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USAID/Vietnam Higher Engineering Education Program (HEEAP) Final Report

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Higher Engineering Education Alliance Program (HEEAP)

FINAL REPORT

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Table of Contents

Acronyms and Abbreviations.....	3
I. EXECUTIVE SUMMARY	4
II. KEY ACHIEVEMENTS.....	Error! Bookmark not defined.
III. PROGRAM PROGRESS... ..	5
IV. MONITORING	Error! Bookmark not defined.
V. FINANCIAL INFORMATION.....	14
VI. PROJECT ADMINISTRATION.....	16
VII. LESSONS LEARNT AND RECOMMENDATIONS.....	20
Annexes & Attachments	19

ACRONYMS AND ABBREVIATIONS

AACC	American Association of Community Colleges
ACE	American Council on Education
AACP	American English Cultural Program
ASU	Arizona State University
CTTC	Cao Thang Technical College
CTU	Can Tho University
DUT	Danang University of Technology
GDVT	General Department of Vocational Training
HCMUT	Ho Chi Minh City University of Technology
HCMUTE	Ho Chi Minh City University of Technical Education
HVCT	Ho Chi Minh City Vocational College of Technology
HEEAP	Higher Engineering Education Alliance Program
HCC	HEEAP Cloud Community
HUST	Hanoi University of Technology
IUH	Industrial University of Ho Chi Minh City
MOET	Ministry of Education and Training
MOLISA	Ministry of Labor, Invalids and Social Affairs
M&E	Monitoring and evaluation
NI	National Instruments
UOEED	University Office of Evaluation and Educational Effectiveness
VEEC	Vietnam Engineering Education Conference
VULII	Vocational and University Leadership Innovation Institute

I. EXECUTIVE SUMMARY

On June 22, 2010, a cooperative agreement was executed between Arizona State University (ASU) and USAID, forming the Higher Engineering Education Alliance Program (HEEAP). The partnership MOU between ASU, Intel and USAID followed with a signing ceremony at the Ho Chi Minh City University of Technology on August 19, 2010. The event included participation from the original five Vietnamese University Partners' Deans and Rectors, 25 participating faculty, the then U.S. Ambassador to Vietnam Michael Michalak, the then USAID Mission Director Frank Donovan, and VIPs from the U.S. Consulate, MOET, Intel and ASU. This began a prosperous partnership which lasted four years through HEEAP 1.0 and whose legacy continues on.

Beginning with the three founding members, the HEEAP project has grown to include a dedicated alliance of partners, including Siemens Corporation, Danaher Corporation, Cadence Design Systems, Pearson and National Instruments. The in kind donations from Cadence, Siemens and Danaher total over \$100M.

During HEEAP 1.0, a total of 155 university and vocational college lecturers, from eight Vietnamese institutions, travelled to ASU to take part in advanced faculty development training courses. Through four to six week long courses, faculty members learned new instructional and pedagogical approaches. HEEAP 1.0 saw positive advances in transforming the existing theory-based engineering and technical vocational programs in Vietnam through higher education enterprise modernization and robust applied and hands-on instructional approaches. In support of ADS 253 "Women in Development" criteria, 31% of the participating faculty members were women. More than 300 faculty members received additional training through active learning workshops in-country. HEEAP 1.0 faculty members reported sharing teaching strategies with other faculty members at their institutions, through seminars, workshops, and word-of-mouth, resulting in increased improvement collaboration between engineering faculty members.

Through the second phase of the project, HEEAP 2.0, ASU and the HEEAP alliance partners will continue to advance a range of activities to grow and sustain long-term vitality of the project.

II. KEY ACHIEVEMENTS

Arizona State University and HEEAP have created sustainable and successful relationships with University and Vocational partners over the past 3 years. Together, with industry partners, USAID and Intel, the HEEAP team was able to successfully focus on advancing the learning outcomes and instructional approaches through its unique faculty development program. After returning to home Universities and Colleges from HEEAP training in the U.S., faculty were more familiar with applied teaching methods and started to utilize more innovative methods in their classrooms (see Success Stories in Annex II for examples). Overall, faculty increased their skills greatly during and following participation in the program. HEEAP successfully met the core objectives as outlined below (see Monitoring and Evaluation Report in Annex I for further details):

- 1) Develop and advance interdisciplinary, applied curricular and instructional methods in engineering.
 - a. Majority of the faculty had redesigned course syllabi to include more active learning into their curricula.
- 2) Develop Students' applied engineering knowledge and skills
 - a. Faculty implemented innovative teaching techniques in their classes, as well as high levels of engagement by and positive feedback from students. Many HEEAP faculty focused their HEEAP project efforts toward building or redesigning lower level, introductory courses in engineering.
- 3) Expand institutional capacity to support engineering faculty.
 - a. Partner Institutions expanded their support to engineering faculty during the course of the project period. Evidence of the institutional leadership strategic plans and

continued development of QA staff and structures via training provided in the VULII program also tangibly support the attainment of this objective.

- 4) Increase number of work-force ready, qualified engineers.
 - a. The HEEAP faculty training program has increased faculty knowledge and their abilities to implement applied active learning strategies, which appear to be having initial impacts on the development of students' engineering knowledge and skills in the courses in which they are applied. Coupled with industry partnerships, which will offer students internship and other work training opportunities, and continued progress toward improving the quality of engineering education in the partner institutions, evidence would suggest that this objective will be fully met in the future.
- 5) Increase the number of partnerships and individuals trained through USAID funded partnerships and exchange programs
 - a. The HEEAP program team effectively increased the number of partnerships with University track and Vocational track institutions in Vietnam, the number of partnerships with industry, and expanded and formalized partnerships with Vietnamese government entities.

Annex I provides further detail on how these achievements were reached over the period of the project. Through continued evaluation, improvements and increased cooperation with partner schools, industry and government partnerships, HEEAP was able to meet the project goals.

III. PROGRAM PROGRESS

Over the course of the partnership between Arizona State University and USAID, HEEAP has made significant progress in many different areas. All of the programs, products and progress below allowed ASU and the HEEAP team to meet the goals and objectives of the program.

Champions Leadership Committee Meeting

The Higher Engineering Education Alliance Program members are requested to serve as active participants in the Champions Leadership Committee Meeting to support the goals and strategic outcomes of the Alliance. The Champions Leadership Committee Meeting (C-COM) provided a platform to bring academic, government and industry leaders together to collectively focus on advancing internationally accredited undergraduate engineering curriculums. Through creative idea sharing and discussion, the C-COM aligned resources to meaningful "high-impact" instructional and curriculum projects directly linked to the strategic objectives and outcomes of the program. Four C-COM meetings took place during HEEAP 1.0 on the following dates:

- April 26-30, 2010 at Arizona State University
- April 18-22, 2011 at Arizona State University
- May 30- June 1, 2012 at Arizona State University
- March 18, 2013 at Can Tho University

HEEAP Faculty Development Trainings

In 2010 the HEEAP project began with five partner universities, Can Tho University (CTU), Danang University of Technology (DUT), Hanoi University of Science & Technology (HUST), Ho Chi Minh City University of Technology (HCMCUT) and Ho Chi Minh City University of Technical Education (HCMUTE). In 2011 HEEAP expanded the project to include three vocational colleges, Cao Thang Technical College (CTTC), Ho Chi Minh Vocational College of Technology (HVCT) and Industrial University of Ho Chi Minh City (IUH).

Two faculty development training workshops were specifically designed to meet the needs of each group. These new instructional and pedagogical approaches were designed for graduate students who are work-ready with both project and applied skills and technical communication competencies

required by multinational corporations. Global engineers need the skills, knowledge, and leadership qualities that cultivate: self-reliance, social and cultural capital, appreciation for lifelong learning, creativity, conflict-resolution and team-building skills, ethics, understanding of economics and business, and more.

During the four to six week trainings, faculty members were exposed to a variety of Arizona State University (ASU) instructors, classrooms, engineering labs, and teaching methodologies. During HEEAP 1.0 a total of 155 university and vocational college lecturers travelled to ASU to take part in advanced faculty development training courses.

HEEAP 1.0 University Faculty Development Trainings

Dates	Male Participants	Female Participants	Total Participants	Training Duration
July 11-Aug. 20, 2010	20	5	25	6 Weeks
July 18-Aug. 26, 2011	20	10	30	6 Weeks
July 23-Aug. 31, 2012	16	6	22	6 Weeks

HEEAP 1.0 Vocational Faculty Development Trainings

Dates	Male Participants	Female Participants	Total Participants	Training Duration
Sept. 12-Oct. 7, 2011	13	10	23	4 Weeks
Aug. 13- Sept. 7, 2012	12	10	22	4 Weeks
June 24-July 19, 2013	19		19	4 Weeks
July 22- Aug. 9, 2013		14	14	4 Weeks

A requirement of the Faculty Development Program was for all participants to complete a curriculum and instructional change plan aligning to the HEEAP strategic objectives. All faculty members prepared group proposals and presented these at the conclusion of their training programs to a proposal review committee consisting of ASU leadership and faculty. The committee provided the faculty feedback to their proposals and this information was leveraged by the faculty to complete final project proposals for review and funding.

Throughout the years, the HEEAP administrative team incorporated changes as outcomes of the Monitoring and Evaluation yearly summary findings. This included a more intensive week of instruction on development of ABET aligned syllabi for the University Faculty Developments Trainings. These syllabi were current courses faculty members were teaching as part of their instructional course load in Vietnam. Through an applied and hands-on workshop, faculty successfully developed and presented sample course session aligned to ABET learning outcomes, active learning and applied lab exercises. We also leveraged this curriculum redesign activity to invite corporate partners to collaborate, coach and assess the faculty with integration of their in-kind software tools and lab donations into the new course syllabi.

The second substantial emphasis was to develop and coach faculty on new instructional approaches for large class sections. In Vietnam, faculty are constrained to implement active and applied project learning methods due to student populations from 50-80 in a section. Ironically, in the U.S. and even ASU we teach to larger class sections than Vietnam in some cases, but leverage a variety of methods, simulation tools, team-based and problem-based project approaches, and technology to assure ABET criteria is met. Faculty were exposed to these new methods and approaches leveraged in the U.S. as well as direct coaching from ASU faculty and observations of large-scale class sections at ASU.

In-country Workshops

In-country workshops were an important factor to the success of HEEAP, providing the opportunity for follow up with HEEAP alumni and make connections with new faculty members. The following in-country workshops took place during HEEAP 1.0.

2012 In-country

As components of the 2011 HEEAP faculty cohort project plans, three in-country workshops were delivered during summer 2012. The outcome of these workshops was for each faculty participant to redesign one undergraduate course syllabi to ABET outcomes and assessment methods incorporating active learning instructional techniques. The three universities that hosted these in-country workshops consisted of Hanoi University of Science and Technology, DaNang University of Technology, and HCMC University of Technology. An estimated 200 faculty members attended these workshops.

- July 3-9, 2012 at Hanoi University of Science and Technology
- August 13-17, 2012 at DaNang University of Technology
- September 4-8, 2012 at HCMC University of Technology

2013 In-country

During March 25-29, 2013, HEEAP Senior Lecturer Dr. David Benson hosted a workshop for HCMC University of Technology in Da Lat. The “Innovation Teaching and Assessment Methods Workshop to Achieve Expected Learning Outcomes” was held for 84 HCMUT Electrical, Mechanical, and Computer Science Engineering professors. The workshop covered ABET processes, how to build professional skills, and how to incorporate active learning projects into the curriculum. Faculty actively participated and delivered positive feedback on Dr. Benson’s first in-country workshop.

2014 In-country

As a final project under HEEAP 1.0, two workshop topics were covered to address issues relevant to higher education instruction in engineering within Vietnam. The first was to help faculty to develop design activities which can be used to reinforce content (and teach design process skills) in any class. The second was to reinforce the use of Bloom’s Taxonomy to structure the level of assignments and assessment in a class (and therefore the instruction) and then to develop plans for collection and revision of instructional methods in response to information about student performance.

A total of six workshops were conducted at HCMC University of Technical Education, Cao Thang Technical College, Can Tho University and DaNang University of Technology during February 17-24, 2014. Four of these workshops were related to design and two to classroom level assessments. Approximately 300 faculty participated in these workshops lead by Dr. David Benson, HEEAP Senior Lecturer and Dr. Kathy Wigal, Associate Director, Curricular Innovation, CTI College Tech & Innovation, ASU.

Intel HEEAP Technical Vocational Female Scholarship Program

In September 2012, Intel and HEEAP announced its Technical Vocational Female Scholarship Program. In the program’s first two years, female engineering students have received a total of 218 scholarships—a total value of 1.4 billion VND. Part of HEEAP, the scholarship program is co-funded by Intel, ASU, USAID, Siemens, Danaher, and Cadence, and aims to change the perception of females in vocational careers.

Intel awards these Technical Vocational Female Scholarships annually under the umbrella of HEEAP. Speaking at the HEEAP Vocational Female Students Scholarship award ceremony on November 29, 2013, Sherry S. Boger, General Manager of Intel Products Vietnam, said, "Education for girls and empowering women is one of Intel's key focuses in our education transformation and corporate social responsibility initiatives. With the ambition of increasing the female to male ratio in Vietnam technical and engineering studies, we launched the female scholarship program as a part of HEEAP Phase One in 2012 and we have provided many scholarships that give female students the opportunity to excel and maximize their potentials within the engineering major."

Annual Vietnam Engineering Education Conference

On March 19th, 2013, HEEAP Administration and Can Tho University hosted the inaugural Vietnam Engineering Education Conference (VEEC), "Transforming Boundaries through Innovation and Partnerships." The two day event brought together Vietnamese and US government officials, engineering faculty and administrators, and industry partners to discuss transforming boundaries through innovation and technology. This conference began an annual tradition. Morning sessions featured plenary speakers, while afternoon break-out sessions included technical presentations on best classroom practices.

2013 Conference highlights included:

- Number of attendees: 164
- Plenary session topics: Government's Role in Driving Transformation in Engineering and Vocational Education; Industry Voice – Building an Engineering and Vocational Technical Workforce in Vietnam; Developing Bi-National Research and Innovation Collaborations in Science and Technology; Higher Education Modernization-Technology Driving Student Access; Faculty Instructional Efficiencies and Outputting Strong Data Analytics
- Number of technical presentations: 20
- US government representatives: Honorable An T. Le, Consulate General of the United States of America; Joakim Parker, USAID Vietnam Mission Director; William Colglazier, Science and Tech Advisor to Secretary of State, US Department of State.
- Conference sponsors: Danaher, Blackboard
- Industry representatives: Intel, GE, Danaher, PEB Steel, Blackboard, National Instruments

Doubling the attendance of the first conference, the second Annual Vietnam Engineering Education Conference (VEEC) was held in Ho Chi Minh City on March 25-26, 2014. The theme for the conference was "Transformative Change: Educating Engineers to Innovate the Future of Vietnam" and was co-organized by HCMC University of Technology. Among the list of conference speakers were Prof. Bui Van Ga, Deputy Minister, Ministry of Education and Training, Vietnam; William Colglazier, the Science and Technology Advisor to the United States Secretary of State; Rena Bitter, the U.S Consul General in Ho Chi Minh City; and USAID Mission Director Joakim Parker.

2014 Conference highlights included:

- Number of attendees: 350
- Plenary session topics: Innovation in Education: Hybrids, MOOCs, Flipped Classrooms, Personalize Learning: What does this all mean and how can it be used "accelerate" Higher Education modernization and quality in Vietnam?; Interactive Industry/Academic Panel Discussion: Inspiring the Next Generation of Engineers-How do we do this together?; Technology Innovation: Building the National Strategy for Vietnam and a "Call to Action" for Strategic Partnerships; Public/Private Partnerships: Building the Engineering Education and Scientific Research Innovation Ecosystem
- Number of technical presentations: 44
- US government representatives: Honorable Rena Bitter, Consulate General of the United States of America; Joakim Parker, USAID Vietnam Mission Director; William Colglazier, Science and Tech Advisor to Secretary of State, US Department of State.

- Conference sponsors: USAID, Intel, ASU Ira A. Fulton School of Engineering, Danaher, Pearson, Cadence, National Instruments, Siemens, Tektronix, Keithley, Axcela and DynEd.
- Industry representatives: Intel, National Instruments, Pearson, Nike Vietnam, Siemens, US-ASEAN Business Council, Saigon Hi-Tech Park and Honeywell Indochina

The 2015 Vietnam Engineering Education Conference is scheduled to take place in DaNang.

World Bank Solutions Network

On May 31, 2013 ASU and the World Bank organized a forum to discuss science and engineering research in Vietnam. Held in Ho Chi Minh City's Vietnam National University, academic, government, and industry leaders participated in the daylong session. The forum discussions resulted in an initial framework for a Solutions Network consisting of four platforms: education and training, policy and analytics, research and development, and catalytic innovation.

In July 2013, ASU and HEEAP hosted Dr. Suhas Parandekar, Program Officer for the World Bank FIRST program, to further develop the Solutions Network concept. The Solutions Network will connect individuals from diverse East Asian groups who are working— through government agencies, universities, bilateral and multilateral development agencies and corporations—for technological innovation. In August 2013, a team of ASU and HEEAP industry representatives met with MOST and the World Bank FIRST team to host a working session and present the concept to potential partners. In late September 2013, MOST representatives presented an overview of the Solutions Network concept at the US-Vietnam Joint Committee Meetings on Science and Technology. Additionally, ASU and the World Bank team met in DC and decided to pursue the Solutions Network concept through a pilot program around a Biomedical Engineering Design/Device Center. ASU is currently working with the World Bank to submit a proposal to seed the Solutions Network through an internal World Bank Innovation Challenge grant. The long-term goal is to formalize partnerships with the World Bank and ASU and connect with other networks, such as the US State Department's Lower Mekong Initiative, to expand the HEEAP model regionally and globally.

HEEAP Website

Throughout HEEAP 1.0 the project has leveraged technology and social media to serve as a source of information and assisting HEEAP alumni to remain connected to the project.

In the summer of 2013 HEEAP Administration executed the HEEAP 2.0 Web Project. The goal of the HEEAP 2.0 Web Project was to rebuild www.heeap.org to improve the site's overall functionality, capacity, interactivity and load time. The 2.0 Web Project also allows for the implementation of a social network allowing Vietnamese faculty to connect with all program affiliates via the HEEAP website. The site is now fully operational, containing the same information and functionality as the current HEEAP site, but with greater interactivity, a sleeker layout and faster page load time.

On December 2013, the HEEAP Cloud Community (HCC) was launched as part of the HEEAP 2.0 Web Project. The HCC is an online Professional Learning Community that is currently in its test phase and is an interactive web-based resource created using aspects of social-networking, cloud computing and electronic file sharing. This novel platform was created for the purpose of real-time knowledge creation and connecting HEEAP faculty and facilitating future collaboration and projects. The HCC was designed to help maintain the connection and energy that is developed during the workshops after the participants have returned to their home institutions and their busy daily lives. The HCC was engineered using the latest web 2.0 technologies to facilitate the continuing discussion on education and to provide a space for faculty to connect and build collaborations regardless of location.

IV. MONITORING

Monitoring and Evaluation Activities

The Arizona State University Office of Evaluation and Educational Effectiveness (UOEEE) served in an external monitoring and evaluation (M&E) capacity to the HEEAP program, from 2010 to present. The evaluation represented a mixed method design, with formative and summative approaches designed to meet the information needs of USAID and program leadership for planning, decision-making, and program improvement.

Over the course of the grant, the M&E team engaged in the following activities:

- Development of goals, objectives, and indicators to measure HEEAP program performance in accord with USAID expectations and implementation plans;
- Development and implementation of the HEEAP Monitoring and Evaluation plan;
- Development of a Data Quality Assessment (DQA) and annual updates, which outlined potential limitations in the evaluation design and resultant data collected;
- Development and administration of several data collection instruments, including:
 - Pre- and post- faculty training surveys
 - One year follow-up faculty survey
 - Mentorship survey
 - Weekly training feedback surveys
 - Observation protocols
 - Focus group protocols
 - Classroom observation rubrics
 - Interview protocols for institutional leaders, deans, rectors, faculty, and students;
- Collected and analyzed data on an ongoing, iterative basis;
- Reviewed training materials (e.g., Blackboard course materials, project assignments completed by faculty);
- Conducted a rubric-driven review of institutional assessment plans, materials, and data collection methods, and provided feedback;
- Observed HEEAP faculty training at ASU and HEEAP faculty teaching in classrooms in Vietnam;
- Conducted focus groups with faculty and students in Vietnam;
- Conducted interviews with key institutional leadership in Vietnam;
- Reported findings to HEEAP leadership and USAID in quarterly reports;
- Provided formative feedback to HEEAP leadership and trainers in weekly meetings;
- Offered expertise in M&E capacity building activities for faculty and institutional leadership
 - Developed and shared sample and template instruments (e.g., engineering alumni survey, engineering course evaluation survey, employer survey of work readiness of engineering alumni); conducted multi-day workshops on classroom assessment and program evaluation; and critiqued evaluation plans for HEEAP projects.

This report summarizes the aggregate findings from all cohorts in the University track program, 2010-2012, and the Vocational track program, 2011-2013. Results from the pre-training, post-training, and one year follow-up surveys were merged to track participants' responses over time, and aggregated across years. Please note that data from the one year follow-up survey for the 2013 Vocational track cohorts are not yet available; data collection is planned for September, 2014. A report will be prepared and presented to HEEAP leadership in late 2014.

Summary of Findings

The M&E findings are detailed thoroughly in Annex I. They are organized by program objectives, as well as by University and Vocational track programs. Specific indicators are referenced in-text, with a list of objectives, results and indicators provided at the conclusion of the full report. Summary tables and figures are provided the annex, as well.

Overall, the M&E team finds that the HEEAP program has been successful with respect to providing high quality training to Vietnamese faculty from the University track and Vocational track partner institutions. Faculty from both tracks have reported increases in their teaching skills, confidence with respect to applying active learning techniques, and frequency of using active learning techniques in their classes. Faculty have reported and provided evidence of the redesign of their curricula in one or more of the classes they teach. Faculty have also reported that they enjoy applying active learning techniques and have integrated them into additional classes, beyond what they proposed in their HEEAP project plans.

Classroom observations and interviews with students in the participating Vietnamese institutions have suggested that students are engaged in the course content through the active learning techniques. Faculty have reported that they are integrating additional classroom assessment techniques in their classes and that their results so far have suggested that students are learning from the active learning techniques they have applied.

Faculty reported challenges with respect to applying the active learning techniques in their classes. Challenges have included applying the active learning strategies in large classes, particularly without the help of teaching assistants, and assessing and grading team or collaborative projects. Faculty have also been challenged with implementing experiments and projects without the proper lab equipment and facilities. Furthermore, the low rate of pay for faculty in Vietnam and the heavy teaching load faculty take on have posed challenges with respect to dedicating additional time to any one class to revise the course content, plan active learning activities, and grade project assignments.

Over the course of the grant period, the HEEAP program leadership, staff, and trainers have integrated support structures to provide the conditions needed by faculty to be successful. The HEEAP Blackboard website, populated with training materials, examples, templates, and literature, has been made available to faculty beyond their training at ASU. Engineering faculty at ASU, affiliated with HEEAP, have also provided support and assistance to faculty of the University and Vocational track programs. Support and structures at the institutional level have also been put into place by the HEEAP program. For example, institutional agreements between ASU and the partner institutions were drafted and signed, HEEAP leadership at ASU have worked closely with the partner institutions to ensure that agreements are upheld and implemented, and new partnerships have been established with industry leaders to provide additional resources (funding, lab equipment, software, etc.) to the Vietnamese institutions.

Early on in the grant period, HEEAP leadership identified needs for institutional leadership training and the establishment of quality assessment structures and trained staff to support the long term goals of the program. Thus, beginning in 2011, the HEEAP leaders planned and implemented the VULII program, which is aimed at providing support and training to institutional leaders for driving, managing, and supporting change at their institutions. The HEEAP and VULII programs have been, and will continue, working in concert to provide the training, materials, and support needed for successful improvement in the quality of education in the partner institutions in Vietnam.

While not without challenges and delays, equipment, materials, and software provided by the programs and their industry partners have been installed in some classrooms and have reportedly been useful to faculty. Furthermore, HEEAP leaders, trainers, and partners have considered the long term sustainability and utility of the equipment and software provided to the institutions, such that license renewal costs are kept to a minimum and services and support for equipment will be available to the Vietnamese institutions in the future.

Faculty have reported that they are increasingly feeling supported by their institutions, and that additional professional development opportunities are being institutionalized. However, given the

nature of the goals of HEEAP and VULII, the cultural context in which they are being implemented, and the number of people involved and affected by the programs, the rate of change is slow. This reflects the scale and complexity of the project—not a performance issue on the part of HEEAP. Evidence of change, such as project plans at the leadership, QA team, and faculty levels, attendance at trainings, assessment of the learning at the trainings, institutional policies, and observations of institutional practices and the teaching in classes continue to be collected and the evaluation and assessment capacity of QA teams will continue to develop. In the longer term, as the institutions put into place QA processes, evidence of the effectiveness of the engineering programs at the HEEAP partner institutions will be tracked over time, sustainably, by QA staff. Such evidence will need to come directly from enrolled students, alumni, and their employers. Tracking and gathering data from alumni and their employers will require a level of QA sophistication that will take time to develop and fully implement. Training and support provided through VULII appears to be moving institutional leadership and QA teams toward that end, which will ultimately show the accomplishment of the original mission of HEEAP.

The table below provides quantitative data on the number of engineering faculty from our HEEAP University and Vocational College partners in Vietnam that have been trained through our program. At the strategic level of information, the data has been disaggregated by:

- 1) Geographic location
- 2) Event type (conference, workshop, HEEAP training, etc.)
- 3) Dates
- 4) Gender

This information is further broken down to the tactical level by classifying the data into three main categories:

- a) **In-Country Training:** conferences and workshops offered by ASU faculty in Vietnam.
- b) **US-Based Training for University Cohorts:** Training of University Vietnamese faculty in Tempe, AZ.
- c) **US-Based Training for Vocational College Cohorts:** Training of Vocational College Vietnamese faculty in Tempe, AZ.

Each category is also broken down by gender and compares HEEAP progress yearly. The two events during the last quarter were the in-country workshops on design and continuous improvement, which trained close to 300 faculty from HEEAP partner institutions, and the 2014 VEEC which had an attendance of 350 participants

INDICATOR TITLE: Number of University and Vocational Engineering Faculty Trained Through HEEAP														
UNIT: Number of Faculty	DISAGGREGATE BY: Geographic Location, Event, Date and Gender													
	Geographic Location				Event				Date		W	M	Sub-total	
	Ho Chi Minh City, Da Nang and Can Tho, Vietnam				Workshop series: Design and Assessment				February 17 – 24, 2014		82	218	300	
	Ho Chi Minh City, Vietnam				2014 Vietnam Engineering Education Conference				March 25- 26, 2014		158	192	350	
									<i>Totals</i>		240	410	650	
Results:														
Additional Criteria	This Reporting Period Q1: 31/March/14				2010		2011		2012		2013		End of Project Totals	
	Target		Achieved		Final		Final		Final		Final		Achieved	
Gender : Women (W), Men (M)	W	M	W	M	W	M	W	M	W	M	W	M	W	M
In-Country Training	100	200	240	410	0	0	0	0	60	140	56	192	356	742
US Based training – University Cohort	0	0	0	0	5	20	10	20	6	16	0	0	21	56
US based training – Vocational Cohort	0	0	0	0	0	0	10	13	10	12	14	19	34	44
Total	100	200	240	410	5	20	20	33	76	168	70	211	411	842

V. FINANCIAL INFORMATION

Chart I: Obligations & Current Expenditures

Expense Category	BUDGET	EXPENDITURES FOR PERIOD 06/22/10 - 02/25/2014
SALARIES	\$351,420.00	\$501,780.87
WAGES	\$94,655.00	\$172,717.20
EMPLOYEE RELATED EXP	\$148,840.00	\$210,572.90
SERVICES	\$248,510.00	\$56,649.72
SUBAGRMNTS LT \$25,000(SP ONLY)	\$25,000.00	\$25,000.00
SUBAGREEMENTS (SP ONLY)	\$62,171.00	\$61,383.73
MATERIALS AND SUPPLIES	\$0.00	\$1,052.75
NON-CAPITAL EQUIPMENT	\$0.00	\$131.05
RENTALS/LICENSES	\$0.00	\$2,465.26
MISCELLANEOUS	\$108,299.00	\$3,572.61
PARTICIPANT EXPENSES	\$559,773.00	\$489,002.42
TRAVEL/IN-STATE	\$0.00	\$347.95
TRAVEL/OUT-OF-STATE	\$0.00	\$18,565.91
TRAVEL/FOREIGN	\$84,065.00	\$48,688.27
DC SUBTOTAL	\$1,682,733.00	\$1,591,931.46
8201 INDIRECT COSTS RECOVERED	\$339,209.00	\$430,010.54
IC SUBTOTAL	\$339,209.00	\$430,010.54
TOTAL	\$2,021,942.00	\$2,021,941.18

Additional Budget Details:

As of the date of this report, ASU and USAID are finalizing the official FSR, which once submitted will be considered the final financial report, taking precedence over the above overview of expenditures.

Salaries and Wages – In the original budget a portion of the instructional expenses related to the cohorts were budgeted as services given the intent to use consultants. As many of these consultants and instructors ended up being ASU faculty, the expenses appear under the salary and wages category.

Participant Expenses – Funds from the participant expense category were used in February 2014 for an in country workshop, which reallocated some of those expenses to the travel, salaries and services categories. This reallocation of expenses received prior approval from USAID Program Director.

