

Diffusion of High Impact Educational Practices at a Saudi University

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Higher education is challenged by workforce needs to transform its outcomes from “knowledge-based” to “competency-based” outcomes. High-impact educational practices, commonly referred to as HIPs, provide, among other benefits, efficacious development of workforce-ready specific competencies. Strategic implementation of HIPs has yet to be diffused at Saudi universities. The Northern Border University (NBU) has identified a set of core competencies graduate workforce-ready graduates. To effectively realize the intended outcomes of its core competencies, NBU selected a set of HIPs to increase student success. This paper discusses NBU’s processes and implementation strategies in selecting core competencies and HIPs with ultimate aim of translating both to the local higher education culture and norms in order to effectively achieve desired outcomes.

Keywords: HIPs implementation, core competency, competency-based education

Introduction

Among its various goals, higher education aims to address the ever-changing workforce needs by training well-rounded and competent students. University graduates’ skills are expected to be continually updated as technological advances necessitate integration into the work environment. Universities need to adapt to these changes through program reform to better prepare their students for the workforce expectations. Technological advances in artificial intelligence, for example, are increasing efficiency and standardization by performing menial repetitive tasks. This shift creates new opportunities for employees to dedicate more time to complex tasks requiring specific skills in information technology, critical thinking, and creativity. With this shift, universities need to evaluate from the traditional “knowledge-based” education to a “competency-based”. One way to successfully pursue this transition is to develop clearly articulated competencies and successfully realize their outcomes by adopting high-impact educational practices (HIPs).

High-impact practices increase the likelihood that students invest more time and effort on purposeful tasks and result in students interacting more frequently with faculty and peers about substantive learning; experiencing and having a greater appreciation for diversity; and discovering relevance of their knowledge

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through real-world applications (Kuh, 2008; Brownell, 2009a; National Survey of Student Engagement, 2007; Hansen, Chism, & Trujillo, 2012). These activities likely contribute to the increase in student retention and graduation rates and enhanced positive attitudes towards college, faculty, learning, and students observed at universities implementing HIPs. Such practices have been especially useful for first-year experience program and of particular benefit to low performing students. Nationwide figures for freshman curricular initiatives in the USA indicate that freshman seminars are provided in between 58% and 80% of two-year institutions and 73% to 90% of four-year institutions (Koch, Griffin, & Barefoot, 2014; Young, Hopp, & National Resource Center for the First-Year Experience and Students 2014).

Focused HIPs have been used to achieve desired learning outcomes, improve critical thinking and communication skills, and increase engagement in deep learning, which speaks to their effectiveness and importance (Kuh, 2008; COMEVO, 2018). After adopting a set of university-wide core competencies, Northern Border University (NBU) became the first Saudi institution of higher education to follow the lead of numerous world-class American and British universities that adopted HIPs.

Higher Education in Saudi Arabia

In the past two decades, higher education in Saudi Arabia has massively expanded from eight to its current 40+ universities. As part of Vision 2030 strategic plan, Saudi higher education is prioritizing program reform to respond to workforce needs. As the country's need for well-trained workforce expands with the addition of new industrial sectors to diversify Saudi economy and technology, so does expectations of its higher education system (Kingdom of Saudi Arabia, 2016; Oxford Business Group, 2015; Alharbi, 2016).

Graduating a world-class workforce creates opportunity for competing in the global marketplace. Numerous world-class universities located within thriving economies implemented a variety of specific core competencies and HIPs allowed cultivating national talent, attracting resources, and establishing favorable governance (Salmi, 2009). Adopting a strategic vision that focuses on developing specific core competencies and implementing focused high-impact educational practices can help Saudi universities overcome major challenges in building successful programs tailored to the needs of the present and future labor market and achieving its national strategic goals (Alharbi, 2016; Alabdulmenem, 2016).

HIPs at Saudi Universities

Saudi Arabian universities, like their peers worldwide, are pressured to meet students', employers' and other external stakeholders' expectations. Successfully teaching a designated curriculum, devoid of real-world practices and experiences, is an outdated paradigm for achieving competence and workplace readiness. Students are eager to be equipped with both knowledge and experiences that make them attractive candidates in the current competitive workforce environment. Simultaneously, employers are seeking competent and agile employees who can adapt and quickly become productive employees.

Universities are responding by transforming their programs and implementing educational strategies such as HIPs, which are proving to be successful as seen in various world-class institutions (Kuh, 2008). Saudi Arabia is undergoing a major reform with the adoption of its national strategic plan known as the Vision-2030. As part of this strategy, one of the national aims is to operate top-tier programs. To achieve this national goal of harboring top-tier programs that graduate workforce ready students, NBU has become the first Saudi university to implement HIPs to our knowledge. It is transforming its programs to ensure graduates' workforce readiness by implementing select HIPs such as: common intellectual experiences, learning communities, first year seminars, and undergraduate research.

