experience can range from years spent as a graduate teaching assistant in a history department to several years as a postdoctoral research assistant in a chemistry lab; or from years in a career as a nurse with little opportunity for teaching to a full career spent teaching in an elementary school classroom. Each year, several dozen new colleagues with a wide range of experiences as instructors join the faculty sharing one common trait: with few exceptions, the biggest influence on the methods they plan to use in their classrooms has been the experience they received while they were students.

IT IS THE GOAL OF THIS QEP TO PROVIDE ALL FACULTY AT SHSU WITH THE RESOURCES AND GUIDANCE TO ADOPT BEST PRACTICES FOR ACTIVE LEARNING TECHNIQUES AND INTEGRATE THEM INTO THEIR DAY-TO-DAY PEDAGOGY.

Unfortunately, the experiences gained as a graduate instructor or as a newly hired professor are not always obtained with evidence-based best practices in mind, or with student success as a priority. It is often left up to the instructors (as opposed to an institutional priority) to learn on their own the techniques and strategies which have been shown to increase student success. It is the goal of this QEP to provide all faculty at SHSU with the resources and guidance to adopt best practices for active learning techniques and integrate them into their day-to-day pedagogy.

Attempting to influence all faculty at all levels of experience—from the several dozen new faculty members each fall semester to the hundreds of veteran faculty members across campus with years if not decades spent as a professor—is a daunting exercise. In order to educate, motivate, and influence as many faculty members as possible over the next five years, several QEP interventions have been carefully designed to be accessible to as wide a variety of faculty as possible. This variety of faculty members—in addition to those who have earned tenure or are on the tenure track—will include all lecturers, clinical, and full-time adjunct faculty who have the most contact with at-risk first- and second-year students.

A carefully designed sequence of interventions will be implemented, allowing faculty over several years to transition from novice to expert in the application of active learning techniques. Described in more detail below, this sequence will have several points of entry to allow for the wide variety of experience faculty already have, regardless of the number of years of service at SHSU. From week-long summer institutes designed to introduce faculty to the techniques and benefits of active learning to a two-year fellowship program designed to certify experts and transform entire courses, curricula or programs, these interventions will impact several dozen faculty members each year.

In addition to these opportunities, other resources will be available to provide enhanced flexibility to those faculty members who wish to learn more about incorporating active learning into their classrooms. Some options include the expansion of current programs (mini-grants promoting teaching innovation or travel), and the addition of campus-wide Faculty Learning Communities. Each of these interventions will allow faculty with varied levels of experience to learn more about incorporating active learning into their classrooms and sharing their successes.

This QEP will not only impact faculty across campus through their increased use of active learning, but will transform particular aspects of our campus and its culture. Described more fully below, classrooms will be redesigned to better accommodate active learning environments, a library of classroom materials and resources will be curated and maintained, and faculty efforts will be formally recognized by the university, deans, and provost. By the end of the QEP implementation, there will be a discernible change in the culture of undergraduate education across campus, resulting in measurable improvement in student success.

Indeed, these twin pillars of this QEP—a shift in the university's culture and the collection and dissemination of evidence of student learning and success—are designed to be mutually reinforcing. The more faculty who choose to employ active learning in the classroom, the more evidence there will be of a positive impact on student learning and success; and the more evidence there is of improved learning and student success, the more reason faculty will have to incorporate active learning techniques in their classrooms. This QEP is designed to have a self-generating, lasting, and positive impact on our students and institution.

The remainder of this section provides more detail on the interventions to be implemented throughout the QEP. We begin with a thorough description of the sequence of interventions which allow any faculty member to become an expert user of active learning in their classroom. The more flexible opportunities and resources are then described, followed by the transformations to campus and its culture. While many of these programs are new to SHSU, some are continuations of programs already deemed successful but on a smaller or more focused scale; full context is provided in these cases.

DEVELOPING FACULTY EXPERTS IN ACTIVE LEARNING

A sequence consisting of three stages will be available each year to provide a path for any full-time instructor —regardless of rank or position – to become an expert in the use of active learning. Faculty may enter this path at any point, although applicants to each phase will be assessed on their experience with active learning techniques and advised into the stage most appropriate for that assessment.

STAGE 1: ACTIVE LEARNING SUMMER INSTITUTES (ALSI)

Whether having recently earned a terminal degree with little experience teaching or having only been exposed to a traditional lecture format, there are many SHSU faculty members who have little to no knowledge of the use or benefits of active learning. In order to expose faculty to these benefits and encourage them to integrate the techniques into the classroom setting, a 5-day Active Learning Summer Institute (ALSI) will be designed and made available three times each summer.

In 2004, Dr. Jo Handelsman, a biologist at the University of Wisconsin-Madison, developed the Summer Institutes on Scientific Teaching to improve undergraduate STEM education. With support from the National Science Foundation, the National Academy of Sciences, and the Howard Hughes Medical Institute, the Center for Teaching and Learning at Yale University expanded this summer institute prototype to six participating campuses, with more than 200 faculty participants each year since 2010.

These summer institutes were designed to expose faculty to the benefits and techniques of inclusive and active teaching, with particular attention provided to design and assessment of immediately usable lessons for the undergraduate classroom. The curriculum of the summer institutes has become popular enough to warrant funding from the National Science Foundation to create traveling versions of the program (the Mobile Summer Institutes, or MoSI), which are held several times each summer across the country.

These summer institutes were designed to expose faculty to the benefits and techniques of inclusive and active teaching, with particular attention provided to design and assessment of immediately usable lessons for the undergraduate classroom.

In fact, in 2018, the STEM Center at SHSU was selected to host a MoSI for a diverse group of 25 faculty members from the College of Sciences and Engineering Technology (CoSET). Part of the MoSI curriculum included an invitation to CoSET department chairs and university administrators to a forum in which a strategic plan to expand active learning through the college was discussed. Because of the high interest in this week-long intensive program, the MoSI organizers will return in 2019 to co-host (with SHSU faculty) another, more broadly focused MoSI, to which faculty from all colleges on our campus will be invited. The Summer 2019 "Expanded MoSI" will serve as the first Active Learning Summer Institute, and will establish a template for moving forward with annual ALSIs.

Beginning in Summer 2019, the SHSU QEP Development Team will use the MoSIs as a model to develop the curriculum for each ALSI which will include:

- the importance and benefits of inclusive teaching
- highlights of education research on active learning
- an introduction to several active learning techniques
- guidelines on effectively integrating these techniques into the classroom
- models of both formative and summative assessment

The curriculum will be delivered through activities such as reflective writing, planning, reading, discussion of teaching methods and philosophy, and interactive presentations. By the end of the week-long ALSI, participants will have observed, evaluated, and collected a portfolio of innovative teaching approaches, instructional materials, and practical strategies for enhancing student learning that can immediately be applied to their own teaching environments.

Scale: In order to accommodate as many interested

faculty participants as possible, there will be three ALSIs each summer, one in each of the months of June, July and August. Each 5-day ALSI will begin at 9:00 a.m. Monday morning, and end at 4:00 p.m. Friday afternoon, with lunch provided daily for all participants. Each of the three ALSIs will accept up to 20 applicants with particular consideration given to those instructors who will be joining the faculty in the following fall semesters. Accommodations in the University Hotel will be provided for those few faculty members who will be joining SHSU in August but have not yet secured a residence for the fall semester.

Selection: Applications for the three summer ALSIs will be available the preceding February, accepted through April. Ideal candidates for the ALSIs will be either faculty members new to SHSU with little teaching experience, or returning faculty members (including lecturers or clinical faculty) who have been using traditional lecturing as their preferred teaching methods since the start of their career. In a typical fall semester, more than 50 faculty members join SHSU on our tenure track. With the large number of new and returning full-time, non-tenure track lecturers, clinical, and adjunct faculty, recruiting 60 participants each summer will not be a challenge.

Compensation: In addition to a modest compensation amount of $500 in return for completion of the ALSI, faculty participants will be provided with refreshments and lunch during each of the five days.

Management: Recruitment and selection of faculty participants, as well as development of the ALSI curriculum will be managed by the QEP Development Team. One team member each year will serve as the compensated facilitator and will lead each of the three weekly institutes. Other responsibilities such as the timely disbursement of participant stipends, ordering of refreshments, room reservations, and general maintenance of the ALSIs will be managed by the administrative support staff in the PACE Center.

Those faculty members (including lecturers) who complete the ALSI will be expected to not only incorporate its curriculum into their pedagogy, but also encouraged to apply for the second stage of the sequence.

STAGE 2: ACUE'S COURSE IN EFFECTIVE TEACHING PRACTICES

For those faculty members who have completed the ALSI (or a similar program with a comparable curriculum) and are interested in learning more about essential learning practices to increase student success, Stage 2 will be available through each academic year. This stage consists of the well-established and widely used Course in Effective Teaching Practices developed by the Association of College and University Educators (ACUE).

ACUE's course prepares college and university faculty to implement all of the practices shown to be essential in improving student outcomes. The course includes 25 one-hour online modules across five comprehensive units of study:

1. Designing an Effective Course and Class
2. Establishing a Productive Work Environment
3. Using Active Learning Techniques
4. Promoting Higher Order Thinking
5. Assessing to Inform Instructions and Promote Deeper Learning

With over 180 instructional videos, the course showcases exemplary teaching on campuses nationwide and features interviews with leading experts in college instruction.

By forming a cohort of faculty who complete the ACUE course together, a community is built through which members can share their progress made and challenges met while integrating educational best practices into their classrooms. During the 2017-18 academic year, the Division of Academic Affairs (through the Re-Imagining the First Year program) sponsored the first ACUE cohort of faculty members. During these two semesters, a diverse group of 29 faculty members from across campus participated in the course, with encouraging, positive reviews of their experience, including:

> *"I have almost 15 years of K-12 and Higher Education teaching experience and to say that I was skeptical of the ACUE modules would be an understatement. However, as I engaged in the ACUE modules, my mind was entirely changed. I can personally testify that as I've implemented the techniques taught in the ACUE program, the effectiveness of my teaching has increased exponentially. I have many more students coming to office hours, students actively engaging in the material much sooner in the semester, reduced failure rates, and happier students. I've found myself more excited to teach, as well."*

> *"All I can say is wow! I have gained a renewed sense of purpose, awareness of my areas of weaknesses, and insight to how my errors in teaching limited student involvement, which in turn may have*

affected their ability to develop critical thinking required for the nursing profession."

Because of the impact the ACUE course has had on this inaugural cohort's teaching and enthusiasm, the course will be a central component of the QEP. During each of the five years, a cohort of between 20 and 30 faculty members will be supported through the ACUE course.

Scale: Because of the significant cost of participation (both in terms of funds and time commitment), each annual cohort will be relatively small: at least 20, but no more than 30 faculty members. Probationary pre-tenured faculty members will be encouraged to apply, while first-year faculty members with little teaching experience will instead be encouraged to first complete the ALSI.

Selection: Applications for admission into each ACUE cohort will be available the preceding February and accepted through April. Ideal candidates for the ACUE cohorts will be either faculty members who recently completed the ALSI, or have some experience with active learning either at SHSU or at another institution. While tenured and tenure-track faculty are expected to be the majority of cohort members, lecturers or clinical faculty with continued positions on SHSU's campuses will be encouraged to apply.

Compensation: In addition to a compensation amount of $1,000 in return for completion of the ACUE course, faculty participants will be provided with lunch during monthly cohort meetings.

Management: Recruitment and selection of ACUE cohort members will be managed by the QEP Development Team. Each year, one team member will serve as the compensated coordinator and facilitator. This facilitator will be responsible for delivery and maintenance of the ACUE course curriculum, and coordination of regular cohort meetings. Other responsibilities such as the timely disbursement of participant stipends, ordering of refreshments, room reservations, and general maintenance of the monthly cohort meetings will be managed by the administrative support staff in the PACE Center.