Chart 3: HEEAP Contribution Matrix

HEEAP Contribution Matrix *

Partner	FY 2010 (\$ Actual)	FY 2011 (\$ Actual)	FY 2012 (\$) Actual	FY 2013 (\$) Target	FY 2013 (\$) Actual	FY 2014 (\$) Target	FY 2015 (\$) Target	Total so far (\$)	Notes
USAID	0	538,522	559,351	1,443,966	1,454,987	942,063	829,331	2,552,861	Amount represents actual expenditures, not total obligated. FY13 654,397.7 for VULLI and \$800,590 for HEEAP. FY14 Target = \$123,478 for HEEAP and \$818,585, FY15 Target VULLI \$829,331
Intel Corp	0	241,781	456,846	885,290	1,260,498	2,269,749		1,959,125	Amount represents actual expenditures, not total obligated or funds actually received (\$388,382 for Intel HEEAP 2.0 and \$872,116 for HEEAP 1.0) FY 2014 target \$354,799 for HEEAP 1.0 and \$1,914,950 for HEEAP 2.0
Siemens Corp	0							160,000,000	Siemens was unavailable to provide a breakdown of costs per year
Danaher Corp	0		191,818	181,808				373,626	\$50,000 out of \$181,808 in FY2012 is sponsor fee for March 2013 HEEAP Conference.
Cadence Design Systems		46,000	19,222,000	24,027,500				43,295,500	
Arizona State University	0	73,885	69,650	179,189	179,034	172,798	128,304	196,410	FY13 estimated , FY 14 Target = \$127,405 for VULLI and \$45,393 for HEEAP; FY15 Target = \$128,304 for VULLI
Total	0	854,188	20,499,665	26,717,753	2,894,519	3,384,610	957,635	208,377,522	

* HEEAP includes HEEAP 1.0 and HEEAP Expansion/VULLI

* Contribution includes both cash and in-kind

* Please note - amounts are estimates and should not be compared to official reports provided by the University

VI. PROJECT ADMINISTRATION

Personnel

In 2011, ASU and Ho Chi Minh City University of Technology signed an MOU to support a HEEAP Country Manager. Under the agreement, HCMCUT provided office space, furniture, telecom/Internet, a computer, supplies and support in their International Program Building. The salary and fringe benefits will be administered through HCMCUT as a contract employee.

ASU selected Dr. Hoa Nguyen as Country Manager and he started his appointment on June 5, 2011. Dr. Nguyen graduated from the University of Utah with a PhD in Materials Science Engineering. He brings both industry and academic experience to HEEAP and a strong understanding of U.S. based ABET programs. His primary responsibilities are to provide in country support planning, executing and managing a wide spectrum of academic-distinctive projects, tasks, and assignments, ensuring their smooth delivery and timely achievement. These project sites are at the five University and three Vocational College institutional partners.

In 2011, Dreamlyn Johnson who served as the Program Coordinator for HEEAP in Tempe, AZ, left ASU for another position. Thus, ASU hired Katie Caufield- Ginder as Program Coordinator for Global Initiatives to support HEEAP program tasks. Katie supported the HEEAP Director and Country Manager in coordinating the tasks associated with the administration of the HEEAP faculty development programs, liaison to support industry and government partners, reporting, and overall coordination tasks to support the outcomes of HEEAP.

Due to the fast growth of the project, in 2012, Katie Caufield- Ginder became the HEEAP Program Manager. The first quarter of 2013 included several additions to the HEEAP Administrative team. Le Van Khoi was hired as the HEEAP In-country Director. Khoi was a recipient of the prestigious Fulbright scholarship to attend the Maxwell School at Syracuse University, where he obtained a Master's Degree of Public Administration. Throughout his career, he worked with more than 6,000 university students from over 30 universities/colleges across Indochina, as well as with various organizations including UNESCO, Ministry of Education & Training, GlaxoSmithKline, Biz Tequila, VATC, ARTI, Tan Tao Corporation, Dong Tam Corporation, VietGate, Le & Associates, and Petrolimex.

Dr. David Benson was hired to lead the ASU HEEAP faculty trainings as the HEEAP Senior Lecturer. Dr. Benson obtained his Ph.D. in Mechanical Engineering from Michigan State University and conducted post-doctoral research in Solar Astrophysics at Michigan State University. Prior to joining HEEAP, Dr. Benson's research focus was divided between flow control methods for high speed inlets and education research characterizing the degree of academic diversity present in higher education.

In January, Gila Aispuro joined as a Program Coordinator for Global Initiatives. Gila works primarily with HEEAP vocational colleges, but also provides assistance with VULII and other global activities. She received her Masters of Science degree in Practicing Sustainable Development from Royal Holloway, University of London. In her previous position, Gila managed the Accounts Receivable of the CCF- Communications Department. In addition to her financial responsibilities, Gila coordinated large-scale community gatherings, press conferences, and partnership events with other organizations.

Another addition to the HEEAP team included Jose Quiroga. Jose is a Program Coordinator for Global Initiatives who works predominately with the HEEAP Universities and provides support with VULII and other global activities. Jose holds a Master's of Science in Electrical Engineering from Tecnologico de Monterrey, MX and a Bachelor's of Science in Biomedical Engineering from Arizona

State University. He worked previously in the Global Outreach and Extended Education department and served as the VP of Operations at Predictive Technologies.

During the first quarter of 2014, the HEEAP Administrative team had several personnel changes. In October, Katie Caufield- Ginder, the Program Manager for HEEAP, resigned from her position at Arizona State University. Due to the continual growth of the program this position was changed to an Assistant Director. In December, Sabrina Carretie was hired to serve as the Assistant Director for HEEAP.

Another addition to the HEEAP team included Tran Thi Phuong Thao. Thao serves as the in-country Program Coordinator based out of the representative office in Ho Chi Minh City, Vietnam. She serves as support to the local operations.

Changes in the Project

ASU Representative Office in Ho Chi Minh City

On November 7, 2013, the Ministry of Education and Training authorized ASU to establish a Representative Office in Vietnam. The physical office will be located in Ho Chi Minh City, within the Saigon Hi-Tech Park. The purpose of the office will operate to support the development of the Higher Engineering Education Alliance Program (HEEAP); for the creation of favorable conditions and increase of exchanges between the Arizona State University with higher education institutions in Vietnam to expand opportunities for mutual cooperation for the purpose of education and training development. The HEEAP In-country Administrative team will move from their current HCMUT location to this new location.

Constraints and Critical Issues

Communication issues with the Industrial University of Ho Chi Minh City

HEEAP administration continues to face obstacles in communication and interactions with the Industrial University of Ho Chi Minh City (IUH). As mentioned previously, IUH is still in the process of hiring a new Rector and as a result it is difficult to receive any approval on the HEEAP innovation project's execution. The 2011-2013 IUH groups during the preparation of have not received funding for their innovation projects as their required sub-awards remain unsigned. While HEEAP administration communicates regularly with IUH HEEAP faculty to ensure they are executing their innovation projects, the faculty have not received any compensation for their efforts. Moving forward, it will need to be discussed if IUH faculty should continue to participate in the trainings at ASU if they are unable to fully execute their innovation projects. As this report is being submitted a final agreement to support faculty projects has been sent to IUH leadership and it is anticipated that funding will be provided to the faculty by the end of July 2014.

Contract Modifications and Amendments

N/A

VII. LESSONS LEARNED AND RECOMMENDATIONS FOR FUTURE PROGRAMMING

While successfully meeting the objectives and goals that were established, HEEAP program staff identified potential areas for improvement and lessons learned from interactions with faculty and partner institutions over the course of the project. Below are some examples of the lessons learned:

- 1) Students: Challenges arose when faculty returned to the classroom and started implementing and practicing new teaching methods. They found while students were

receptive to the new style of instruction, it was a slow process for the student to adjust and become fully engaged. In addition, it is suspected that the allocation of points toward final course grades—which in some cases weight projects less heavily than test scores— may have impacted the activities and topics upon which students focused their learning efforts.

- 2) English Language: English language skills of faculty improved during time in program, but at a slower rate than originally anticipated. HEEAP encouraged Vietnamese Institutions to provide English language training to faculty while also encouraging HEEAP faculty to develop student clubs with a focus on English.
- 3) Infrastructure: Throughout the program it was seen that while faculty were learning a lot from the training, their institutions lacked adequate classroom and lab infrastructure, materials and equipment. HEEAP leadership established partnerships with industry to help fill this gap by donating or providing the equipment and materials at a reduced cost.
- 4) Professional Development: While HEEAP faculty were implementing changes, it was observed that peer faculty members were less likely to adapt to such changes. HEEAP training materials were made accessible on the blackboard website to encourage more peer to peer professional development training.
- 5) Leadership: faculty reported a perceived lack of support from institutional leadership leading to slower processing time for approvals. Institutional leadership training was offered through VULLI program, providing strategies for leadership to support HEEAP projects and other curriculum development.

Annexes

Annex I: Monitoring and Evaluation Data

Annex II: Success Stories

Annex II: 2014 Vietnam Engineering Education Conference Program

Annex I - Monitoring and Evaluation Data

USAID Vietnam – HEEAP Final Report

I. USAID Monitoring and Evaluation Report

Attachment: USAID Monitoring and Evaluation Report

Monitoring and Evaluation Activities

The Arizona State University Office of Evaluation and Educational Effectiveness (UOEEE) served in an external monitoring and evaluation (M&E) capacity to the HEEAP program, from 2010 to present. The evaluation represented a mixed method design, with formative and summative approaches designed to meet the information needs of USAID and program leadership for planning, decision-making, and program improvement.

Over the course of the grant, the M&E team engaged in the following activities:

- Development of goals, objectives, and indicators to measure HEEAP program performance in accord with USAID expectations and implementation plans;
- Development and implementation of the HEEAP M&E plan;
- Development of a Data Quality Assessment (DQA) and annual updates, which outlined potential limitations in the evaluation design and resultant data collected;
- Development and administration of several data collection instruments, including:
 - Pre- and post- faculty training surveys
 - One year follow-up faculty survey
 - Mentorship survey
 - Weekly training feedback surveys
 - Observation protocols
 - Focus group protocols
 - Classroom observation rubrics
 - Interview protocols for institutional leaders, deans, rectors, faculty, and students;
- Collected and analyzed data on an ongoing, iterative basis;
- Reviewed training materials (e.g., Blackboard course materials, project assignments completed by faculty);
- Conducted a rubric-driven review of institutional assessment plans, materials, and data collection methods, and provided feedback;
- Observed HEEAP faculty training at ASU and HEEAP faculty teaching in classrooms in Vietnam;
- Conducted focus groups with faculty and students in Vietnam;
- Conducted interviews with key institutional leadership in Vietnam;
- Reported findings to HEEAP leadership and USAID in quarterly reports;
- Provided formative feedback to HEEAP leadership and trainers in weekly meetings;
- Offered expertise in M&E capacity building activities for faculty and institutional leadership
 - Developed and shared sample and template instruments (e.g., engineering alumni survey, engineering course evaluation survey, employer survey of work readiness of engineering alumni); conducted multi-day workshops on classroom assessment and program evaluation; and critiqued evaluation plans for HEEAP projects.

This report summarizes the aggregate findings from all cohorts in the University track program, 2010-2012, and the Vocational track program, 2011-2013. The following tables present the number of responses by survey.

Table 1 : Number of University track respondents by survey by year

	2010	2011	2012	Total
Pre-training	21	22	19	62
Post-training	19	27	22	68
1 year follow-up	22	22	18	62

Table 2: Number of Vocational track respondents by survey by year

	2011	2012	2013	Total
Pre-training	17	13	21	51
Post-training	21	18	23	62
1 year follow-up	18	19	-	37

Analyses

Results from the pre-training, post-training, and one year follow-up surveys were merged to track participants' responses over time and aggregated across years. Please note that data from the one year follow-up survey for the 2013 Vocational track cohorts are not yet available; data collection is planned for September, 2014. A report will be prepared and presented to HEEAP leadership in late 2014. All quantitative analyses were conducted using SPSS unless otherwise indicated.

Descriptive statistics were calculated to obtain aggregated percentages across cohorts from 2010-2013 for the University and Vocational tracks. Change scores were calculated for items that were asked in the pre-training, post-training, and one year follow-up surveys. Change scores were calculated for individual respondents by subtracting the scale response of individual items in one survey from the scale response of the same items in a subsequent survey. This was also done to compare responses from pre- to post-, post- to one year follow-up, and pre- to one year follow-up surveys. The Likert scales used in the surveys remained the same over time. Each scale included four points; up to three levels of change were analyzed (i.e., the greatest rate of change was +3) and the percentages of participants whose survey responses changed by each level were calculated for each comparison. For instance, when comparing an item in the one year follow-up to the pre-training survey, a one point increase could indicate that the respondent "agreed" (coded value=3) with an item in the pre-training survey and "strongly agreed" (coded value=4) with the same item in the one year follow-up survey.

In a separate analysis, Likert scale items were converted to the scale level of measurement to allow for the construction of subscales. Subscales were initially constructed based on face validity and confirmed using factor analysis. Grand means of subscales were calculated for individual participants. T-tests were conducted to compare the average subscale means between the pre-training survey to the one year follow-up survey. For example, confidence items were treated as a subscale and used to calculate an overall average confidence score for each participant. Participants' average confidence scores were compared from the pre-training survey to the one year follow-up survey; the differences between the scores were tested for statistical significance.

Findings

In this report, the M&E findings are organized by program objective and then by University and Vocational tracks. Specific indicators are referenced in-text, with a list of objectives, results and indicators provided at the conclusion of the full report. Summary tables and figures are provided in-text to support specific findings, below.

Objective A: Develop and advance interdisciplinary, applied curricular and instructional methods in engineering.

Findings supported the attainment of Objective A by both the HEEAP University track and Vocational track programs. Overall, faculty from both tracks reported gaining pedagogical skills for engineering instruction (i.e., knowledge and application of and confidence using applied teaching and learning strategies). Faculty also reported gaining advanced engineering content knowledge (i.e., experimental and analytical methods, business communication, and role of the global engineer) through the HEEAP program.

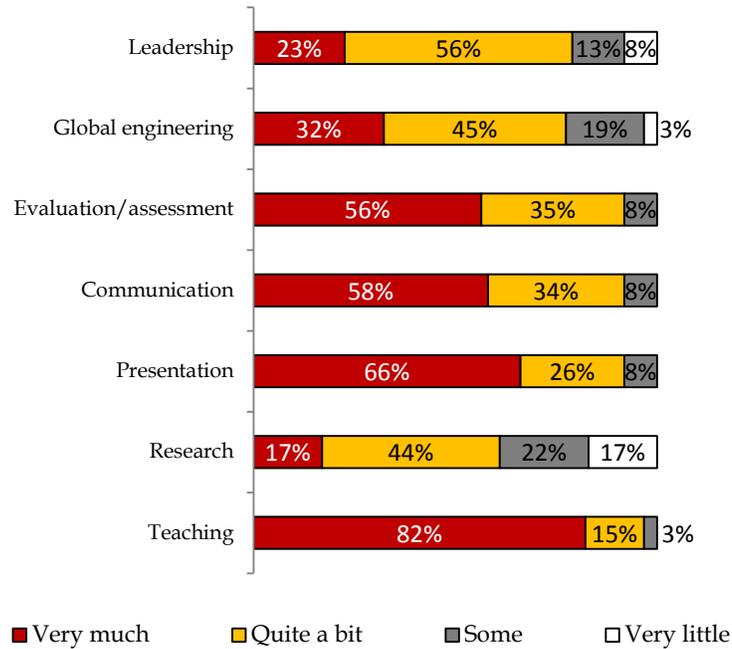
Faculty from both program tracks demonstrated enthusiasm and a willingness to learn new teaching strategies in the HEEAP trainings held at ASU. However, faculty noted that the teaching principles they learned through HEEAP are a significant departure from traditional instruction in Vietnam and how they were taught. Faculty reported reservations toward employing some of the teaching strategies, explaining that they were uncertain of whether or not they would be supported by their Deans and Rectors.

A review of redesigned course syllabi suggested that HEEAP faculty from both program tracks have integrated active learning strategies, as well as more frequent assessment techniques, into their course curricula. Classroom observations and conversations with both cohort faculty and their students supported this claim.

University track

The vast majority of faculty who participated in the University track program reported gaining a great deal of teaching, presentation, communication, and evaluation/assessment skills over the course of their participation in HEEAP (Figure 1). These results indicate that Indicators 1.1, 1.2, 1.3, 1.4, and 2.1 were met through this program. Specifically, faculty increased their skills in the following areas of understanding: experimental methods (1.1); engineering analytical methods (1.2); business communication (1.3); the role of the global engineer (1.4); and applied teaching and learning strategies (2.1).

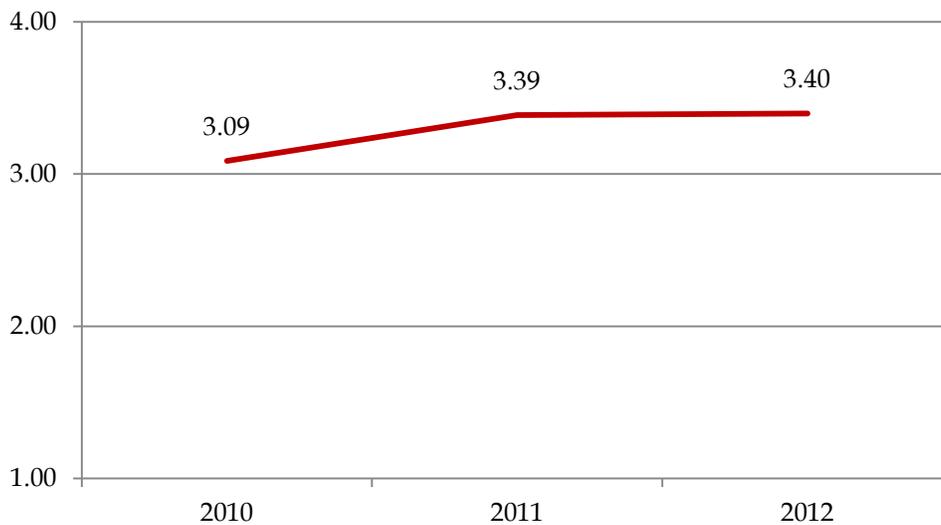
Figure 1: University track faculty improvement in skills self-reported in the one year follow-up (N=59-62)



Faculty also demonstrated their understanding of business communication and the role of the global engineer through their responses to open-ended survey questions. For instance, faculty described the global engineer as someone who is “able to work in...and lead a multicultural, multidisciplinary team,” “aware of global issues,” “has very good technical knowledge and is able to learn to update their knowledge and skills,” and “understands engineering ethics.” Further, faculty described business communication skills as involving “listening skills,” “strong communication skills,” “authenticity,” “leadership,” “teamwork,” and “confidence.”

Viewing the data from a slightly different angle, average skill improvement scores supported that faculty felt that they improved overall and further suggested that the average self-reported improvement scores increased each year the program was implemented (Figure 2). This appears to reflect the fine-tuning of the program by HEEAP trainers and staff in response to feedback from participants on their learning needs, particularly between 2010 and 2011 and supports attainment of Indicator 2.3: Increase in faculty confidence in using applied teaching and learning strategies.

Figure 2: University track faculty average self reported increases in HEEAP-related skills by cohort year (4=Very much, 1=Very little; N=59)



Figures 3 and 4 (next page) demonstrate descriptive and summary statistics representing faculty confidence in their abilities to apply various HEEAP-related skills and strategies.

Figure 3 suggests that many faculty did not report an improvement in their confidence from the pre-training survey to the one year follow-up survey (i.e., “no change”). However, many faculty reported one level increases in their confidence (i.e., “confident” to “very confident”), as well. This could be reflective of faculty reporting high levels of confidence in the pre-training survey, which has been an observation of the M&E team over the course of the project. It should be noted, however, that across most items, an approximately equal percentage of faculty reported “no change” as reported a one level increase. Thus, faculty are reporting gains in confidence as a result of participation in the HEEAP programs.

Figure 4 provides average confidence scores across all cohorts reported in the pre-training, post-training, and one year follow-up surveys. The slight decrease in average confidence from the post-training to the one year follow-up may be reflective of faculty experiencing challenges with implementation in their classes. However, irrespective of this decrease between post- and follow-up, the increase in confidence from the pre-training survey to the one year follow-up survey was statistically significant ($t(49)=5.8; p<.001$). This suggests that the overall change was not due to chance and is likely a real change on the part of faculty. These results should be interpreted with caution, however, since they are based on ratings using a four-point scale. Ultimately, the results provide additional support for faculty achieving increased confidence in using applied teaching and learning strategies over the course of participating in the HEEAP program (Indicator 2.3).

Figure 3: University track change in confidence from pre-training to the one year follow-up (4=Very confident; 1=Not at all confident; N=52-55)

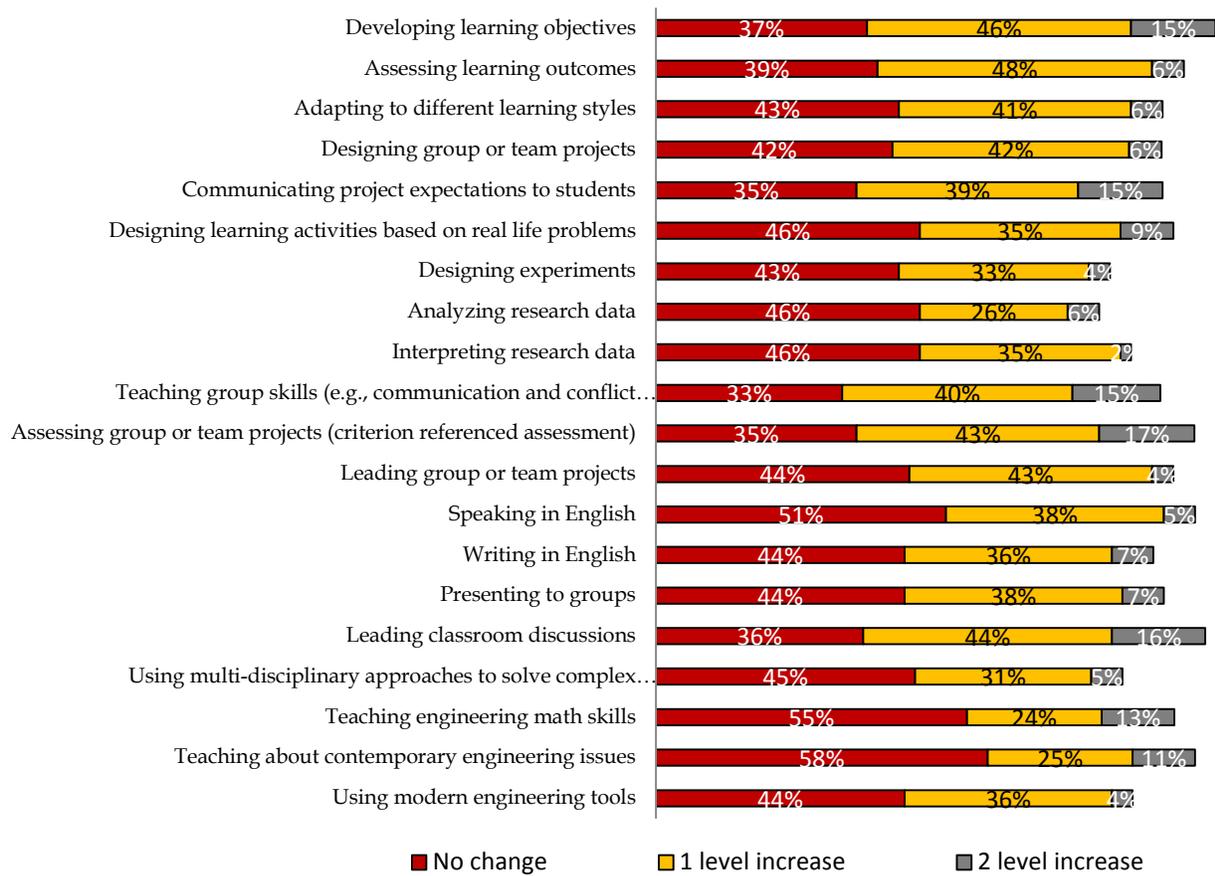
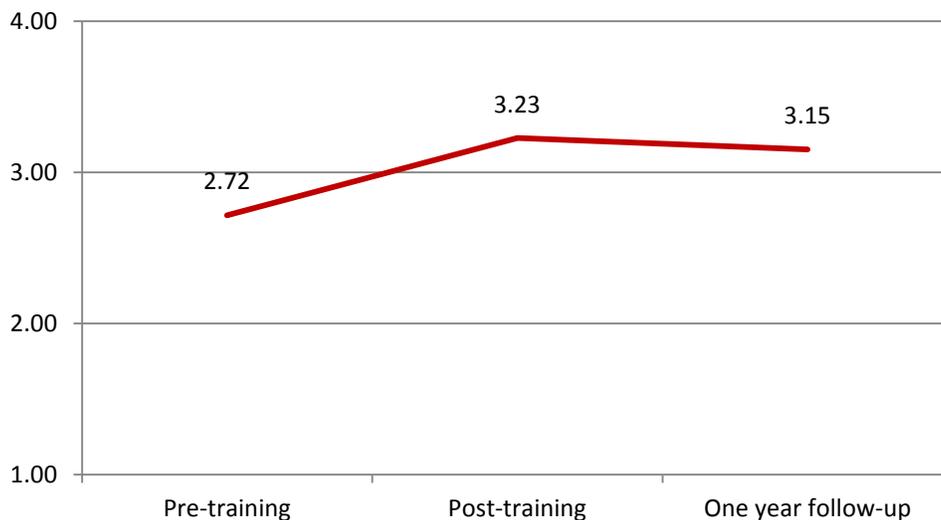
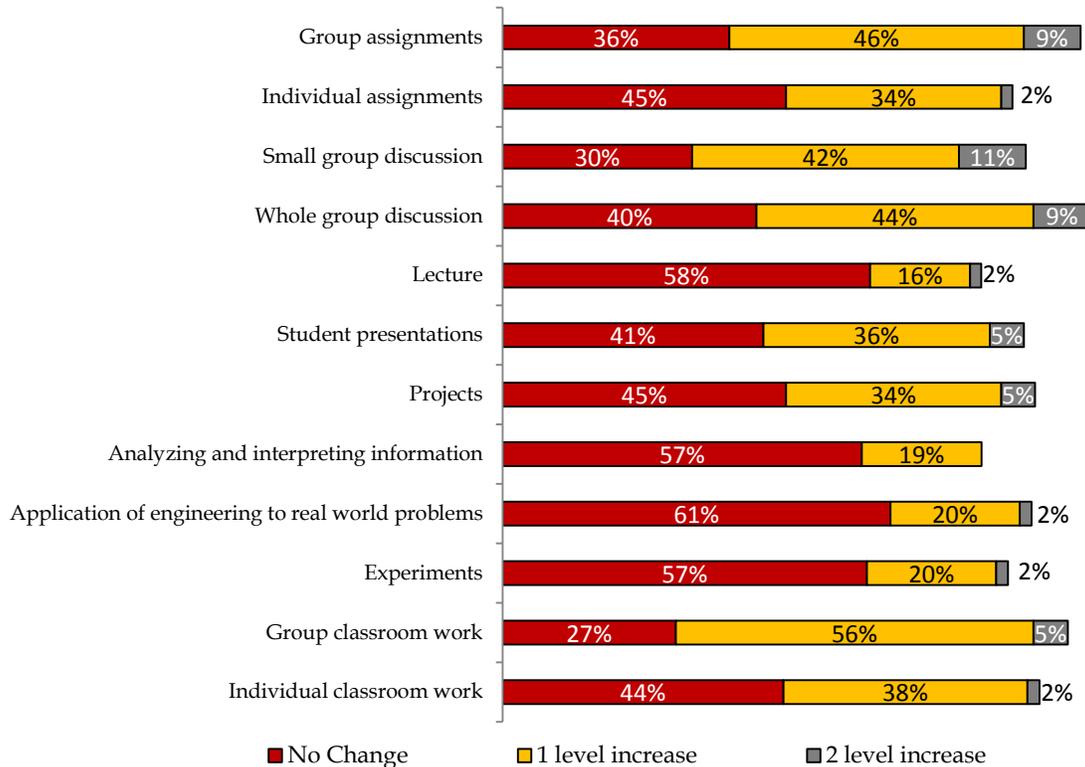


Figure 4: University track faculty average confidence in HEEAP-related skills (4=Very confident, 1=Not at all confident; N=60-68)



Survey results also suggested that faculty increased the frequency with which they used various teaching techniques, particularly group classroom work, small group discussion, group assignments, and whole group discussion (Figure 5), supporting the attainment of Indicator 2.2: Increase in faculty application of applied teaching and learning strategies. Faculty frequently reported “no change” in the frequency with which they used lecture, analyzing and interpreting information, application of engineering to real world problems, and experiments. These findings appear to support the observation that faculty were eager to apply group exercises and projects to their classes and were able to use them often.

Figure 5 : University track change in self-reported use of teaching techniques from pre-training to the one year follow-up (4=Very often, 1=Never; N=52-57)

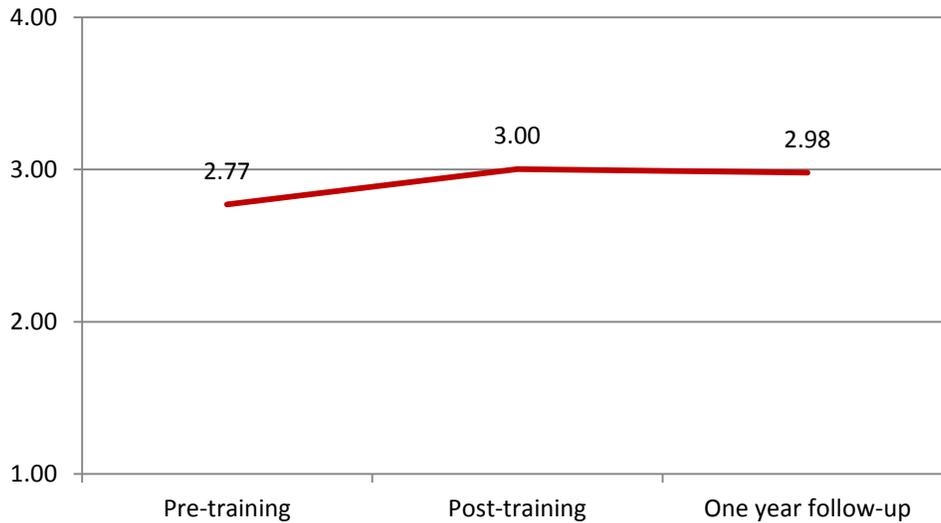


Changes in the course content taught through lecture, labs and experiments, and application to the real world were more difficult for faculty for various reasons, including reluctance to teach concepts in vastly different ways from tradition (and the requisite time needed to plan and grade), lack of lab equipment, large class sizes, perceived lack of support from their institutional leaders, and a strong emphasis on test scores for student learning assessment.