Northern Border University, Its Challenges and Solutions

Northern Border University is a regional comprehensive public university located in north of Saudi Arabia. It consists of 16 colleges, four campuses and enrolls approximately 15 thousand undergraduate students, the majority are females. After a major internal and external survey, NBU determined that its students' competencies and the regional workforce needs to be more aligned with the workforce directions. It also learned of students increment participation in extracurricular activities designed for attaining specific core competencies. The institution's programs have been structured as traditional lecture-style teaching, which focused on professors and their assistance to students to improve performance, but lacked opportunities to aid students in refining their skills.

NBU's new strategic plan adopts a new vision for the university. It transforms the themes of teaching and learning. To fulfill the new vision, NBU has identified core competencies each student should acquire prior to graduation and has selected specific HIPs to implement to develop those core competencies. The core competencies will align with the regional workforce needs based on employer surveys and NBU values. HIPs will incorporate skill-development activities (e.g., presentations, research, etc.) into the curriculum.

Institutional Core Competencies

The NBU core competencies follow the Saudi Arabian Qualification Framework (SAQF). The SAQF uses 10 level descriptors to aid programs in the design and development of requirements and provide a scheme for comparing and matching learning outcomes and performance criteria. The levels are differentiated by the depth of knowledge, skills and competence acquired at different tiers of the education system: general education (levels 1-3), technical and vocational training (levels 3-7), and higher education (levels 5-10), which all contribute towards life-long learning. To better match its graduates workforce skills and competencies with its local employers', NBU surveyed leaders of local employment sectors to identify the regional labor market needs and understand the key qualities employers look for in prospective employees. The survey included assessment of strengths and weaknesses of the current workforce and identified employee competencies of highest importance. The assessment resulted in 24 competencies, which were grouped into five dimensions: communication, organization, cognitive skills, creativity, and social responsibility (Table 1).

Table 1. Dimensions and Competencies Surveyed for Importance in the Workforce in the Northern Border Region of Saudi Arabia

Dimensions	Competencies
Communication	Leadership and people management
	Communication skills
	Influencing
	Networking and Influencing ability
Organizing	Time management
	Organizational ability
	Problem-solving capacity
	Planning skills
	Business management skills
Cognitive	Industry knowledge
	Language skills
	Finance knowledge
	Technology skills
	Digital literacy
Creativity	Creative
	Inspiring
	Challenging
	Innovation orientation
	Critical Thinking
	Entrepreneurial
Social Responsibility	Responsible
	Volunteering
	Civic and National Identity
	Collaborative

NBU found that employers considered all dimensions important with the cognitive and organizing dimensions as most valuable and creativity least vital. Employers expressed that technology proficiencies and problem-solving were the competencies most highly required in the current workforce, whereas time

management, language skills, and volunteering were the least demonstrated. Based on SAQF, its survey result, and university goals, NBU selected seven core competencies as its top priority: effective oral and written communication in Arabic and English, digital and information literacy, critical thinking, citizenship and national identity, self-motivated professionalism, networking and group interaction, and entrepreneurship.

Selection of High-Impact Educational Practices

High-impact activities ask students to engage in genuine learning experiences, allowing them to apply the knowledge garnered from classroom lessons to practical problems and scenarios in their communities and campuses. By interacting with their peers and faculties, and learning in “real life” situations, it becomes more likely that a greater level of diversity will be encountered, promoting fresh ways of thinking about unfamiliar circumstances. High-impact activities are a good way of allowing students to reach crucial learning goals by receiving feedback regarding how well they performed, which allows them to make adjustments to their behaviors, acquire new knowledge, build their characters, and develop new skillsets.

NBU selected a set of HIPs for implementation based on their alignment with its strategic themes, likely effectiveness towards students’ attainment of the core competencies, feasibility and resource availability, anticipated faculty interest and suitability to local practices and culture. NBU assessed faculty and student participation in diverse university activities to understand level of engagement and current norms. The HIPs described by Kuh were categorized based on their expected influence on each core competency and on results observed at universities in the US and UK. NBU also evaluated faculty qualifications and expertise, curriculum, university capabilities, infrastructure, and conducted community and student surveys. Additionally, unique characteristics of NBU and the local culture influenced the selection of HIPs. Certain HIPs strategies are unlikely to be effective or accessible for all students due to the cultural perspective. Four HIPs were chosen for implementation at NBU: common intellectual experiences, learning communities, first year seminars, and undergraduate research.

Common Intellectual Experience: The concept of the “core” curriculum has undergone an evolution into a number of different interpretations in modern education, e.g., a group of compulsory shared courses or vertically-structured general education programs that incorporate high-level integration studies and/or compulsory involvement with learning communities. Such programs frequently offer a combination of broad-brush thematic elements and various curricular/co-curricular opportunities (Kuh, 2008).