Those faculty members who have completed the ACUE course will be asked to serve as volunteer members of PACE Center committees, either helping to select recipients of mini-grants for teaching innovation or travel to teaching and learning conferences (described in full below); or assisting the QEP Assessment Team with the evaluation of active learning techniques and course redesign (also described in detail below).

To continue a tradition begun in 2017, in late spring a banquet will be held in honor of faculty members who have completed the ACUE course. Those faculty members who complete the ACUE course will be encouraged to apply for the third stage of the sequence.

STAGE 3: ACTIVE LEARNING TEACHING FELLOWSHIPS (ALTF)

By the Fall 2019 semester, there will be several dozen faculty members who have completed the ACUE Course in Effective Teaching Practices or who have considerable experience using active learning in their classrooms. In order to provide a collaborative platform for faculty to not only expand their knowledge and base of experience with specific active learning techniques, but also be recognized for their efforts, the QEP will create Active Learning Teaching Fellowships (ALTFs).

These two-year fellowships will be available to faculty who are interested in a long-term examination of a particular active learning technique or strategy, and are willing to commit to its implementation on a larger scale. During their second year, the recipients of these fellowships will serve as mentors to first-year fellows in the next cohort.

At the time of their application to the ALTF program, faculty will propose a particular "deeper dive" into active learning. Example scenarios that may inspire a successful fellowship proposal include:

> A member of the mathematics faculty may have previously used course materials obtained from the Journal of Inquiry-Based Learning in Mathematics for use in a linear algebra course, and would like to develop her own set of course notes for use in a differential equations course. Her first fellowship year will be spent on research and writing in the summer and fall semesters, and using that set of notes the following spring semester. Her second year will be spent adjusting the notes for submission to the journal mentioned above, as well as working with another colleague (in his first year as a fellow) in developing a set of course notes for a different course.
>
> A member of the history faculty has successfully incorporated role playing and gamification in more than one of his upper-level history courses. One of his colleagues is intrigued by the enthusiasm displayed by students in her colleague's course and is interested in learning

more and integrating a version of his techniques in her courses. Her first fellowship year will be spent observing several meetings of his class during the fall semester, for the purpose of adapting the technique to her course for use the following spring. Her second fellowship year will be spent mentoring previously identified historians in her department on the technique and its benefits, helping them integrate gamification and role playing in their courses.

After discovering the low rates of student success of first-year STEM majors, two biologists are interested in redesigning the curriculum of the pair of courses in the first-year biology sequence. Using increased student learning outcomes as their primary objective, the biologists will spend the first year of their joint fellowships researching effective teaching methods in biology courses, reexamining appropriate and current content for the courses, and designing an effective pair of courses to replace the current sequence. Upon approval of the faculty in their department, the second year of their fellowship will be spent teaching (and updating) the redesigned courses and providing training and development to the biology instructors who will be teaching the newly designed courses.

Because of the diversity of qualified faculty and the varied needs and interests across campus, each cohort of ALTFs will be different. However, all will share a common structure:

Year 1. A comprehensive literature review compiled and performed by each fellow, shared with the entire cohort during monthly meetings; an in-depth analysis of active learning techniques applicable to each member's accepted proposal; and the implementation in the proposed course, included (but not limited to) writing and editing of course materials, course redesign, curriculum development or redevelopment.

Year 2. Continuing or updating the implementation; service as mentor to ALTFs during their first year; and acting as formal ambassadors to their home department or college to aid in recruiting more fellows for later fellowship years. Implementing dissertation plan.

In order to foster a collaborative, supportive cohort of ALTFs, the PACE Center will maintain monthly meetings of each cohort over a catered lunch.

Scale: Each year (beginning in Fall 2019) between 14 and 18 faculty members will be selected as ALTFs. Monthly meetings will therefore consist of between 28 and 36 cohort members (half of those in Year 1, half in Year 2). Regular, informal meetings will develop organically among fellows with common interests.

Selection: Applications for admission into each ALTF cohort will be available in early spring and accepted through April. Ideal candidates for the ALTF cohorts will be either faculty members who either recently completed the ACUE course or have considerable experience with active learning either at SHSU or at another institution. Because of the long-term scope of these fellowships, tenured and tenure-track faculty are expected to represent the majority of the applicant pool. However, there are some full-time lecturer faculty who serve as course coordinators within a department and will be encouraged to apply. A successful application will include a dissemination plan to be followed upon completion of the proposed fellowship.

Compensation: ALTFs will receive compensation in the form of one course release per long semester. A modest budget of $500 annually will be available for each ALTF to purchase necessary educational supplies, materials, or software. In addition, fellows will be provided with lunch during monthly cohort meetings.

Management: Recruitment and selection of ALTF cohort members will be managed by the QEP Development Team, with one team member serving as an uncompensated coordinator and facilitator of each cohort. This facilitator will be responsible for maintenance of the ALTF cohort curriculum, coordination of monthly meetings, and arranging mentoring between Year 1 and Year 2 cohort members. Other responsibilities such as the submission of workload adjustments to departments, ordering of refreshments, room reservations, and general maintenance of the monthly cohort meetings will be managed by the administrative support staff in the PACE Center.

Additional expectations from ALTF cohort members include formal status reports each semester, including a comprehensive literature review to be published on the QEP website. This literature review will be available as a valuable resource to all SHSU faculty. A final report will also be expected from each cohort member, also publicly available to SHSU faculty. As mentioned above, a dissemination plan will be required with the application proposal. It is expected that each ALTF cohort member will share the results of their fellowship

with the academic community, whether in the form of a research article submission, a peer-reviewed conference proceeding, or a sponsored campus, regional, or national workshop in which their particular technique or finding is shared with other educators.

Those faculty members who have completed the two-year fellowship will be formally recognized as ALTFs in the late spring semester of their second cohort year. A dinner reception will be held to honor this recognition, with invitations extended to the provost and president, as well as the college deans and department chairs of each fellow. This banquet will also formally recognize those faculty who have completed the ACUE course.

RESOURCES FOR INTEGRATION

Three additional opportunities will be available throughout and beyond the QEP period to independently complement the sequence of faculty development interventions. Each resource will enhance the use of active learning by faculty with various levels of experience. From novice faculty who wish to attend a workshop focused on an innovative teaching technique to expert users of active learning who have a wealth of knowledge to share (and still have much to learn from colleagues), there will be many opportunities for a wide variety of faculty to take advantage of these QEP resources.

As was the case with the sequence of three stages to become an expert user of active learning, not all of these opportunities are new to SHSU. One in particular will be a welcome addition to the teaching and learning culture on our campus.

TEACHING INNOVATION GRANTS

In Spring 2017, several proposed initiatives resulted from the inaugural year of involvement with the AASCU Re-Imagining the First Year (RFY) program. One of these created a competition for faculty to be awarded Teaching Innovation Grants (TIGs) to incorporate evidence-based teaching strategies (including active learning) into a particular course. Faculty awardees received a modest summer stipend in exchange for a commitment to design, implement, assess, and share their implementation.

Interest from faculty was higher than expected. With enough funds to accept six proposals, 19 proposals were submitted. The PACE Center solicited additional funds from colleges and departments across campus hoping to increase the number of accepted proposals, effectively doubling the amount of funds available. In the end, 10 proposals were funded involving 38 faculty members across eight departments, impacting students in twelve different courses.

In Fall 2018, the SHSU STEM Center borrowed the success of the TIGs for a more focused setting within the College of Sciences and Engineering Technology. Of the 25 faculty who participated in the Summer 2018 Mobile Summer Institute described above, 10 were awarded a STEM Center mini-grant ($2,000 salary stipend plus a $1,500 flexible account for supplies, equipment, technology or teaching assistants) in exchange for designing, incorporating, assessing, and sharing a specific active learning technique in a Fall 2018 STEM undergraduate classroom. The awarded proposals ranged from standard active learning techniques (using app-based clickers daily to increase student engagement in a biology course) to creative (designing a games-based liberal arts mathematics class) to innovative (growing cultures of bacteria from student-collected soil samples in a first-year STEM learning community).

In order to broaden both the scope and the scale of these successful mini-grants, TIGs will continue to be available to several faculty across campus each year, encouraging the use of evidence-based or innovative active learning techniques in their classrooms. Proposals will be solicited in early fall of each year, beginning in 2019.

Scale: Up to 20 TIGs will be awarded each year. Typically, proposals will be solicited in the fall semester, and accepted by the first of November. Awardees will be notified by the first of December, with the expectation of regular meetings of awardees during the following spring semester. Course development will occur that spring and summer, with integration of the course materials completed during the following fall semester. As needed, flexibility will be granted to those applicants who wish to modify a course which is only taught each spring semester.

Selection: The QEP Development Team (consisting of ACUE graduates, ALTF cohort members, and QEP personnel) will evaluate and rank all submitted faculty TIGs proposals. The highest ranked proposals will receive funding.

Compensation: In addition to a compensation amount of $2,000 in return for completion of stated goals in each TIGs proposal, faculty participants will be provided with lunch during regular meetings in the spring semester after notification of the award.

Management: As this component of the QEP is already fully implemented, the PACE Center staff will continue to administer all TIGs promotional materials as well as solicit and collect applications from faculty. Awarding funds to selected faculty will be similar to an internally-awarded grant. Consequently, the TIGs funds will continue to be administered through the Office of Research Administration.

Upon completion of the course in which active learning was integrated, each TIGs recipient will submit the materials that were used and/or designed to the SHSU Active Learning Library, including any information required for other faculty members to integrate them into their classrooms. In addition, TIG recipients will be asked to share their experiences with SHSU faculty, either through the annual summer PACE Center Teaching and Learning Conference, the STEM Center annual symposium held each spring, or other similar public campus event.

All TIG recipients will submit the results of their teaching intervention to the Assessment Team for the purpose of evaluating the progress of the QEP and contributing to the educational research literature.

FACULTY LEARNING COMMUNITIES

Every year, there are faculty members interested in expanding their knowledge or participating in a more focused application of active learning. In order to facilitate these discussions, the PACE Center will begin developing and sponsoring multiple Faculty Learning Communities (FLCs) each year.

> **Faculty Learning Communities have been shown to increase faculty interest in teaching and learning and provide safety and support for faculty to investigate, attempt, assess, and adopt new (to them) methods.**

Formally established by Dr. Milton Cox and his collaborators at Miami University of Ohio four decades ago, FLCs have been shown to increase faculty interest in teaching and learning and provide safety and support for faculty to investigate, attempt, assess, and adopt new (to them) methods (Cox & Richlin, 2004).

Creating FLCs on established models (Miami University and the University of Cincinnati's FLCs in their Center for the Enhancement of Teaching and Learning) will provide faculty from across campus to learn from each other, work together, and work towards a common, focused goal.

Examples of FLCs which may be formed over the course of the QEP:

- **Scholarship of Teaching and Learning Journal Club:** faculty participants will read, discuss, and analyze current articles on the research of teaching and learning.
- **Scholarship of Teaching and Learning Writing Club:** faculty members, who have completed research and/or data collection but are seeking a supportive group to lend motivation and advice regarding the writing and submission process, will meet to write and provide each other feedback.
- **Active Learning in Large Classroom Settings:** faculty members integrating active learning in large sections (>80 students) will meet to provide mutual guidance and support.
- **Active Learning in Online Pedagogy:** faculty members integrating active learning in online courses will meet to provide mutual guidance and support.
- **Active Learning in Graduate Courses:** faculty integrating active learning in graduate courses will meet to provide mutual guidance and support.
- **Active Learning in Core Courses:** faculty members (in particular non-tenure track instructors) integrating active learning in (particularly first-year) service courses will meet to provide mutual guidance and support.