Figure 6, on the next page, summarizes the average reported frequency of use of various teaching techniques over time, excluding “lecture.” Lecture was removed from the grouping as the focus of this analysis was to identify increases in techniques *other than* lecture. Findings from this analysis suggested that faculty reported using the various non-lecture teaching techniques more frequently after participating in HEEAP for one year than they had been using them at the time of the pre-training survey. As the question asked faculty to project the frequency with which they planned to use the teaching strategies over the coming year in the post-training survey, the difference between the post-training and one year follow-up averages is negligible. However, a test of significance between the average faculty reported frequency of use at the time of the pre-training survey compared to the one year follow-up survey was statistically significant ($t(44)=3.6; p<.001$), suggesting that the difference is not

due to chance. However, again, the statistics were based on data collected from a four point scale and should be interpreted with caution. The findings do appear to support the program attainment of Indicator 2.2, an increase in faculty application of applied teaching and learning strategies.

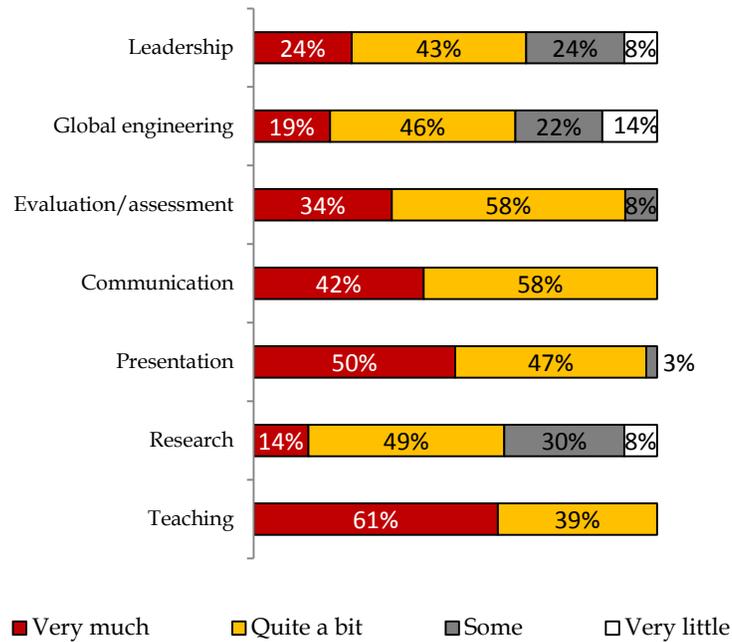
Figure 6: University track faculty average reported frequency of use of active learning techniques (4=Very often, 1=Never; N=52-60)



Vocational track

Vocational track faculty also reported achieving gains in their knowledge and skills through participating in HEEAP, supporting the attainment of Indicators 1.1, 1.2, 1.3, 1.4, and 2.1 (i.e., increases in faculty understanding of: experimental methods, analytical methods, business communication, role of the global engineer, and applied teaching and learning strategies, respectively). As appropriate for the goals of their institutions (i.e., vocational versus university), faculty reported acquiring more knowledge and skills in teaching, presentation and communication skills, and evaluation/assessment, as compared to research skills (Figure 7).

Figure 7: Vocational track self-reported improvement in various skills after participating in HEEAP for 1 year (N=37-38)

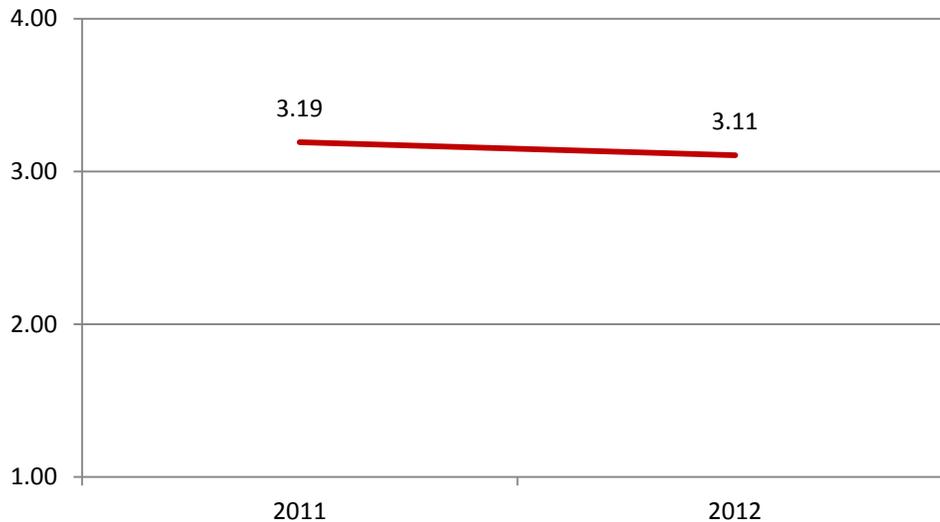


Descriptions of what constitutes good business communication and the role of the global engineer by Vocational track faculty suggested that they increased their understanding of these concepts through participating in the program, supporting achievement of Indicators 1.3 and 1.4. For instance, faculty described the global engineer as having well developed “soft skills,” such as “leadership,” “interpersonal skills” “presentation...and communication skills,” “teamwork,” and “confidence,” which were attributes they also described as being important in business communication.

They also wrote that global engineers “apply technical skills to the many urgent problems our societies are facing” and are able to “think creatively to design and innovate.”

As shown in Figure 8 (below) average faculty increases reported in the one year follow-up survey suggested that faculty felt they gained skills to a great extent, on average, though faculty in the 2012 cohort were slightly less likely to report such gains as compared to the 2011 cohort.

Figure 8: Vocational track faculty average self reported increases in HEEAP-related skills by cohort year (4=Very much, 1=Very little; N=37)



Survey results also supported faculty gains in confidence in their ability to apply various skills over the course of their participation in HEEAP, supporting the attainment of Indicator 2.3: Increase in faculty confidence in using applied learning and teaching strategies. Similar to the University track, the Vocational track faculty reported high levels of confidence in the pre-training survey, which, along with the four point scale, contributed to sizable percentages of faculty reporting “no change” in their confidence levels from pre-training survey to the one year follow-up survey. However, large percentages of faculty also reported one-level increases in confidence, as well (Figure 9, next page), particularly in developing learning outcomes, assessing learning outcomes, adapting to different learning styles, developing group and team projects, communicating project expectations to students, and leading classroom discussions.

Average faculty ratings of their self confidence in these areas (see Figure 10, next page) increased from the pre-training survey to the one year follow-up survey, a difference which was statistically significant ($t(20)=2.6, p<.05$). Interestingly, average confidence reported in the post-training survey compared to the one year follow-up survey in the Vocational track group followed a similar pattern as the University track group; faculty confidence appeared to decrease slightly, suggesting that faculty encountered challenges with respect to actual implementation in their institutions. Overall, however, the findings further support the attainment of Indicator 2.3, yet results should again be interpreted with caution due to the nature of the scale.

Figure 9: Vocational track change in confidence from pre-training to the one year follow-up (4=Very confident; 1=Not at all confident; N=25-27)

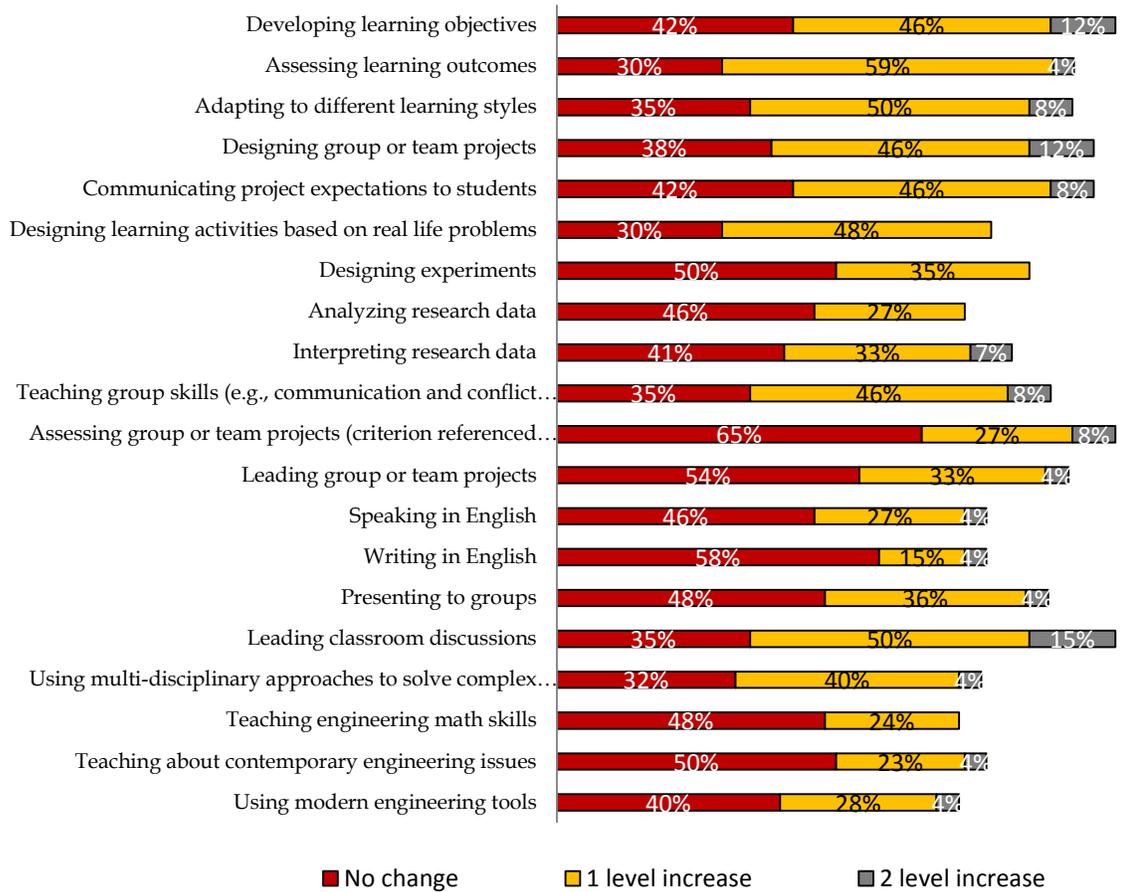
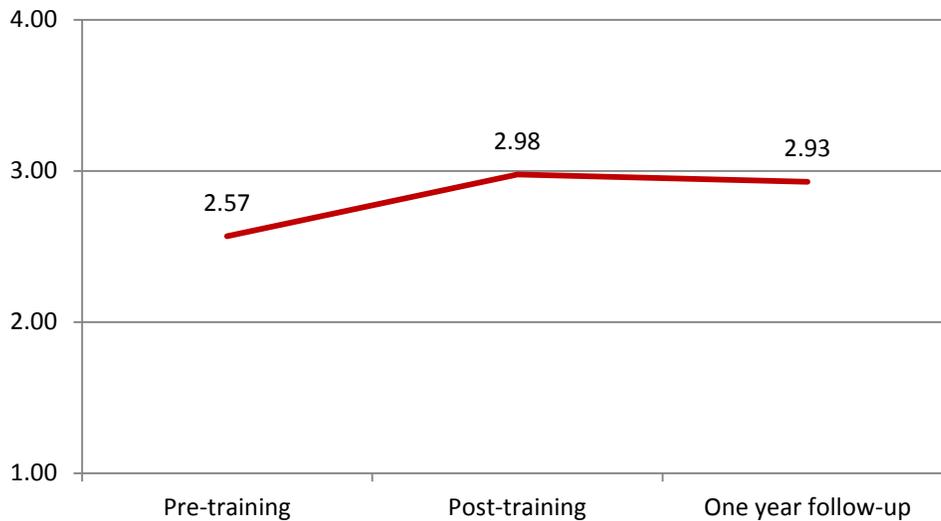
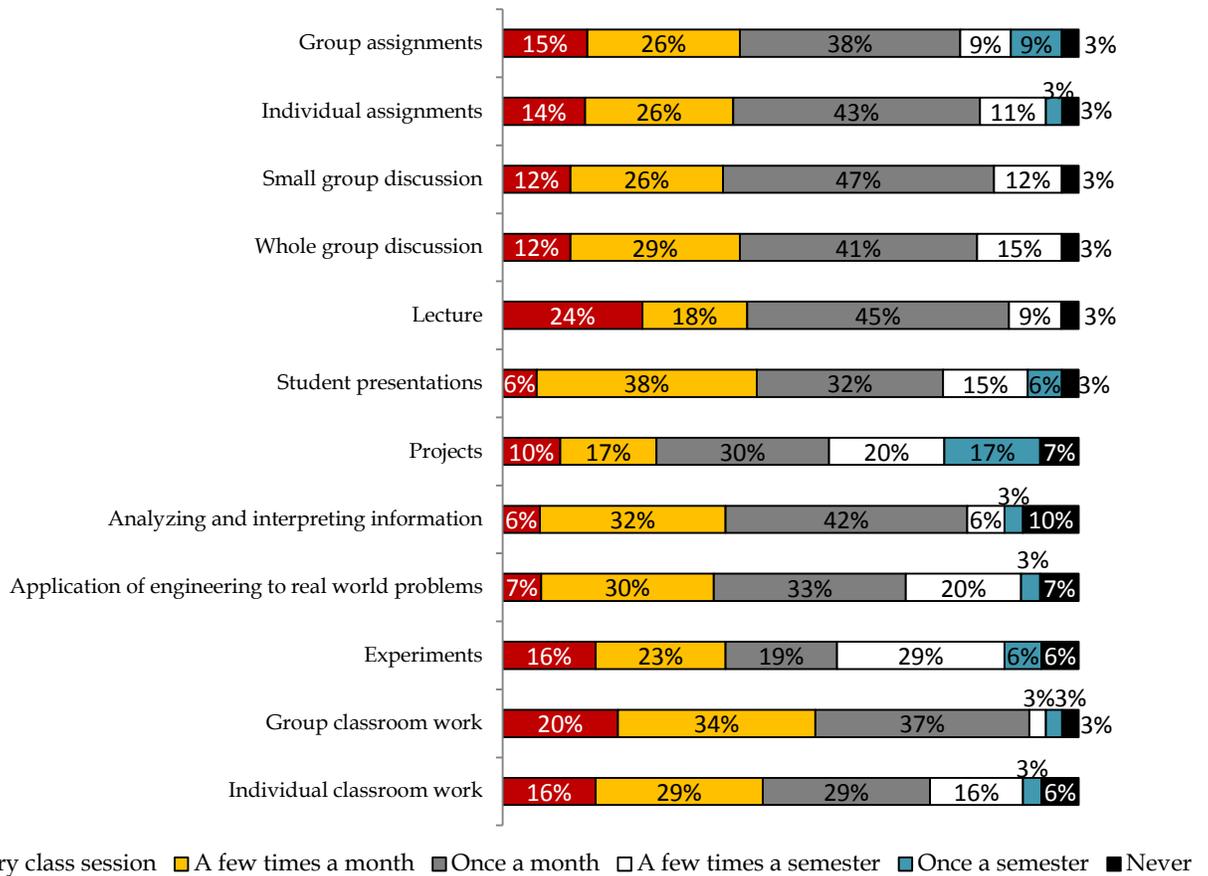


Figure 10: Vocational track faculty average confidence in HEEAP-related skills (4=Very confident, 1=Not at all confident; N=33-58)



Faculty reported applying various teaching techniques in their classes in the one year follow-up survey. The scale response items were modified for this survey over the course of data collection, which provided greater detail as to the frequency with which faculty used the teaching strategies. Unfortunately, given changes in the scale response items, these items cannot be compared over time. As shown in Figure 11, at the one year follow-up point, the majority of Vocational track faculty reported using the teaching strategies in their classes once a month or more frequently, with the highest frequencies reported for: group classroom work (91%), use of lecture (87%), small group discussion (85%); individual assignments (83%); whole group discussion (82%); and analyzing and interpreting information (80%). The activities faculty reported using once a month or more, but with the lowest frequencies, included experiments (58%) and projects (57%). As mentioned previously, infrastructure support for implementing active learning techniques was limited, which may have contributed to these results.

Figure 11 : Vocational track frequency of use of teaching techniques during the past year, as reported in the one year follow-up (N=30-35)



Review of Vocational track revised course syllabi suggested that faculty integrated applied team exercises and assignments into their teaching. Group assignments and hands on learning in Vocational track faculty classes were also directly observed by the M&E team. However, similar to the University track, Vocational track faculty continued to rely heavily on lecture as a teaching tool and mainly used traditional testing for assessing student learning. Observations and discussions with faculty and HEEAP trainers suggested that Vocational track faculty were integrating new content and innovative teaching strategies incrementally, and with caution, due to their lack of experience with the teaching methods and uncertainty about the degree of institutional leadership support. Faculty also experienced challenges with respect to the amount of time they were able to dedicate to changing their course curricula due to heavy teaching loads, large class sizes, and a lack of lab equipment and supplies. However, evidence does support achievement of Indicator 2.2: an increase in faculty application of applied teaching and learning strategies.

Objective B: Develop students’ applied engineering knowledge and skills.

Overall, Monitoring and Evaluation findings suggest that progress continues to be made at the University and Vocational track institutions with respect to achieving Objective B. Faculty have reported implementing innovative teaching techniques in their classes, as well as high levels of engagement by and positive feedback from students at both types of institutions. Faculty also reported that students appear to be learning applied engineering knowledge and skills through their redesigned course curricula. As

many HEEAP faculty focused their HEEAP project efforts toward building or redesigning lower level, introductory courses in engineering, evidence would suggest progress toward attaining Indicators 1.1 (increase students' understanding of engineering fundamentals) and 1.2 (increase students' understanding of engineering systems and constraints). With the integration of group exercises, projects, and presentations in their course curricula, movement also appears to be made with respect to developing students' ability to work in multi-disciplinary teams (Indicator 2.2) and ability to communicate effectively (Indicator 2.3). Further, the design and integration of higher level and "capstone" courses into academic engineering programs provides evidence toward intentions of meeting Indicators 2.1 (increase student abilities to design robust engineering experiments) and 2.4 (increase student abilities to analyze and interpret data), both of which reflect higher student level skills.

Brief classroom observations by the Monitoring and Evaluation team support these findings. Furthermore, brief interviews with students suggested that they were enjoying the new approaches offered in their classes and were learning through their experiences. However, faculty have reported challenges with respect to encouraging students to engage more fully in the assignments and in their teams; the teaching methods employed are also new to students who are learning *how* to learn from them. Faculty also reported challenges with encouraging students to practice speaking in English in classes, which is mainly due to varied levels of English proficiency among students. In addition, we surmise that the allocation of points toward final course grades—which in some cases weight projects less heavily than test scores— may have impacted the activities and topics upon which students focused their learning efforts.

While HEEAP faculty received training and materials to help them improve their knowledge and skills with respect to student learning outcome assessment, they continue to develop in this area over time. Data requested by the M&E team in 2011, which focused on student learning outcomes in courses of the 2010 cohorts, revealed that support and direction from institutional leadership and development of QA teams were necessary to help faculty evaluate their courses accurately and consistently (both across courses and over time). The development of course and overall program evaluation systems at each institution is a key objective of the VULII program, which was implemented to meet the needs of HEEAP participating institutions. As a result, we do not yet have strong evidence supporting the full attainment of demonstrated, increased applied engineering knowledge and skills among students of the HEEAP partner institutions.

However, the perspectives of faculty on student development of applied engineering knowledge and skills for the University and Vocational tracks are summarized below.

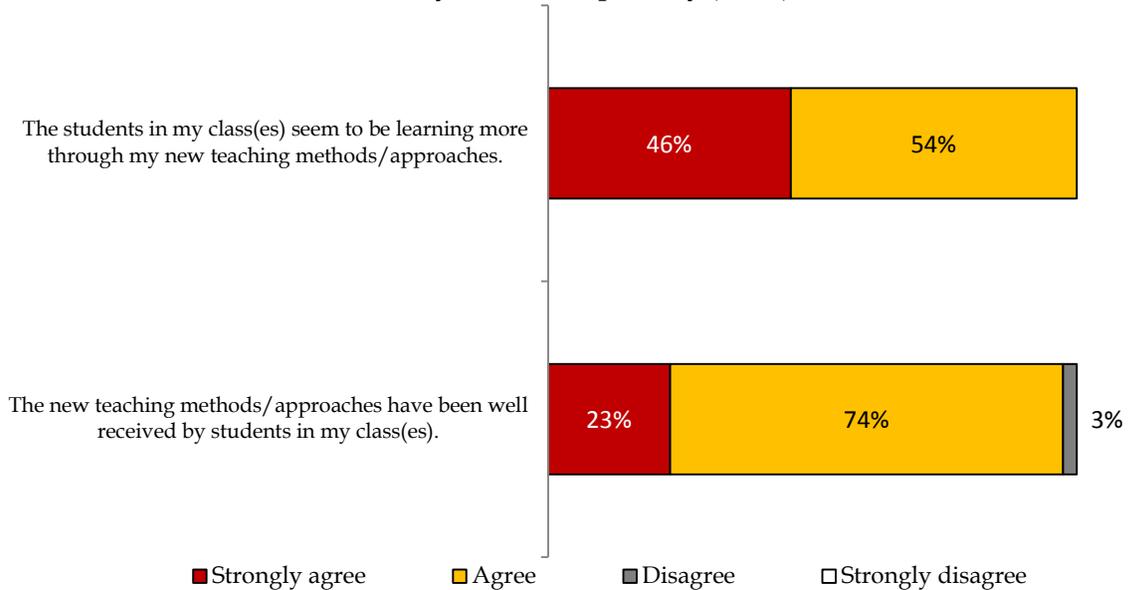
University track

In the one year follow-up survey, nearly all University track faculty reported perceiving that their students were learning more through their use of the active learning approaches (Figure 12, next page). Faculty provided examples of the types of projects they required students to complete in their classes, which frequently integrated teamwork, presentations, engineering design, case studies or application to real world products or issues, and peer evaluations. Faculty noted that the development of teamwork, communication, and presentation skills in students were the key skills they wanted students to acquire through such projects.

Comparatively, faculty were less likely to "strongly agree" that their students "received" the new teaching strategies well. Faculty explained that their active learning strategies have forced students to learn in ways they were not accustomed to learning, and that students were, at first, hesitant to engage fully and participate. Faculty frequently described this as a "passive habit" of students, which they were

actively “trying to change.” Faculty also noted that not all students were eager to embrace the new teaching strategies due to the greater time commitment required to complete team projects outside of class. As stated by one University track participant, “The students like some new methods, for example, group work [and] problems given in class, but they do not want to ask questions [and] do not like to do more homework.”

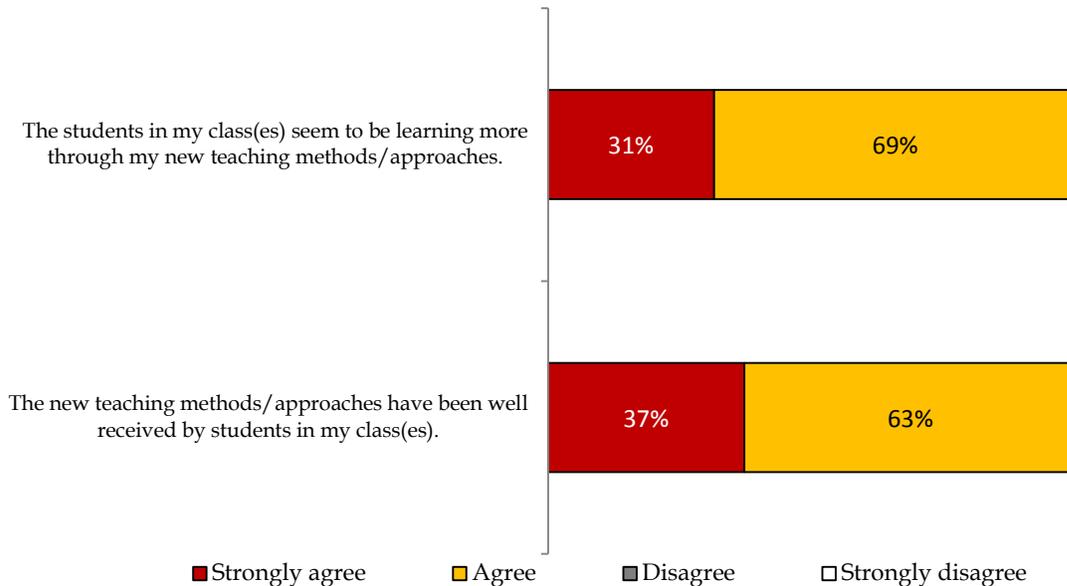
Figure 12: University track student engagement as reported by faculty in the one year follow-up survey (N=61)



Vocational track

Vocational track faculty reported that students in their classes appeared to be learning from the active learning strategies and that the learning strategies were “well received.” Faculty in the Vocational track also noted challenges with engaging students in learning activities when they are accustomed to “passive” learning.

Figure 13: Vocational track student engagement as reported by faculty in the one year follow-up survey (N=35)



Objective C: Expand institutional capacity to support engineering faculty.

Monitoring and Evaluation findings suggest that considerable work has been done to achieve Objective C by the HEEAP program team. Capacity at the University and Vocational track institutions to support engineering faculty has expanded; evidence of the institutional leadership strategic plans and continued development of QA staff and structures via training provided in the VULII program also tangibly support the attainment of this objective. However, development of institutional capacity to support engineering faculty will continue over time, in both tangible and intangible ways.

HEEAP leadership, trainers, and staff have demonstrated a comprehensive approach to encouraging change in the University and Vocational track institutions. The HEEAP program team identified institutional challenges and barriers to change early on in program implementation and developed approaches to address them within the realm of their influence. For instance, HEEAP leadership developed the VULII program to prepare institutional leaders to support faculty projects for HEEAP and prepare QA staff to develop systems for assessing student learning outcomes over time to inform decision-making and continued improvement (i.e., supporting Indicators 1.1: Increase institutional leadership commitment toward faculty development programs and resources and 2.1: Increase opportunities for faculty development). HEEAP leadership established long term partnerships with companies that have helped equip classrooms and labs with state of the art equipment and software, which is supportive of Indicator 1.2: Increase financial support of faculty development programs. These industry partners will continue to help sustain program activities in the long term.

Faculty communicated specific concerns early on in HEEAP, related to their abilities to redesign the engineering curriculum at their institutions and spearhead institutional change efforts. Some of these concerns included:

- Low wages paid to faculty by their institutions;
- Heavy teaching load requirements and insufficient time for office hours and/or tutoring;
- Large class sizes;

- Variable proficiency in English foreign language skills amongst themselves and their students;
- Lack of teaching assistants and no institutional policies for hiring them;
- Lack of adequate classroom and lab infrastructure, materials, and equipment;
- Perceived lack of support from institutional leadership, coupled with cultural contextual factors, such as top-down decision-making and lengthy processes for obtaining permission;
- Disinclination to change by peer faculty members; and
- Lack of professional development opportunities offered in their institutions.

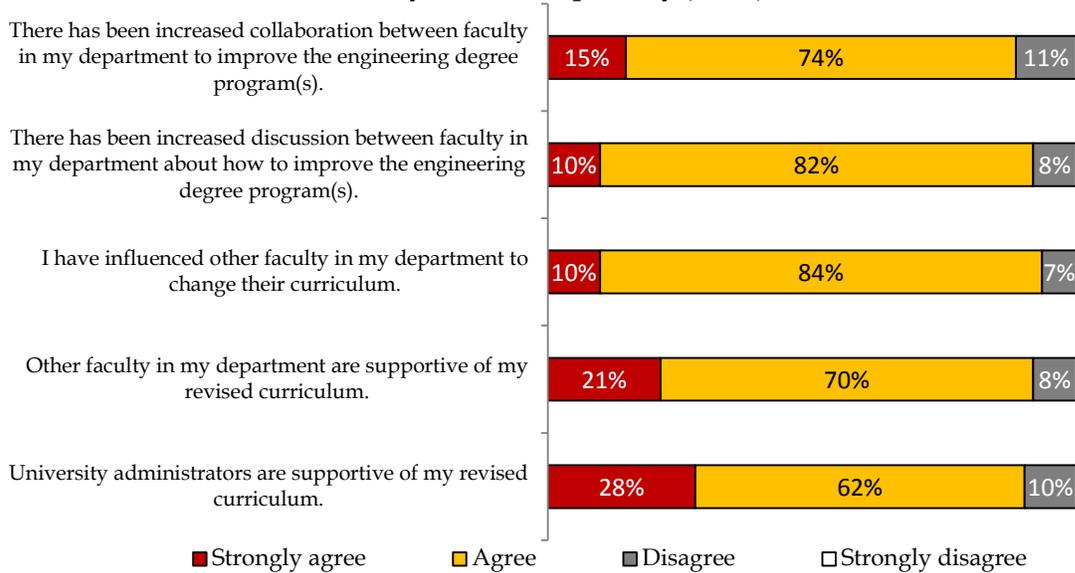
Though not an exhaustive list, some of the strategies employed by the HEEAP program team to address faculty concerns and help institutions better support faculty efforts included (Indicator alignment as indicated):

- Paid faculty stipends for completing their HEEAP projects, in addition to professional development opportunities (1.2);
- Encouraged institutions to loosen their teaching load requirements for faculty to allow more time for curriculum development and office hours (1.1, 2.1);
- Offered strategies, examples, and tips for implementing active learning techniques in large classes during the HEEAP trainings and accessible on Blackboard (2.1);
- Encouraged Vietnamese institutions to provide English language training to faculty (while providing directions to resources), and encouraged HEEAP faculty to consider developing student English language clubs as part of their HEEAP projects (1.1, 2.1);
- Encouraged Vietnamese institutions to adopt policies for hiring paid teaching assistants, and brainstormed creative arrangements to “hire” teaching assistants in the absence of formal pay or stipends if budget allocations were not feasible (1.2);
- Established partnerships with industry that included agreements to donate or provide reduced-cost equipment, materials, and software, and provide technical support (1.2);
- Developed and offered institutional leadership training in the VULII program, which provided strategies for leaders to visibly support faculty curriculum development activities and HEEAP projects (1.1); and
- Made HEEAP training materials accessible and sharable on the Blackboard website, encouraged faculty peer-to-peer professional development training, and garnered support for program activities from institutional leadership (1.1, 2.1).