Learning Community: The central aim of the learning community is to promote integrated learning outwith specific course learning and to ask students to address crucial questions that have import beyond the academic world. Students may enroll in groups for two or more courses with common

themes, working closely together and with education professionals. These learning communities may undertake explorations of shared topics or materials from the perspective of various disciplines. Some may deliver links between professional subjects and the liberal arts, while others incorporate service-learning (Kuh, 2008).

Learning communities form links between a minimum of two cohorts via a common theme; often, sufficient courses can be linked to fill out student schedules for a semester. Learning communities help students to transition into a college education and assist students from underrepresented groups in identifying as learners, promoting a feeling of inclusion. Such communities can also be influential in a number of desirable educational outcomes, including developing ethics and values, civic engagement, integrated thinking, and general intellectual development (Brownell & Swaner, 2009a).

First Year Seminars: First-year seminars implement regular meetings between students and faculty. The most valuable freshman experiences are those that have a robust focus on collaboration and learning, information literacy, frequent writing, and critical inquiry, along with other skills that make students more competent both intellectually and practically. Freshman seminars encourage students to discuss the most important questions of their time, supported by the research of faculty members (Kuh, 2008). Students engaging in freshman seminars have a greater likelihood of regarding the campus as somewhere that offers them support; additionally, they will know more about the resources available on campus and will develop superior time management to those who do not engage with such seminars (Brownell & Swaner, 2009b).

Undergraduate Research: Numerous universities and colleges now offer students from every discipline the opportunity to participate in research. This is most common within scientific subjects. With robust NBU encouragement, scientists are reformulating their curricula to form connections between central concepts and student investigations and to encourage students to participate in systematic investigations/research. The aim is that students should become involved in addressing unresolved questions, undertaking empirical observations, working with the latest technology, and experiencing the intellectual stimulation that results from addressing significant issues (Kuh, 2008). In comparison to those who did not participate in research, undergraduates who do have a higher likelihood of continuing their education by entering graduate school, generally feel that their education as a whole was more fulfilling, and are more skilled in terms of research and problem-solving (Brownell & Swaner, 2009a).

Demonstrated by other universities, these activities increase student retention, modestly improve student performance, and expose students to diverse experiences and forms of learning, which will lead to successful attainment of core competencies to fuel the future workforce (Kuh, 2008; Brownell & Swaner, 2009b).

Implementation and Sustainability

NBU will pilot HIPs with the incoming freshman class of two colleges: Engineering – 150 male students – and Nursing – 60 female students. Gender segregation is enforced in universities throughout Saudi Arabia, including NBU, and it is imperative to launch and evaluate these programs for both males and females as they will all contribute to the future workforce. Within the first and second semester, courses that will integrate HIPs include English, Thinking Skills, Communications Skills, and Computer Skills.

Implementing HIPs requires an abundance of resources including a considerable investment of money and time from committee members, faculty, and staff. The willingness of faculty members to participate in new programs and change the current teaching standard – from an instruction paradigm to a learning paradigm – are equally important as the program logistics (White, 2018; Dedman, 2018; Finley & Kuh, 2016). Here, we describe implementation tactics found throughout the literature and from higher education institutions.

Implementing HIPs involves establishing a program framework, developing assessment tools, engaging and training faculty and staff across disciplines, and increasing awareness among students (White, 2018; Brownell & Swaner, 2009b). These activities require thoughtful strategic planning that accounts for the unique culture and specific goals of the university and region, where critical activities for implementing HIPs include:

1. Setting measurable goals for each HIP and for the collection of HIPs (Moon et al. 2013; AACU, 2015; Buyarski & Landis, 2014).
2. Developing a framework as a resource guide for faculty and staff, revising the guide periodically to ensure smooth transitions between program iterations, and distributing the guide to faculty and staff (Brownell & Swaner, 2009b).
3. Forming external and internal partnerships for training, learning, and campus-wide impact; identifying, engaging, and training faculty and staff across disciplines to ensure smooth adoption and revisions of programs (White, 2018; Kinzie, 2011).
4. Developing assessment tools and an assessment schedule that can be used to evaluate the progress towards each goal, at the program-level and university-level, and to revise the programs as needed (Finley & McNair, 2013; Kuh, 2012).