While most of these FLCs will meet monthly or twice each month on campus, several may opt to conduct online meetings. In this latter case, there are several classrooms and conference rooms equipped with the necessary technology to foster virtual meetings.

Each semester all FLCs will meet collectively for 90 minutes to share their progress and seek feedback from participants of other FLCs.

Scale: Each year it is anticipated that six-eight FLCs will be formed, with a membership of five-ten faculty.

Selection: Each spring semester, an online survey (using Qualtrics) will be administered to determine the common interests of faculty across campus. The results of this survey will be compiled and used to determine the topics (and potential participants) of the FLCs during the following fall/spring semesters. Recruitment of additional members, if necessary, will be conducted by PACE Center

staff early in the fall semesters. The QEP Development Team will monitor the interests of ACUE members, ALSI participants, and ALTF meetings to coordinate the creation of FLCs and new members of existing FLCs. Membership in each FLC will require a formal application, but all faculty with an interest in a particular FLC will be accepted and invited to participate.

Compensation: Other than occasional lunch provided at larger (or initial) meetings of established FLCs, no compensation to members will be necessary. A modest budget of $500 annually will be available for each FLC to purchase educational supplies, materials, or software as necessary.

Management: The PACE Center staff will maintain the membership list of each FLC, solicit and collect applications from faculty, and manage the website listing the continual availability of the FLCs.

TRAVEL FUNDS FOR EXTERNAL WORKSHOPS

Each year, there are several opportunities for faculty to either learn specific methods of teaching or to share the successes of their own experiences with active learning. The QEP will maintain a set of funds specifically set aside for faculty who wish to take advantage of these opportunities.

There are many examples of professional development workshop opportunities for faculty to learn more about active learning either in a specific discipline, or a specific technique. These range from regularly scheduled workshop opportunities such as:

- the eight annual Lilly conferences and institutes held across the country, which share and model a scholarly approach to teaching and learning
- the four annual workshops on inquiry-based learning sponsored by the Academy of Inquiry Based Learning
- the several Process-Oriented Guided Inquiry Learning (POGIL) workshops held each year to introduce and experience POGIL

Less frequent offerings in which faculty members may have only one chance to participate:

- the Serious Play Conference, a leadership conference for both those who create serious games/simulations and those who implement game-based learning programs
- TRansforming Instruction in Undergraduate Mathematics via Primary Historical Sources (TRIUMPHS), an opportunity to teach content based around original content sources
- The Small World Initiative symposium, a three-day workshop showcasing the integration of antimicrobial research into a first-year biology course

The QEP Development Team will maintain a list of workshops and seminars available to faculty, especially those that have been particularly useful to SHSU faculty in the past. In those years in which interest in these particularly beneficial workshops appears to be waning, there will be active recruitment. The QEP Development Team and the PACE Center staff will ensure that these designated travel funds affect a large and diverse group of instructors and foster a strong presence of SHSU faculty at these workshops.

There are also several opportunities for faculty members to share the results of their teaching innovations to their peers. Those faculty who have been selected to present their results at a conference, meeting, or seminar are encouraged to apply for assistance to fund their travel and registration costs.

Scale: up to 25 trips will be funded at an anticipated average cost of $2,000 per trip.

Selection: The QEP Development Team (consisting of ACUE graduates, ALTF cohort members, and QEP personnel) will evaluate all submitted proposals for travel to workshops and conferences. An attempt will be made to allocate all annual funds before the middle of each fall semester, with the realization that not all travel funds are completely spent as planned, and not all travel arrangements can be made so early in the academic year.

Compensation: other than the allocation of up to $2,000 per workshop or conference, no additional compensation will be provided to faculty whose applications are accepted.

Management: The PACE Center staff will advertise the availability of these travel funds, solicit and collect applications from faculty, and manage the reimbursement of travel costs once each is completed.

Three Stages on the Pathway to Becoming an Expert on Active Learning			
	Active Learning Summer Institutes (ALSI)	**ACUE's Course in Effective Teaching Practices**	**Active Learning Teaching Fellowships (ALTF)**
	From those who are novices with active learning to expert practitioners		
Target Audience	Those new to active learning, perhaps new to teaching. Later years may see second version, one for repeat users	Faculty with some experience, those willing to learn more in order to affect change in their classrooms and their students	Faculty who want a long-term examination of a particular active learning technique or strategy, are willing to implement it on a large scale and serve as peer mentor
Curriculum	Diversity and its importance; exposure to several evidence-based active learning techniques and strategies; methods of assessment	Set by ACUE: 25 modules in five units: course design, productive learning, active learning, higher order thinking, and assessment	Comprehensive literature review; in-depth analysis of best practices; course redesign; full implementation, assessment and adjustment
Scope	Held three times each summer, equivalent of one week	Fall and spring semesters	Two academic years; the second year is spent as a peer mentor for the next cohort
Scale	60 faculty per summer	20-30 faculty per year	14-18 faculty per cohort
Compensation	$500 per faculty member plus stipend for facilitators	$1,000 per faculty participant plus programming costs	One course release per year
Expectations of Participants	Integrate at least one active learning techniques into their curriculum the following fall semester	Service on selection committees (for TIGs and travel mini-grants), assistance with assessment of active learning in classrooms	ALTFs will serve as ambassadors to their college and department, helping to recruit more colleagues

Flexible Interventions Available Each Year			
	Teaching Innovation Grants	**Workshops**	**Faculty Learning Communities**
	Faculty at all levels of experience with active learning will be encouraged to apply		
Target Audience	Faculty (or group of faculty) interested in either redesigning a course or integrating active learning in a particular course or sequence of courses	Faculty willing to attend workshops or teaching seminars; faculty presenting results of active learning experience at teaching conferences	Faculty interested in applying active learning to a particular setting; faculty wanting to focus attention on a particular active learning technique
Curriculum	Spend one summer developing course materials for use in the following fall or spring	Attendance at workshops or conferences to learn a particular technique and/or disseminate results	Cohorts of faculty discussing best practices for implementing active learning in particular settings such as online courses, graduate courses, large sections, core courses; a reading or writing group
Scope	Mini-grants available each summer.	Throughout each year.	Cohorts will last a year or more
Scale	Up to 20 per year	Up to 25 per year	6-8 FLCs each year, 5-10 faculty per cohort
Compensation	$2,000 stipend	None	None
Expectations of Participants	Participants are required to submit materials to repository of active learning materials, share experience with SHSU faculty	Participants are required to share experience with SHSU faculty (Teaching & Learning Conference, Faculty Learning Community, etc.)	Cohort leaders will report to QEP Director and campus community the conclusions of each FLC

INSTITUTIONAL TRANSFORMATION

Collectively, the interventions above are designed to provide the guidance and resources required by instructors who have varying levels of experiences with active learning. To ensure a culture of active learning is not only supported by university administration, but also allowed to expand across campus, the following components of the QEP are designed to provide more indirect support to faculty participants and the campus as a whole.

CLASSROOM REDESIGN

While there are several classrooms across the campus suitable for the use of active learning, the vast majority are instead designed with either fixed rows of attached seating or large, difficult to move desks traditionally arranged in columns facing one direction. These more traditional classroom designs do little to inspire the collaborative, active, and group learning promoted by this QEP.

In order to increase the availability of active learning classrooms across campus, a QEP Effective Learning Spaces Team will be formed to determine which existing classrooms can and should be converted to rooms more conducive to active learning. This team will consist of QEP personnel, faculty, staff, and students from each of the seven colleges. The team will meet regularly to solicit, assess, and prioritize requests for classroom redesign and submit two rooms each year to the Vice President for Finance and Operations. The two requests will consist of one proposal for minor updates (for example, a need for new furniture) and one proposal for a major renovation (new furniture, construction modification, new technology needs).

This Active Learning Library will serve as a clearinghouse of teaching materials and techniques that SHSU faculty members can search based upon their own situational needs.

Each year, QEP funds will be earmarked for these two classroom renovations. The rooms will be strategically selected to accommodate other, more general space projects on campus (such as plans for building renovations in the near future), and will, over the course of the QEP, be allocated so as to equally benefit all colleges and classroom buildings on campus.

The QEP Effective Learning Spaces Team will be charged with allocating the funds to be used for particular active learning classroom redesign projects, and determining the best design with the greatest benefit to the classes taught in those rooms.

THE ACTIVE LEARNING LIBRARY

During each year of the QEP, course materials for use in an active learning setting will be produced by faculty members across campus. Whether developed as part of the portfolio during the Active Learning Summer Institute (ALSI), the course redesign produced by an Active Learning Teaching Fellow (ALTF) or course materials written by recipients of the Teaching Innovation Grants (TIG); several dozen of examples of active learning will be produced, ready for use in similar settings. In order to make these materials searchable and available, the Newton Gresham Library will create, support, and preserve a digital repository available to all SHSU faculty.

This Active Learning Library will serve as a clearinghouse of teaching materials and techniques that SHSU faculty members can search based upon their own situational needs. The techniques submitted to the database will be classified according to a set of discrete parameters used to describe both the classroom setting for which the materials were designed, as well as an active learning category.

For example, a TIG recipient has developed a set of course notes to be used over three weeks in her online section of ENGL 1302. These course notes use the technique of role playing to enable students to empathize with characters in one of Shakespeare's plays. After the completion of the course integration, a member of the Communications Team (initially one of the research and instructional librarians on the team) will assist the faculty member with classifying her teaching materials by setting and intended use.

When another faculty member is interested in learning more about role playing in a small online section of a first-year history course, this entry will appear along with a description of its use, the level of its success, and contact information of the person who made the submission. The materials can be downloaded for immediate use, or a meeting time between the faculty members can be arranged to learn more about the experience. If the technique is still being used by the English instructor who made the submission, an informal classroom observation can be arranged for the interested history instructor.

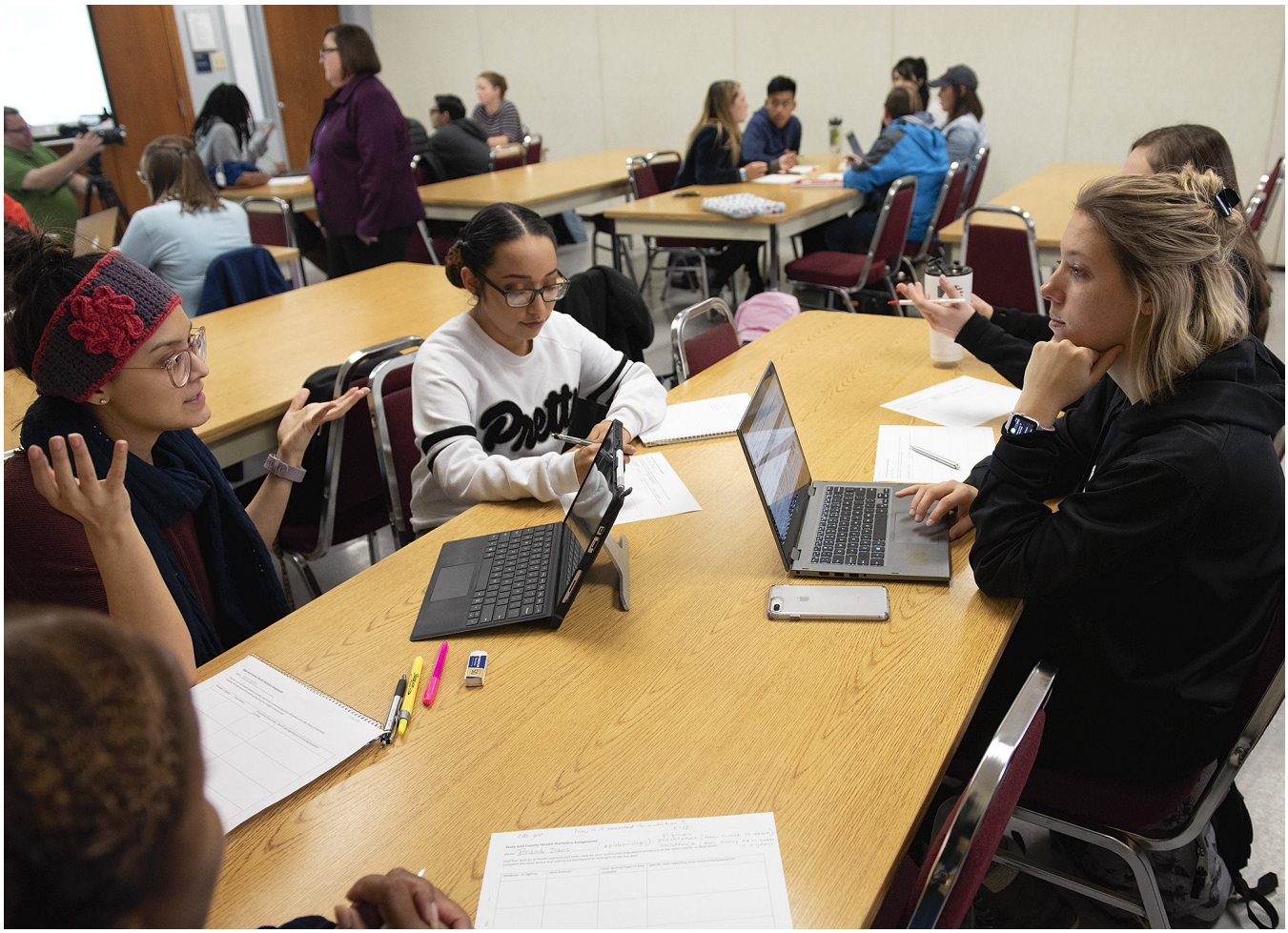
The database created by the Communications Team will use several discrete parameters to classify each of the submissions. Some of these parameters will be:

- time to administer (one class period, several class periods, over multiple weeks)
- scale of intervention (individual students, small groups, large groups, entire class)
- complexity (simple, moderate, complex)
- setting (during class, outside of class time, off-campus)
- course format (online, hybrid, traditional)
- skills utilized (discovering, processing, applying)
- part of Bloom's Taxonomy emphasized
- applied active learning strategy (role playing, inquiry-based learning, case study, etc.)

Specific members of the QEP Communications team will assist and oversee the submission process to ensure proper classification.

The Active Learning Library will be a comprehensive, searchable, and expandable database to be used by SHSU faculty members as an invaluable resource to incorporate active learning into their classrooms.

Embedded into the curriculum of the ALSI and ACUE course (as well as part of each FLC) will be a thorough discussion of the benefits and use of the Active Learning Library. Consequently, almost immediately upon implementation of the QEP, several dozen entries to the repository will be available for use and by the third year several dozen (if not hundreds) of entries will be searchable and usable. By the end of the QEP the Active Learning Library will be a comprehensive, searchable, and expandable database to be used by SHSU faculty members as an invaluable resource to incorporate active learning into their classrooms.



VII. TIMELINE

Several of the proposed faculty development opportunities discussed in Section VI have already been implemented, either in full or as a pilot program. For example, the proposed Teaching Innovation Grants emerged as one of the Re-Imagining the First Year (RFY) initiatives. Also over the past two years, the Division of Academic Affairs has supported cohorts of faculty to complete the ACUE Course in Effective Teaching Practices.

The Active Learning Summer Institutes held in the summer will be a scaled-up version of the summer program sponsored by the STEM Center at SHSU. Funded through the Improving Undergraduate STEM Education program of the National Science Foundation since September 2017, the STEM Center (DUE No. 1725674) is a five-year program devoted to increasing both the quantity and quality of STEM degrees earned from SHSU. One of the three stated goals of the Center is to increase the use of active learning techniques by STEM faculty. This QEP is a natural extension of the STEM Center.

Because pilot versions of many of the proposed components of this QEP (or structures that can be easily modified to constitute these components) are already in place on our campus, full implementation of its design will occur immediately. In Fall 2019, all actions and interventions described in the Section VI will be implemented. A table summarizing the annual timeline for each intervention, from recruitment of participants through assessment has been provided.

Prior to full implementation in the Fall of 2019, several events will occur on campus to fully engage students and faculty in the importance and benefits of the QEP.

QEP MARKETING

The communication of the QEP to the faculty and staff began early, with the President's office hosting two Faculty and Administrators' Forum events. The first, held on April 4, 2017, formally introduced the QEP topic to campus. On November 5, 2018, the second forum provided an update on the status of the QEP with a formal presentation of its structure as it was approved by the President and her SACSCOC Leadership Team.

In Fall 2018, the SHSU Department of Marketing and Communications began work to design and implement a marketing strategy to not only introduce the campus to the QEP, but also to provide an opportunity to begin the recruitment of interested faculty for the first full year of its implementation. This marketing plan has several components:

- website containing all information regarding the QEP
- video of student testimonials of the success of active learning
- video of faculty testimonials of the benefits of active learning
- promotional materials and signage used to increase awareness of the QEP and recruit faculty participants

In late Fall of 2018, several undergraduate students studying graphic design participated in a design-thinking session to develop strategies and design elements for a marketing strategy. This session, led by two faculty members from the SHSU Department of Art, was also attended by members of the QEP Planning Committee. These committee members discussed goals, concerns, hopes, and fears of the QEP and its objectives. The students then returned with creative elements and ideas in support of QEP communications, both short-term (to increase awareness across campus) and long-term (to help educate and recruit interested faculty participants).

The short-term marketing strategy and plan will culminate in April 2019 with the site visit from the SACSCOC team and the QEP Lead Evaluator. Full implementation of the QEP components will immediately follow the site visit. Recruitment of faculty facilitators and participants will be complete in mid-Spring, as the following table indicates.

TIMELINE OF ANNUAL QEP ACTIVITIES

(SPRING 2019 THROUGH SPRING 2024)

	Spring				Summer		Fall			Spring	
Active Learning Summer Institute	Recruit faculty facilitators	Finalize summer workshop curriculum	Recruit faculty participants	Administer pre-TDOP	Host three ALSIs		Conduct post-survey		Conduct follow-up focus groups	Actively recruit for ACUE	Administer post-TDOP
ACUE Course on Effective Teaching Practices	Recruit faculty facilitator		Recruit faculty participants	Administer pre-TDOP			ACUE course begins				Administer post-TDOP
Active Learning Teaching Fellowships			Recruit faculty participants	Administer pre-TDOP	Plan the ALTF year		Monthly meetings				Administer post-TDOP
Faculty Learning Communities		Administer faculty survey to solicit suggestions for FLCs			Determine topics for FLCs		Recruit members		All FLCs meet late in the semester to share progress		All FLCs meet late in the semester to share progress
Teaching Innovation Grants							Solicit applications	Determine, notify awardees	Monthly meetings		Proposals to Teaching & Learning Conference
Active Learning Travel Mini-grants								Solicit applications	Determine, notify awardees		Proposals to Teaching & Learning Conference
Other	Plan annual Teaching & Learning Conference					Host annual Teaching & Learning Conference					Banquet honoring those faculty who completed ACUE course or ALTF

Administered by QEP Development Team

Administered by QEP Assessment Team

Administered by PACE Staff

VIII. ORGANIZATIONAL STRUCTURE

In late Spring of 2018, a QEP Planning Committee was formed to develop the structure of the QEP, establish a timeline for its implementation, and determine an effective management plan and budget. The primary charge of the committee was to produce the QEP proposal for submission to the Provost and the President of SHSU.

Because the success of the QEP is dependent upon the involvement and development of faculty across campus, the Planning Committee was comprised primarily of faculty members. This diverse group of 20 dedicated faculty, staff, and administrators spent the Summer and Fall of 2018 developing, writing, and editing the QEP proposal.

Doug Constance	Professor	Humanities and Social Sciences
Zach Doleshal	Lecturer	Humanities and Social Sciences
Benjamin Mitchell-Yellin	Asst. Professor	Humanities and Social Sciences
John Newbold	Professor	Business Administration
Ashly Smith	Asst. Professor	Business Administration
Eric Connolly	Asst. Professor	Criminal Justice
Jamie Coyne	Asst. Professor	Education
Andrea Foster	Assoc. Professor	Education
Marilyn Rice	Professor	Education
Ashley Crane	Research & Inst. Librarian	Newton Gresham Library
Michael Henderson	Professor	Fine Arts and Mass Communication
Kiwon Seo	Asst. Professor	Fine Arts and Mass Communication
Simone Camel	Asst. Professor	Health Sciences
Brandy Doleshal	Assoc. Professor	Sciences & Engineering Technology
Taylor Martin	Asst. Professor	Sciences & Engineering Technology
Somer Franklin	Associate Vice President	Academic Planning and Assessment
Ken Hendrickson	Dean	Graduate Studies
Brian Loft, Chair	Faculty Admin. Fellow	Provost's Office
Todd Primm	Director	PACE Center
Jeff Roberts	Director of Assessment	Academic Planning and Assessment

After receiving approval of the QEP proposal by the President and Provost, in January 2018, the transition of the QEP Planning Committee to an Implementation Committee began. This Implementation Committee consists of four teams and will be responsible for full implementation of the QEP and its assessment. The four teams, their roles and responsibilities, their chairs, and the QEP leadership positions will now be described in full.

THE IMPLEMENTATION COMMITTEE AND TEAMS

The Implementation Committee will ensure all goals and objectives of the QEP proposal are properly met in a timely manner. In particular, the committee will ensure:

- the SACSCOC Vice President and his team receive all information regarding the QEP proposal during their on-site campus visit
- strict adherence to the stated timeline and budget
- all assessment instruments are designed and in compliance with Institutional Review Board (IRB)
- all new positions are filled with qualified applicants

Chaired by the QEP Director, the Implementation Committee is comprised of members of the following four teams:

1. **The Development Team**. Chaired by the PACE Faculty Fellow for Development, the Development Team meets twice monthly each spring semester to select participants in the Active Learning Summer Institute (ALSI) and the ACUE course as well as evaluate applications for the following year's Active Learning Teaching Fellowships. During fall semesters, monthly meetings will suffice. Specific responsibilities include:
   - ensures all faculty development components of the QEP are implemented in a timely and effective manner
   - focuses on the recruiting a diverse group of faculty participants into each of the three stages: the summer institutes, the ACUE courses, and the teaching fellowships
   - recruits workshop facilitators for both ALSI and the ACUE course
   - creates appropriate Faculty Learning Communities based on faculty needs

- promotes travel and teaching innovation grants

2. **The Assessment Team.** Chaired by the PACE Faculty Fellow for Assessment, the Assessment Team will ensure adherence to the assessment plan and timeline as well as maintain several data sets whose analysis may result in the potential for several publication opportunities. The SHSU Director of Assessment in the Office of Academic Planning and Assessment will be a de facto member of the QEP Assessment Team. Responsibilities will include:
   - compliance with the SHSU IRB
   - maintenance of all assessment instruments
   - timely administration of pre- and post-intervention surveys
   - training and recruitment of volunteer classroom observers
   - analysis of collected data
3. **The Communications Team.** Chaired by Dr. John Newbold, Assoc. Professor of Marketing, this team manages all communications and information regarding the QEP including:
   - developing effective messaging
   - build awareness of the benefits, purpose, and goals of the QEP
   - manage the QEP website in order to properly and effectively market the benefits of the initiatives and meet the informational needs of the campus community
   - maintain the Active Learning Library
   - maintain a member list of each recipient of travel and Teaching Innovation Grants as well as a current list of all active Faculty Learning Communities (and their participants and meeting dates and times).