University track

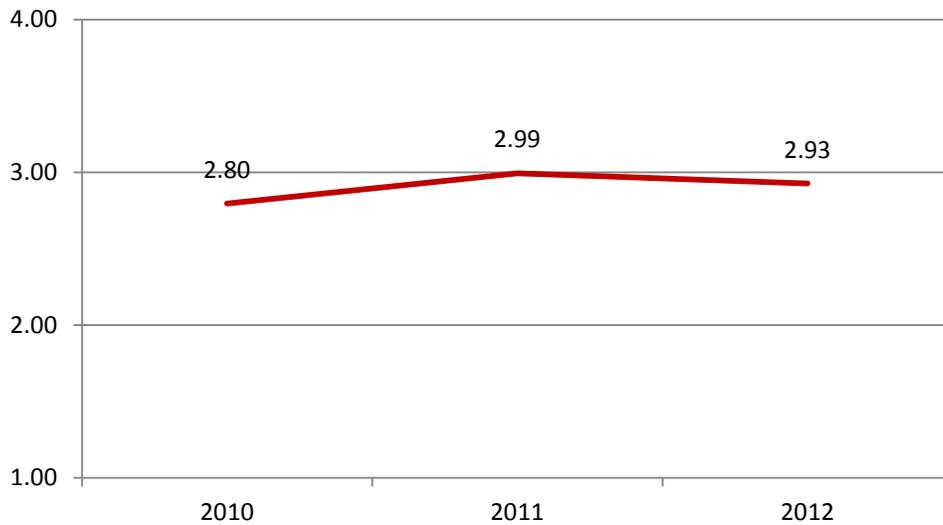
As reported in the one year follow-up survey, some of the efforts to support them were perceptible to faculty. For instance, as shown in Figure 14 (next page), faculty were more likely to “strongly agree” with the item, “University administrators are supportive of my revised curriculum” than any other item, supportive of Indicator 1.1. Faculty members were also highly likely to indicate that peer faculty members were supportive of their curriculum redesign efforts, and that there had been increased discussion and collaboration between them to improve the engineering programs overall.

Figure 14: University track faculty institutional support reported in the one year follow-up survey (N=61)



Converted to the scale level of measurement and averaged, agreement with items listed in Figure 14 appeared to increase slightly by cohort over time (Figure 15, below). Compared to the 2010 cohort, faculty of the 2011 and 2012 cohorts, on average, were more likely to agree with items on perceived institutional support, supporting achievement for Indicator 1.1.

Figure 15: University track faculty average agreement with statements about institutional change at their institutions by cohort year (4=Strongly agree, 1=Strongly disagree; N=61)



The percentages of faculty who reported that they perceived changes-specific to their expressed concerns-by their institutions are presented in Table 3, below.

Table 3: Percentages of University track faculty reporting changes at their institutions over the past year in the one year follow-up survey, by year (N=60-61)

	2010	2011	2012
The number of classes and/or class sections that I am required to teach has decreased.	45%	41%	35%
More teaching assistants are assigned to my class(es).	64%	64%	41%
New lab equipment has been installed in the engineering lab(s).	9%	18%	24%
New teaching equipment has been installed in my classroom(s) (e.g., computers, projectors).	32%	68%	47%
More space has been allocated to engineering labs.	0%	24%	35%
Course schedules have been changed to accommodate more lab time.	18%	55%	41%
There are fewer students enrolled in my individual class(es).	18%	18%	35%
More engineering faculty have been hired in my department.	9%	52%	41%
Capstone courses have been incorporated into the engineering course offerings.	23%	55%	63%
Funding has been provided for me to participate in more professional development programs.	18%	32%	53%
New opportunities for professional development programs at my institution are available.	45%	86%	71%

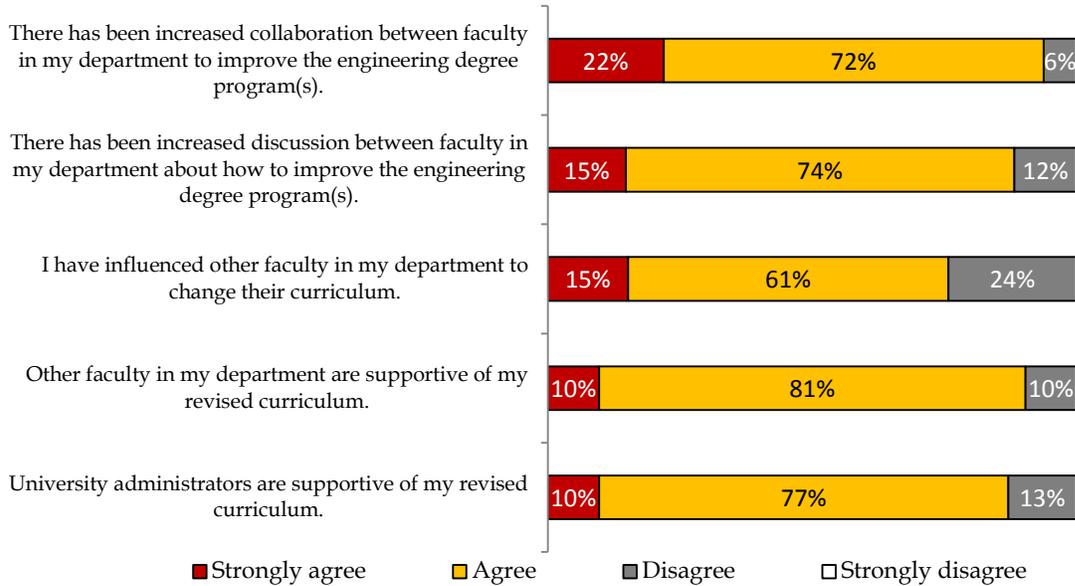
The data suggested that faculty from each cohort year were increasingly more likely to perceive some of the changes listed, such as, “New lab equipment has been installed in the engineering lab(s),” “More space has been allocated to engineering labs,” “There are fewer students enrolled in my individual class(es),” “Capstone courses have been incorporated into the engineering course offerings,” and “Funding has been provided for me to participate in more professional development programs.” These increases suggest achievement towards all three Indicators (1.1., 1.2, 2.1) for this objective.

Items reflecting an increase from the 2010 to 2011 cohorts and subsequent decrease from the 2011 to 2012 cohorts would appear to suggest that such changes were made in the 2011-2012 academic year and therefore were not perceived as “new” in the 2012-2013 academic year. For instance, this appeared to be the pattern for the item, “New teaching equipment has been installed in my classroom(s) (e.g., computers, projectors).” The percentages of faculty indicating that the change occurred appeared to decrease over time for the items, “The number of classes and/or class sections that I am required to teach has decreased,” and “More teaching assistants are assigned to my class(es).” Though the reasons for the decreases are unclear, it could be that changes in these areas were implemented in 2010-2011 and were more perceptible to the 2010 cohort than the 2011 and 2012 cohorts.

Vocational track

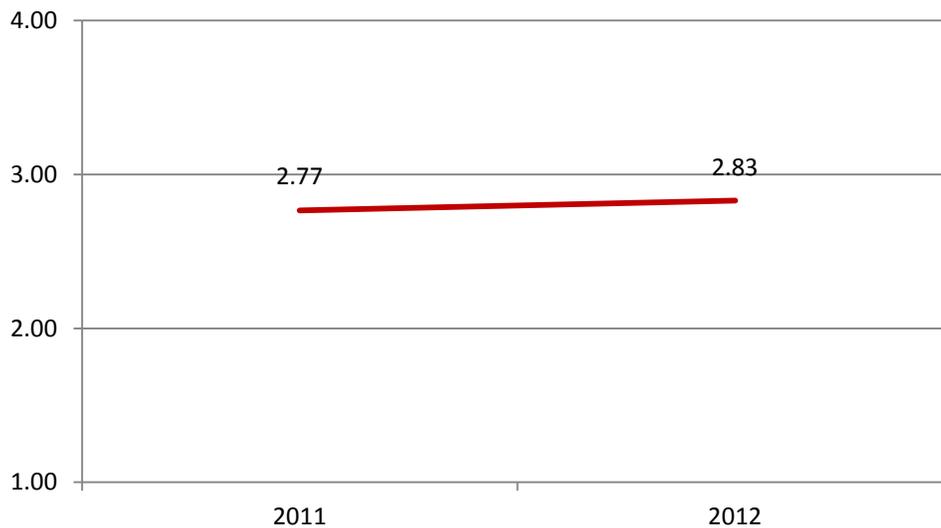
Findings on institutional support items from the one year follow-up survey appeared to be relatively consistent between the University and Vocational track faculty. As presented in Figure 16, next page, Vocational faculty members were highly likely to indicate that they perceived support from their administrators and peer faculty, supporting Indicator 1.1. However, the percentage of faculty indicating “disagree” was somewhat elevated for the item, “I have influenced other faculty in my department to change their curriculum.” These findings appear consistent with anecdotal evidence that suggested that faculty in the Vocational track were somewhat slower to embrace the new teaching strategies than faculty in the University track. However, reports of supportiveness and increased collaboration and discussion amongst faculty in the Vocational track are nonetheless suggestive of progress.

Figure 16: Vocational track faculty institutional support reported in the one year follow-up survey (N=31-34)



The overall, average ratings of institutional support reported in the one year follow-up survey of Vocational track faculty from the 2011 and 2013 cohorts are presented in Figure 17, below. Findings appear to suggest that faculty were slightly more likely to agree with institutional support items in the 2012 cohort compared to the 2011 cohort. Although modest, this increase provides support for achievement of Indicator I.1.

Figure 17: Vocational track faculty average agreement with statements about institutional change at their institutions by cohort year (4=Strongly agree, 1=Strongly disagree; N=29)



Higher percentages of faculty in the 2011 cohort reported perceiving most of the changes noted in Table 4, on the next page, compared to the 2012 cohort. A possible explanation for this would be that changes were implemented in the 2011-2012 academic year, and then were not perceived by the 2012 cohort as new or greater changes from the prior year. Overall, percentages of faculty reporting changes such as, “New teaching equipment...installed in...classrooms,” “More engineering faculty...hired,” and “New opportunities for professional development programs at [the Vocational] institutions” were high, however, which suggest that changes are being made that are supportive of faculty success. These increases again suggest achievement towards all three Indicators (1.1., 1.2, 2.1) for this objective.

Table 4: Percentages of Vocational track faculty reporting changes at their institutions over the past year in the one year follow-up survey, by year (N=31-36)

	2011	2012
The number of classes and/or class sections that I am required to teach has decreased.	47%	37%
More teaching assistants are assigned to my class(es).	53%	32%
New lab equipment has been installed in the engineering lab(s).	60%	50%
New teaching equipment has been installed in my classroom(s) (e.g., computers, projectors).	87%	80%
More space has been allocated to engineering labs.	56%	37%
Course schedules have been changed to accommodate more lab time.	56%	42%
There are fewer students enrolled in my individual class(es).	40%	33%
More engineering faculty have been hired in my department.	67%	58%
Capstone courses have been incorporated into the engineering course offerings.	53%	19%
Funding has been provided for me to participate in more professional development programs.	56%	24%
New opportunities for professional development programs at my institution are available.	63%	56%

Objective D: Increase number of work-force ready, qualified engineers.

Objective D is a long term outcome that is contingent on the achievement of Objectives, A, B, and C. At the conclusion of the three year funding period, the HEEAP program has achieved some successes with respect to meeting the indicators associated with this objective. The HEEAP faculty training program has increased faculty knowledge and their abilities to implement applied active learning strategies, which appear to be having initial impacts on the development of students’ engineering knowledge and skills in the courses in which they are applied (Indicator 1.2: Increase program graduates’ work-readiness). The HEEAP program team, in concert with the VULII program, is working to set the stage at the institutional leadership level to encourage and amplify faculty success. Coupled with partnerships with industry, which will offer students internship and other work training opportunities, and continued progress toward improving the quality of engineering education in the partner institutions, evidence would suggest that this objective will be fully met in the future. However, it is too soon to determine how well the institutions are preparing their students to be truly workforce ready and qualified as future engineers. Current efforts to help the Vietnamese institutions establish solid QA systems and processes will help equip them with the knowledge and skills to accurately measure and track this outcome over time. In particular, institutions will need to define and operationalize what is meant by “workforce ready, qualified engineers;” those institutions seeking ABET accreditation are currently progressing toward this goal. Data collection from direct sources- alumni and their

employers, for example- will help institutions determine how well they are meeting this objective in the long term.

Objective E: Increase the number of partnerships and individuals trained through USAID funded partnerships and exchange programs.

M&E findings from document review, observations, and monitoring activities support the program attainment of this objective. Over the course of the grant period, the HEEAP program team effectively increased the number of partnerships with University track and Vocational track institutions in Vietnam (Indicator 1.3), the number of partnerships with industry, and expanded and formalized partnerships with Vietnamese government entities.

With the 2010 to 2012 cohorts, the HEEAP program trained 77 University track faculty, 21 (27%) of whom were women, from five independent universities in Vietnam (Indicators 1.1 and 1.2). Seventy eight Vocational track faculty, 34 (44%) of whom were women, from three independent vocational technical universities were trained from 2011 to 2013 (Indicators 1.1 and 1.2). In addition, new industry partnerships were added over time, offering additional funding, equipment and supplies, and software.

Not only has the HEEAP program team increased the quantity of partnerships, but they have also built quality relationships, upon which educational reform efforts will continue. Furthermore, through work at the institutional leadership levels, establishing a presence at the institutions, and following through on participants' final HEEAP project implementation, the HEEAP program team helped lay the groundwork for continued, peer-to-peer professional development opportunities. More specifically, HEEAP participants developed projects to implement at their institutions, many of which involved a faculty peer professional development component. Faculty have reported implementing some of these trainings, which were targeted to faculty who did not participate in the HEEAP program.

Summation of Findings

Overall, the M&E team finds that the HEEAP program has been successful with respect to providing high quality training to Vietnamese faculty from the University track and Vocational track partner institutions. Faculty from both tracks have reported increases in their teaching skills, confidence with respect to applying active learning techniques, and frequency of using active learning techniques in their classes. Faculty have reported and provided evidence of the redesign of their curricula in some of the classes that they teach. Faculty have also reported that they enjoy applying the active learning techniques and have integrated them into additional classes, beyond what they proposed in their HEEAP project plans.

Classroom observations and focus groups with students in the Vietnamese institutions have suggested that students are engaged in the course content through the active learning techniques. Faculty have reported that they are integrating additional classroom assessment techniques in their classes, and that their results so far suggest that students are learning from the active learning techniques they have applied.

Faculty have reported some challenges with respect to applying the active learning techniques in their classes. Challenges have included applying the active learning strategies in large classes, particularly without the help of teaching assistants, and assessing and grading team or collaborative projects. Faculty have also been challenged with implementing experiments and projects without the proper lab equipment and facilities. Furthermore, the low rate of pay for faculty in Vietnam and the heavy teaching

load faculty take on have posed challenges with respect to dedicating additional time to any one class to revise the course content, plan active learning activities, and grade project assignments.

Over the course of the grant period, the HEEAP program leadership, staff, and trainers have integrated support structures to provide the conditions needed by faculty to be successful. The HEEAP Blackboard website, populated with training materials, examples, templates, and literature, has been made available to faculty beyond their training at ASU. Engineering faculty at ASU, affiliated with HEEAP, have provided ongoing support and assistance to faculty of the University and Vocational track programs. Support and structures at the institutional level have also been put into place by the HEEAP program. Institutional agreements between ASU and the partner institutions were drafted and signed. HEEAP leadership have worked closely with the partner institutions to ensure that agreements are upheld and implemented. New partnerships have also been established with industry leaders that have provided additional educational resources (funding, lab equipment, software, etc.) to the Vietnamese institutions. The HEEAP program has also established partnerships with the Vietnamese government entities, MOET and MOLISA. Such partnerships will continue to sustain HEEAP progress toward its goals and objectives past the USAID-funding period.

Early on in the grant period, HEEAP leadership identified needs for institutional leadership training and the establishment of quality assessment structures and trained staff to support the long term goals of the program. In 2011-12, the HEEAP leaders planned and implemented the VULII program, which is aimed at providing support and training to institutional leaders for driving, managing, and supporting change. Assessment coordinators were identified by the HEEAP program in 2010, yet it was found that they needed infrastructure, training, and support to develop the systems needed to collect, manage, analyze, and report data on student learning and employment outcomes needed for decision-making. The appointed assessment coordinators were also hard-pressed to perform these new duties without prioritization from institutional leadership, adequate training and preparation, and compensation.

In response to these challenges, the VULII program is also providing training to meet the needs of the quality assessment (QA) teams at the Vietnamese institutions. Furthermore, VULII is assisting institutional leaders and QA teams with creating and aligning academic program structures and assessment data collection, reporting, and usage efforts to position their institutions for accreditation by ABET and other accreditation organizations.

The HEEAP and VULII programs have been, and will continue to work in concert to provide the training, materials, and support needed for a successful improvement in the quality of education in the partner institutions in Vietnam. The University track and Vocational track partner institutions have enthusiastically attended the trainings offered. While not without challenges and delays, equipment, materials, and software provided by the programs and their industry partners have been installed in some classrooms, and have reportedly been useful to faculty. Furthermore, HEEAP leaders, trainers and partners have considered the long term sustainability and utility of the equipment and software provided to the institutions, such that license renewal costs are kept to a minimum and services and support for equipment will be available to the Vietnamese institutions in the future.

Faculty have reported that they are increasingly feeling supported by their institutions, and that additional professional development opportunities are being institutionalized. However, given the nature of the goals of HEEAP and VULII, the cultural context in which they are being implemented, and the number of people involved and affected by the programs, the rate of change is slow. This reflects the scale and complexity of the project—not a performance issue on the part of HEEAP. Evidence of change, such as project plans at the leadership, QA team, and faculty levels, attendance at trainings, assessment of the learning at the trainings, institutional policies, and observations of institutional

practices and the teaching in classes continue to be collected, and the evaluation and assessment capacity of QA teams will continue to develop. In the longer term, as the institutions put into place QA processes, evidence of the effectiveness of the targeted engineering programs at the HEEAP partner institutions will be tracked over time, sustainably, by QA staff. Such evidence will need to come directly from enrolled students, alumni, and their employers. Tracking and gathering data from alumni and their employers will require a level of QA sophistication that will take time to develop and fully implement. Training and support provided through VULII appears to be moving institutional leadership and QA teams toward that end.

HEEAP Objectives, Results, and Indicators

Objective A: Develop and advance interdisciplinary, applied curricular and instructional methods in engineering.

Result 1: Develop faculty content knowledge and skills in advanced engineering

Indicator 1.1: Increase faculty understanding of experimental methods

Indicator 1.2: Increase faculty understanding of engineering analytical methods

Indicator 1.3: Increase faculty understanding of technical, business communication

Indicator 1.4: Increase understanding of the role of the global engineer

Result 2: Develop pedagogical skills for advanced engineering instruction

Indicator 2.1: Increase in faculty understanding of applied teaching & learning strategies

Indicator 2.2: Increase in faculty application of applied teaching & learning strategies

Indicator 2.3: Increase in faculty confidence in using applied teaching & learning strategies

Objective B: Develop students' applied engineering knowledge and skills

Result 1: Increase students' applied engineering knowledge

Indicator 1.1: Increase students' understanding of engineering fundamentals

Indicator 1.2: Increase students' understanding of engineering systems and constraints

Result 2: Increase students' applied engineering skills

Indicator 2.1: Increase students' ability to design robust engineering experiments

Indicator 2.2: Increase students' ability to work in multi-disciplinary teams

Indicator 2.3: Increase students' ability to communicate effectively

Indicator 2.4: Increase students' ability to analyze and interpret data

Objective C: Expand institutional capacity to support engineering faculty

Result 1: Improve support of Vietnamese engineering faculty

Indicator 1.1: Increase institutional leadership commitment toward faculty development programs and resources

Indicator 1.2: Increase financial support of faculty development programs

Result 2: Develop institutional structures and processes for providing faculty development

Indicator 2.1: Increase opportunities for faculty development

Objective D: Increase number of work-force ready, qualified engineers

Result 1: Increase percentage of program graduates described as “work ready”

Indicator 1.1: Increase number of engineering graduates who secure engineering-related employment immediately following graduation

Indicator 1.4: % increase in employment rate of participating university mechanical & electrical engineering graduates within 6 months of graduation

Indicator 1.2: Increase program graduates’ work-readiness

Objective E: Increase the number of partnerships and individuals trained through USAID funded partnerships and exchange programs.

Result 1: Increase the number of host-country individuals trained as a result of USAID funded exchange programs and investments

Indicator 1.1: Number of host-country individuals completing the USG-funded exchange programs conducted through higher education institutions

Indicator 1.2: Number of host-country individuals trained as a result of USG investments involving higher education

Result 2: Increase the number of higher education partnerships supported by USAID

Indicator 1.3: Number of higher education partnerships between U.S. and host country higher education institutions that address regional, national, and/or local development needs

HIGHER ENGINEERING EDUCATION ALLIANCE PROGRAM

Annex II- Success Stories

USAID Vietnam – HEEAP Final Report



SUCCESS STORY

Teaching through student competitions

Cao Thang Technical College (CTTC) implements active teaching and student engagement techniques through a series of student competitions



Over 400 engineering students participate in the first competition at CTTC building towers out of newspaper

Over the past year, Cao Thang Technical College (CTTC) in Ho Chi Minh City actively curated several student competitions focusing on the development of social skills. Each competition has been successful one after another with about 400 students participating. The purpose of the competitions is to allow engineering students to improve their teamwork and communication skills necessary for the global engineering workplace.

These competitions are the results of rigorous training from the HEEAP workshops at Arizona State University. Vietnamese faculty transferred the learning methods taught at the workshops to help their own students, expanding their soft skills alongside with their technical skills.

The first student competition was a collaboration of engineering departments to initiate a university-wide “tower” contest. This attracted students from various engineering fields like mechanical, electrical, and automation. Thirty-six teams underwent a preliminary competition to construct the highest tower in 30 minutes. Each team was given newspapers, glue, tape, scissors, and colored paper to construct their towers, which were judged based on correct measurements.

The head of CTTC’s Department of Mechanical Manufacturing, Professor Thong Nguyen, said that the main objective was to introduce students across engineering disciplines to what the faculty learned attending HEEAP 2012 workshops.

“We wanted our students to improve their teamwork and soft skills through the contest,” said Professor Thong Nguyen. Other instructors also believe the competition encouraged student creativity, confidence, and coordination skills.

One of the student winners, Le Thi Thanh Hieu, said “in the contest, each group had their own ideas, but required close links between the team members.”

With the overwhelming success of the first competition, CTTC continued to host more student competitions. One of such was the Electrical Engineering Contest modeled after the popular



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FROM THE AMERICAN PEOPLE

SUCCESS STORY

The Higher Engineering Education Alliance Program (HEEAP) is a consortium of Industry, Government and Academic institutions, with the primary objective of transforming higher education through instructional innovation, focusing on the development and graduation of work-ready engineering students from Vietnamese universities and vocational colleges.

Vietnamese academic game show, “Đường Lên Đỉnh Olympia.”

Tran Huy Thong, winner of a personal excellence award and member of the first-place team, said the contest allowed him to learn about the electrical engineering industry, such as how to deal with tough situations and how to work with industry equipment. “I really like that the contest gave students a lot of knowledge, and inspired us to constantly try to improve in our academic majors,” he said. “I hope that in the future there will be more contests to enhance knowledge and skills.”

Because of the electrical engineering contest’s success, the school organized another active learning competition as part of the “Welcome New Students 2013” event. On September 29, 2013, the faculty organized “Active Learning with Legos,” a game-show type competition that created an active, play-ground-like learning atmosphere for new students while helping them develop teamwork and communication skills. About 300 engineering students participated in the competition, which stimulated the new students’ dynamic thinking abilities.

On March 30, 2014, the HEEAP July 2013 cohort organized their first Olympic Competition of Computer Skills. With about 100 students, the participants are tested on their office computer literacy, including Word, Excel, PowerPoint, Internet, Windows, computer hardware, etc. The competition requires strong collaborative group work, presentation, and effective communication.

Throughout the 2013-2014 school year, the HEEAP faculty has successfully conducted several competitions that engage their engineering students to participate in various competitions. These competitions aim to reinforce the students’ technical knowledge while improving their soft skills to succeed in the global professional workplace.



SUCCESS STORY

Women in Engineering

Two female HEEAP faculties succeed in their role as engineering professors despite being a minority in the field



Dr. Phan Hong Phuong, HEEAP University Cohort 2010, VEF Scholar 2013-2014



Dr. Tran Thi My Dung, HEEAP University Cohort 2013

HEEAP has successfully supported many female engineering faculties over the past few years. Although even today women in engineering are a minority, two female HEEAP faculties have learned to succeed in their roles as female engineering professors.

In summer of 2010, Dr. Phan Hong Phuong, was selected among others to attend the inaugural HEEAP University cohort group at Arizona State University. In 2013, she was awarded a Vietnam Education Foundation Scholar Award (VEF) and had the opportunity to visit Professor Constantine Balanis' laboratory. He is a well-known scientist who has written two books on Antenna Theory that are being used as textbooks at many universities in the world. His facilities are specifically suited for research in the field of Electromagnetics and Antenna Design. However, Dr. Phan was even more excited when she realized that two of his Ph.D. students working there were women.

It was a different environment than at her department of Electrical and Electronics Engineering in Vietnam. Now that she's working with Professor Balanis, she continues to see many other female faculty in his field and around his office, much more than her school in Vietnam.

In the second semester, Dr. Phan started teaching an undergraduate class at ASU. Initially, she was nervous that she might not understand the questions from her US students. Because she spent her undergraduate and graduate years studying in Kiev, Ukraine, her English wasn't comparable to her colleagues who have studied in the US, Australia, or France. However, there's no better way of practicing than taking part in the process. The feedback from her students only strengthened her abilities as a teacher, and she gained confidence teaching her class.

ASU provided an opportunity for Dr. Phan to find her passion, work at a place with all facilities for research, and meet people who can inspire her to thrive in her own field. "If you have the



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FROM THE AMERICAN PEOPLE

SUCCESS STORY

The Higher Engineering Education Alliance Program (HEEAP) is a consortium of Industry, Government and Academic institutions, with the primary objective of transforming higher education through instructional innovation, focusing on the development and graduation of work-ready engineering students from Vietnamese universities and vocational colleges.

passion for Engineering plus your good background and a little bit of capability gifted by God,” said Dr. Phan, “you can learn very fast and have great success whether you are a man or a woman.”

Tran Thi My Dung, a HEEAP University faculty in 2013, said that the HEEAP workshop at ASU changed her mind about the role of women in engineering fields.

“Women in engineering can do as good as the men in technical fields,” she said, “I hope every female engineer will be a mirror for other female engineering students to follow. It will help improve the number of female students in technical fields.”

According to Dr. Tran, women not only support by bringing new ideas but also help the group have a good connection; women also pay attention to the small and aesthetic details when designing products. Since coming back to Vietnam, she feels more confident in her role as a female faculty member in Engineering; she changed her teaching methodologies by applying the skills she acquired from the HEEAP program. Her practice at HEEAP allowed her to collaborate with other HEEAP alumni to redesign curriculums following the Accreditation Board for Engineering and Technology (ABET).

Engineering does not have a gender preference, but these two women showed that they can excel as long as they have the passion for learning. Each individual applied the skills they learned through HEEAP and was able to transfer their knowledge from the workshop to other students and faculty members in Vietnam.



VEEC

VIETNAM ENGINEERING EDUCATION CONFERENCE

Transformative Change: Educating Engineers to Innovate the Future of Vietnam

March 25-26, 2014 • Ho Chi Minh City University of Technology





Vietnam Engineering Education Conference Transformative Change: Educating Engineers to Innovate the Future of Vietnam

March 25-26th, 2014 at Rex Hotel, Ho Chi Minh City

Welcome to Ho Chi Minh City,

It is a great honor for Ho Chi Minh City University of Technology (HCMUT) to give a warm welcome to industries-government-academia to the second annual Vietnam Engineering Education Conference (VEEC) under Higher Engineering Education Alliance Program (HEEAP) in Ho Chi Minh City. HCMUT feels a great pleasure to be the host of "Transformative Change: Educating Engineers to Innovate the Future of Vietnam" Conference linking business managers, governmental leaders and educators to discuss the educational innovation in Vietnam.

Established in 1957, HCMUT has been nationally and internationally recognized as one of the leading engineering universities in Vietnam. Currently, HCMUT has more than 26,000 students in undergraduate, graduate, twinning and collaborative training programs. With more than 1,400 academic and administrative staff, HCMUT has emphasized its development strategies on scientific research, technological transfer as well as a diversity of accredited training programs including ABET, AUN-QA, CDIO...