Goals for HIPs individually and collectively should be established to optimize program design (Fink & Fink, 2016); different designs of the same HIP can be more effective for different outcomes. For example, first year seminars that are one contact hour per week are sufficient for introducing students to policies and practices, but are not as effective as two-contact hour seminars for improving time management or increasing student-faculty interactions (Brownell & Swaner, 2009a). NBU's goal is for all students to acquire the selected core competencies. Assessment of the HIPs will be centered on the essential core competencies; staff,

faculty, and student feedback will be employed. Besides, development of the HIPs will involve NBU considering the eight conditions responsible for student engagement at high levels and HIP benefits being achieved (Kuh, O'Donnell, & Reed, 2013), these being:

- Suitably high level of performance expectation.
- Students investing significant effort/time for extended periods.
- Students interacting with peers and faculty regarding substantive issues.
- Students experiencing high levels of diversity.
- Students receiving feedback that is constructive, frequent, and timely.
- Students receiving regular structured opportunities for reflecting on and integrating their learning.
- Students having the opportunity of discovering how relevant their learning is by applying it in real-world scenarios.
- Students are publicly demonstrating their competencies.

Not every HIP needs to fulfill all these conditions, but those designing the programs should recognize each condition when creating strategic plans and implementing program assessments.

HIPs are most successful through cycles of launch, measure, and learn, similar to the lean manufacturing model. This requires frequent assessment of the program, which enables productive iterations to improve the programs and experiences for students and faculty. Additionally, establishing a framework as a resource guide increases program sustainability by increasing information accessibility for faculty and staff to efficiently accept and implement changes. This is especially important if those faculty and staff are responsible for key tasks within the HIPs, such as providing feedback and assessments as an undergraduate research mentor, or if they are new to the institution or program (Kuh, O'Donnell, & Reed, 2013; Sandeen, 2012).

Faculty and staff engagement and training is essential to the success of the programs (McNair & Albertine, 2012; Kezar & Holcombe, 2017). Faculty and staff need to know what is expected of them, how to integrate new teaching practices or topics into their classroom, and what assessment tools and resources are available to them (Kezar & Holcombe, 2017). NBU has formed partnerships with universities that have successfully implemented and sustained HIPs to learn from their experience and leverage their expertise to train the NBU faculty. External and internal key partners and stakeholders of the university should be identified and their specific roles and contributions toward the design and implementation of a specific HIP should be understood.

Student, faculty, and employer decision-making are influenced by assessments on knowledge, skills, and abilities. Assessment practices are becoming increasingly complex evolving from traditional exams to capstone projects and feedback from faculty and students. Program assessment can be labor intensive and complex, but is crucial for understanding if programs are modeling best practices and meeting institutional and national goals, as well as meeting the needs of the students (Einbinder, 2018). Traditional tests are useful, but cannot assess certain outcomes

such as leadership skills or willingness to learn, but instructors continue to use exams for reasons such as lack of time, funds, and knowledge of modern and appropriate methods (Wiggins, 2014; Haghnegahdar, 2013). When assessing student learning and skills, alternative assessment methods (e.g. research reports and writing assignments) should be weighted appropriately for comprehensive student evaluations (Miller, Imrie, & Cox, 2014). Additionally, faculty teaching evaluations should not only rely on how well they can instruct, but also on what methods they are using and how effective their teaching methods are. Utilizing assessment tools and both quantitative and qualitative metrics for each HIP is useful for collecting key information on the programs and making decisions on which elements of the HIPs should be kept, revised, or eliminated. For meaningful program evaluation and revision, baseline status of programs in relation to the university goals (e.g., critical thinking ability) should be documented prior to HIP launch. Adjustments to programs are most effective when there is data collected on the progress towards the original goal, student experience, and faculty/staff experience (White, 2018; Barr & Tagg, 1995).

The most common outcome studied for first-year seminars, learning communities, and undergraduate research is student perseverance, followed by academic performance. Behavioral, attitudinal, and learning outcomes are also commonly assessed, such as faculty and peer interactions, critical thinking skills, writing skills, and engagement level (Brownell & Swaner, 2009a; Tampke & Durodoye, 2013; Andrade, 2007). Upcraft, Gardner, and Barefoot (2004) state that colleges should have a broader palette when it comes to defining student success, which should include the development of career goals, exploration of identity, clarification of beliefs and values, the development of an awareness of multiculturalism, the development of feelings of civic responsibilities, and becoming more intellectually and academically competent (Upcraft, Gardner, & Barefoot, 2004). NBU has opted to undertake the evaluation of particular student outcomes on the basis of the targets, mission, and vision detailed in its HIP Strategic Planning.

To gain a full sense of the impact of the programs, data should be collected at different timepoints, throughout a semester, between two semesters, over the course of a year, and more longitudinally – over the course of the undergraduate experience and perhaps extend beyond to graduate studies or into alumni careers. It is important to note that frequently assessing programs can become burdensome to faculty members and can result in frustration. Bresciani suggests starting with a few learning outcomes to measure rather than attempting to assess everything every year. Once data is collected and assessed, strengths, weaknesses, gaps, and needs can be identified and used to iterate the programs and make them more sustainable and beneficial (Bresciani Zelna, & Anderson, 2004; Bowman, 2010; Limbach & Waugh, 2014).