   The members of the Communications Team will consist of faculty members who were instrumental in establishing the Active Learning Library, several research and instructional librarians from the SHSU Newton Gresham Library, and several staff members from campus marketing and communications.
4. **The Effective Learning Spaces Team.** The structure and mission of this team is modeled after the Learning Spaces Team at Indiana University, whose goal is to "create a mosaic of active learning spaces to support a variety of pedagogical strategies." A large, diverse group of faculty members, university staff, and

students will collaborate with representatives from the Division of Finance and Operations to provide input from experienced educators in building and renovating teaching and learning spaces. The team will:

- match the needs of the faculty members and departments who regularly use active learning with the designs of classrooms that have been shown to be most effective for their use.
- meet regularly to solicit, assess, and prioritize requests for classroom redesign and submit two each year to the SHSU Vice President for Finance and Operations. The two requests will consist of one minor updates and one major renovation.

The members of the Effective Learning Spaces Team will consist of faculty (most of whom who are current users of active learning in all disciplines across campus), staff (chairs of large departments, facilities staff), and students (both representatives of the student body as well as representatives of graduate education programs).

THE QEP MANAGEMENT PERSONNEL

QEP Director. This position serves as chair of the QEP Implementation Committee and reports directly to the Vice Provost for Academic Affairs as well as receives guidance and approval from the Associate Vice President of Academic Planning and Assessment (who reports directly to the Provost and Vice President of Academic Affairs). The Director is responsible for monitoring the progress in accomplishing the goals and objectives of the QEP by:

- maintaining proper adherence to the stated timeline, budget, and assessment plan
- regularly monitoring the progress of the QEP objectives, the faculty participation, and the effectiveness of the budget towards the goals of the QEP
- ensuring compliance of the QEP within the SACSCOC guidelines

The stated responsibilities of the QEP Director will be assumed by the current Faculty Administrative Fellow who reports to the Vice Provost, so no additional resources will be required for this position.

Director of the PACE Center (Professional and Academic Center for Excellence). The Director serves as senior member of the QEP Implementation Committee and is primarily responsible for:

- management of the faculty development components of the QEP
- recruitment of faculty coordinators and facilitators for the ALSIs each summer and the annual ACUE course each year
- supervision of the PACE Center staff in the disbursement of faculty stipends, travel reimbursement, and cost of materials, supplies, and meals

The PACE Director generally reports directly to the Vice Provost of Academic Affairs. For the purpose of accomplishing the goals and objectives of the QEP, however, the Director of the PACE Center will coordinate with the QEP Director to ensure all QEP goals and objectives are met. The Director of the PACE Center is a half-time faculty appointment (currently held by Dr. Todd Primm, professor of biological sciences) and therefore requires no additional funding from the QEP budget.

In order to assist the PACE Director with the many additional duties and responsibilities of the PACE Center, two additional half-time, three-year faculty appointments will be created to support the QEP.

The PACE Associate Director for Development. This half-time position chairs the QEP Development Team and is responsible for:

- ensuring faculty training and enrichment initiatives operate fully and smoothly
- recruiting a diverse, representative, and vibrant set of faculty participants
- coordinating with the PACE Director to assemble committee members to serve as reviewers of applications for travel and teaching innovation grants
- monitoring the progress of Faculty Learning Communities
- assisting the PACE Director with administration of ALSIs and the ACUE course

The PACE ADD will generally be a three-year appointment.

The PACE Associate Director for Assessment. This half-time position chairs the QEP Development Team and is responsible for:

- ensure the team properly and timely applies all of the assessment and evaluation tools described in the Assessment Plan

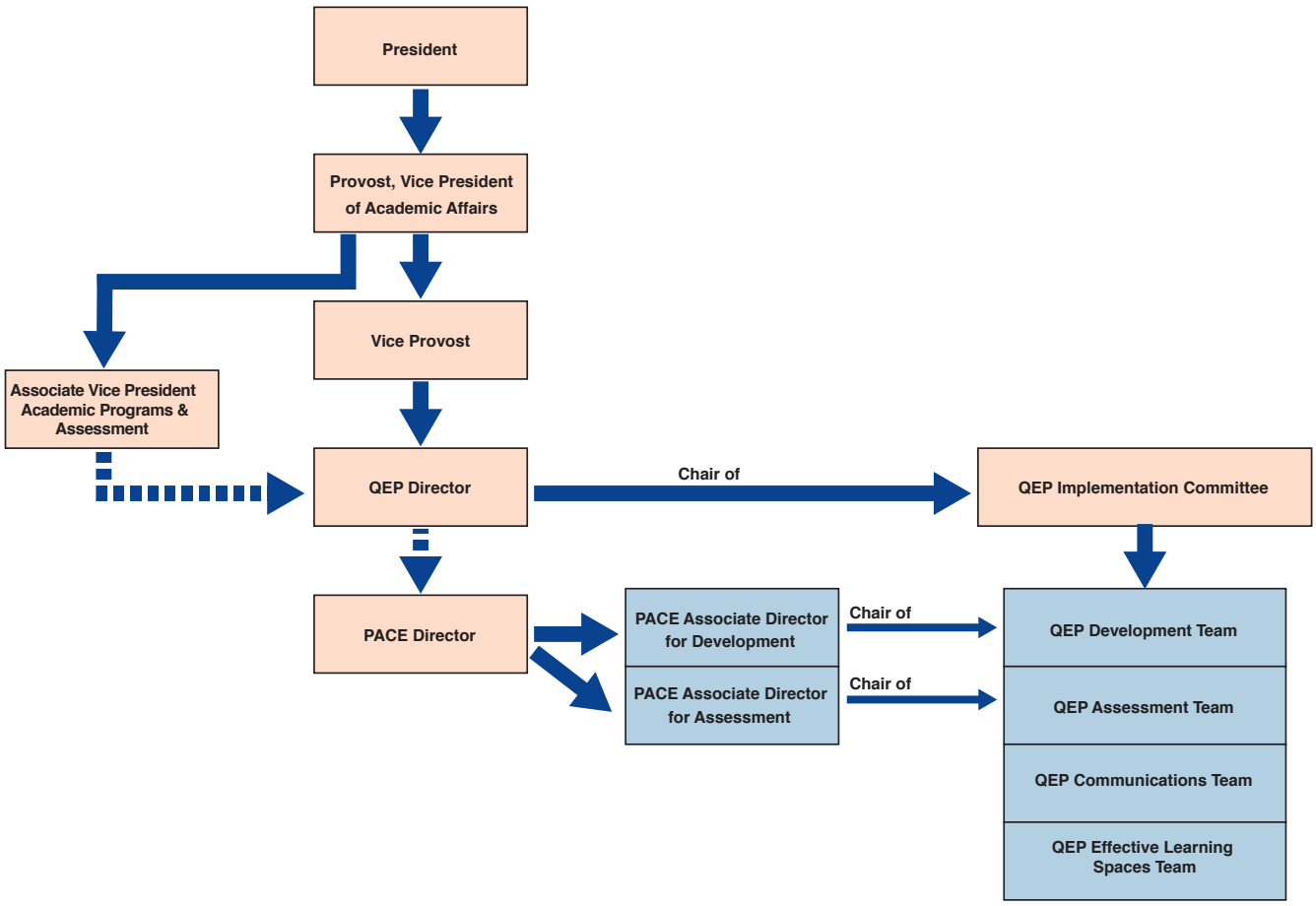
- coordinate faculty volunteers (chosen from among the ALSI participants and teaching and travel grant recipients) or qualified graduate students to administer and score the assessment instrument used to determine the extent of active learning used in classrooms

Each PACE Associate Director for Assessment will serve a three-year appointment. The QEP Implementation Committee will make every attempt to fill both half-time faculty fellowships positions at different times to ensure continuity of experience with the QEP. Consequently, the first Associate Director for Development in Fall 2019 will serve a two-year appointment. This design will ensure—with the exception of Fall 2019—only one year in which both fellowships are filled with faculty members who are new to the QEP.

Compensation for each PACE faculty fellow will be equivalent to three course releases each year plus 1.5 months of summer salary, effectively ensuring each fellow serves as QEP personnel for half their annual time. The academic departments from which they are hired will consequently receive enough funds from the QEP budget to hire adjunct instructors to teach the two courses each semester initially intended for these fellows. In order to ensure these newly hired adjunct instructors receive the support necessary to replace these experienced faculty fellows, funds will be set aside for the purpose of training and development.

An additional full-time PACE Center Administrative Support staff member will be created to assist both PACE Associate Directors. This staff member will process travel reimbursement and payroll action forms, order supplies and materials, process necessary catering requests, and coordinate with other staff members across campus.

ORGANIZATIONAL CHART



IX. RESOURCES

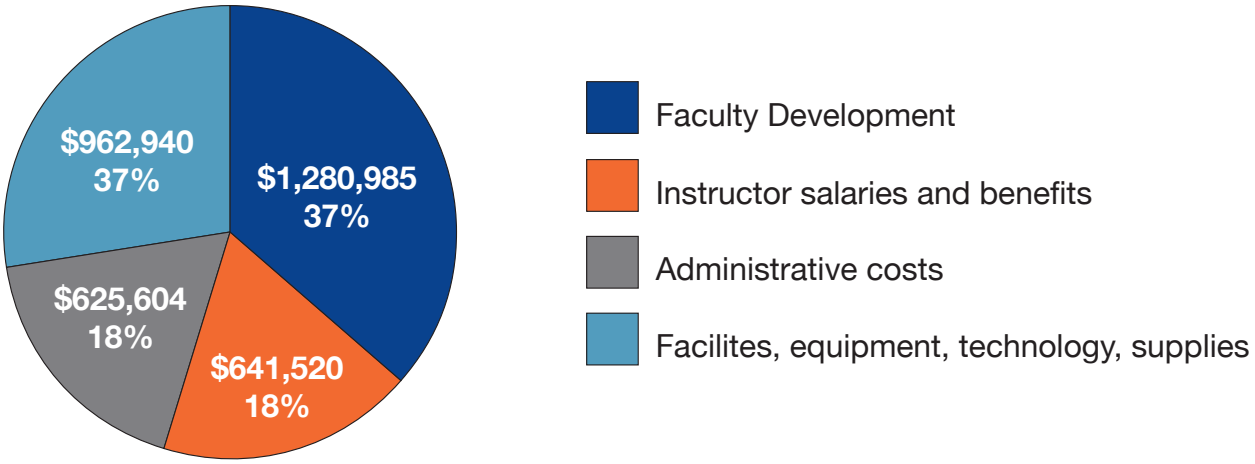
Over the course of the QEP, $3.5 million will be utilized to ensure all goals and objectives are met. Of these funds, more than two-thirds are allocated as new initiatives, while one-third may be classified as in-kind funding. These in-kind funds are contributions from the PACE Center (such as the Teaching Innovation Grants) or already allocated funds from external grants (such as the NSF-funded STEM Center).

More than half of the funds allocated for this QEP are devoted to either faculty professional development or faculty salaries and benefits. Less than 20% are administrative costs, and almost all of the funds allocated to facilities and equipment are devoted to classroom redesign, which will directly benefit students.

In order to ensure full implementation of all QEP goals and progress on its objectives, three positions will be created on campus: two half-time faculty fellowships and one new full-time administrative staff position.

These three positions will be physically located in the PACE Center, with no structural modifications required to its office space. Furniture for these three individuals will be funded through the Frontier Set grant (funded by AASCU and the Bill & Melinda Gates Foundation) described in Section III.