In pursuit of innovative education model, HCMUT has enormously improved its training and administrative system to provide work- ready engineers to the society. Hence, the 2nd VEEC has become a precious opportunity for HCMUT and HEEAP to introduce latest innovation and discuss the driving need for changes and the future of Vietnamese education.

We sincerely thank you for your participation in VEEC 2014 and hope that you will enjoy the interesting presentations and inspiring talks, the scenic beauty of Ho Chi Minh City and our campus on Ly Thuong Kiet Street, the largest and greenest in Ho Chi Minh City.

With warmest regards,

Prof. Vu Dinh Thanh
Rector

Higher Engineering Education Alliance Program (HEEAP)

Through the Higher Engineering Education Alliance Program (HEEAP), the Arizona State University Ira A. Fulton Schools of Engineering (ASU) and an expanding industry consortia are collaborating to transform and modernize top engineering and technical vocational universities in Vietnam. This includes university leadership development, faculty development, curriculum innovation, and university engagement. The United States Agency for International Development (USAID) and the Intel Corporation are the founding HEEAP partners. In addition, Siemens Corporation, Pearson, National Instruments, Cadence Inc., and Danaher Corporation (Fluke, Tektronix, Keithley companies) recently joined as industry alliance partners. HEEAP will focus on transforming the existing theory-based engineering and technical vocational programs through higher education enterprise modernization and robust applied and hands-on instructional approaches. These new instructional and pedagogical approaches will graduate students who are work-ready with both project and applied skills and technical communication competencies required by multinational corporations. Global engineers need the skills, knowledge, and leadership qualities that cultivate: self-reliance, social and cultural capital, appreciation for lifelong learning, creativity, conflict-resolution and team-building skills, ethics, understanding of economics and business, and more.





TABLE OF CONTENTS

Tuesday, March 25

Plenary Session 5
Breakout Session Track 1 9
Breakout Session Track 2 10

Wednesday, March 26

Plenary Session 11
Breakout Session Track 3 13
Breakout Session Track 4 14

Abstracts

Tuesday, March 25 17
Wednesday, March 26 27

Presenter Check-In: 7:00 am, Rex Hotel

7:00 a.m.
 Registration and Check-in
 in Park View Foyer

7:30 a.m. - 8:30 a.m.
 Coffee Reception in Park View Foyer
 Entertainment: Drum Dancing and
 Folk Dance

8:30 a.m.
 Welcome by Conference Organizer
 and Host Dr. Vu Dinh Thanh, Rector,
 HCMC University of Technology



Dr. Vu Dinh Thanh
 Rector, HCMC University of
 Technology

Prof. Vu Dinh Thanh, Rector of Ho Chi Minh City University of Technology (HCMUT) has been well-known for his expertise in engineering and his commitment to the development of the university. Prof. Vu earned his doctoral degree at L'Institut National Polytechnique de Grenoble in 1993, which laid foundation to his strong relationship with French universities, and gradually with all universities around the world. Being authors of several international journals, he puts his interests in Microwave Techniques, Digital Signal Processing, Telecommunications Systems Modeling & Simulation. Promoted to the position of Dean of Electrical – Electronic engineering from 1998 to 2007 and after that HCMUT Rector, Prof. Vu has successfully made educational innovation at HCMUT. HCMUT is the pioneering institution which engages in ABET accreditation. At the same time, HCMUT is restructured to transfer to 4-year training system. While many university leaders are reluctant to changes, Prof. Vu strongly supports educational reforms which will help HCMUT remain its leading position in Vietnam and make its name internationally prestigious.

8:40 a.m.
 Opening Comments
 Honorable Dr. Bui Van Ga, Deputy
 Minister, Ministry of Education and
 Training
 Honorable Rena Bitter, U.S. General
 Consulate-HCMC



Honorable Dr. Bui Van Ga
 Deputy Minister,
 Ministry of Education
 and Training

Honorable Dr. Bui Van Ga has served as the Vice Minister of the Ministry of Education and Training in Vietnam since 2010. Career highlights and accomplishments include working as the Rector of Da Nang University of Technology and the President of the University of Da Nang. He holds a Bachelor of Science in Mechanical Engineering from Da Nang University of Technology and a Ph.D. from Ecole Centrale de Lyon, France. He has served as a Visiting Professor at the University of Angers and University Institute of Technology, University Joseph Fourier in France. His field of research includes Fluid Mechanics, Combustion and Air Pollution. He is a member of the Editor Committee of Journal “Science and Technology” and “Vietnamese Journal of Mechanics.” He serves as the Vice Chairman of The National Council of Professor Title in Vietnam.



Honorable Rena Bitter
 U.S. General Consulate
 Ho Chi Minh City

Rena Bitter is a career Senior Foreign Service Officer and with nearly twenty years in the Foreign Service, Ms. Bitter has served in Europe, the Middle East, Latin America and Washington DC. She most recently served under

Secretary Clinton as Director of the State Department's Operations Center, the Department's 24/7 Briefing and Crisis Management Center. Prior to her work in the Operations Center, Ms. Bitter served as Consular Section Chief in Amman Jordan and Non-immigrant Visa Chief in London. She was a Special Assistant to Secretary of State Colin Powell from 2001-2002 and on Madeleine Albright's Secretariat Staff from 1999-2000. She has also served at Embassies Bogota and Mexico City.

9:00 a.m. - 9:45 a.m.

Innovation in Education: Hybrids, MOOCs, Flipped Classrooms, Personalize Learning: What does this all mean and how can it be used to "accelerate" Higher Education modernization and quality in Vietnam?

Moderator: Octavio Heredia

Associate Director, Global Outreach and Extended Education, Arizona State University

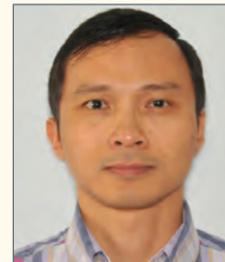
SPEAKERS



Mr. John Rome
Deputy Chief Technology Officer, Arizona State U.

John Rome is the Deputy Chief Information Officer (CIO) and a 20+ year employee of Arizona State University (ASU). John has led ASU's Data Administration, UTO's Business Intelligence (BI), UTO's Application Development/ERP Systems (Peoplesoft), and ASU's Academic Technologies during his tenure at ASU. John is a pioneer of data warehousing/BI in higher education, and he started building ASU's first Data Warehouse in 1992. John coaches higher education institutions and industry on BI best practices, including the stra-

tegic importance of BI and developing data driven organizations. He frequently speaks on the topic of analytics and information technology (IT) in higher education. Mr. Rome energy has focused the last several years on data dashboards, LMS (learning management systems), e-learning, academic analytics, and most recently, big data.



Dr. Le Chi Thong
Academic Affairs Office, HCMC University of Technology

Le Chi Thong graduated from Ho Chi Minh City University of Technology, Vietnam in 1993 with Summa Cum Laude. He received his Master of Science degree in electronics from Ho Chi Minh City University of Science, Vietnam in 1998. He earned a Ph.D. in electrical engineering in 2009 from University of Arkansas, United States. He has been a faculty member at Faculty of Electrical and Electronics Engineering, Ho Chi Minh City University of Technology since 1993. He is interested in nanotechnology, digital electronics, microcontrollers, and control systems. His research includes using microcontrollers to develop automatic control systems and using HDL to design digital systems. He is also interested in embedded sensors using nanotechnology for industrial applications. He loves photography and travelling.



Mr. Dave Wilson
Director, Academic Programs, National Instruments

As the Director of Academic Programs for National Instruments, Dave Wilson works with both NI headquarters and more than 45 NI branches around the globe. He ensures the most effective product proficiency development strategies and tactics are implemented

worldwide. Before joining NI, Dave worked for the Xerox Corporation and Keithley Instruments as a research engineer and software developer. In 1995, Wilson became the director of data acquisition marketing where he led several successful launches for products that have become key parts of the NI product line including motion control, Vision, DAQ boards, and PXI. Wilson has delivered more than 60 keynotes about the application of next-generation technologies in 30 countries in Asia, Europe and the Americas. He has met with the ministers of education in both Russia and Kosovo and many Deans of engineering to discuss ways to adopt new generation technologies for science and engineering in university curricula. He has also authored numerous articles and interviewed with multiple domestic and international publications including EE Times Asia, Bits & Chips, Evaluation Engineering, Desktop Engineering, and Sensors. Wilson holds a bachelor of science degree in applied physics from the State University of New York.



Karl Engkvist
Senior Vice President of Business Development for Pearson Asia Pacific

Karl Engkvist is the Senior Vice President of Business Development for Pearson Asia Pacific. During the course of a 20-year career in education, Karl has held leadership roles in education services pioneer The Princeton Review and at education technology innovator Blackboard Inc. At the Princeton Review in the 1990s, he helped to introduce enhanced learning technologies to thousands of students preparing for high-stakes tests. While at Blackboard, he worked with universities throughout North America, Europe, and Asia, including the three years he spent living in Beijing as COO of a joint venture with a spin-off from China's Ministry of Education. Unique experiences have included working with in Iceland and Tibet with their own Min-

istries of Education. Today he lives in Hong Kong and leads Pearson's efforts to incorporate digital learning and other emerging educational models across the company's many business lines. He graduated from Dartmouth College with a degree in Russian History.

9:45 a.m. - 10:00 a.m.

Question and Answer Session with Speakers

10:00 a.m. - 10:30 a.m.

Technology Showcase Exhibit Area

Break in Park View Foyer

10:30 a.m. - 11:30 a.m.

Interactive Industry/Academic Panel Discussion: Inspiring the Next Generation of Engineers - How do we do this together?

Moderator: Jeffrey Goss

Director, Higher Engineering Education Alliance Program; Vice Provost, Arizona State University

PANELISTS



Ms. Sherry Boger
General Manager, Intel Products Vietnam

Ms. Sherry Boger is the General Manager of Intel Products Vietnam and is responsible for all aspects of the ramp of Intel's state-of-the art assembly and test facility located in HCMC. The HCMC factory produces the latest technology chips for Intel's global supply chain. Sherry has held other leadership positions such as Intel Factory Director in Chengdu China and as Fab

Director for Intel-Micron NAND Flash Joint Venture green field start-up. Sherry started working for Intel in 1993 and has spent most of her working career in Fab in various positions within engineering before moving to Assembly/Test. She has done two development rotation assignments in technology development, worked at five different sites in the US, and four sites internationally.



Dr. Do Van Dung
President, HCMC University of
Technical Education

Prof. Dr. Van Dung Do, is the President of HCMC University of Technical Education. He received his B.Eng. and M. Eng. in Automotive Mechatronics from the Moscow State Technical University, Soviet Union in 1983 and 1985, respectively. In 1986, he joined as a Lecturer at HCMC, University of Technical Education. During this time additionally he has charged as a Chief Executive Officer (CEO) at Automotive Company THANH PHAT, which is one of the main dealers for Mitsubishi. In 1995, he received his Ph.D. in Automobile Engineering from the Moscow State Automotive Academy, Russia. In 2000, additionally he received a Master degree in Educational Management at The University of Sydney (Australia). His research is related to the Automobile and its engine control systems, renewable energy (Biogas, LPG, CNG) for Internal Combustion Engines and Educational Management.



Mr. Noel Kinder
General Director, Nike Vietnam

Noel Kinder is currently the General Manager of Nike Vietnam LLC where he has responsibility for all manufacturing operations. Vietnam is one of

Nike's largest source countries, producing for footwear, apparel and accessories. He is a 14-year veteran of Nike, Inc. having held a wide range of leadership positions in the footwear and apparel divisions as well as roles strategic planning and finance. He has extensive experience in the footwear and apparel global supply chains. He has worked with a wide range of manufacturers; from textile and apparel production in Sri Lanka and Eastern Europe to footwear manufacturing in Brazil and throughout Asia.



Mr. Hulas King
Vice President, Siemens
Corporation

Hulas King manages the \$4B GO PLM (Global Opportunities in Product Lifecycle Management) program, nurturing strategic partnerships that provide significant added value for academic institutions, youth development programs and our global communities. These partnerships exemplify SIEMENS as the PLM Industry Leader are successful in developing technology environments where underutilized citizens of the world can work together to improve their economic conditions and promote peace. Mr. King is a decorated Vietnam veteran, a Certified Manufacturing Engineer and a Certified NC Manager. He was inducted into the African-American Biographies Hall of Fame for outstanding contributions in Business and Engineering.



Mr. Vu Tu Thanh
Deputy Regional Managing
Director,
Vietnam Country
Representative, US-ASEAN
Business Council

Thanh Vu is Deputy Regional

Managing Director and Vietnam Representative for the US-ASEAN Business Council. He joined the Council as its first Vietnam Representative in late 2007 when the Council opened its Hanoi office. In this capacity, he has been advising the world's leading multinational companies on business strategies in Vietnam and helping them engage directly with key decision makers in both the government and private sectors here. Thanh has over 15 years of experience as a business and political consultant in Vietnam, covering a wide range of issue areas including business, politics, the media, NGOs and social development. Thanh holds a master's degree from the Maxwell School of Citizenship and Public Affairs of Syracuse University where he studied international relations and public policies on a Fulbright scholarship in 2003 – 2005. Thanh lives in Hanoi with his wife and two children.

11:30 a.m. - 12:00 p.m.

Question and Answer Session
with Panelists

12:00 p.m. - 12:10 p.m.

Axcela-DynEd Presentation



12:00 p.m. - 1:30 p.m.

Lunch at the Hoa Mai Restaurant
Sponsor: Axcela-DynEd

1:30 p.m. - 3:00 p.m.

Afternoon Concurrent Technical
Track 1

Session 1 (Lotus A): Student Engagement & Undergraduate Teaching Assistant (UGTA) Programs I

Session Chair: Nguyen Cao Tri

Club of Undergraduate Teaching Assistants: An Experimental Model to Support and Assessment Active Learning Activities in HUST
Truong Thu Huong, Tran Minh Hung, Nguyen Nga Viet, Vu Toan Thang and Do Duc Nam (Hanoi University of Science and Technology)

A Survey of Student Engagement at HCM UTE
Do Van Dung, Nguyen Thi Thu Trang and Nguyen Thi Kim Anh (Ho Chi Minh City University of Technical Education and University of Southern Australia)

Session 2 (Lotus B): Research and Education Collaborations I

Session Chair: David Benson

Bridging the Gap between Theory and Practice in University Education: Teaching-Research Teams
Doan Quang Vinh and Nguyen Le Hung (The University of Danang)

Engaging Students and Faculty in Global, Collaborative, Biotechnology & Interdisciplinary Projects: The Global Leadership Center at Ohio University
Greg Emery (Global Leadership Center and Edison Biotechnology Institute at Ohio University)

Session 03 (Sunflower A): Industry Partner Presentations

Session Chair: Don Baron

GO PLM: A Resurgence of Manufacturing
Hulas Hubert King (GO PLM & Global Community Relations – Siemens PLM Software)

A Breakthrough in Teaching the Fundamentals of Electronics Using Innovative Lab Instruments
John Winderam (Tektronix Southeast Asia Pte Ltd)

Session 04 (Sunflower B): Reflections on Implementing Active Learning

Session Chair: Do Tieu Xuan

Applying Active Learning and Assessment Methods in Engineering Education: Design, Implementation and Guidelines
Vo Que Son (Ho Chi Minh City University of Technology)

Innovative Teaching Methodologies Applying to Can Tho University to Engage Engineering Students
Doan Thi Truc Linh, Nguyen Van Cuong and Tran Thi My Dung (Can Tho University)

Further Concerns for Ethical Education in Order to Have More Opportunities of Labor Force Training
Huynh Le Minh Thien (Saigon University)

Session 05 (Park View Foyer): Academic Writing Workshop

Academic Writing Workshop: Publish and Flourish
Keith Roberts (TotalEdit.com)

3:00 p.m. - 3:30 p.m.

Break and Networking in Technology Avenue in Park View Foyer

3:30 p.m. - 5:00 p.m.

Afternoon Concurrent Technical Track 2

Session 01 (Lotus A): ABET and Course Design

Session Chair: Nguyen Huu Phuc

Engineering Curriculum Redesign Toward ABET Accreditation
Nguyen Huu Phuc, Douglas Jones, and Do Ngoc Minh (University of Illinois at Urbana-Champaign and Ho Chi Minh City University of Technology)

Engaging Students for Engineering Courses Starts from Course Design through Constructive Alignment
Pham Cong Bang and Nguyen Huu Loc (Vietnam National University and Ho Chi Minh City University of Technology)

Session 02 (Lotus B): Research and Education Collaborations II

Session Chair: Le Thanh Phuc

Interdisciplinary Collaboration and the Lower Mekong Public Policy Initiative (LMPPI)
Rainer Asse (Fulbright Economics Teaching Program - University of Economics)

Business and Vocational Training in Vietnam - Suggestions for Collaboration
Nguyen Giao Hoa (HEEAP Program)

Session 03 (Sunflower A): Biomedical Engineering Collaborations

Session Chair: Greg Emery

Education, Research and Entrepreneurship in Biomedical Engineering
Vo Van Toi, (International University of Vietnam National Universities in Ho Chi Minh City)

Biomedical Device Design Centers: Opportunities for Collaborations between Arizona State University and Vietnamese Universities
Marco Santello (Arizona State University)

Session 04 (Sunflower B): Undergraduate Teaching Assistant (UGTA) Programs II

Session Chair: Doan Quang Vinh

Applying Undergraduate Teaching Assistants Model in Improving Active Learning
Tran Thi My Dung and Nguyen Minh Luan (Can Tho University)

In-House Graduate Training Program - Training in Laboratory
Tran Ngoc Dam (Ho Chi Minh City University of Technical Education)

Session 05 (Park View Foyer): Capstone Project Implementation I

Session Chair: David Benson

Several Strategies for Deployment of Capstone Project at University of Science and Technology - The University of Danang (DUT)
Bui Minh Hien, (University of Science and Technology-The University of Danang)

Teaching Approach Associated with Industry for Engineering Students
Tran Thi Thanh Hai (Hanoi University of Science and Technology)

6:00 p.m. - 8:00 p.m.

Gala Reception - Rex Hotel, Vertical Garden
Sponsor: Pearson and ASU-Fulton Schools of Engineering

PEARSON



8:00 a.m. - 9 a.m.

Check-in and Coffee - Park View Foyer

9:00 a.m. - 9:45 a.m.
Keynote Presentation

Technology Innovation: Building the National Strategy for Vietnam and a "Call to Action" for Strategic Partnerships

Moderator: Scott Danielson

Associate Dean of Academic Programs and Associate Professor, College of Technology and Innovation, Arizona State University

SPEAKERS



Dr. Mai Ha

Adviser to the Minister, Department of International Cooperation, Vietnam Ministry of Science and Technology

Dr. Mai Ha serves as Adviser to the Minister of the Vietnam Ministry of Science and Technology (MOST) and as the Director General of the Office of the Vietnam Space Commission. Previously, Dr. Mai Ha held the position of Director General of the Department for International Cooperation in MOST. During his career he has held many important roles shaping the technological advancement and international relations of Vietnam. Dr. Mai Ha holds a Bachelors of Law degree from Law University in Hanoi and earned Graduate and PhD degrees in Economics from Kiev State University in the Ukraine.



Dr. William Colglazier
Science and Technology
Advisor to the Secretary of
State, U.S. State Department

From 1994 to 2011, Dr. Colglazier served as Executive Officer of the National Academy of Sciences (NAS) and the National Research Council (NRC). From 2000 to 2011 he also served as NRC Chief Operating Officer. In these roles he helped to oversee the studies conducted by the NRC, which is the operating arm of the NAS, the National Academy of Engineering, and Institute of Medicine. From 1991 to 1994, Dr. Colglazier was Executive Director of the Office of International Affairs of the NAS and NRC, overseeing collaborative projects with scientific organizations in many countries.

9:45 a.m. - 10:15 a.m.

Question and Answer Session with
Presenters

10:20 a.m. - 11:30 a.m.

Public/Private Partnerships: Building
the Engineering Education and
Scientific Research Innovation
Ecosystem

Moderator: Marco Santello

School Director and Professor, School of Biological
and Health Systems Engineering, Arizona State
University

PANELISTS



Dr. Victoria Kwakwa
Country Director, World Bank
Vietnam

Victoria Kwakwa, a Ghanaian national, is the World Bank's Country Director for Vietnam in the East Asia and Pacific Region, based in Hanoi. She is an expert in Economic Policy. Ms. Kwakwa joined the World Bank in 1989 as a Young Professional. Since that time, she has held different positions in the World Bank including assignments as country economist, lead economist, and country manager. She has worked mainly in Africa but also in East Asia where she was a member of the economic team on Vietnam in the late 1990s. Prior to her current assignment, Ms. Kwakwa worked as the Bank's Country Manager for Rwanda, from January 2007. In this capacity she managed the World Bank's program on Rwanda covering a broad range of issues, and including several innovative approaches to development assistance in areas such as health (notably results based financing), social protection and decentralization. These innovative approaches have provided important lessons for other World Bank programs in Africa and elsewhere. Ms. Kwakwa worked actively with government and development partners to strengthen aid harmonization and alignment and the use of country systems in delivery of development assistance.



Mr. Joakim Parker
Mission Director, USAID
Vietnam Mission

Joakim Parker oversees development activities related to health, education, economic

growth, environmental remediation of dioxin, climate change, anti-trafficking in persons, good governance, and support for persons with disabilities and to ethnic minorities. His prior experience in development for USAID was in Georgia, Peru and Ukraine. He holds degrees from Stanford University, University of California's Hastings College of Law, and University of the West Indies' Institute for International Relations.



Dr. Le Hoai Quoc
President, Saigon Hi-Tech
Park

Dr. Le Hoai Quoc is the President of the Saigon Hi-Tech Park (SHTP). Being one of Vietnam's only two national hi-tech parks, it is considered one of Ho Chi Minh City's five focal economic projects serving as the driving force for the city's development, Saigon Hi-Tech Park (SHTP) has received exceptional support from both the central and local governments, as well as from other relevant state agencies. By 2015, SHTP is to become a technology and science city that will greatly enhance the economic, technological, and intellectual base of Ho Chi Minh City and the Southern Economic Region of Vietnam and that will ultimately serve as a model for Vietnam technological innovation, intellectual capital development, and innovation economy. Dr. Le Hoai Quoc obtained his doctorate from the institute of Mathematics and Electronics in Moscow, Russia.

Dr. Nguyen Anh Thi
Director of VNU-HCM Information Technology Park

11:30 a.m. - 12:00 p.m.

Question and Answer Session
with Panelists

12:00 a.m. - 12:10 p.m.

Tektronix Presentation



12:10 p.m. - 1:30 p.m.

Lunch at the Hoa Mai Restaurant
Sponsor: Tektronix

1:30 p.m. - 3:00 p.m.

Afternoon Concurrent Technical
Track 3

**Session 01 (Lotus A): Entrepreneurship and
Innovation I**

Session Chair: Vo Minh Tri

An Overview of Patent Registration and Exploitation
in Vietnam

*Nguyen Thi Phuong (Deputy Director, National
Institute of Patent and Technology Exploitation)*

From Ideas to Market: Nurturing the Nation's
Innovators

Pham Quoc Hung (National Instruments)

**Session 02 (Lotus B): On Teaching
Engineering English**

Session Chair: Nguyen Giao Hoa

Engineering English: Ensuring Student Success
in Training and the International Engineering Job
Market

*Scott Welsh (American English and Culture
Program, Arizona State University)*

Has English Become the Gold Language in International Programmes in Vietnamese Higher Education?

Doan Hue Dung (University of Agriculture and Forestry, Ho Chi Minh City)

English Acquisition: Redefining the Roles of Learners, Teachers, and Technology
Chris Albright (Managing Director, Axcela)

Session 03 (Sunflower A): Blended and Flipped Classrooms

Session Chair: David Benson

Introduction to Flipped Classroom Technique
Nguyen Minh Tam (Hochiminh City University of Technical Education)

Blended Learning: A Preliminary Study and First Trial Courses in Engineering Education
Nguyen Ba Hai, Do Van Dung (Hochiminh City University of Technical Education)

Session 04 (Sunflower B): Methods for Engaging Students

Session Chair: Nguyen Ba Hai

Enhancing Student Motivation in Foundry Technology using Active Learning and CDIO Practices
Vo Xuan Tien (Ho Chi Minh City University of Technical Education)

The Effect of Multimedia Video towards Students' Essay Writing
Adenan Bin Ayob (Sultan Idris Education University, Malaysia)

An Effective Solution to Promote the Skills of Students in Active Learning
Nguyen Hoang Mai (The University of Danang)

Session 05 (Sunflower A): Assessment of Student Learning

Session Chair: Joerg Franke

ePortfolio-Based Assessment for Learning
Le Thanh Tung, Nguyen Trung Lap and Ikeda Mitsuru (Hoa Sen University and Japan Advanced Institute of Science and Technology)

Fast and Effective Assessment Strategy for Optical Communications Course
Pham Quang Thai (Ho Chi Minh City University of Technology)

How to Develop a High Performance Team
Brian O'Reilly (The International Management Initiative for Vietnam - IMIV)

3:00 p.m. - 3:30 p.m.

Break and Networking in Technology Avenue in Park View Foyer

3:30 p.m. - 5:00 p.m.

Afternoon Concurrent Technical Track 4

Session 01 (Lotus A): Research and Education Collaborations III

Session Chair: David Benson

The Bi-National Master's Program Computational Engineering at the Vietnamese-German University
Joerg Franke (Vietnamese-German University)

HEEAP Resource for Building and Developing Collaborations (Research and Education) – HEEAP Cloud Community
David Benson (Arizona State University)

Session 02 (Lotus B): Faculty Development

Session Chair: Brian O'Reilly

Using Key Performance Indicators in Faculty Assessment at the University of Technical Education Ho Chi Minh City
Dang Truong Son, Ngo Van Thuyen and Phan T.T. Thuy (Ho Chi Minh City University of Technical Education)

Faculty Evaluation, Development and Workload Modeling
Scott Danielson and Kathy Wigal (Arizona State University)

Session 03 (Sunflower A): Capstone Project Implementation II

Session Chair: Nguyen Tan Luy

Forming Industry Partnerships for Capstone Projects in Danang University of Science and Technology
Nguyen Van Tuan and Le Thi Phuong Mai (The University of Danang, University of Science and Technology)

Capstone Project Integrating Industry Partners Applied for IUH's Students
Nguyen Tan Luy and Bui Thu Cao (Industrial University of Ho Chi Minh City)

Session 04 (Sunflower B): Entrepreneurship and Innovation II

Session Chair: Vo Xuan Tien

Entrepreneurship and Technology Innovation: Innovating Education for the 21st Century
DL Baron (Academic Partnerships International)

Technology Entrepreneurship and Innovation
Christopher Quang Zobrist (John von Neumann Institute)

Session 05 (Park View Foyer): HEEAP Project Reflections

Session Chair: Keith Roberts

HEEAP Training Under One Choice in the Inevitable Integration Period
Truong Minh Tri (Ho Chi Minh City University of Technical Education)

The Application of New Teaching Methods to Engineering Education at Vietnam: Actions and Results
Pham Huy Hoang (Ho Chi Minh University of Technology)

Project-Based Learning Applied in the Course of Mechatronics Design Project: Pros and Cons in Implementation and Evaluation
Vo Minh Tri (Can Tho University)



ABSTRACTS

VIETNAM ENGINEERING EDUCATION CONFERENCE

Tuesday, March 25 — Track 1

Session 1

ABSTRACT

**Club of Undergraduate Teaching Assistants:
An Experimental Model to Support and Assessment Active Learning Activities in HUST**

AUTHORS

¹Thu-Huong Truong, Nga-Viet Nguyen, Duc-Nam Do, Toan-Thang Vu, Minh-Hung Tran
Hanoi University of Science and Technology,
Vietnam

¹E-MAIL: huong.truongthu@hust.edu.vn

In recent years, active learning has become recognized as an effective approach to engineering instruction. As this trend has gained currency, it has tremendously benefited not only students who are trained to assist faculty members in active learning activities in particular but also lectures in Hanoi University of Technology and Science (HUST) in general. However, certain conditions such as large classes and heavy workloads in HUST often discourage faculty from applying active learning techniques. It is the goal of this article to outline the potential sources of making a big effort to reform education as well as suggest certain approximate ways of obtaining it. In order to resolve such problems, we should first confront with its root cause. At the heart of the matter is a “high degree of professionalism and discipline in classrooms across the country” and another systemic problem is a general lack of “integrity” in HUST education sector. Moreover, many instructors are still not aware of the latest techniques. As a solution with the help of the HEEAP program (Higher Engineering Education Alliance Program), we propose to organize a “Club of Active Learning Troop” or CALT, training volunteer

students for promoting active learning in class. The ALT students are undergraduate students who can assist faculty members in active learning activities through their presence in the classroom; and who can reflect their study themselves through the CALT workshops. Notwithstanding its grave causes, the above-mentioned measures would constitute a good step toward solving its issues.

ABSTRACT

A Survey of Student Engagement at HCM UTE

AUTHORS

¹Dung Van Do, ²Thi thu Trang Nguyen, ³Thi Kim Anh Nguyen

¹Rector, The University of Technical Education HCMC, Vietnam

²The University of Southern Australia, Australia

³The University of Technical Education HCMC, Vietnam

¹E-MAIL: dodzung@hcmute.edu.vn

Student engagement can be defined as the quality of effort students put into their learning and their involvement in educationally purposeful activities (Kuh, 2009). Not surprisingly, student engagement has become the central issue of higher education literature focusing on the enhancement of learning and teaching (Trowler, 2010), and the highlight of discussions about higher education policies, and through the mass media (Kuh, 2009). The impact of the concept “student engagement” in higher education can also be seen in the implementation of national surveys of student engagement that are annually conducted in the US, Canada, Australia, New Zealand, South Africa, and China. Considered as an instrument necessary for determination of the university education quality (Coates, 2005), these surveys are gaining increasing popularity in higher education around the world. In the Vietnamese context where the higher education system is under

the pressure to fundamentally reform to improve the quality of educational provision, student engagement is a worthwhile focus for Vietnamese educators and researchers, but has not yet been explored in Vietnamese higher education scholarly research, especially in engineering education. This paper presents the result of a survey of student engagement at HCM UTE.