Implementation Plan

To successfully implement its HIPs Plan, NBU identified key resources; developed metrics and key performance indicators; established a system for evaluating and revising programs; and developed a timeline for key activities. We plan to launch programs and execute key tasks outlined in the HIPs Implementation Plan, utilize assessment tools to track progress and key outcomes, and revise the programs as needed. NBU's HIPs Implementation Plan outlines key objectives over a five-year period to successfully integrate HIPs into the curriculum, extracurricular student life and achieve the desired core competencies. Successful implementation will create a high-impact education environment, establish intentional and integrative learning approaches that encourage competence transference to students, develop students' entrepreneurship and leadership skills, and instill effective soft skills that enable undergraduates to create meaningful connections between gained experiences.

Important supplemental activities involving project management, information dissemination, program sustainability, and quality control will be performed throughout the strategic plan. For knowledge-transfer and program success, partnerships have been formed with universities where HIPs are established and successful. These partnerships enable NBU faculty and staff training with distinguished HIPs experts, which will be leveraged upon program launch.

Institutional Investment

Increased outputs generally require an increase of inputs. Planning and implementing high-impact activities demand considerable time and effort from students, faculty, and staff to achieve learning objectives, and the level of investment depends on the intensity of the programs and assessment tools. Some high impact practices are very cost efficient such as common reading experiences – mainly requiring some administrative effort and leadership by faculty – or entry/exit seminars where first-year students interface with graduating students, spurring mentorship, whereas other HIPs are costly to develop, such as undergraduate research, especially if the necessary infrastructure and expertise need to be acquired (White, 2018; Limbach & Waugh, 2014). Investing in HIPs, incorporating meaningful assessments, and stimulating faculty willingness to participate is essential for successful program development and sustainability. Below, we describe some of the costs associated with HIPs in general and specifically to the HIPs that are being implemented at NBU.

University Investment

A substantial amount of financial resources and time goes into developing and launching HIPs. NBU executives, faculty and staff have dedicated hundreds of hours to assessing the current state of the university, planning critical activities, and finalizing a strategic plan, and are anticipating dedicating considerable time

over the next five years to implement, assess, and revise the HIPs. Some areas of investment may include acquiring physical and technology infrastructure, acquiring research equipment, synthesizing departments to oversee new programs, expanding the number of high-quality faculty and administrative staff, training and incentivizing faculty and administrative staff, and financially supporting students and faculty through scholarships and grants (White, 2018).

Seeking engagement with industry and the community, and forging partnerships with them, is now commonplace within higher education institutions, allowing them to produce students better suited to the workforce, but this can create additional pressure on universities and additional demands in that more specialized staff and a more robust administration are required. It has been shown (Baltaru & Soysal, 2018) that spending 1% more on goods and services means that there will be a 20% rise in the proportion of staff involved in administration; in UK higher education administrative staff levels are expanding at a higher rate than those of teaching staff (Baltaru, 2018; Temple, Callender, Grove, & Kersh, 2014; Temple, Callender, Grove, & Kersh 2016). This illustrates that the adoption of novel practices and systemic transformation can be highly disruptive and involve very significant change, requiring the intervention of highly effective administrators. One of NBU's central objectives is to implement both quality and capacity increases for staff, both administrative and academic; it is intended to accomplish this by acquiring new personnel, implementing robust training, and undertaking assessments employing the four key performance indicators detailed in the strategic plan.

Faculty Investment

Faculty members are the driving force of educational programs, as they are the direct implementors and are involved in regular assessments of their students. The quality of NBU's academic programs, graduates, and knowledge production is predicated on the caliber and commitment of NBU's faculty. Instructors and faculty members will need to dedicate substantial amounts of time to train and be trained on new programs, teaching methods, and systems. Courses and assessment tools will need to be restructured, resulting in faculty time being dedicated to assessment activities, providing feedback to students and program administrators, and revising courses. As new programs are implemented and students increase their time dedicated to diverse experiences (e.g., undergraduate research), faculty and staff will need to be more available to support, guide, and mentor students. Time allotted to program development and sustainment can take away from faculty members' research initiatives and other professional appointments, stressing the importance of developing a system that will avoid frustrating faculty and encourage faculty to participate. This can be particularly difficult for universities if tenure and other incentives are not dependent on HIPs activities (White, 2018).