QEP EXPENSES BY CATEGORY, 2019-2014



2019-24 QEP Budget							
	Year 0 FY 2019	Year 1 FY 2020	Year 2 FY 2021	Year 3 FY 2022	Year 4 FY 2023	Year 5 FY 2024	Total
Marketing and Promotion – New Funding	$39,500	$0	$0	$0	$0	$0	$39,500
Two per year, half-time PACE Center Associate Directors – New Funding							
$3,000 Instructor salary to offset each course release granted		$24,000	$24,000	$24,000	$24,000	$24,000	$120,000
3 months Summer salary (1.5 months each)		$26,667	$27,467	$28,291	$29,139	$30,014	$141,577
$4,000 Prof. dev. for replacement instructor		$8,000	$8,000	$8,000	$8,000	$8,000	$40,000
Subtotal		**$58,667**	**$59,467**	**$60,291**	**$61,139**	**$62,014**	**$301,577**
PACE Center Administrative Support – New Funding							
$40,000 salary for one full time position		$40,000	$41,200	$42,436	$43,709	$45,020	$212,365
$10,000 additional annual O&M		$10,000	$10,000	$10,000	$10,000	$10,000	$50,000
Subtotal		**$50,000**	**$51,200**	**$52,436**	**$53,709**	**$55,020**	**$262,365**
Active Learning Summer Institutes (ALSI) – New Funding							
60 participants per year							
$500 Compensation per faculty member	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$180,000
$1,000 Compensation for workshop facilitators	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$18,000
$15 Lunch per day over five days	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500	$27,000
$500 Week at campus hotel for nonlocal new faculty	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$18,000
Subtotal	**$40,500**	**$40,500**	**$40,500**	**$40,500**	**$40,500**	**$40,500**	**$243,000**
ACUE's Course in Effective Teaching Practices – New Funding							
25 participants per year							
$1,250 Program costs		$31,250	$31,250	$31,250	$31,250	$31,250	$156,250
$1,000 Compensation per faculty participants		$25,000	$25,000	$25,000	$25,000	$25,000	$125,000
$2,000 Compensation for cohort facilitator		$2,000	$2,000	$2,000	$2,000	$2,000	$10,000
$15 Lunch each monthly meeting		$3,375	$3,375	$3,375	$3,375	$3,375	$16,875
Subtotal		**$61,625**	**$61,625**	**$61,625**	**$61,625**	**$61,625**	**$308,125**
Active Learning Teaching Fellowships (ALTF) – New Funding							
18 participants per year							
$15 Lunch each monthly meeting		$4,860	$4,860	$4,860	$4,860	$4,860	$24,300
$50 Closing congratulatory dinner, per person		$1,800	$1,800	$1,800	$1,800	$1,800	$9,000
$500 Materials and supplies for each cohort member		$9,000	$9,000	$9,000	$9,000	$9,000	$45,000
$3,000 salary to offset each course release granted		$54,000	$108,000	$108,000	$108,000	$108,000	$486,000
Subtotal		**$69,660**	**$123,660**	**$123,660**	**$123,660**	**$123,660**	**$564,300**
Teaching Innovation Grants (TIGs) – In-kind Funding							
20 recipients per year							
$2,000 summer salary (STEM Center)		$18,000	$26,000	$24,000	$24,000	$0	$92,000
$2,000 summer salary (PACE Center)		$22,000	$14,000	$16,000	$16,000	$40,000	$108,000
$1,500 Supplies for STEM faculty TIGs		$13,500	$19,500	$18,000	$18,000	$0	$69,000
Subtotal		**$53,500**	**$59,500**	**$58,000**	**$58,000**	**$40,000**	**$269,000**
Travel Grants							
25 recipients per year							
$2,000 new funding, travel to workshops, conferences		$34,000	$34,000	$34,000	$42,500	$50,000	$194,500
$2,000 In-kind Funding (STEM Center), travel to workshops, conferences		$16,000	$16,000	$16,000	$7,500	$0	$55,500
Subtotal		**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$250,000**
Faculty Learning Communities (FLCs) – New Funding							
80 participants per year (8 FLCs, each with 10)							
$15 refreshments at monthly meetings		$7,200	$7,200	$7,200	$7,200	$7,200	$36,000
$500 Supplies for each FLC, annually		$4,000	$4,000	$4,000	$4,000	$4,000	$20,000
Subtotal		**$11,200**	**$11,200**	**$11,200**	**$11,200**	**$11,200**	**$56,000**
		$150,000	$150,000	$150,000	$150,000	$150,000	$750,000
Classroom redesign - In-kind funding (HEAF)							
$50,000 simple redesign (furniture, paint, boards)		$50,000	$50,000	$50,000	$50,000	$50,000	$250,000
$100,000 complex redesign (simple plus new technology)		$100,000	$100,000	$100,000	$100,000	$100,000	$500,000
Subtotal		**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$750,000**
Fringe Benefits – 32% of Compensation	**$10,560**	**$77,733**	**$100,709**	**$99,613**	**$99,885**	**$83,844**	**$472,345**
Total Funds	**$80,000**	**$623,445**	**$703,365**	**$704,584**	**$707,385**	**$692,270**	**$3,511,049**
Total New Funding	**$80,000**	**$391,145**	**$465,065**	**$467,784**	**$479,085**	**$489,470**	**$2,372,549**
	100%	63%	66%	66%	68%	71%	68%
Total In-kind Funding	**$0**	**$232,300**	**$238,300**	**$236,800**	**$228,300**	**$202,800**	**$1,138,500**
	0%	37%	34%	34%	32%	29%	32%

X. ASSESSMENT

As described in Section IV, the primary goals of this QEP are to:

1. increase the use of active learning techniques in all levels and types of courses
2. increase the demonstrated levels of undergraduate student success
3. increase the demonstrated levels of undergraduate student learning

These goals are further defined by several objectives and outcomes.

Objective 1. The use of active learning techniques will increase in undergraduate courses across campus, with a particular focus on lower-division, general education courses.

Objective 2. The greater use of active learning techniques will result in increases in student success.

Objective 3. The greater use of active learning techniques will result in increases in student learning, in particular as it relates to SHSU's general education outcomes.

Each objective will be assessed through the use of several measurable outcomes, both direct and indirect. Some outcomes will be measured using existing SHSU instruments, while others will require the use of instruments new to our campus.

OBJECTIVE 1: THE USE OF ACTIVE LEARNING TECHNIQUES WILL INCREASE IN UNDERGRADUATE COURSES ACROSS CAMPUS, WITH A PARTICULAR FOCUS ON LOWER-DIVISION, GENERAL EDUCATION COURSES.

OUTCOME 1A: THE TOTAL NUMBER OF FACULTY MEMBERS USING ACTIVE LEARNING WILL INCREASE.

Each year, cohorts of faculty members will have the opportunity to participate in various workshops and training activities on the use of different active learning techniques in their classrooms. It is expected that up to 200 faculty members will participate in these activities annually, with the expectation that, by the end of the QEP, all full-time instructors will have had the

opportunity to participate in at least one of the six active learning opportunities or resources.

By participating in these six interventions, each faculty member will gain knowledge and experiences with active learning and will expand their use of these techniques within their classrooms. This increase will be measured directly via pre-to-post surveys administered both before and after each intervention. These surveys will distinguish between those who do or do not use active learning by discerning from each faculty participant

- familiarity of particular active learning techniques
- knowledge of the benefits of their use
- extent of their personal

Each year the participants in each of the three stages (the ALSI, ACUE, and ALTF) will participate in this survey to discern whether each participant integrated more active learning into their pedagogy. In addition, students will participate in a pre- and post-survey to examine their enthusiasm and attitudes towards active learning (Cavanaugh et al., 2016). Both surveys were designed to test the exposure-persuasion-identification-commitment process model of buy-in by either students or faculty, and are included in Section XI: Appendix.

Formative assessments of each intervention will improve each of the interventions. These formative assessments will be administered by the PACE Center, and while the results will not indicate progress of the QEP on the stated outcomes, they will allow the QEP personnel and the PACE Center staff to improve the effectiveness of each program.

Additionally, an increase in the use of active learning techniques will be seen university-wide. A baseline survey of full-time instructors was administered in early Fall of 2018 to determine the extent to which faculty are knowledgeable of the benefits and active learning and its use. Using this as baseline data, the QEP will be able to measure not only the increased levels of active learning by faculty, but will also be able to identify those disciplines in which active learning is used less frequently than in others. This baseline survey will be administered again in Year 3 and in Year 5 of the QEP project to determine what gains are being made campus-wide.

OUTCOME 1B: MORE CLASS TIME WILL BE DEVOTED TO ACTIVE LEARNING TECHNIQUES.

Direct assessment methods will be used to measure the relative amount of active learning used in classrooms over time. The Teaching Dimensions Observation Protocol (TDOP) is a customizable observation protocol which can be used to produce robust and nuanced depictions of the dynamics that unfold among teachers, students, and technologies in the classroom (Osthoff, Clune, Ferrare, Kretchmar, & White, 2009). Based on theories of learning as an activity distributed among different actors and artifacts, the TDOP has been extensively field-tested and is being used by over 300 researchers, program evaluators, and professional developers to create detailed descriptions of what happens inside classrooms. In particular, the TDOP can be used for several purposes:

- to document the types of teaching practices being used in your department or organization, especially those known as “active learning” techniques
- to support professional development by providing an objective source of formative feedback for peer mentoring or self-evaluation
- to evaluate the effects of instructional interventions by conducting pre- and post-observations of instruction
- to carefully specify the different teaching practices that distinguish between control and experimental conditions in research studies

Faculty members who participate in the QEP interventions will be identified in the middle of the spring semester, at which time the TDOP can be administered to establish baseline information on the use of active learning. Upon completion of the intervention during the following semester, the instrument will be applied again to determine the extent of additional active learning techniques in use by that faculty member. It is expected that analysis of the TDOP results will indicate general increases in uses of active learning techniques by participants in the QEP activities.

In addition to comparison of TDOP results before and after intervention, a control group of non-participants will also be observed via the TDOP protocol. Comparison of their results to the “post” observations

of QEP participants will allow for further analysis of the extent of the use of active learning. That is, further analysis of student data will also allow for a comparison between student learning and success in the control and experimental groups.

OUTCOME 1C: MEASURES OF STUDENT ENGAGEMENT WILL BE GREATER, PARTICULARLY WITHIN THOSE CLASSROOMS IN WHICH MORE ACTIVE LEARNING IS USED.

In order to evaluate student engagement at the university, and classroom levels, the QEP will employ several different measures of student engagement.

At the institutional level, SHSU administers the National Survey for Student Engagement (NSSE) on a three-year cycle, with the next NSSE administration scheduled for the Spring 2019 semester. Data from selected NSSE questions from the Spring 2019 administration will serve as a baseline for comparison to data from the Spring 2022 and Spring 2025 administrations, with the expectation that students will report being more engaged overtime.

At the classroom level, SHSU will employ the Classroom Survey of Student Engagement (CLASSE), an instrument designed by the administrators of the NSSE. It is composed of two instruments: CLASSEStudent asks students how frequently they engage in various educational practices within a specific course; CLASSEFaculty asks the instructor of that course how important the various educational practices are in facilitating student success. Student and faculty outcomes are then contrasted to identify important and valued educational practices that are occurring less frequently than desired or expected.

The CLASSE will be administered in quasi-experimental fashion, with the instrument being administered in a pre-to-post fashion in selected course sections of faculty members who participated in the different active learning workshops and trainings, as well as control course sections of faculty members who have not participated in the workshops.

It is expected that greater increases in undergraduate student engagement will be observed in course sections incorporating active learning techniques.

OBJECTIVE 2: THE GREATER USE OF ACTIVE LEARNING TECHNIQUES IN WILL RESULT IN INCREASES IN STUDENT SUCCESS.