Session 2

ABSTRACT

Bridging the Gap between Theory and Practice in University Education: Teaching-Research Teams

AUTHORS

¹Doan Quang Vinh, ²Nguyen Le Hung
The University of Danang, Vietnam

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This report is concerned with the problem of enhancing the performance of research and teaching activities in university education. In particular, a model of teaching-research teams (TRT) to provide students and faculty with opportunities in teaching and research collaborations is introduced. With the model, productive research activities can enhance the outcomes of teaching activities and vice versa. As a result, the mutual benefits of the model can help to bridge the gap between theory and practice in university education. In this report, detailed management regulations of TRTs and related issues at the University of Danang are presented.

ABSTRACT

Engaging Students and Faculty in Global, Collaborative, Biotechnology & Interdisciplinary Projects: The Global Leadership Center at Ohio University (USA)

AUTHOR

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The following abstract discusses a presentation that will focus on how the Global Leadership Center's problem- and project-based, global curriculum addresses and executes:

- Activities which Promote and Reinforce Student Engagement
- Engages Students in Bi-National Research and Education Collaboration
- Develops Capstone Projects with Industry Partners
- Develops High Performance Teams
- Engages Students with Entrepreneurship and Technology Innovation
- Develops Faculty Collaboration through Virtual Community Networks
- Demonstrates an Successful Industry-Academic Partnership Model

The Global Leadership Center at Ohio University offers a two-year undergraduate certificate that prepares students to become lifelong learners in order to serve as internationally-minded, skilled, attuned, professional, and experienced leaders in all walks of life (commercial, scientific, governmental and nongovernmental, educational, etc.). The program prepares students to think critically and creatively, communicate clearly and logically, be flexible and non-dogmatic, embrace ambiguity and complexity, and understand the world's challenging commercial, scientific, political, religious, and cultural issues.

Global Leadership Center courses are not traditional classes with lectures, tests, and papers. Instead, students work in project teams on real-world

problems and issues. The project-based action learning approach challenges students to acquire the knowledge and skills they need to work in a rapidly changing world. The GLC's core program consists of project-learning units, which spring from real-world, global issues. Each project challenges students to determine what they need to know to solve the problem, how they are going to find the information they need, and how they are going to apply it. Project-based learning also changes the role of faculty members; rather than providing the students with specific course content, faculty advise, consult and provide constant feedback on all aspects of a project, from research and analysis to report writing and presentations.

The proposed presentation will focus on two specific, biotechnology-themed projects the Global Leadership Center has undertaken. One project involved exploring global (South American) commercial markets for a local biotech firm (Diagnostic Hybrids - www.dhiosa.com) and the other project (on-going) involves building bridges between Ohio University's Edison Biotechnology Institute (www.ohio.edu/research/biotech) and international partners.

Session 3

ABSTRACT

GO PLM: A Resurgence of Manufacturing

AUTHOR

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Increased Collaboration of global manufacturing processes entails major shifts in the relative importance of how institutions train and certify the next generation of engineers and technologists for our customers, business partners and the communities

in which we work and live. Institutions are joining forces with industry to nurture the Resurgence of Manufacturing globally. To meet this Work Force Imperative for knowledge workers, community colleges and engineering technology programs must offer strong manufacturing programs to attract, educate, certify and place students in high-wage, high demand occupations. This paper discusses the Virtual Learning Environment for GO PLM the (Global Opportunities in Product Life-Cycle Management) Program and provides unique examples for insuring the quality and readiness of engineering students entering global Manufacturing markets.

ABSTRACT

A Breakthrough in Teaching the Fundamentals of Electronics Using Innovative Lab Instruments

AUTHOR

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As the pace of technological change continues to accelerate; Professors, Students and Researchers are challenged every day to deliver the latest innovations in an effective and structured way. In this session, we will introduce a breakthrough in the tools available for the teaching of fundamental electronics. It allows teachers to develop teaching material offline and incorporate it into the measuring instrument for classroom use. We will also show how we have created the ability for teachers and researchers to share best practices with their peers around the world using our Courseware ecosystem.

Session 4**ABSTRACT****Applying Active Learning and Assessment Methods in Engineering Education: Design, Implementation and Guidelines****AUTHOR**

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Active learning and teaching have become the popular techniques of higher engineering education not only in United States but also in other countries. However, the implementation of these techniques in the engineering programs is not easy because of many factors such as the different goals of engineering programs at different universities, quality of students and lecturers. It also depends on the facilities supporting the lecturing and course evaluation or due to the diversity, learning style and culture as well. In this paper, we will present the implementation of active learning techniques in combination with the revised syllabus to target ABET criteria for the Telecommunication Networks course at Ho Chi Minh City University of Technology. Moreover, the paper also shows how to apply appropriate assessment methods to achieve successful evaluation of class hours, course, and student quality during the course time. In addition, the research work illustrates the comparison between a tradition class and the ABET-oriented class with the same applied techniques to show the advantages of active learning and teaching in the implementation phase. Besides, the result of this research gives the guideline to implement active learning and the assessment methods under the consideration of different conditions at other universities by designing the effective surveys, forms, etc. Finally, challenges in some open issues during the implementation and assessment phases such as class size, studying style of students, etc. are also discussed to propose several continuous

improvements and can be able to be expanded to other courses in the higher engineering education programs.

ABSTRACT**Innovative Teaching Methodologies Applying to Can Tho University to Engage Engineering Students****AUTHORS**¹Doan Thi Truc Linh, Nguyen Van Cuong, Tran Thi My Dung

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The rapid development of society urges companies seeking for employees with high quality of a well-round knowledge and skills. It creates a big challenge for universities to train their students, especially engineering students. Thus, to assure the training quality for these students in order to meet the outcome criteria and satisfy the recent social requirements, we have to concern many aspects, especially teaching methods during training process. Using of innovative learning methods in the classroom is vital because of their powerful impact upon students' learning. Indeed, it may help engineering students to learn with active methodologies in order to gain and comprehend the knowledge to bring into play their soft- skills and creativity. These new teaching methods could make students attracted into learning activities actively based on the organization and instruction of lecturers. The students explore fuzzy contents as well as missing skills that traditional teaching styles do not focus on. In addition, students will involve in researching on the real problems, discussing in group, generating new ideas, promote their ability and their soft-skill as communication skill, presentation skill, computer skill, etc. As a result, it is expected that they can reach new professional knowledge and improve their creativity.

This paper presents and discusses some improving teaching methodologies which have been applied effectively to Can Tho University for engineering students. However, it is not easy for lecturers to carry out these techniques in classroom since it needs a strong effort and a close cooperation between lecturers and students. Besides, this paper shares some advantages and disadvantages of the implementation of these teaching methodologies at Can Tho University.

ABSTRACT**Further Concerns for Ethical Education in Order to Have More Opportunities of Labor Force Training****AUTHOR**

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In order to develop industrial economy, we really need strong labor force with the technical capability of manufacturing and advanced qualities to meet the need of working in industry parks and multinational companies. However, we have not been able to fulfill this. So what are the reasons?

In my opinion, it's all rooted in consciousness. Nowadays, people tend not to respect the working class, who actually make necessary utensils for daily life such as bowls, spoons, chopsticks, cups... In fact, most of them want to go to college and get degrees that, as they believe, would bring them higher social reputation than working in factories.

Although there are many reasons and also solutions for this phenomenon (for example...), in this presentation, as a member of HEEAP 2012 vocational cohort, I would like to address two problems and call for

solution within the authority and responsibility of a teacher.

1. The ideology of parents that their children have to go to college and become white-collar workers.
2. The teachers are not teaching ethics to students. Therefore, without professional ethics, students are not fully aware of the importance of hands-on working in the country's development process.

In order to solve these problems, I suggest every teacher to be a good example of professional methods, skills, knowledge and ethics to focus on and keep educating students on ethics and more specifically, professional ethics; make them aware of the true value of labor and appreciate the working class – the skillful workers that produce life's goods. Perhaps, if we, as the teachers, pay more attention to this in our teaching, we will gradually get rid of the preference of college degrees and at the same time have more training opportunities of skilled workers with adequate advanced qualities to qualify the requirements of multinational companies.

Session 5**ABSTRACT****Academic Writing Workshop: Publish and Flourish****AUTHOR**

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HEEAP and the VEEC Program have been actively developing teaching and scholarship in Engineering Education in Vietnam. An integral part of improving teaching and learning is the publication of the results of scholarship in international journals. These publications not only share the wisdom and

success of the teaching and scholarship, they also add prestige to the institution and the individual. International rankings of universities always include an assessment of scholarly publication as a core indicator of university excellence. Vietnam currently ranks 59th in the world in number of academic publications and fifth among ASEAN nations behind Malaysia, Singapore, Thailand, and Indonesia.

Tuesday, March 25 — Track 2

Session 1

ABSTRACT

Engineering Curriculum Redesign Toward ABET Accreditation

AUTHORS

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As Vietnam develops into a knowledge-based economy, there exists an urgent need and challenge for the country's top engineering universities to restructure and be recognized as some of the more advanced technical universities in the world. A full analysis of the hindering factors that contribute to the inefficient organizational structure, archaic curriculum design philosophy of the current engineering education is illustrated in the paper. A case study related to Electrical- Electronics Engineering undergraduate program will then be presented with findings and potential solutions for changes are proposed for rapidly modernizing and improving the quality of the curriculum, faculty instruction toward a new curriculum design philosophy in compliance with ABET accreditation standards.

ABSTRACT

Engaging Students for Engineering Courses Starts from Course Design through Constructive Alignment

AUTHORS

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Foreign investment into Vietnam, especially in high-tech fields, has recently been growing. This development requires work-ready engineers with necessary skills to succeed in team-oriented workplaces. However, there are concerns of the content and methods of undergraduate teaching and learning in Vietnamese universities. Detailed outcomes up to the fourth level in the CDIO syllabus of the program are mapped into outcomes for various courses in different semesters. With given set of outcomes, a lecturer has to make sure that students possess these outcomes within the available student and faculty time, funding and other resources. In this presentation, the authors would like to present a systematic procedure to design a course syllabus through constructive alignment that refers to the purposeful relationship between intended learning outcomes, teaching and learning activities, and assessment methods. In order to engage students learning engineering courses, instructors have to incorporate active learning strategies into class discussions. Together with traditional teaching methods, several active learning methods have been employed, developed and used in class with one thing to bear in mind 'learning by doing, learning by playing'. Demonstration of teaching and learning activities will be highlighted in courses of 'Introduction to Engineering' (200300, first year), 'Control system technology' (218001, third year), and 'Introduction to industrial robots' (218033, fourth year). The use of a single mode of instruction, such as lecture, often leads to complacency and boredom in the classroom. By varying teaching methods in each class meeting, students are more engaged and learn

well in the end. In other words, lecturers have to be creative so that lecture is interspersed with the use of visuals, group activities, multimedia demonstrations, games, and other instructional techniques. Activities of 'Learning by doing & learning by playing' are possible to implement in classes of 60 students, which are common in Vietnamese universities, with one or two teaching assistants.

Session 2

ABSTRACT

Interdisciplinary Collaboration and the Lower Mekong Public Policy Initiative (LMPPI)

AUTHOR

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The Lower Mekong Public Policy Initiative (LMPPI) is a newly launched regional project funded by the United States Agency for International Development (USAID). It seeks to build institutional capacity in action-research and public policy for ecologically sustainable development in the Lower Mekong region through interdisciplinary collaboration and multi-sectoral knowledge exchange in Cambodia, Lao Republic, Myanmar, Thailand, and Vietnam. A distinguishing aspect of the Initiative is its mission of generating policy action from research that integrates socioecological system dynamics with the socioeconomics of sustainable economic development. LMPPI is led jointly by the Harvard Kennedy School - Ash Center for Democratic Governance and Innovation and the Fulbright Economics Teaching Program of the University of Economics, Ho Chi Minh City. The Initiative is anchored in an evolving regional network of researchers and decision-makers working in agricultural production & natural resource management systems. Major nodes of the network consist of small teams of researchers

at university, government, and non-government research units. The teams (in partnership with LMPPI) will conduct outreach to key stakeholders from a range of sectors and disciplines. Such outreach will facilitate knowledge translation and active participation of stakeholders in constructing research dissemination and policy dialogue. Expected results from the LMPPI experience will center on knowledge generation through testing of best-practices and examination of project policy outcomes.

ABSTRACT

Business and Vocational Training in Vietnam - Suggestions for Collaboration

AUTHOR

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The purpose of this presentation is to suggest feasible collaboration formulas between business and vocational institutions in Vietnam. In order to drive its economy train in the next development phase, Vietnam is under pressure of moving from depending on low-cost human resource as national advantage to preparing its workforce with modern skills. However, the vocational system of the country is not ready yet for this new task. This presentation discusses the status quo of Vietnam's vocational system, especially its relation to business, leading to suggestions for win-win collaboration. The study does not only limit to business-schools relation but also try to address the problem at higher level which requests changes in policy of the government.

Session 3

ABSTRACT

Education, Research and Entrepreneurship in Biomedical Engineering

AUTHOR

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The Biomedical Engineering Department (BME) at International University of Vietnam National Universities in Ho Chi Minh City was established in 2009. It is the first in the country that offers the accredited degrees of Bachelor and Master of Engineering in BME, using English for teaching. The Department promotes the close relationship between Education, Research and Entrepreneurship. Its motto is: High Quality, Sustainability and Usefulness. It has almost 200 undergraduate and graduate students, and 11 faculty and staff.

The Department activities focus on the Design and Applications of Medical Devices to satisfy the urgent needs of the country. To this end, the Department has developed a family of homecare devices for telemedicine. These cost effective point-of-care devices allow patients to make the measurements of vital factors (blood pressures, heart rates, blood glucose levels, lung functions, etc.) by themselves. They can be either at home (in the cities or in the remote areas) or on the move (in the country or abroad). The obtained data will be automatically and instantaneously sent to a server. Custom made software on the server will analyze the data. If the data are out of normal range, the system will automatically alarm the corresponding healthcare providers for intervention from distance. Healthcare information of a patient is stored in a password protected website to allow this patient to monitor the health status by him/herself. Technology transfer has been done to a start-up company to promote a new family medicine practice appropriate for third world countries. Patient to patient, patient to doctor and doctor to doctor can communicate and exchange data remotely.

Other orientations of the BME Department include Medical Signal and Image Processing focusing on the investigations of the Brain-Computer-Interface, Pharmaceutical Engineering focusing on the drug delivery system, and Regenerative Medicine focusing on the design of new biological materials. The Department has published widely in these fields.

The Department organizes every other year International Conferences on the Development of Biomedical Engineering in Vietnam. The Fourth Conference was organized in 2012 which was kicked off by the Regenerative Medicine Conference, endorsed mainly by the Tissue Engineering and Regenerative Medicine International Society (TERMIS). It was followed by the Computational Medicine Conference, endorsed mainly by the Computational Surgery International Network (COSINE) and the Computational Molecular Medicine of German National Funding Agency; and the General Biomedical Engineering Conference, endorsed mainly by IFMBE. It featured the contributions of 435 scientists from 30 countries whose papers were published in the IFMBE Proceedings Series by Springer (ISBN: 978-3-642-32183-2). The Fifth Conference will be organized on June 16-18, 2014 in Ho Chi Minh City.

The Department strives to seek for research topics that exist only in Vietnam to offer specific platforms for international researchers to come to develop mutually beneficial collaborations. Most importantly, it wants to become a niche for young researchers to flourish and a magnet to attract Vietnamese diasporas to come back.

ABSTRACT

Biomedical Device Design Centers: Opportunities for Collaborations between Arizona State University and Vietnamese Universities

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The School of Biological and Health Systems Engineering (SBHSE) at Arizona State University (ASU) is one of very few Biomedical Engineering Departments in the U.S. with a strong emphasis on biomedical device design. Specifically, unlike other programs where design may be taught for one or two semesters, our Design curriculum is offered through the four years of the major, culminating with a senior capstone design. The mission of the SBHSE Biomedical Device Design Center in (SBHSE) is to train the next generation of biomedical engineers in becoming solvers of clinical problems that affect the community. The Design Center pursues this mission by fostering strong interactions with the clinical community in the Phoenix area (e.g., The Mayo Clinic, The Barrow Neurological Institute, Banner Health), biomedical device industry, and biomedical engineering alumni to expose students to real-life problems. Importantly, the impact of the Design Center goes beyond the confines of Arizona or the U.S. as we train our students in understanding global challenges to the health condition. As part of our global engagement, senior capstone projects are often undertaken to serve individuals from communities in developing countries. I will give an overview of the vision, mission, and activities of the Biomedical Device Design Center and discuss educational and research opportunities for collaborations with Vietnamese universities in the pursuit of improving quality of life in our communities.

Session 4**ABSTRACT**

Applying Undergraduate Teaching Assistants Model in Improving Active Learning

AUTHORS

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Undergraduate teaching assistants (UGTAs) have provided benefits for the moving a traditional lecture, where students receive information from instructor while participation in class discussion is very little, to active learning classroom, where students and lecturers cooperate to discover and construct knowledge. Many colleges and universities in developed countries have implemented the using of undergraduates as teaching assistants in which there are many suggestions of useful practical ways to apply in the classroom. As a consequence, plenty of research are reported and indicate that the advantages are far more dominated in terms of supporting a collaborative approach to teaching, the feedback from UGTAs to lecturers, giving UGTAs experience from knowledge as well as soft skills and encouraging students' responsibility in the active learners. However, the number of colleges and universities using the UGTAs model in Vietnam are only counted on one hand because these few universities have perceived the supporting effective role of teaching assistant in active learning and learning methodology. Many major or public universities have not applied this model and for local and private universities they are not entirely applicable. In fact, most of teaching assistants who are recruited for lecturer position will only spend their time in the class for proficiency in teaching their subjects, not a UGTAs working objectives. In addition, according to the experts from education and training, the main obstacle of using UGTAs model of many Vietnamese universities is lack of funds. The purpose of this paper is to review and analyze the utilization of UGTAs for lecturers, UGTAs themselves and students in courses served by UGTAs. We also focus on the procedure of the UGTAs selection process, UGTAs

responsibilities, training and assessment. This paper will make the appropriate engagement to lecturers and leader who want to overcome the obstacles of using UGTAs model and have potential for UGTAs application more effectively.

ABSTRACT

In-House Graduate Training Program - Training in Laboratory

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Nowadays, most technical universities are integrating its curriculum for effective in long-term for career, long life learning and science communication. To prepare for global engineer, the students must be driven with course-work by a graduate assistant responsibilities program. However, several surveys have reported that undergraduate students easily confuse teaching obligations with own leaning. In this study, own graduate train program were proposed as the training students in laboratory with mentors and supervisor. The study indicated the successful projects and expertly of supervisor in laboratory of motivation in learning taught subjects. The focus was on real project solving to teach students the industrial work and science communication skills needed to become a global engineer. The research methodology and method were utilized in achieving educational objectives. Three project groups with around 10 students from three faculties included a mentor, two master students, two last year undergraduate students and five third year undergraduate students were applied. The surveys with 50 questions were used for fresh graduated students and graduated students from laboratory. The averages with error bar of each class were used for analysis, comparison, and evolution. The results show that the skills in

communication, decision making, ethical engineering, defining problems, team work and executing projects were greatly improved by the trained students.

This 90 minute workshop will help the participant develop a strategy for publishing in academic journals including; choosing a journal, developing a paper, and the general structure of journal articles, and suggestions regarding rewriting and resubmitting.

Upon completion of the workshop the participant will know how to develop a strategy for academic writing that will lead to eventual publication in a regional or international journal.

Session 5

ABSTRACT

Several Strategies for Deployment of Capstone Project at University of Science and Technology - The University of Danang (DUT)

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In recent years, more and more experimental projects are conducted by student groups under supervision of DUT professors or DUT lecturers. These projects are usually initially planned over a period of 6 months (one or two semesters) and require students not only use their knowledge to think critically, solve challenging problems, but also develop their soft skills such as oral communication, presentation, teamwork, planning their timeline, etc. These projects are considered as capstone projects which are large projects and can be the final piece of undergraduate degree. The final product of a capstone project is a potential deliverable for a work-place audience and a rationale report. This abstract presents two following types of capstone project are deployed at DUT and

then several strategies are provided to improve the deployment of capstone projects at DUT.

- Industrial research projects: the projects are supported by local industry. Students have the opportunity to work on a practical project and interact with outside engineers. The research topics are proposed by the industry to solve problems or to improve a new solution for their company/factory. Students can be arranged a workplace at the company/factory during the conducting projects.

- University research projects: the projects are supported by University funding. Students have opportunity to work on their proposed projects or projects proposed by DUT professor/lecturers under supervision of DUT professor/lectures. For this kind of project, students can use equipments in DUT laboratories to conduct their projects.

These two kind projects are already deployed at DUT. However, there are no specific instructions about research topic selection and group selection. Therefore, some following strategies are provided.

Firstly, there are some guidelines to help students select a research topic, as follows.

- The research topic should be one in which students are interested and should be related to student career cluster.

- Students must ensure cumulative knowledge the last school years related to the research topic.

- The research topic should enliven students' creativity and challenge their academic.

Secondly, the ability of team members to work within a group to accomplish a task is very important. Therefore, group selection plays an important role in success of a team. Literature shows that there are different group selection strategies, such as:

- Students are selected based on their interest in projects, previous dealing with the problem through internships or their classes and based on the average grade point average per group.

- Students are selected based on the survey.

ABSTRACT

Teaching Approach Associated with Industry for Engineering Students

AUTHOR

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For students after graduation, who will be work-ready (in particular for ones in mechanical engineering), there is a need for improving teaching curriculums and teaching skills. One of the innovative methods is the teaching approach associated with real industry. In this case, instructor is required to have close contacts or relations with industrial companies, practical demands (e.g. industrial output such as goods, technologies). In each part or section of the lecture, questions, practice exercises or assignments must be always established in a way they are concerned practical problems so that students can solve individually or answer in team working. Instructor also needs to discuss with his or her class in order to propose solutions to industrial requirements. This issue is documented in the middle assessments or final exams. This helps students have a better overview on industry from the curriculums. This paper presents the unified teaching method, exercises and assessments of study results of the students, which are associated with practical industry.

Wednesday, March 26 — Track 3

Session 1

ABSTRACT

An Overview of Patent Registration and Exploitation in Vietnam

AUTHOR

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Building a nation based on the intellectual property and exploiting this asset effectively is a trend in both industrialized countries and emerging countries. However, the intellectual property and patent exploitation in Vietnam is a challenging issue. The exploitation of the patents and the patent application process in Vietnam is still very weak. Researchers and Vietnamese enterprises are not interested much in registering patents and commercialization of this property for profit and many universities and research institutes are not using patent information for research and applications in business. With the goal of Vietnam to become an industrial country by 2020. To achieve this goal, Vietnam should boost its efforts in research activities, innovation, protection and exploitation of intellectual property to follow the current trend of many developed countries – making the country an intellectual property-based nation. This presentation will provide an overview of current processes for registration and exploitation of patents in Vietnam. We should think together about this issue and have a new look and new way to promote it.

ABSTRACT

From Ideas to Market: Nurturing the Nation's Innovators

AUTHOR

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The importance of innovation in entrepreneurship can be seen in the invention of new ways to produce

products or improved solutions. Engineers can create a new system that provides much convenience for the community. Manufacturers can come up with new products from raw materials and by-products. The growth of innovation is greater in small businesses as innovation is essential to propagate the development and success of business. Entrepreneurs, as drivers of small businesses, are the innovators of the economy. However, most of the innovators encounter various difficulties at different stages of developing their business, from realizing the initial innovative ideas to bringing these new technologies to the market, especially for small businesses.

The first problem comes up is how to bring an idea to a tangible system. The innovator needs to identify and choose a platform that is suitable for development. Ease of using the platform is also important as most of the technology start-ups do not have much manpower. National Instruments (NI) provides system design software – LabVIEW. LabVIEW integrates all the tools that engineers and scientists need to build a wide range of applications in a dramatically less time. It is ideal for any measurement or control system. The correct tool to use will shorten the development time, and thus shorten the time to market of the new technology.

After the innovative idea is properly conceptualized, the entrepreneur may face another problem – funding of the project. Many governments are well aware of the importance of the small innovative entrepreneur businesses, and provide multiple channels for small and medium enterprises (SMEs) to apply for funding. As a corporate social responsibility, NI introduces a program called Planet N to empower engineers in the emerging countries to achieve sustainable prosperity by providing increased access to NI technology. The program focuses on nurturing local innovation through partnerships and supporting SMEs.

When the solution is done, the problem facing innovators is how to bring it to market. As more markets

take on the characteristics of networks, once-reliable tools for introducing new products and services do not work as well as they used to. Executives need to rethink the way they bring innovations to market. For example, seeing the App Store revolution, NI provides the LabVIEW Tools Network that allows scientists and engineers to share or trade their intellectual properties (IPs) online through an App-Store-like interface. And other channels are available for hardware based solutions.

Session 2**ABSTRACT**

Engineering English: Ensuring Student Success in Training and the International Engineering Job Market

AUTHOR

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One of the major factors that helps determine students' success in training for and developing their engineering careers is their ability to use English as a medium for study, work and collaboration. Industries and educational institutions have recognized this as an important issue, but answers to the questions of what can be done to help non-native English speaking students improve their English skills for use in their careers are still being developed and tested. In answering these questions, Arizona State University (ASU) has developed a three-part approach to English for engineering training: pre-program preparation, in-program English language support, and engineering faculty teacher training. These approaches use a combination of activities for promoting student engagement, exercises for team building and collaboration, alternative models for

classroom learning and educational technologies for improving specific English skills to accomplish the goals of the programs. This presentation will highlight the three approaches the American English and Culture Program (AECPP) at Arizona State University has taken to help provide strong sustainable solutions to the problem of improving international engineering students' English skills and their ability to succeed, and make recommendations for how educational institutions and engineering industries can adopt similar strategies.

ABSTRACT

Has English Become the Golden Language in International Programmes in Vietnamese Higher Education?

AUTHOR

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English has been widely used as an instructional language in many undergraduate and graduate programmes in Vietnamese higher education, social and engineering fields alike, particularly in all advanced and international programmes. However, little has been discovered about the impact and effectiveness of English on the outcomes of these programmes. This presentation will discuss the issues and challenges of using English as a technical and instructional language in Vietnamese higher education nowadays. Based on the teaching and learning situations experienced by some selected universities in Ho Chi Minh City, the paper will examine the roles of English in Vietnamese university teaching and learning. The paper will also raise the question of how to enhance the effectiveness of the advanced and international educational programmes through proper use of English as a means of instruction, communication and competence acquisition.

ABSTRACT**English Acquisition: Redefining the Roles of Learners, Teachers, and Technology****AUTHOR**

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The paper will focus on the blended approach to English acquisition. The most effective use of technology to accelerate the English learning process requires the application of a new learning theory in which the student and the teacher interact in new ways, and use technology differently than in the past. This 'brain-based' learning theory, Recursive Hierarchical Recognition (RHR) will be discussed, as well as a case study of the theory in use in the classroom.

Session 3**ABSTRACT****Introduction to Flipped Classroom Technique****AUTHOR**

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Flipped classroom technique has been used by many teachers and professors around the world. In flipped classrooms, students learn the content by watching video clips made by instructors or selected from other resources. Many free online resources including video clips about almost everything are available for students to learn. Students are watching video clips at home to understand the content. In class, lecturers do not use time to lecture students any more. Instead, teaching time of lecturers will be now used to help students do homework, apply the content, discuss and interact with classmates and with instructors in

order to achieve high levels of learning for students. Other active learning technique such as project based learning can be deployed easier because lecturers and students have more time in class.

Though there are many advantages in using flipped classroom technique, this technique has not been widely used in Vietnam. This paper aims to introduce this technique to our colleagues and to discuss about why flipped classroom is needed and to find ways for application of this technique in Vietnam.

ABSTRACT**Blended Learning: A Preliminary Study and First Trial Courses in Engineering Education****AUTHORS**¹Ba-Hai Nguyen, Dung Van Do

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This paper presents preliminary results of blended learning courses called PC-based data acquisition and control (PDAC). This study is one of the first activities carried out at Hochiminh University of Technical Education (UTE) by a HEEAP cohort to evaluate the possibility of the implementation of massive blended courses in engineering education. In the research, we conducted 4 courses with 250 third- and fourth-year students in automotive engineering. Blended learning model [1] here had two main learning environments: Face-to-face in the classroom (FTF) implemented with 70% of total course's learning hours and Web-based online learning (WOL) implemented with 30% of course's learning hours. The total learning hours of this tested course were 45 hours (equivalent to 3 credits). In the class, a flipped classroom [2] is used as a pedagogical model in which the lecturers are presented to students at home via WOL (in video clips and discussion topics in WOL) and assignments

are done in FTF session. Generally, the research results extracted from a survey with 100 students show that training quality is significantly improved in terms of students' outcomes and competency, students' satisfaction, students' understanding of self-assessment for improvement, teamwork, self-learning skills, reduction of FTF lecture time, and communication between teacher and students as well as between students and students. With these results, blended learning can be a suitable model for CDIO approach.