Administrative and Staff Investment

Universities' purpose and vision globally has widened to incorporate external relationships, the transference of technology and knowledge, regional development, enterprise and research, student services, marketing, strategic planning, and quality control (James, Marginson, & Considine, 2002; Krücken, Blümel, & Kloke, 2013; Baltaru & Soysal, 2018). This demands complex and robust administrative infrastructures that are able to address the requirements of students, faculty, and external actors and that have the ability to develop new skill sets and adapt themselves rapidly to institutional changes, e.g., NBU's systemic HIP implementation. Extant and newly recruited staff will need to be trained and give their feedback regarding training and existing frameworks. Faculty/student schedules will have to be coordinated, monitored, and restructured for the accommodation of HIPs. Administrators will have to be able to respond to student/faculty questioning about protocols and policies, in addition to dealing with compliance issues and setting a budget for activities and equipment needed for HIPs.

Student Investment

Specific HIPs may take time away from core courses or from activities and responsibilities outside of education. Travel, additional course materials, increased time dedicated to school activities might reduce available time to work or earning potential. Additionally, the cost to participate and enroll may be outside the students' ability depending on the structure of the activity, which could create unequal program accessibility and limit the involvement of low-performing students (White, 2018). However, the cost of participating might reach the students social life and family duties especially in the Saudi culture.

Research-Related

Upfront costs vary depending on the equipment and laboratory space already acquired by the university. Once these are established, the cost of actual projects is relatively low because materials, space, and equipment used in course laboratories can be used in research projects. Universities may choose to support undergraduate researchers by providing a stipend, but involvement could also be as a volunteer. Additional costs to consider for undergraduate research programs include software; research subject compensation (for human research); service fees; instructional materials; travel; and publications. The greatest costs associated with undergraduate research are faculty members' time and indirect costs, such as facilities and administrative costs. Faculty members leading undergraduate researcher is a major commitment of time and energy due to undergraduate students needing to be fully trained in basic techniques and laboratory safety, as well as mentoring students specific to their project, which will take time away from other professional activities faculty members need to perform that could contribute to tenure and other professional accolades (White, 2018).

First Year Seminars-Related

Investment for first year seminars depends on the structure and frequency. Faculty time is the greatest investment, as they will need to determine the structure and topics, and ultimately instruct the courses. Additional areas of investment can include cost of course materials, field trips, honorarium/guest lecturers, reference materials for instructors, reference materials for students, and light refreshments. UC Davis provides mini grants of \$500 to cover various expenses (Schmidt & Graziano, 2016; Finley & Kuh, 2016).

Learning Communities

There are many different types of learning communities, and their costs will be variable depending upon how programs are structured and their anticipated timeframe. Oakland University defines the learning community as being a “cross-disciplinary, faculty-driven group of 6-12 members engaging in a year-long program to promote the scholarship of teaching and learning.” The Centre for Excellence in Teaching and Learning at Oakland University offers \$1,500 towards the costs of travel, materials, and books that can support the implementation of the learning community (Finley & Kuh 2016).

Common Intellectual Experiences

Similar to the other HIPs, common intellectual experiences can vary in structure, which will dictate the level of investment. Ursinus College implemented CIEs as a two-semester course for all first-year students to engage students in conversation about central questions, cultivate self-knowledge needed to live an independent and responsible life, and to establish an enjoyable intellectual community for students and faculty. Classes were limited to 16 students and involved faculty from all disciplines. Similarly, Union College encouraged intellectual experiences through student-faculty dinners, speaker receptions, and cultural and academic trips, and provided grants up to \$1,000 to cover these types of activities (White, 2018).

Cost can be reduced by using open educational resources and if resources are shared across programs and disciplines. Partnering with the community or industry could potentially relieve some financial stress if the partners are willing to cover a portion of the program costs (e.g., student travel or materials). Identifying program champions across campus and maintaining motivation to improve programs is crucial to the success of HIPs. Universities need to balance the needs of faculty, staff and mentors to ensure that they have sufficient time to perform their primary duties, teach core courses and accomplish their own research goals.

Conclusions

High-impact education practices are utilized by top-tier education programs and can result in increased retention and improved student outcomes. Universities play a critical role in fueling the regional marketplace and have the responsibility of developing individuals that are well-equipped to quickly join and contribute to the economy and society.

Saudi Arabia is in a period of reform to build a prosperous, knowledge-based economy. This national goal spurs innovation across all sectors including higher education to achieve the key objectives outlined in the Vision 2030 plan. There are many challenges faced by universities in Saudi Arabia, one being developing effective programs that address the needs of employers and the evolving marketplace. HIPs improve deep learning, impacting the country workforce by adding the value of gaining the essential competencies before joining the labor market. The workforce obtaining core competencies will influence the economy by providing well-trained personnel to quickly training students to contribute to the economy's development.

Northern Border University plans to implement four synergistic high-impact practices that are commonly utilized by world-class universities and provides a framework and key considerations as a resource for other universities in Saudi Arabia.