A comprehensive collection of student success data has been completed since Spring 2017, when SHSU received funding from the Bill & Melinda Gates Foundation and the Association of American State Colleges and Universities (AASCU) to be part of the Frontier Set. This collaborative of 30 colleges, universities and state systems of higher education is committed to collecting, analyzing, and submitting for national comparison several sets of student success data. Beyond the scope of the Frontier Set (whose funding period ends in 2021), the SHSU Office of Institutional Effectiveness has committed resources to not only continue this data collection, but also has begun the development of a set of information dashboards using Tableau to allow faculty, staff, and administrators access to custom visual display of dozens of metrics of student success.

Because of the broad scope and large scale of this QEP, its impact on general student success has the potential to be substantial. If 15% of full-time instructors participate in the available Year 1 QEP opportunities (only 127 of 850, far less than is planned), the probability in the next semester of a full-time student enrolling in at least one course taught by one of these instructors is 56%. In a full academic year, this probability increases to 80%. As more faculty participate in later years of the QEP, it is therefore not unreasonable to expect most first-year students at SHSU to directly experience the benefits of this QEP.

OUTCOME 2A: THE NUMBER OF STUDENTS SUCCESSFULLY COMPLETING ALL FIRST-YEAR COURSES WILL INCREASE

Success in the first year of college is a reliable predictor of graduation. As a direct result of the increased use of evidence-based best practices in first-year gateway courses, the proportion of students who earn a grade of C or higher in all completed first year courses will increase. This proportion has seen increase recently: 56.1% of first-year students in 2016-17 received a grade of C or higher in all completed courses, compared to a three-year baseline average of just under 50%.

This proportion will increase to 65% in 2023-24 by increasing the use of active learning teaching

methods that have been shown to increase student success. Because of the large scale of this QEP, it is not unreasonable to expect that by 2024 most instructors of first-year courses to have participated in at least one of the development opportunities, providing much of the momentum behind this predicted outcome.

Collection of this data will be performed by SHSU Institutional Research (within the Office of Institutional Effectiveness) and analyzed by the QEP Assessment Team.

OUTCOME 2B: SUCCESS RATES IN FIRST-YEAR CORE COURSES WILL IMPROVE.

As described in Section III, the success of students in several first- and second-year courses, as measured by the proportion of students earning a grade of C or above, leaves much room for improvement. With so many of our students the first in their family to attend college, many of our students begin their first semester with at least some suspicion of not belonging in higher education. Poor performance in just one first-year course is often enough to turn the smallest doubt into a signal to not return the following semester.

Even in the case of courses in which student success is not alarmingly low, the success of students enrolled in online sections is far below that of students in sections taught using traditional, face-to-face delivery methods. By providing faculty with the resources and guidance to integrate active learning into their online pedagogy, the gaps of success of online students in these first-and second-year courses will be closed.

Poor performance in just one first-year course is often enough to turn the smallest doubt into a signal to not return the following semester.

The QEP Assessment Team will realize Outcome 2b is met when the success gap of online students is closed, when the A/B/C rates of critical gateway courses have increased, and the number of students who excel in these courses (with a grade of A) increase.

In particular, those students who enroll in sections of first-year courses taught by faculty who utilize QEP resources will succeed at a rate higher than those taught by faculty who do not.

As a sufficient number of students participate in active learning interventions over the course of the QEP statistical examinations will be conducted to determine what, if any, impact the frequency of active learning interventions has upon student success outcomes. Such an examination would help determine whether student engagement in multiple courses using active learning leads to greater student success, and whether such interventions reach a point of diminishing return. If possible, similar examinations would be conducted to examine the efficacy of the different active learning trainings and workshops provided by SHSU during the course of the QEP. Given the need for a sufficiently large sample size to allow for statistical analysis, these analyses would come towards the end of the QEP and would help serve as valuable summative assessments of the QEP's overall success.

OBJECTIVE 3: THE GREATER USE OF ACTIVE LEARNING TECHNIQUES WILL RESULT IN INCREASES IN STUDENT LEARNING, PARTICULAR AS IT RELATES TO SHSU'S GENERAL EDUCATION OUTCOMES.

OUTCOME 3A: STUDENTS WHO ENCOUNTERED ACTIVE LEARNING IN A PREQUEL COURSE WILL PERFORM BETTER IN THE SEQUEL COURSE THAN THOSE WHO DID NOT.

While it is acknowledged that letter grades are not a perfect measure of student learning, it is not unreasonable to expect students who learn more in the first of a two-course sequence to perform better in the second course. In particular, in order to determine if active learning techniques produce increases in student learning, those students who were exposed to these techniques in the first part of a two-course sequence will perform better in the second course than those students who received traditional instruction in the first course.

There are several pairs of courses which will allow for this hypothesis to be examined, including:

ENGL 1301 & ENGL 1302	Composition I & II
MATH 1410 & MATH 1420	Precalculus & Calculus I
MATH 1420 & MATH 1430	Calculus I & II
CHEM 1411 & CHEM 1412	General Chemistry I & II
HIST 1301 & HIST 1302	U.S. History to 1876 & since 1876
ACCT 2301 & ACCT 2302	Principles of Financial & Managerial Accounting
MATH 1324 & BANA 2372	Math for Business & Business Analysis
PHYS 1411 & PHYS 1422	Introduction to Physics I & II

Students who enrolled in prequel courses taught by faculty who use active learning methods will perform better (i.e. have higher A/B/C rates) in the sequel courses than those who were taught using traditional instruction.

OUTCOME 3B: STUDENTS WHO ENCOUNTERED ACTIVE LEARNING WILL PERFORM BETTER ON CONCEPT INVENTORIES THAN THOSE WHO DID NOT.

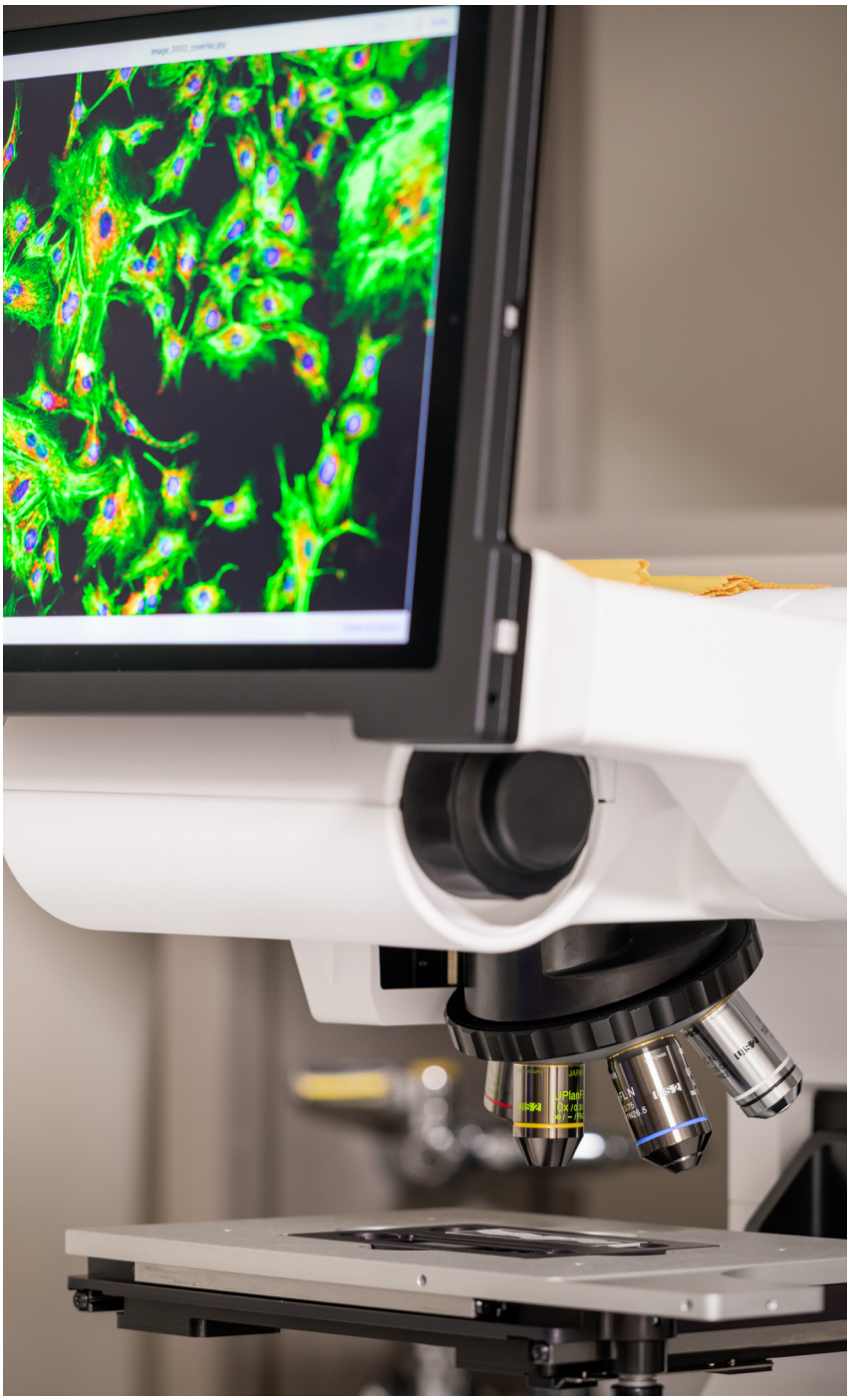
There are several instruments which measure the level to which students in certain disciplines understand concepts which are considered fundamental to that discipline. These concept inventories are widely used in program assessments in higher education. For example, the disciplines of physics (Hestenes, Wells, & Swackhamer, 1992), chemistry (Mulford & Robinson, 2002), biology (Klymkowski & Garvin-Doxas, 2008), calculus (Epstein, 2013), astronomy (Collaboration for Astronomy Education Research, 2004), and statistics (Allen, Stone, Rhoads, & Murphy, 2004) each have concept inventories which are widely used.

These instruments are usually quick (20-25 questions), easy to administer and score (multiple choice), and free to use. Those faculty members who incorporate active learning into a discipline which has a developed concept inventory will administer the instrument at the end of their course and compare their scores to a control group (both national and local). It is expected that students who enroll in a course using active learning will perform better on the concept inventory than those who receive instruction using methods other than active learning.

XI. APPENDIX

Attached are

- the survey used to measure faculty perceptions of active learning (two pages)
- the survey used to measure student perceptions of active learning (three pages)



I. Student EPIC

Was this practice used in your Class?

[N] *This was **not** used in my class* {-E}
[NC] *This was used in my class but it was not clear to me* {-E}
[Y] *This was used in my class* {E}
[IF YES ONLY]
1- *I was convinced that this is good {P}*
2- *I liked doing this as a way to learn {I}*
3- *I am committed to embracing this as a way of learning* {C}
4- *I only did this because I had to* {-C}
5- *I did this because I believed it would contribute to my learning in a positive way* {C}

1. Having learning goals (i.e., what you are expected to know and be able to do) for the course that you know you are expected to master.
2. Providing feedback on course structure and content.
3. Completing supporting activities when assessments reveal a problem area.
4. Relating scientific concepts to everyday phenomena or human experiences.
5. Developing hypotheses, and then making predictions based on your hypotheses.
6. Designing and conducting experiments.
7. Reading and evaluating scientific literature, including peer-reviewed and popular media articles.
8. Presenting your scientific ideas in writing.
9. Completing in-class activities (e.g., worksheets, problem sets, case studies) in groups of two or more.
10. Providing feedback to your classmates on projects, assessments, or other activities.
11. Answering questions in class using a clicker or other polling method.
12. Considering the contributions of diverse people and perspectives in the realm of scientific discovery.
13. Working in diverse groups.
14. Applying knowledge of other subjects (e.g., mathematics, computer science, biology, chemistry, physics, or other disciplines) in this class.
15. Adjusting your thought process when solving problems or answering questions.
16. Reflecting on the effectiveness of your study habits.

II. Motivated Strategies for Learning Questionnaire (MSLQ)

Please rate each of the following statements from 1-Not at all true to 4- Completely true.