Session 4**ABSTRACT****Enhancing Student Motivation in Foundry Technology using Active Learning and CDIO Practices****AUTHOR**

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The course "Foundry Technology" is a theoretical course and, without the experience of experimentation in casting, students cannot understand what they learn in class and do not have motivation to study. Introducing active learning principles and a CDIO experiment involving the casting process in the laboratory are presented as examples of a "wind of innovation" to change the way students learn in the course "Foundry Technology". One active learning principle included in this course is the "one minute paper" at the beginning semester. It began from a small piece of paper, which I gave to students at the beginning of every semester. Those papers contain only one question "What is your expectation in this course?" The answers of students are certainly high scores, easy to pass, but there are many answers that they expect an interesting course in which they

have chances to apply what they learn in class to do something or they want not only to learn theory but also to practice what they learn. Using this information and the skills gained during the HEEAP workshops, at the beginning of the course I also gave every group of students (4 – 6 students) a real part of machine. Then they develop a technical drawing from this part as the first step. The rest of the project is structured for the students and used CDIO methods. This project is done by students and gets along with contents of the course in class so that students can apply what they have just learned in class to do these tasks. Through this project, theories of foundry technology are not just any more in books, but they instead anchor in the minds of students. One tool used to assess this is a pre/post-test which is given right before and after student implement sand molding process at the sixth or seventh week. The test comprises 4 questions which are answered in 10 minutes. Results from this test before the beginning of implement sand molding process are different from after the unit is taught. The result of the test after sand molding process are better than the before. Therefore, we can recognize that experiment process of sand molding gave students the chance to review and try what they had read and learned. After the experiment, students can understand more about foundry technology. Moreover, the experiment of molding sand process spread the spirit of HEEAP, of CDIO wider. Students learn not only with mind (head), but also with hands and heart. Finally, the most important thing which I got when I integrated the casting project in the course "Foundry technology" is the smile of students - the change in the motivation of student. They are encouraged to apply what they learned, to realize what is in their mind, and to deal with many problems which they never think that they have met. When all problems are solved, they have more confident in study and have developed habits to overcome challenges they will face as a professional engineer.

ABSTRACT**The Effect of Multimedia Video towards Students' Essay Writing****AUTHOR**

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The use of computer in language teaching and learning has been a recent trend in the development of information and communication technology. Thus, this research is to study students' achievement levels in writing essays based on multimedia video. Writing essay is important to students because of its high grading evaluation. In this study, quasi-experimental methods based on quantitative design were used. A group of 30 students from Form Two involved in the survey. They were given a pre and post-test in essay writing. Multimedia video as a treatment was given to them before post-test. The results showed that there were significant differences between pre and post-test in students' essay writing. Therefore, it is proposed to a teacher to use multimedia video as an activity in teaching essay writing. Multimedia video is very important to students because it contains an integration of audio, graphics, animation and text. It is also very interesting to them.

ABSTRACT**An Effective Solution to Promote the Skills of Students in Active Learning
Nguyen Hoang Mai (The University of Danang)****AUTHORS**

Nguyen Hoang Mai

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In recently, the practice skill is a difficult problem for Engineering Universities in Vietnam. The students

learn many good theories from books, documents, internet and teachers, but is limited by the lack of practical knowledge and equipment. This paper presents a simple solution but it has high effect for teaching of courses, which have practice and lab problems in the DUT by student's abilities. The results have good estimation and we can expand them in many universities.

Session 5**ABSTRACT****ePortfolio-based Assessment for Learning****AUTHORS**¹Nguyen Trung Lap, ²Le Thanh Tung, ³Mitsuru Ikeda^{1,2} Hoa Sen University, Vietnam²Japan Advanced Institute of Science and Technology, Japan**E-MAILS:** ¹ap.nguyentrung@hoasen.edu.vn, ²tung.lethanh@hoasen.edu.vn, ³ikeda@jaist.ac.jp

Competency modeling and assessing play an important role in learning. Assessment is not only for measuring but also for encouraging. In order to engage in learning, learners have to know their knowledge and skills, and can observe their learning. Therefore, learners need support in evaluating self-competency, and performance to improve their learning. The literature has shown that ePortfolio can provide a significant approach to competency modeling and measuring (Gadbury-Amyot, et al., 2003; Parkes, Dredger, & Hicks, 2013; Rao, et al., 2012). Indeed, ePortfolios can store all students' achievements, and the processes showing how students reach these achievements (JISC, 2008). In other words, ePortfolio contains and shows not only students' competencies but also the evidences of these competencies. That is why using ePortfolio can improve the accuracy of competency measuring.

However, most ePortfolio approaches mainly pay

attention on storage and representation capacity. Researchers have used ePortfolio capability for competency assessment based on general structure of ePortfolio (JISC, 2008; Ryan & Ryan, 2012) whereas competency requires some special characteristics of ePortfolio (Bartolomé & Steffens, 2011; Voorhees, 2001). The literature has also indicated the need to develop a standardized ePortfolio environment to provide methods for tracking performance during learning and provide aggregate data for education and performance improvement (Rao, et al., 2012).

This research aims to process layer of ePortfolio to improve the ability of ePortfolio in order to support users better by decreasing information processing load from users. We propose an explicit ePortfolio model to promote competency assessment for learning. This model takes into account peer and self-assessment, and bases on process perspectives. It also considers activities and results of these activities, and relies on the assessment strategies that are based on smaller units of analysis such as activities, not course level as most traditional models have used. In our competency-based learning model, learning can be described and measured in ways that are understood by stakeholders. Consequently, this characteristic fosters knowledge sharing, communicating among learners, evaluators, instructors in order to achieve better assessments for learning. In our research, an ePortfolio system has been implemented and experimented at Hoa Sen University. Data has been collected and observed by using ePortfolio system in two courses which are Data Structure and Algorithms, and Software Development Processes and Tools. We argue that the model and the implemented ePortfolio system foster competency assessment during learning and affect learning positively. In conclusion, learning model in this research represents the way in which students approach their goals, provides environment for feedback, reflection, and discussion that help students become more active, and motivated. In

addition, it also supports stakeholders to create assessments that are used in making decision about learning strategies to improve learning.

ABSTRACT**Fast and Effective Assessment Strategy for Optical Communications Course****AUTHOR**

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In this presentation, strategies to significantly reduce work-load while ensure a swift and accurate course assessment system are presented. The modifications were part of the HEEAP 2012 project named "Assessment Redesign and Improvement Strategies at Ho Chi Minh City University of Technology". Using various methods such as randomly grading tests, online computer-assisted quizzes and multiple-choice examinations, it was possible to achieve more than 86% reduction in assessment time. Moreover, the number of tests was 71% higher and covered several levels of Bloom's taxonomy. After the HEEAP 2012 project, the strategies have been further adjusted to improve sustainability and accuracy. Several advantages and disadvantages, as well as comments and suggestions on the application of the proposed assessment strategies to other courses are also presented.

ABSTRACT**How to Develop a High Performance Team****AUTHOR**

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High performance teams (HPT's) are essential in today's highly competitive business world. These teams help organizations meet their goals and achieve desired results. Successful organizations work hard on developing and maintaining productive and professional teams that will achieve their objectives and ensure the continued success for the organization. Developing a HPT requires success in a number of key areas: strong leadership, finding team members with right skills, building mutual responsibility and accountability, communication skills and a creating a culture of performance. To achieve success with HPT's, in Vietnam, these key areas also need to be adapted to take local factors into consideration. Strong leadership capabilities are required to build the team and maintain a high level of achievement. Leadership is required to promote a common vision and purpose that inspires their performance. Leaders should have integrity and develop a platform where team members can operate in an environment of trust, collaboration, and openness. It is often said that people are an organizations most important asset and this is very true when it comes to HPT's. Identifying the skills required to obtain results is the first step.

Finding people with required skills and attitude comes next. Effective team members develop a sense of mutual responsibility and accountability and don't rely on individual performance. Good communication is also essential to promote an understanding of why a group of people need to work as a team. Team members need to understand the vision and goals and have sufficient knowledge to accomplish their tasks. Team leaders need to be approachable, build rapport and delegate. Feedback is also very important so that team members know how they are performing. Finally, the team should have a strong culture of performance and excellence. Team members need to have the right characteristics and be given the opportunity to develop and grow. Good performance should be recognized and rewarded informally on a regular basis. The appropriate implementation of the key areas above will help with the development

of HPT's. In addition, the development of HPT's in Vietnam also needs to take into consideration local factors. This will lead to a more competitive and profitable organization.

Wednesday, March 26 — Track 4

Session 1

ABSTRACT

The Bi-National Master's program Computational Engineering at the Vietnamese-German University

AUTHOR

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The Vietnamese-German University was founded in 2008 with the target to establish a university in Vietnam that conducts teaching and research in a way as close as possible to the German universities. To that end initially German programs with relevance for Vietnam are exported and taught in English at the VGU. One of the first programs was the Master's program Computational Engineering, which started in October 2009. It is offered by the Ruhr-University Bochum, where the program is running very successful since 2000. The English program is research oriented and teaches the basics and specializations of Computational Engineering with applications in the fields of mechanical and civil engineering. Practical usage of the theory in exercises and through hands-on training in state-of-the-art laboratories is a central ingredient of the program. While teaching was done initially nearly entirely by German professors, lectures are now successively taken over by VGU's own staff, so that in a few years the high quality program will be completely run by VGU.

In the contribution the experience from nearly five

years operating this bi-national Master's program is presented. After a detailed introduction of the contents and the conduct of the program, achievements like the current employment of the graduates and the student exchange with the Ruhr-University Bochum are shown. Also the previous and current problems are highlighted, e.g. the teaching in blocks and the language proficiency of the students. At the end an outlook is given, with the challenges and opportunities that the program is facing in the near future.

ABSTRACT

HEEAP Resource for Building and Developing Collaborations (Research and Education) – HEEAP Cloud Community David Benson (Arizona State University)

AUTHOR

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In the Fall of 2014, the HEEAP program at Arizona State University launched a pilot project, the HEEAP Cloud Community (HCC), as a vehicle to “continue the conversation” on education and best-practices started during the HEEAP workshops and to build lasting collaborations between American faculty and administrators and their colleagues in Vietnam. This online “community of practice” is an interactive web-based resource that uses aspects of social-networking, cloud computing and electronic file sharing to create a system that facilitates knowledge creation in addition to dissemination. With this system, the HEEAP program and staff have developed another way to maintain connection and support for participant efforts once the HEEAP faculty have returned to their home communities, as well as to provide a platform to foster collaboration and connection between the HEEAP alumni.

Session 2

ABSTRACT

Using Key Performance Indicators in Faculty Assessment at the University of Technical Education Ho Chi Minh City

AUTHORS

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The internal quality assurance (IOA) system of a university plays an important role in assessing, maintaining and improving the operation of the university in order to achieve the highest efficiency in the creation of quality products. However, the IOA system itself needs to be renewed and updated over the time. This article presents the current reality of the situation of IOA system at the University of Technical Education Ho Chi Minh City (UTE) and some experiences in the system's innovation by applying the Key Performance Indicators (KPIs) to assess the performance of the employees.

ABSTRACT

Faculty Evaluation, Development and Workload Modeling Scott Danielson and Kathy Wigal (Arizona State University)

Session 3

ABSTRACT

Forming Industry Partnerships for Capstone Projects in Danang University of Science and Technology

AUTHORS

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Capstone projects provide students with professionally focused learning experience, allow them to apply their learnt theory into practice, as well as supply them a great opportunity for developing leadership skills while integrating industry partners. In addition, benefits of industry integration in capstones are documented in prior literature [1]. In Danang University of Science and Technology (DUT), however, there are not many links that have been made between manufacturers and scientists, between industry and universities as well. This leads to the majority of graduated students being rejected by recruiters due to their shortage of practical knowledge and needed skills.

This presentation aims at proposing solutions to enhance the scientific research activities between departments, universities and industries, specifically in case of promoting partnership for capstone projects. The presentation is organized as follow: Section I analyses the Skilled Labour shortfalls in Vietnam. Section II discusses the causes of the loose joint university-industry relationship in Vietnam from perspectives of the foreign and local enterprises. The proposed solutions in promoting the university-industry partnership and faculty's cooperation in capstone projects are given in Section III. Finally, Section IV summarizes the main results of the analysis.

ABSTRACT

Capstone Project Integrating Industry Partners Applied for IUH's Students

AUTHOR

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In the Electronics Technology Faculty (EFT) of

Industrial University of Ho Chi Minh City (IUH) students who are studying industry automation are encouraged in implementing capstone projects integrating industry partners. This paper describes a capstone project that provides students opportunity for developing real applications to gain professional skills and technical expertise. Based on a business system (AUTOMATE 200 (SMC)), with the components including pneumatics, electro-pneumatics, sensors, motors and PLC, supported by Intel Company, an ETF's industry partner, and IUH's fund, a capstone project is designed for the students in last year. The project is accomplished through the integration of new methodology and approach of faculties who are trained from the Higher Engineering Education Alliance Program (HEEAP). The students are taught strategies of design, construction and evaluation in an active learning environment to produce new SMC systems whose controllers are more effective and cheaper than the Intel Company's. For those students who still have not had professional work experience, the project will be needed to provide an initiation and foundation for their professional engineering careers that satisfy the industry criteria. To form University-Industry partnerships for the project, some recommendations are proposed.

Session 4

ABSTRACT

Entrepreneurship and Technology Innovation: Innovating Education for the 21st Century

AUTHOR

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Universities and Corporations face wrenching transformation in order to meet the global training and education challenges of the 21st century. Numerous industries have already gone through this kind of

technology driven change (newspapers, retail, music, travel). Education and training is next. Those who embrace change and establish themselves as innovators will thrive, as the market need for more effectively trained workers is large and growing. Those who do not change and innovate quickly, will die or worse, become increasingly irrelevant zombies (think AOL, Newsweek, Blockbuster, Sears). This workshop seeks to: identify the market and technological forces driving the change; understand the threats and opportunities for Universities and Corporations; examine a range of creative, entrepreneurial responses.

ABSTRACT

Technology Entrepreneurship and Innovation

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In 2013, a bold new theory built upon the "disruptive innovation" model was proposed to directly address the economic stagnation that now characterizes highly developed and technologically advanced nations such as Japan and the United States. These insights, when applied to a rapidly developing economy such as Vietnam, can help technology entrepreneurs, corporate executives, government leaders, and educators to better position our universities, researchers, and students for accurately identifying potential high growth opportunities for technology innovations that will achieve market viability and long-term financial success.

Session 5

ABSTRACT

HEEAP Training Under One Choice in the Inevitable Integration Period

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Vietnam is in the process of international integration, especially since Vietnam joined the World Trade Organization (WTO) and the implementation of the General Agreement on Trade in Services (GATS), Vietnam's tertiary education has gradually developed markedly. In order to meet the requirements of practical approach towards international society is expecting. The Technical University in Vietnam Block gradual improvement programs and teaching methods in technical training HEEAP is a inevitable trend in the development of technical education.

ABSTRACT

The Application of New Teaching Methods to Engineering Education at Vietnam: Actions and Results

AUTHOR

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Since summer 2010, the first cohort of HEEAP was sent to Arizona State University for learning about new method for engineering instruction. This is a report about how the 2010 cohort of Faculty of Mechanical Engineering (FME) applied new teaching method to engineering education in mechanical field during the time from 2011 to 2013 at FME of Ho Chi Minh City University of Technology. We describe the actual actions and the results obtained in four years of the application. We also analyze the disadvantages and discuss about how to overcomes them and also tell about the proposals to the HEEAP program and also to the education managers for better results in the future.

ABSTRACT**Project-Based Learning Applied in the Course of Mechatronics Design Project: Pros and Cons in Implementation and Evaluation
Vo Minh Tri (Can Tho University)****AUTHOR**

Vo Minh Tri

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This paper presents the experiences of conducting course of mechatronics design project using project-based learning approach for last two semesters since the author had been trained in ASU. The advantages as well as the feasibility of this approach have been proved by not only student success and but teacher expectations. Besides the benefit, the paper also presents some drawbacks may occur during and after using this method for a long period.

First of all, since each project was well-defined by teacher, students in group know clearly what they are going to do, meanwhile teacher directs student going through certain levels in the cognitive domain by designing the indicators to measure their performance. Secondly, even though the teacher has the project framework from starting to the end, it is not showed and students have to seat together to discuss how to acquire knowledge, tools to finish the given project. Students therefore find that working in group is really help now then, and teacher leaves some degree of freedom for student voice. Thirdly, asking questions and finding the answer by themselves is always encouraged so that students were aware of life-long learning; i.e. managing their learning in the information booming time. English usage during acquiring and absorbing information showed it helpful because students have to understand at least principle of elements and/or components they are going to use in the project. The other benefit of this approach during

implementation phase is that the teacher prepares for students enough materials to guarantee that the project would be completed and assign for them the mission, but students feel free to find different ways to get the assigned target. From that point students showed up more and more creative. Many students founds useful tools for their work that sometimes the teacher got surprised. For example, with the CNC machine design project, instead of using standard software package, student found that when going to manufacture a work piece, the machine picks up the G-code randomly, they learn extensively and solve the problem by using other software which can allow to brush up the code order before sending to the machine controller. Last but not least for the advantages of this method is that at a laboratory scale the project is sometimes considered as an initial design, but when the students feel more confident with the project, they can extend the project to as a research with industry scale and can ask financial support from university. In last two semesters two groups won this kind of support and they had a chance to develop complete product.

For the disadvantages, first of all there should be some teaching assistants at the project laboratory to help students when they come to work without the present of the teacher, for example the hour of self-study. Secondly, the facilities to support students to complete their project sometimes go to be limited, especially when students generate a good idea but not enough means for them to try. Thirdly, when applying Bloom's Taxonomy for measuring the individual performance it took a lot of time to qualify and mark. The last point of drawback is that if those assigned projects used for many classes, students go to passive, creative encouragement gets a decay. Thinking a new solution for that, the blended instructional method have been applied recently in which some projects start from problem based in order to update the number of projects in the laboratory.



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Ho Chi Minh City, Vietnam(April 18, 2011) – The United States Agency for International Development (USAID), Arizona State University (ASU) and Intel Corp. announced today a \$2-million expansion of a program to improve higher education and technological development in Vietnam. The program, called Higher Engineering Education Alliance Program or HEEAP, was developed jointly with the Government of Vietnam.

Through HEEAP, USAID, ASU's Ira A. Fulton Schools of Engineering, Intel, Siemens and other industry partners have teamed up with eight top technical universities and colleges in Vietnam on a collaborative initiative to improve the quality of Vietnam's higher education curriculum and support the country's growing high-tech industry.

The expansion of the program will enable alliance partners to add a vocational track using the innovative instructional approaches and pedagogy implemented in the inaugural program. The goal of the expanded initiative is to prepare students for success in the global economy through modernization of vocational education programs, resources and instructional technology.

"The world faces a number of very serious challenges ranging from low standards of living and poor health care to armed conflict and the question of whether our planet will be able to sustain life in the future," said ASU President Michael M. Crow. "To solve these problems we need to modernize every economy and greatly expand access to and the quality of education.

"This collaboration is an example of ASU's commitment to strengthen the economic, social and cultural vitality of our global community."

Crow will host an executive briefing during the April 18th meeting in Ho Chi Minh City and explain ASU's the New American University design and the ability of higher education to drive economic development and high wage job creation. His presentation will be followed by an executive roundtable bringing together technology and industry leaders in Vietnam to discuss HEEAP's role as a catalyst for both higher education reform and economic

"Competitive economies require a skilled workforce ready to perform efficiently in a global context. HEEAP is not only advancing engineering education in Vietnam today, it is fostering a long-term education-industry relationship," said USAID Director Francis Donovan.

According to Rick Howarth, General Manager of Intel Products Vietnam - "HEEAP program has seen rapid uptake and promising early outcomes. Further investment and expansion enables Intel and Vietnam to promote a broad, highly engaged workforce that is ready to support a rapidly growing high tech sector as well as to accelerate the role of ICT in the economic growth."

HEEAP works closely with Vietnam's Ministry of Education and Training, the Ministry of Labor and Social Affairs and leadership at partner universities and technical colleges to implement programs and broad infrastructure that supports faculty training, curricula development and hands-on student learning experiences. Students gain the technical expertise, language proficiency, and the soft skills and competencies needed to succeed.

Dr. Vu Dinh Thanh, rector, Ho Chi Minh City University of Technology, said, "HEEAP works closely with our Ministry of Education and Training and university leadership. It is an effective collaboration strategy that is yielding significant progress toward our goals for our educational system."

The funding expansion, which runs through 2014, also allows the partners to further efforts to recruit women to engineering and provide student scholarships. Women currently account for four percent of students enrolled in applied technology programs at Vietnam's vocational schools.

HEEAP was initiated in 2010 with funding from USAID, Intel and ASU. For more information, visit www.heeap.org.



News Release

Intel to award 120 scholarships for technical vocational female students

(*Ho Chi Minh City, September 5, 2012*). Intel Products Việt Nam launched the “**Technical vocational female student scholarship program - HEEAP**” for female students in several technical vocational (12+3) programs. The scholarship program has a total value of up to VND 2.4 billion and will run for three years from 2012 to 2014. Up to 120 scholarships each worth VND 6.5 million will be awarded each year.

The “**Technical vocational female student scholarship program – HEEAP**” for 2012 has a total funding of VND 800 million and will award up to 120 scholarships. The program will open for application from September 5 to September 30, 2012. The scholarship requirements include:

- Being a female Vietnamese student from year one to last year in the vocational diploma (12+3) studying Electrical, Electronics, Automation, Mechanical, and Mechatronics at the following colleges: *Ho Chi Minh University of Industry, Ho Chi Minh Vocational College of Technology, Cao Thang Technical College, Thu Duc College of Technology, Dong An Polytechnique, Ho Chi Minh Vocational College, Ly Tu Trong Technical College, Nguyen Tat Thanh Vocational College, Phu Lam Technical Economic College, Industry and Trade Vocational College HCMC, Vietnam Singapore Vocational College, Viet Duc Centre – Ho Chi Minh University of Technical Education, Ton Duc Thang University, Dong Nai Vocational College, Can Tho Vocational College.*
- Good academic results
- Active in extra curriculum activities
- Priority will be given to students having financial difficulties

The program aims at providing financial assistance as well as to encourage more females to study in technical vocational fields. This scholarship program is part of the “Higher Engineering Education Alliance Program – HEEAP” which is funded by Intel and USAID, Arizona State University and other industrial partners: Siemens, Honeywell, Danaher and Cadence for the initial phase from 2010-2014.

Scholarship information and application form can be downloaded at the school website or at this link: <http://www.intel.com/cd/corporate/education/apac/vie/Scholar/415968.htm> or email to: hocbong_kythuat_intel@intel.com

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NEWS RELEASE

March 15, 2013

International alliance presenting first conference on advancing engineering education

Partnership of industry, government and universities working to produce highly trained workforce in Southeast Asia

The Higher Engineering Education Alliance Program (HEEAP) is organizing its first conference to provide leaders in government, industry and academia an opportunity to share ideas on accelerating advances in engineering education throughout Southeast Asia.

The Vietnam Engineering Education Conference – “Transforming Boundaries through Innovation and Partnerships” – will be March 19 and 20 at Can Tho University in Can Tho, Vietnam.

Conference presentations will focus on ways to build sustainable higher education systems, methods to assess performance of engineering education programs and innovation instructional methods, including use of Learning Management Systems (LMS).

The event will include “Technology Avenue,” featuring exhibits on advanced engineering simulations software, engineering design tools, learning management systems and student robotics labs.

The Consulate General of the United States in Vietnam, An T. Le, will be among dignitaries participating in the conference, along with William Colglazier, the Science and Technology Advisor to the United States Secretary of State.

HEEAP was established in 2010 through a partnership of the United States Agency for International Development (USAID), Intel Corporation and Arizona State University’s Ira A. Fulton Schools of Engineering.

The conference “gives us a platform for deepening the collaborative discussions among HEEAP partners and the faculty of Vietnam’s universities and colleges about the emerging best practices in engineering education,” said Jeff Goss, who directs the office of Global Outreach and Extended Education in ASU’s engineering schools.

This partnership of industry, government and academia works with top technical universities and vocational colleges in Vietnam to transform engineering education from passive, theory-based instruction to active, project-based instruction.

The goal is the development and graduation of "work ready" students to provide a more highly trained workforce in Vietnam to meet the growing needs of global high-tech industries. Ultimately, HEEAP intends to strengthen education and research collaborations and business partnerships between Vietnam and other countries, including the United States.

The conference is supported by a grant from the Danaher Corporation, which is sponsoring the event through its subsidiary companies, Keithley, Tektronics and Fluke.

Danaher is a HEEAP industry partner, along with the Siemens and Cadence companies. They have provided computer software, hardware and co-investments to support faculty scholarships.

HEEAP is planning to make the conference an annual event.

For more information on the conference, see <http://heep.org/e-flyer/Can-Tho-Conference3.html>

For more information on HEEAP, visit visit: <http://heep.org>

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News Release

Intel awarded more than VND 700 million in the technical vocational female student scholarship

(Ho Chi Minh City, January 13, 2013). Four months since the launching of the “**Technical vocational female student scholarship program – HEEAP**”, Today Intel Products Việt Nam awarded the first 109 scholarships for female students in 13 technical vocational (12+3) schools for the 2012 intake. The scholarship program has a total value up to VND 2.4 billion and will run for three years from 2012 to 2014.

The “**Technical vocational female student scholarship program – HEEAP**” for 2012 intake has a total funding of VND 700 million awarded to 109 female students from 13 colleges and universities. The participating schools in 2012 include:

- *Ho Chi Minh University of Industry, Ho Chi Minh Vocational College of Technology, Cao Thang Technical College, Thu Duc College of Technology, Dong An Polytechnique, Ho Chi Minh Vocational College, Ly Tu Trong Technical College, Nguyen Tat Thanh University, Phu Lam Technical and Economic College, Industry and Trade Vocational College HCMC, Vietnam Singapore Vocational College, Ho Chi Minh University of Technical Education, Can Tho Vocational College.*

“We believe that investing and supporting girls and women improving their own lives through education is the right thing to do. It’s not only to support their career development path but also to empower their key role at family and in society in the 21st century”, said Ms. Sherry Boger, General Manager of Intel Products Vietnam.

The program aims at providing financial assistance as well as to encourage more females to study in technical vocational fields. This scholarship program is part of the “Higher Engineering Education Alliance Program – HEEAP” which is funded by Intel and USAID, Arizona State University and other industrial partners: Siemens, Honeywell, Danaher and Cadence for the initial phase from 2010-2014.

The 2013 program will be open for application/nomination from around September 2013. Scholarship information, 2012 scholarship recipient list and application form can be seen at

the participating schools' website or at this link:
<http://www.intel.com/cd/corporate/education/apac/vie/Scholar/415968.htm>

About Intel

Intel (NASDAQ: INTC) is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for the world's computing devices. Additional information about Intel is available at www.intel.com/pressroom and blogs.intel.com.

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HEEAP vocational scholarship program expands support for female students

Women currently account for four percent of students enrolled in applied technology programs at Vietnam's vocational schools. An initiative through the Higher Engineering Education Alliance Program (HEEAP) aims to change that.

This week Intel Products Vietnam awarded the first HEEAP technical vocational scholarship awards for female students. Over 700 million VND was awarded to 109 students from 13 colleges and universities in Vietnam.

The scholarship program, which will run for three years, provides financial assistance in an effort to encourage more females to pursue technical fields in Vietnam. Up to 2.4 billion VND will be awarded through 2014.

HEEAP was initiated in 2010 with \$5 million from the United States Agency for International Development (USAID), Intel and Arizona State University's Ira A. Fulton Schools of Engineering. Through a collaborative initiative with top technical universities and colleges in Vietnam, the goal is to improve the quality of Vietnam's higher education curriculum and support the country's growing high-tech industry.

A \$2 million expansion of the program in 2011 enabled alliance partners to include modernization of vocational educational programs using the innovative approaches implemented in the inaugural program. The expansion also furthers efforts to recruit women to engineering and provides student scholarships.

Working closely with Vietnam's Ministry of Education and Training, the Ministry of Labor and Social Affairs and leadership at partner universities and technical colleges, HEEAP partners are implementing programs and broad infrastructure that supports faculty training, curricula development and hands-on student learning experiences. Students gain the technical expertise, language proficiency, and the soft skills and competencies needed to succeed in a global economy.

Intel recently received the U.S. Secretary of State's 2012 Award for Corporate Excellence for its pioneering work with HEEAP.

Since its start, HEEAP alliance partners have grown to include university partner Portland State University's Maseeh College of Engineering and Computer Science and industry partners Siemens, Honeywell, Danaher and Cadence.

The program has trained more than 150 faculty members from Vietnam's universities and colleges in advanced methods for teaching at ASU and in Vietnam.

NEWS RELEASE
January 31, 2012

ASU, Intel to expand support of enhancing higher education in Vietnam

Alliance will foster research collaborations with U.S., economic development and student exchange programs

TEMPE, Ariz. – Arizona State University and Intel Corp. recently renewed a joint commitment to help improve higher education and technological development in Vietnam.

Working with the Vietnamese Ministry of Education and Training, the partners have reached an agreement to expand the Higher Engineering Education Alliance Program (HEEAP).

Established in 2010 with an initial \$5 million grant from the United States Agency of International Development (USAID) and Intel, the HEEAP project is administered through the Office of Global Outreach and Extended Education in ASU's Ira A. Fulton Schools of Engineering.

HEEAP's mission is to modernize teaching and learning methods in Vietnam's schools of higher education as a way to support economic development in the country.

The program is providing a model for advancing engineering education to prepare engineers to support Vietnam's growing high-tech industry.

At a recent summit meeting, leaders from the Vietnamese government and universities joined ASU and U.S. industry partners to discuss the model and the best strategies to support the transformation of Vietnam's national education system. A memorandum of understanding signed at the summit provides a framework to establish final agreements.

"This is an evolving relationship between the U.S. and Vietnam to enhance teaching, learning and discovery and support strong economic development," said ASU President Michael Crow.

The expanded investment commitment from the Ministry of Education and Training and Intel "will allow the HEEAP alliance to rapidly scale up the modernization of English-instructed undergraduate engineering programs modeling ABET- accredited programs in the United States," said Jeffrey Goss, an assistant dean in the Ira A. Fulton Schools of Engineering who directs the Global Outreach and Extended Education office.