References

- Alabdulmenem, F. M. (2016). Measuring the Efficiency of Public Universities: Using Data Envelopment Analysis (DEA) to Examine Public Universities in Saudi Arabia. *International Education Studies*, 10(1), 137.
- Alharbi, E. A. R. (2016). Higher Education in Saudi Arabia: Challenges to Achieving World-Class Recognition. *International Journal of Culture and History (EJournal)*, 2(4), 169-172.
- Andrade, M. S. (2007). Learning Communities: Examining Positive Outcomes. *Journal of College Student Retention: Research, Theory & Practice*, 9(1), 1-20.
- Association of American Colleges & Universities - AACU (2015). *Assessment for Learning: Building a New Curriculum at Charles and Stella Guttman Community College*. Retrieved from: <https://www.aacu.org/campus-model/assessment-learning-building-new-curriculum-charles-and-stella-guttman-community>. [Accessed 12 March 2020]
- Baltaru, R. D. (2018): Do Non-Academic Professionals Enhance Universities' Performance? Reputation vs. Organization. *Studies in Higher Education*, 44(7), 1183-1196.
- Baltaru, R. D., & Soysal, Y. N. (2018). Administrators in Higher Education: Organizational Expansion in a Transforming Institution. *Higher Education*, 76(2), 213-229.
- Barr, R. B., & Tagg, J. (1995). From Teaching to Learning — A New Paradigm for Undergraduate Education. *Change: The Magazine of Higher Learning*, 27(6), 12-26.
- Bowman, N. A. (2010). Assessing Learning and Development among Diverse College Students. *New Directions for Institutional Research*, 2010(145), 53-71.
- Bresciani, M. J., Zelna, C. L., & Anderson, J. A. (2004). *Assessing Student Learning and Development: A Handbook for Practitioners*. United States: NASPA.

- Brownell, J., & Swaner, L. (2009a). High-Impact Practices: Applying the Learning Outcomes Literature to the Development of Successful Campus Programs. *Peer Review*, 11(2), 26.
- Brownell, J., & Swaner, L. (2009b). Outcomes of High-Impact Educational Practices: A Literature Review. *Association of American Colleges & Universities: Diversity and Democracy*, 12(2).
- Buyarski, C., & Landis, C. (2014). Using an ePortfolio to Assess the Outcomes of a First-Year Seminar: Student Narrative and Authentic Assessment. *International Journal of EPortfolio*, 4(1), 49-60.
- COMEVO (2018, June 27). *How to Implement High Impact Practices*. Retrieved from: <https://www.comevo.com/implement-high-impact-practices/>. [Accessed 12 March 2020]
- Dedman, B. (2018, September 21). High-Impact Practices Help Students Succeed During University Expansion. Retrieved from <https://www.aacu.org/campus-model/high-impact-practices-help-students-succeed-during-university-expansion>. [Accessed 12 March 2020]
- Einbinder, S. (2018). A Process and Outcome Evaluation of a One-Semester Faculty Learning Community: How Universities Can Help Faculty Implement High Impact Practices. *InSight: A Journal of Scholarly Teaching*, 13(4), 40-58.
- Fink, L. D., & Fink, D. (2016). Five High-Impact Teaching Practices. *Collected Essays on Learning and Teaching*, 9, 3-18.
- Finley, A., & Kuh, G. D. (2016). The Case for Connecting First-Year Seminars and Learning Communities. In *Building synergy for high-impact educational initiatives: First-year seminars and learning communities* (pp. 3-18). Columbia, SC: National Resource Center for the First Year Experience and Students in Transition and the Washington Center for Improving the Quality of Undergraduate Education.
- Finley, A., & McNair, T. (2013). Assessing Underserved Students' Engagement in High-Impact Practices. *Association of American Colleges and Universities*, 1-68.
- Haghnegahdar, A. (2013). Alternatives to Heavily-Weighted Final Exams in Engineering Courses. *Teaching Innovation Projects*, 3(1).
- Hansen, M. J., Chism, L. P., & Trujillo, D. T. (2012). The Synergy of and Readiness for High Impact Practices during the First-Year of College. Paper Presented at the *Association for Institutional Research (AIR) Annual Forum*. New Orleans, LA.
- James, P., Marginson, S., & Considine, M. (2002). The Enterprise University: Power, Governance and Reinvention in Australia. *Academe*, 88.
- Kezar, A., & Holcombe, E. (2017). Support for High-Impact Practices: A New Tool for Administrators. *Liberal Education*, 103(1), n1.
- Kingdom of Saudi Arabia. (2016). KSA Vision 2030 Strategic Objectives and Vision Realization Programs. Retrieved from: [https://vision2030.gov.sa/sites/default/files/vision/Vision Realization Programs Overview.pdf](https://vision2030.gov.sa/sites/default/files/vision/Vision%20Realization%20Programs%20Overview.pdf). [Accessed 12 March 2020]
- Kinzie, J. (2011, March). High-Impact Practices: Promoting Engagement and Student and Academic Affairs. In *American College Personnel Association Annual Convention*.
- Koch, S. S., Griffin, B. Q., & Barefoot, B. O. (2014). National Survey of Student Success Initiatives at Two-Year Colleges. Retrieved from: <https://elimindset.com/wp-content/uploads/2016/03/National-2-yr-Survey-Student-Success-Initiatives.pdf>. [Accessed 12 March 2020]
- Krücken, G., Blümel, A., & Kloke, K. (2013). The Managerial Turn in Higher Education? On the Interplay of Organizational and Occupational Change in German Academia. *Minerva*, 51(4), 417-442.
- Kuh, G. D. (2008). *High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter*. Association of American Colleges and Universities.