1. When I study the readings for this course, I outline the material to help me organize my thoughts.
33. During class time I often miss important points because I'm thinking of other things. (REVERSED)
34. When studying for this course, I often try to explain the material to a classmate or friend.
35. I usually study in a place where I can concentrate on my course work.
36. When reading for this course, I make up questions to help focus my reading.
38. I often find myself questioning things I hear or read in this course to decide if I find them convincing.
41. When I become confused about something I'm reading for this class, I go back and try to figure it out.
42. When I study for this course, I go through the readings and my class notes and try to find the most important ideas.
43. I make good use of my study time for this course.
44. If course readings are difficult to understand, I change the way I read the material.
45. I try to work with other students from this class to complete the course assignments.
47. When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.
49. I make simple charts, diagrams, or tables to help me organize course material.
50. When studying for this course, I often set aside time to discuss course material with a group of students from the class.
51. I treat the course material as a starting point and try to develop my own ideas about it.
52. I find it hard to stick to a study schedule. (REVERSED)
53. When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.
54. Before I study new course material thoroughly, I often skim it to see how it is organized.
55. I ask myself questions to make sure I understand the material I have been studying in this class.
56. I try to change the way I study in order to fit the course requirements and the instructor's teaching style.
57. I often find that I have been reading for this class but don't know what it was all about. (REVERSED)
61. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course.
62. I try to relate ideas in this subject to those in other courses whenever possible.
63. When I study for this course, I go over my class notes and make an outline of important concepts.
64. When reading for this class, I try to relate the material to what I already know.
65. I have a regular place set aside for studying.
66. I try to play around with ideas of my own related to what I am learning in this course.
67. When I study for this course, I write brief summaries of the main ideas from the readings and my class notes.
69. I try to understand the material in this class by making connections between the readings and the concepts from the lectures.
70. I make sure that I keep up with the weekly readings and assignments for this course.
71. Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.
73. I attend this class regularly.
76. When studying for this course I try to determine which concepts I don't understand well.
77. I often find that I don't spend very much time on this course because of other activities. (REVERSED)
78. When I study for this class, I set goals for myself in order to direct my activities in each study period.
79. If I get confused taking notes in class, I make sure I sort it out afterwards.
80. I rarely find time to review my notes or readings before an exam. (REVERSED)
81. I try to apply ideas from course readings in other class activities such as lecture and discussion.

III. Student Demographic Questions

1. **Class Status:**
    a. Freshman
    b. Sophomore
    c. Junior
    d. Senior
    e. Other (please specify): _____

2. **Major(s)**? : _____
    a. I am undecided

3. **Which of the following is true for this course?**
    a. It is an elective
    b. It is part of my major credit requirement
    c. It is part of a general credit requirement

4. **I am:**
    a. Male
    b. Female
    c. I choose not to identify my sex

5. **Age:**
    a. Under 18 [discontinue if selected]
    b. 18-19
    c. 20-21
    d. 22-24
    e. 25 or above

6. **Race/Ethnicity:**
    a. African American/Black
    b. Asian/Pacific Islander
    c. Hispanic/Latino
    d. Multiracial
    e. Native American/American Indian
    f. White
    g. Not Listed (Please specify): _____
    h. I choose not to identify my race/ethnicity

Item	Category	I am not familiar with this practice	I am familiar with this practice	I have used this practice myself		I am convinced that this is good	This is compatible with my teaching style	I have decided to incorporate this into my teaching
		Select one option				Select all that apply		
Incorporating activities other than lecture to engage students in their own learning	Active Learning							
Providing opportunities for students to apply knowledge of other subjects to course content	Active Learning							
Helping students identify appropriate strategies for solving different types of problems	Active Learning							
Using exercises that lead students to draw their own conclusions	Active Learning							
Encouraging students to relate course concepts to everyday experiences	Active Learning							
Providing opportunities for students to answer questions using a clicker or other polling method	Active Learning							
Encouraging students to generate class-wide discussions	Active Learning							
Using exercises that generate small group discussion	Active Learning							
Asking students to respond to in-class writing prompts	Active Learning							
Considering learning goals in the design of activities and assessments for the class	Assessment							
Using differing levels of depths of understanding when preparing assignments and exams	Assessment							
Providing feedback that communicates to students areas they can improve	Assessment							
Incorporating assessments that allow me to recognize when concepts are not understood by students	Assessment							
Implementing ongoing formative assessments that inform students' progress toward desired outcomes	Assessment							
Identifying students' misconceptions so that they may be corrected	Assessment							
Encouraging interaction among classmates to provide peer feedback	Assessment							
Encouraging students to think about their own learning processes	Assessment							
At the onset of a course, telling students what they should know and be able to do upon course completion	Assessment							
Setting and communicating learning goals for students for each class	Assessment							
Asking students for feedback to inform my teaching practices	Assessment							
Taking steps to make all students feel like an important part of the class	Inclusivity							
Fostering an environment in which all students play an important role	Inclusivity							
Making efforts to cultivate a scientific community among my students	Inclusivity							
Designing class content to represent contributions of people from diverse backgrounds	Inclusivity							
Incorporating culturally diverse and relevant examples into my teaching	Inclusivity							
Communicating that all students are capable of success in the course	Inclusivity							
Choosing varied teaching methods to optimize learning for all students	Inclusivity							
Ensuring that all students have equal access to course materials	Inclusivity							

WORKS CITED

Allen, K., Stone, A., Rhoads, T., & Murphy, T. (2004). The statistics concept inventory: developing a valid and reliable instrument. Proc. ASEE Conf. & Exp., 1-508.

Bain, K. (2004). What the Best College Teachers Do. Cambridge, MA: Harvard Univ. Press.

Barkly, E., Cross, K. P., & Major, C. H. (2005). Collaborative Learning Techniques: A Handbook for College Faculty. San Francisco: Jossey-Bass.

Booth, A. (2013). Strategies for Active Learning in the History Classroom. In A. Booht, Teaching History at University: Enhancing Learning and Understanding. London: Routledge.

Bransford, J., Brown, A. L., & Cocking, R. R. (Eds.). (2000). How People Learn: Brain, Mind, Experience, and School. Washington, D.C.: National Research Council, Committee on Learning Research and Educational Practice.

Brown, P. C., Roediger, H. L., & McDaniel, M. A. (2014). Make it Stick: The Science of Successful Learning. Cambridge, MA: Harvard Univ. Press.

Calder, L. (2006). Uncoverage: Toward a Signature Pedagogy for the History Survey. J. Am. History, 92(4), 1358-1370.

Cavanaugh, A., Aragón, O., Chen, X., Couch, B., Durham, M., Bobrownicki, A., . . . Graham, M. (2016). Student buy-in to active learning in a college science course. CBE - Life Sci. Ed., 15(76), 1-9.

Collaboration for Astronomy Education Research. (2004). Astronomy Diagnostic Test (ADT) Version 2.0. Retrieved January 2019, from http://solar.physics.montana.edu/aae/adt/

Cox, M., & Richlin, L. (Eds.). (2004). New Directions for Teachign and Learning (Vol. 97). Jossey-Bass.

DeNeve, K. M., & Heppner, M. J. (1997). Role play simulations: The assessment of an active learning technique and comparisons with traditional lectures. Innovative Higher Ed., 21, 231-246.

Durham, M., Knight, J., & Couch, B. (2017). Measurement instrument for scientific teaching (MIST): a tool to measure the frequencies of research-based teaching practices in undergraduate science courses. CBE - Lise Sci. Ed., 14(67), 1-14.

EAB. (2016). The Evolving Role of Faculty in Student Success.

Epstein, J. (2013). The calculus concept inventory—Measurement of the effect of teaching methodology in mathematics. Notices of the Am. Math. Soc., 60(8), 2-10.

Ertmer, P. A., & Newby, T. J. (2008). Behaviorism, Cognitivism, Constructivism: Comparing Critical Features from an Instructional Design Perspective. Perfomance Improvement Quarterly, 6(4), 50-72.

Faust, J. L., & Paulsen, D. R. (1998). Active learning in the college classroom. J. Exc. Coll. Teaching, 9(2), 3-24.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. Proc. Nat. Acad. Sci., 111(23), 8410-8415.

George, M. e. (2015). Learning by Doing: Experiential Learning in Criminal Justice. J. Crim. Justice Ed., 26(4), 471-492.

Grabinger, R. S., & Dunlap, J. C. (1995). Rich environments for active learning: a definition. ALT-J, 3(2), 5-34.

Grabinger, R. S., Dunlap, J. C., & Duffield, J. A. (1997). Rich environments for active learning in action: Problem-based learning. ALT-J, 5(2), 5-17.

Hamlin, J., & Janssen, S. (1987). Active Learning in Large Introductory Sociology Courses. Teaching Sociology, 15(1), 45-54.

Hestenes, D., Wells, M., & Swackhamer, G. (1992, March). Force Concept Inventory. The Physics Teacher, 30, 141-158.

Hinde, R., & Kovac, J. (2001). Student active learning methods in physical chemistry. J. Chem. Educ., 78(1).

Klymkowski, M., & Garvin-Doxas, K. (2008). Recognizing students' misconceptions through Ed's Tools and the Biology Concept Inventory. PloS Biology, 6(1).

Krause, S., Pavelich, M., Jenkins, B., Birk, J., & Bauer, R. (2004). Development of a chemistry concept inventory for use in chemistry, materials and other engineering courses. ASEE Ann. Conf. Proc., 3445-3452.

Kuh, G. D. (2008). High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter. Washington, D.C.: Assoc. Am. Coll. and Univ.

Laursen, S. e. (2011). Evaluation of the IBL mathematics project: Student and instructor outcomes of inquiry-based learning in college mathematics. Univ. Colorado.

McCarthy, J. P., & Anderson, L. (2000, June). Active Learning Techniques Versus Traditional Teaching Styles: Two Experiments from History and Political Science. Innovative Higher Ed., 24(2), 279-294.

Miller, C. J., & Metz, M. J. (2014). A comparison of professional-level faculty and student perceptions of active learning: its current use, effectiveness, and barriers. Adv. Physiol. Ed., 38(3), 246-252.

Mulford, D., & Robinson, W. (2002, June). An inventory for alternate conceptions among first-semester general chemistry students. J. Chem. Ed., 79(6), 739.

Osthoff, E., Clune, W., Ferrare, J., Kretchmar, K., & White, P. (2009). Implementing immersion: Design, professional development, classroom enactment and learning effects of an extended science inquiry unit in an urban district. Madison, WI: University of Wisconsin–Madison, Wisconsin Center for Educational Research.

Robinson, M. B. (2000). Using Active Learning in Criminal Justice: Twenty-five Examples. J. Crim. Justice Ed., 11(1), 65-78.

Stains, M., Harshman, J., Barker, M. K., Chasteen, S. V., Cole, R., DeChenne-Peters, S. E., & Young, A. M. (2018). Anatomy of STEM teaching in North American universities. Science, 359(6383), 1468-1470.

Stein, B., & Haynes, A. (2011). Engaging faculty in the assessment and improvement of students' critical thinking using the Critical Thinking Assessment Test. Change: The Magazine of Higher Learning, 44-49.

Umbach, P., & Wawrzynski, M. (2005, March). Faculty Do Matter: The Role of College Faculty in Student Learning and Engagement. Research in Higher Ed., 46(2), 153-184. Retrieved January 2019, from http://nsse.indiana.edu/pdf/research_papers/faculty_do_matter.pdf

Watson, C. E., & Hagood, T. C. (2017). Playing to Learn with Reacting to the Past: Research on High Impact, Active Learning Practices. New York: Palgrave Macmillan.

Worthen, M. (2015, October 17). Lecture Me. Really. The New York Times, p. SR1.

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