- Kuh, G. D. (2012). What Matters to Student Success: The Promise of High-Impact Practices. In *12th Annual Texas A&M Assessment Conference*.
- Kuh, G. D., O'Donnell, K., & Reed, S. D. (2013). Ensuring Quality & Taking High-Impact Practices to Scale. In *AAC & U, Association of American Colleges and Universities*.
- Limbach, B., & Waugh, W. (2014). Implementing a High-Impact, Critical Thinking Process in a Learner-Centered Environment. *Journal of Higher Education Theory and Practice*, 14(1), 95-99.
- McNair, T. B., & Albertine, S. (2012). Seeking High-Quality, High-Impact Learning: The Imperative of Faculty Development and Curricular Intentionality. *Peer Review*, 14(3), 4.
- Miller, A. H., Imrie, B. W., & Cox, K. (2014). *Student Assessment in Higher Education: A Handbook for Assessing Performance*. Student Assessment in Higher Education: A Handbook for Assessing Performance. Routledge.
- Moon, S., Sullivan, E., Hershey, J., Walker, S., Bonsangue, M., Filowitz, M., et al. (2013). High-Impact Educational Practices as Promoting Student Retention and Success. In *the Proceedings of the 9th Annual National Symposium on Student Retention* (pp. 4-6).
- National Survey of Student Engagement (2007). Experiences that Matter: Enhancing Student Learning and Success. In *Experiences that Matter: Enhancing Student Learning and Success*. National Survey of Student Engagement.
- Oxford Business Group (2015, November 24). *Saudi Arabia Expands Educational Offerings at All Levels*. Oxford Business Group.
- Salmi, J. (2009). *The Challenge of Establishing World Class Universities*. The Challenge of Establishing World Class Universities. World Bank.
- Sandeen, C. (2012). High-Impact Educational Practices: What We Can Learn from the Traditional Undergraduate Setting. *Continuing Higher Education Review*, 76, 81-89.
- Schmidt, L. C., & Graziano, J. (2016). *Building Synergy for High-Impact Educational Initiatives: First-Year Seminars and Learning Communities*. National Resource Center for the First-Year Experience and Students in Transition. University of South Carolina.
- Tampke, D., & Durodoye, R. (2013). Improving Academic Success for Undecided Students: A First-Year Seminar/Learning Community Approach. *Learning Communities: Research & Practice*, 1(2), 3.
- Temple, P., Callender, C., Grove, L., & Kersh, N. (2014) *Managing the Student Experience in a Shifting Higher Education Landscape*. Report to the Higher Education Academy. York: Higher Education Academy.
- Temple, P., Callender, C., Grove, L., & Kersh, N. (2016). Managing the Student Experience in English Higher Education: Differing Responses to Market Pressures. *London Review of Education*, 14(1), 33-46.
- Upcraft, M., Gardner, J. N., & Barefoot, B. O. (2004). *Challenging and Supporting the First-Year Student: A Handbook for Improving the First Year of College*. San Francisco, California: Jossey-Bass.
- White, A. (2018). Understanding the University and Faculty Investment in Implementing High-Impact Educational Practices. *Journal of the Scholarship of Teaching and Learning*, 18(2), 118-135.
- Wiggins, G. (2014). *Final Exams vs. Projects – Nope, False Dichotomy*. Retrieved from: <https://grantwiggins.wordpress.com/2014/01/01/final-exams-vs-projects-nope-false-dichotomy-a-practical-start-to-the-blog-year/>. [Accessed 30 March 2020]
- Young, D. G., Hopp, J. M., & National Resource Center for the First-Year Experience and Students (2014). *2012-2013 National Survey of First-Year Seminars: Exploring High-Impact Practices in the First College Year*. Research Reports on College

Transitions No. 4. National Resource Center for the First-Year Experience and Students in Transition.