“This will also further open the door for Vietnamese and American engineering programs to work together to develop additional global engineering research, student exchange programs and other innovative partnerships,” Goss said.

The partnerships with leading technical universities and vocational colleges in Vietnam has so far enabled more than 100 faculty members from Vietnam engineering colleges to participate in instruction training programs at ASU and in Vietnam.

The new agreement, supported by a funding investment, will enable the program to increase the number of faculty members receiving training in the HEEAP education model.

“This collaboration has been instrumental in advancing our goals,” said Nguyen Vinh Hien, vice minister of Vietnam’s Ministry of Education and Training, “but we still have a need for more fundamental and comprehensive renovation of our higher education system.”

The new agreement will also support development of a distance-education network that will enable students at multiple campuses in Vietnam to take the same courses simultaneously.

In addition, it will expand a program to train Vietnamese education leaders in modern administrative, revenue-enhancement and policy development models necessary to build regionally and globally competitive institutions.

Since its inception, the HEEAP alliance has been joined by Portland State University’s Maseeh College of Engineering and Computer Science, and industry partners Siemens, Danaher and Cadence.

For more information, visit <http://heep.org/>

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Ira A. Fulton Schools of Engineering

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HO CHI MINH CITY, Vietnam, (Nov. 2, 2011) – Cadence Design Systems, Inc. (NASDAQ: CDNS), a leader in global electronic design innovation, has joined the Higher Engineering Education Alliance Program (HEEAP) with an in-kind donation of electronic design automation (EDA) software and services valued at over USD \$40 million. The donation enables students in Vietnam to gain hands-on experience with the software and services that engineers around the world rely on, including the Cadence® proprietary software, hardware, design and verification IP, memory models, methodologies, and design services that are used to create the integrated circuits and silicon chips found inside most electronic devices.

HEEAP is a collaborative program of the United States Agency of International Development (USAID), Arizona State University's Ira A. Fulton Schools of Engineering (ASU), Portland State University's Maseeh College of Engineering and Computer Science (PSU), Intel Corp., Siemens, Danaher Corporation and other industry partners with the top technical universities in Vietnam. The goal is to advance electrical and mechanical engineering curricula and support the country's growing high-tech industry.

"Cadence believes that innovation begins in education and is committed to preparing students with the tools and training they need to thrive in the competitive semiconductor and electronics marketplace," said Charlie Huang, senior vice president, Cadence Worldwide Field Operations. "Our customers are expanding into emerging countries such as Vietnam and we are pleased to be a part of developing their engineering work force."

HEEAP works closely with Vietnam's Ministry of Education and Training, the Ministry of Labor and Social Affairs and university leadership in Vietnam to put in place the programs and infrastructure that support faculty training, curricula development and hands-on student learning experiences. Students will have the opportunity to gain the technical expertise as well as the competencies needed to succeed in a global economy.

Under the auspices of HEEAP, Cadence will provide future engineers in Vietnam with access to cutting-edge IC design software and will help instructors develop a curriculum that applies design theories to real-world engineering challenges. For nearly 20 years, Cadence has worked with academic institutions and government organizations around the globe to enable them to build and implement design engineering education programs and support developing the global electronics marketplace.

"Cadence Design Systems brings critical expertise to HEEAP, helping us advance the applied lab experiences for engineering students to better prepare them to succeed in the burgeoning high-tech electronics industry in Vietnam," said Jeffrey Goss, director of HEEAP and assistant dean, Global Outreach and Extended Education, for ASU's Ira A. Fulton Schools of Engineering.

"This alliance, which is focused on improving the quality of Vietnam's future engineers and technicians, continues to grow and is an excellent example of industry and academic linkages," said Francis Donovan, USAID/Vietnam Mission Director.

The HEEAP initiative in Vietnam was initiated in 2010 with initial grants of USD \$5 million funded from USAID, Intel and ASU. For more information, visit www.heeap.org.

About Cadence

Cadence enables global electronic design innovation and plays an essential role in the creation of today's integrated circuits and electronics. Customers use Cadence software, hardware, IP, and services to design and verify advanced semiconductors, consumer electronics, networking and telecommunications equipment, and computer systems. The company is headquartered in San Jose, Calif., with sales offices, design centers, and research facilities around the world to serve the global electronics industry. More information about the company, its products, and services is available at www.cadence.com.

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Danaher Corporation's subsidiaries Tektronix, Fluke and Keithley sign MOUs with five Vietnam Universities to help advance engineering education in Vietnam with \$300,000 USD donation of equipment and faculty scholarships as part of the Higher Engineering Education Alliance Program

Ho Chi Minh City, March 1– Tektronix, a Beaverton, Oregon based U.S. company and part of the Danaher Corporation, signed MOUs this week in both Ho Chi Minh City and Hanoi with five distinguished Vietnamese Universities as part of a collaborative program under the HEEAP Alliance (Higher Engineering Education Alliance Program). The five universities include Ho Chi Minh City University of Technology, Hanoi University of Science and Technology, Ho Chi Minh City University of Technical Education, Cantho University, and Danang University of Technology. Danaher and its subsidiaries, Tektronix, Fluke and Keithley Corporations, have committed \$300,000 USD donations of test and measurement equipment and cash scholarships for faculty training. The goal is to help provide increased opportunities for engineering students to obtain practical, hands-on experience using electrical and electronic testing and measurement in manufacturing and research and development applications. Tektronix, Fluke and Keithley are global leaders in the test and measurement industry and have a long history of working with universities and vocational schools to help develop the next generation of highly skilled engineers.

Through HEEAP, the United States Agency for International Development (USAID), Arizona State University's Ira A. Fulton Schools of Engineering (ASU), Portland State University's Maseeh College of Engineering and Computer Science (PSU), Intel Corp., Siemens, Cadence and other industry partners are collaborating with top technical universities in Vietnam to advance electrical and mechanical engineering curricula and support the country's growing high-tech industry.

HEEAP works closely with Vietnam's Ministry of Education and Training, the Ministry of Labor – Invalids and Social Affairs and leadership at partner universities and technical colleges to implement programs and broad infrastructure that supports faculty training, curricula development and hands-on student learning experiences. Students gain the technical expertise, language proficiency, and the soft skills and competencies needed to succeed.

Tektronix, Fluke and Keithley donations to the program will include a range of industry leading oscilloscopes, digital multimeters, power supplies, generators and other instrumentation to be used by students at the HEEAP partner

universities. Scholarships will provide funding for faculty from the partner universities to participate in HEEAP training programs to develop and implement instructional improvement projects.

“Support from partners like Danaher and its subsidiaries, Tektronix, Fluke and Keithley, is a critical piece of the HEEAP initiative, giving students in Vietnam access to state-of-the-art tools that provide the real-world knowledge and experience that will help them be successful in a highly competitive marketplace,” says Jeffrey S. Goss, director, Vietnam Higher Engineering Education Alliance Program and assistant dean, Global Outreach and Extended Education for ASU's Ira A. Fulton Schools of Engineering.

“We are very pleased to sign MOUs with Vietnam's leading universities to support their engineering programs “says Amir Aghdaei, Danaher Group Executive and President, Tektronix Corporation, “Today's engineers need to deal with ever more complex embedded designs. It's important to keep the curriculum current with rapidly evolving technology. Our intent is to help students master the basics and move to advanced topics and independent research by using a combination of basic to cutting-edge test equipment. Our faculty scholarships will help provide the training that enables tighter integration of the lab-oriented project work with engineering curriculum. This is our commitment to Vietnam as we seek to build our presence in this important market and we look forward to a very successful partnership with HEEAP.”

The HEEAP initiative in Vietnam was initiated in 2010 with funding from USAID, Intel and ASU. For more information, visit www.heeap.org.



About Danaher

Danaher is a U.S.A. based diversified technology leader that designs, manufactures and markets innovative products and services to professional, medical, industrial, and commercial customers. Our premier brands are among the most highly recognized in each of the markets we serve. Based on the foundation of the Danaher Business System, our 48,000 associates serve customers in more than 125 countries and generated \$13.2 billion of revenue in 2010. For more information, please visit our website at www.danaher.com.



About Tektronix

For more than 60 years, engineers have turned to Tektronix for test, measurement and monitoring solutions to solve design challenges, improve productivity and dramatically reduce time to market. Tektronix is a leading supplier of test instrumentation for engineers focused on electronic design, manufacturing, and advanced technology development. Headquartered in Beaverton, Oregon, Tektronix serves customers worldwide and offers award-winning service and support. Stay on the leading edge at www.tektronix.com.



About Fluke

Founded in 1948, Fluke Corporation is the world leader in compact, professional electronic test tools. Fluke tools deliver the testing and troubleshooting capabilities that are critical to keep commerce and industry running smoothly. Fluke customers are technicians, engineers, electricians, metrologists and building diagnostic professionals who install, troubleshoot and manage industrial, electrical and electronic equipment calibration processes for quality control as well as conducting building restoration and remediation service. In the past five years, Fluke tools have won more than 50 industry awards including **Test and Measurement World Best in Test, Control Engineering's Engineer's Choice** and **Plant Engineering Product of the Year**. Fluke is a registered trademark of Fluke Corporation in the U.S. and/or other countries. Please visit our website at www.fluke.com.



About Keithley Instruments

With more than 60 years of measurement expertise, Keithley Instruments has become a world leader in advanced electrical test instruments and systems. Our customers are scientists and engineers in the worldwide electronics

industry involved with advanced materials research, semiconductor device development and fabrication, and the production of end products such as portable wireless devices. The value we provide them is a combination of products for their critical measurement needs and a rich understanding of their applications to improve the quality of their products and reduce their cost of test. In 2010, Keithley Instruments joined Tektronix as part of its test and measurement portfolio. Our website is www.keithley.com.

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HEEAP PARTNERS ORGANIZE CONFERENCE ON VIETNAM EDUCATION TRANSFORMATION INITIATIVES

Ho Chi Minh City – The second annual Vietnam Engineering Education Conference, hosted by the partners of the Higher Engineering Education Alliance Program (HEEAP) and Arizona State University, will be March 25 and 26, 2014, at the Rex Hotel in Ho Chi Minh City, Vietnam.

With the theme “Transformative Change: Educating Engineers to Innovate the Future of Vietnam,” the event brings together government, industry and education leaders from around the world to explore ideas and solutions to challenges in engineering and technical education programs in Vietnam.

Conference presentations, discussions, technical sessions and seminars will focus on enhancing public-private partnerships that bring industry, government and academia together to improve and expand innovation in engineering and technology education and research.

Discussions will also focus on development of capstone design courses, establishing undergraduate teaching assistant programs and ways to inspire and engage the next generation of engineers.

English is the official language of all conference sessions and presentations unless otherwise noted on the program.

Keynote presentations will highlight innovative methods in education involving techniques such as hybrid/flipped classrooms and MOOCs (Massive Open Online Courses), as well as industry/academic panel discussions on ways to inspire the next generation of engineers and on building public-private partnerships in both education and scientific research.

Another keynote presentation will focus on development of a national strategy for technical innovation in Vietnam.

Conference technical sessions will address topics ranging from the development of bi-national research and education collaboration to classroom activities that promote and reinforce student engagement.

The conference will also include technology exhibits from HEEAP's technology partners.

Technical sessions will focus on issues and solutions directly impacting higher education in Vietnam. Presenters will share solutions and discuss challenges on topics ranging from capstone design courses to establishing undergraduate teaching assistant programs (UGTAs).

Several sessions will highlight collaboration models and opportunities to further develop faculty research and undergraduate research opportunities in Vietnam.

The technical sessions promise to be enlightening and engaging, with presenters from the most of the HEEAP partner institutions

sharing results of their efforts, as well as presentations from industry and U.S. institutions of higher education.

“The Vietnam Engineering Education Conference provides an opportunity to develop connections, share best practices and strengthen the partnerships that will lead to a lasting transformation of education in both Vietnam and in the partner countries,” said Bui Van Ga, Deputy Minister of the Vietnam’s Ministry of Education and Training.

Bui Van Ga will be one of the featured presenters at the conference, along with William Colglazier, the science and technology advisor to the United States Secretary of State; Mylan Nguyen, president of General Electric Vietnam; Le Joai Quoc, president of the Saigon Hi-Tech Park; Sherry Boger, general manager of Intel Products Vietnam; Rena Bitter, the U.S. General Consulate in Ho Chi Minh City; and Vu Dinh Thanh, the rector of the Ho Chi Minh City University of Technology, which is organizing the conference.

HEEAP’s mission is to modernize teaching and learning methods in Vietnam’s schools of higher education as a way to support economic development in the country.

HEEAP is providing a model for advancing engineering education to prepare engineers to support Vietnam’s growing high-tech industry. Its partnerships with leading technical universities and vocational colleges in Vietnam have so far enabled almost 200 faculty members from Vietnam engineering colleges to participate in instruction training programs at ASU and in Vietnam.

The HEEAP partners are also developing a distance-education network to enable students at multiple campuses in Vietnam to

take the same courses simultaneously. There is also a program to train Vietnamese education leaders in modern administrative, revenue-enhancement and policy development models necessary to build regionally and globally competitive institutions.

For more information, visit the HEEAP website at <http://heep.org/> and the conference website at <http://heep.org/conference>

About HEEAP

Higher Engineering Education Alliance Program (HEEAP) was founded in 2010 by United States Agency for International Development (USAID) and the Intel Corporation in partnership with Arizona State University's Ira A. Fulton Schools of Engineering (ASU). HEEAP is administered by the office of Global Office of Extended Education (GOEE) in the Fulton Schools of Engineering. Sponsors now include the Vietnam Ministry of Education and Training, Ho Chi Minh's Hi-Tech Park, Siemens, Danaher, Cadence, National Instruments and Pearson, which are aiming to produce "ready-to-work" students and providing high-quality human resources and local training for high-tech industries in Vietnam.

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NEWS MEDIA CONTACTS:

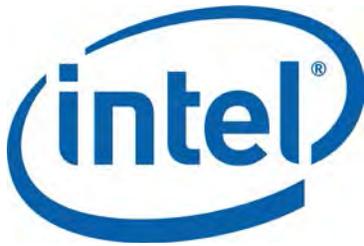
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U.S. Announces \$2.5 Million Program to Support Higher Education in Vietnam

HANOI, July 13, 2010 – The U.S. government is establishing a \$2.5 million partnership that will team American universities and the private sector in efforts to enhance the quality of engineering education at Vietnam’s top technical universities.

In collaboration with the government of Vietnam, the United States Agency for International Development (USAID) is working with Arizona State University, and Intel Corporation as part of the new Higher Engineering Education Alliance Program. Intel’s anticipated contribution to the program totals \$1.5 million.

The three-year public-private partnership will work closely with the Ministry of Education and Training (MOET) and technical universities in Vietnam to advance their electrical and mechanical engineering curricula and instruction leading to a highly-skilled technical workforce to strengthen the emerging high-tech manufacturing in Vietnam.

“The countries that lead in innovation have these things in common: an excellent higher education system and a strong alliance between academia and industry. This is what we are working to create here, so that Vietnam will become one of the global leaders in high-tech,” says Rick Howarth, General Manager of Intel Products Vietnam.

Through a selective process, ASU’s Ira A. Fulton Schools of Engineering are hosting the first cohort of 25 engineering faculty for the instructional training component through August 20th, 2010. The faculties represent Hanoi University of Technology, HCMC University of Technology, Can Tho University, HCMC University of Technical Education, and Da Nang University of Technology.

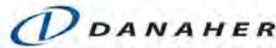
“This project exemplifies ASU’s vision of fostering global engineering education,” said Deirdre Meldrum, dean of the ASU Ira A. Fulton Schools of Engineering. “We want to establish collaborations in research, curriculum, knowledge exchange and innovative engagement throughout the world. This program is the beginning of what will become a long-term collaboration between our faculty and students and our Vietnamese institutional partners.”

The partnership has evolved from cooperative U.S. Vietnam efforts to improve education in areas – particularly engineering -- that are vital to Vietnam’s economic growth, investment, and employment.

The project partners will recruit and train engineering professors and students from Vietnamese universities, develop curricula, and increase collaboration between universities and industry.

Through its activities since 2000, USAID has worked with the government of Vietnam in areas of economic growth, prevention and treatment of HIV/AIDS, and vulnerable groups' access to educational and other social services. In total, USAID has contributed \$330 million for development and relief activities in Vietnam.

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HIGHER ENGINEERING EDUCATION ALLIANCE PROGRAM

QUARTER 2 NEWSLETTER
JUNE 2013

Inside:

- 2** First Annual VEEC
- 2** Upcoming HEEAP Cohort
- 3** Soft Skills at HVCT
- 3** USAID Alumni Site Registration
- 4** CTU Holds Soft Skills Workshop
- 4** HEEAP Alumni Association
- 5** HCMUT Teaching Workshop
- 5** MOET University Trainings
- 6** CTC Electrical Contest
- 6** Facebook Changes
- 7** HEEAP Website Version 2.0
- 7** Upcoming Events
- 7** Send Your Photos and Stories
- 8** “Why Women are Central to U.S. Foreign Policy,” by John Kerry



HEEAP holds first annual Vietnamese Engineering Education Conference in Can Tho

Story and photo by USAID. [View this article on USAID's website.](#)

CAN THO, March 19, 2013 -- The U.S.-supported Higher Engineering Education Alliance Program (HEEAP) opened its first conference to provide leaders in government, industry and academia an opportunity to discuss and collaborate on improving engineering education throughout Southeast Asia.

Hosted at Can Tho University, the two-day Vietnam Engineering Education Conference focuses on ways to build sustainable higher education systems, methods to assess performance of engineering education programs and innovation instructional methods. The event features a "Technology Avenue," with exhibits on advanced engineering simulations software, engineering design tools, learning management systems and student robotics labs.

"HEEAP advances engineering undergraduate learning and instruction through an innovative faculty

development program," said An T. Le, Consulate General of the United States in Ho Chi Minh City. He noted that women play an important role in the science and technology and economic development. "We are proud that HEEAP works to boost women's participation in engineering."

Other conference participants include William Colglazier, the Science and Technology Advisor to the United States Secretary of State and leaders from HEEAP alliance partners: Joakim Parker, Mission Director of United States Agency for International Development (USAID), Sherry Borger, General Manager of Intel Products Vietnam, Linda Rae, President of Keithley Instruments, Tektronix ASEAN, and rectors from eight universities and vocational colleges in Vietnam.

HEEAP was established in 2010 through a partnership of USAID, Intel Corporation and Arizona State University's Ira A. Fulton Schools of Engineering. A total of 122 lecturers were trained under HEEAP from 2010 to 2012 and are working on innovation projects to transform engineering education. The expansion of HEEAP is from 2013 to 2017 with an estimated investment of \$40 million. They focus on leadership development, faculty development, curriculum, lab and infrastructure, distance education,

diversity and instructional expert development, and English.

The goal is to graduate work-ready students to provide a highly trained workforce in Vietnam to meet the growing needs of global high-tech industries. Ultimately, HEEAP intends to strengthen education and research collaborations and business partnerships between Vietnam and other countries, including the United States.

HEEAP is planning to make the conference an annual event. ⚙



USAID Mission Director Joakim Parker speaks at the Vietnam Engineering Education Conference. **Photo: USAID**

UPCOMING HEEAP VOCATIONAL COHORT

The next HEEAP vocational cohort will begin at Arizona State University on June 24, 2013. This session will be HEEAP 1.0's third Vocational Cohort, with 19 faculty members from three

different HEEAP vocational colleges in Vietnam traveling to Tempe, Arizona, for a four-week summer training session.

Ho Chi Minh Vocational College of Technology Faculty incorporate soft skills into curriculum

by Alex Gregory

Engineering students learned more than just science during the 2011-2012 school year at Ho Chi Minh Vocational College of Technology (HVCT). As part of a HEEAP project entitled “Applying Soft Skills in Vocational Training Programs to Develop Students with Active Skills at HVCT,” students majoring in industrial electronics, mechatronics and mechanical engineering completed soft skills training that covered skills such as communication, creativity, presentation and teamwork.

In addition to soft skills training, HVCT students learned to apply those skills in professional courses with active learning in a dynamic and compatible setting. According to professors and students at HVCT, the project went well, with both teachers and students eager to actively

participate in the courses.

When asked what they like most about the courses, students said they enjoyed the chance to practice and discuss freely with others, as well as to correct their mistakes. They also reported satisfaction with the professors, who they said worked effectively and helped them to better understand concepts. Students said that after the courses, they know more about life, have more time to practice skills and feel more confident about creating their own products.

However, students also reported a few points to be improved upon in future courses. Students said that teamwork portions of the class took too much time and that students who didn’t take learning seriously affected the rest of the class.

Overall, the HEEAP project was carried out effectively, with enthusiastic support from the school, students, and professors. Students came away feeling prepared to graduate, with professional knowledge about the soft skills necessary to successfully enter the engineering workforce. ⚙️

SIGN UP FOR THE USAID ALUMNI SITE

USAID’s [International Exchange Alumni website](#) provides a tremendous variety of resources for HEEAP alumni. Members enjoy access to \$33 billion worth of grant opportunities, frequently updated job listings, exclusive video webchats with VIPs and 20,000 online magazines and newspapers. Furthermore, members can network and communicate with alumni from USAID programs worldwide. Click [here](#) to register now!



Students practice both teamwork and engineering skills by working together to build structures in groups.



HVCT students proudly display the products of group work that helped them gain experience similar to that of a common workplace environment.

ON-CAMPUS HEEAP ALUMNI ASSOCIATION

Since 2010, HEEAP has trained over 100 university and vocational professors, creating an extensive network of engineering professionals in Vietnam. As a HEEAP participant, you can share your expert skills with others through a HEEAP Alumni Association. Participation will improve your school, spreading concepts and ideas from HEEAP trainings.

We encourage all alumni to participate

in a HEEAP Alumni Association. If an alumni association does not currently exist on your campus, consider organizing one. The success of the alumni association depends on you! Utilize this connection with your colleagues to establish partnerships, focus on your professional and post-training activities, participate in joint projects, continue exploring active, applied and theory-based instruction

methods, focus on curriculum reform, or serve as a mentor to new HEEAP Faculty. Is there information you wish you had known before traveling to your HEEAP training site? Share your knowledge with new HEEAP Faculty by facilitating pre-departure orientation sessions. Alumni associations can meet on an ongoing, monthly or quarterly basis. These are just a few ideas; the possibilities are endless.

Can Tho University holds Soft Skills Training Workshop for senior IT students

by Alex Gregory

Can Tho University (CTU) teamed up with the Higher Engineering Education Alliance Program (HEEAP) this March to hold a Soft Skills Training Workshop for CTU's senior IT students. The workshop, held at CTU on March 27, equipped more than 60 senior IT students with the necessary knowledge, experience and skills to land a job after graduation.

HEEAP funded the soft-skills workshop to thank CTU's senior IT students for their volunteer work at the March 19-20 Vietnam Engineering Education Conference.

Mr. Le Van Khoi, HEEAP In-Country Director, served as the workshop's lead trainer. Throughout the day, he taught students how to write CVs, search for jobs, prepare for interviews and succeed in new organizations, emphasizing skills and qualities required to successfully complete workplace tasks.

Students learned these skills through a wide range of methodologies, including role-playing, partner work, group activities, exercises, games, case studies, discussions, presentations, break-out sessions, problem-solving and sharing.

"After the workshop, we feel more confident and know how to prepare ourselves before graduation," a student representative said after completing the workshop.

Khoi has over ten years of international work experience and served as a professional trainer with Vietnam's Ministry of Education and Training (MOET), where he trained more than 6000 university students from over 30 universities across Indochina.

Because of impressive student testimonies and requests, HEEAP and Can Tho University will continue hosting Soft Skills Training Workshops in the future. ⚙️

Top: Here, students learn the soft skills associated with teamwork by working together to build catapults.

Bottom: After cooperating to build catapults and learn about teamwork, students gather excitedly to view their results.



HEEAP 2.0 - MOET UNIVERSITY TRAININGS

In August 2012, ASU signed an MOU with the Ministry of Education and Training (MOET) to fund additional HEEAP University trainings. Over the next five years, MOET will sponsor 3 HEEAP University cohorts per year and selected faculty from participating HEEAP universities will complete a six week faculty development training at ASU. HEEAP leadership and MOET are working together to understand MOET's English certification requirements and new pre-training planning logistics. We are hopeful that the new process will be finalized soon and the first HEEAP 2.0 MOET training will begin later this year. We will continue to keep HEEAP University leadership and faculty informed on our progress and any significant updates.

HEEAP Senior Lecturer Dr. David Benson hosts teaching workshop at HCMUT

by Alex Gregory

HEEAP Senior Lecturer Dr. David Benson hosted a workshop for Ho Chi Minh City University of Technology (HCMUT) from March 25-29, in Da Lat, Vietnam. His workshop, "Innovation Teaching and Assessment Methods Workshop to Achieve Expected Learning Outcomes" was held for 77 HCMUT Electrical, Mechanical, and Computer Science Engineering professors.

The workshop, structured as an experiential learning opportunity, covered Accredited Board for Engineering and Technology (ABET) processes, how to build professional skills, and how to incorporate active learning projects into engineering curricula. Dr. Benson laced content instruction in each of these areas within illustrative activities and practical development exercises.

The teaching approaches that Dr.

Benson demonstrated focused on applying education's best practices to engineering classes, as well as applying learner-centered methods within large lecture classes. Each of these methods aims to increase student engagement, reinforce content instruction, and generate formative assessment of student learning.

Faculty actively participated and delivered positive feedback on Dr. Benson's first in-country workshop.

"It was a distinct pleasure working with the faculty from HCMUT," Dr. Benson said. "As an engineering faculty member, I experienced the challenges very similar to the ones the HCMUT faculty face in thier classes, and it was rewarding to share many of the tools which I used to boost student engagement and make space for active learning exercises in a large class with such a receptive and active audience." ✨



Dr. Benson discusses ways to apply best teaching practices to large engineering classes with HCMUT faculty.



Workshop participants work together to create a solar shade as they learn to apply learner-centered methods in large lecture classes.

FACEBOOK CHANGES

To make sure that everyone receives all HEEAP updates, we've consolidated all of the HEEAP Facebook pages into one convenient page: www.facebook.com/heap. Don't forget to click "Like" to stay updated on HEEAP

news, updates, and useful information from HEEAP staff and colleagues.

HEEAP Faculty at CTC Organizes Electrical Engineering Contest

by Alex Gregory

Over the past two months, Electrical Engineering students at Cao Thang Technical College (CTTC) in Vietnam have participated in an academic contest modeled after a popular Vietnamese game show.

HEEAP faculty organized the Electrical Engineering Contest to allow students to practice soft skills while reinforcing their engineering knowledge. "The contest helped [students] to consolidate their knowledge and professional skills. They had the opportunity to improve soft skills such as communication, presentation, teamwork and problem-solving," CTTC's HEEAP 2012 cohort leader Nguyen Van Thong said.

Faculty organized the contest in four different rounds, each taking part on different days. First was the qualifying match, in which 46 teams of three students each took a multiple choice test. The nine teams with the highest scores made it to the two semifinal rounds, which were set up to look like "Đường lên đỉnh Olympia," a Vietnamese academic game show for high school students.

Finally, the three teams with the highest semifinal scores made it to the final round, which faculty set up the same as the semifinal round. The teams competed while their peers, teachers, and department leaders looked on. Also in attendance was Nguyen Giao Hoa, HEEAP Vietnam Country Manager.

Students Tran Huy Thong, Nguyen Van Trieu and Nguyen Minh Man won the contest, with their team called Tia chớp 1, or Lightning One. CTTC recognized the first, second and third place teams with ribbons, and also gave personal excellence awards to individuals who excelled in the competition.

Tran Huy Thong, winner of a personal excellence award and member of the first-place team, said the contest allowed him to learn a lot about the electrical engineering industry, such as how to deal with tough situations and how to work with industry equipment.

"I really like that the contest gave students a lot of knowledge, and inspired us to constantly try to improve in our academic majors," he said. "I hope that in the future there will be more contests to enhance knowledge and skills."

Because of the contest's success, the school says it does indeed plan to hold similar contests in the future. ⚙️

Click [here](#) to watch the contest for yourself!



A team of CTTC Electrical Engineering students works together to solve a problem at the qualifying match.



Students answer questions in front of peers and faculty at the Electrical Engineering Contest.

UPCOMING HEEAP EVENTS

HEEAP University Group Training:

August 5–September 13, 2013
September 16–October 25, 2013
October 14–November 22, 2013

HEEAP Vocational Group Training:

June 24–July 19, 2013
July 22–August 16, 2013

First all-female Vocational Group:

The July 22 Vocational Group consists of 15 women from HEEAP's three vocational colleges. By hosting an all-female Vocational Group, HEEAP continues to support the Vietnamese effort to increase the number of women employed in engineering fields.

HEEAP Website Version 2.0

by Jose Quiroga

We are proud to announce that our website is undergoing a series of upgrades to increase functionality. For its first three years, the HEEAP website has served as a valuable source of information for our stakeholders, and has been steadily growing in size and number of users. As we move toward HEEAP's fourth year of operation, the website will transition to an online portal that fosters collaboration among users, facilitates communication between participants and serves as a repository for all documents and materials available for downloading.

In early February 2013, all previous HEEAP participants received user accounts to create their personal profiles where they can share their cohort year, research area and project topics. These user accounts will add the social media functionality to the site, allowing its users to create, share and exchange information and ideas through our platform. Going forward, all future participants will be asked to create their user accounts and profiles during their training at ASU.

The new HEEAP website will not only continue to serve as the main registration site, where nominated faculty from our Vietnamese partner institutions can submit their program applications, but will also include a new interactive feature that allows

users to communicate directly with each other, master lecturers, program administrators and other faculty. In addition, users will be able to upload and share their own educational resources. These valuable, on-demand capabilities will be accessible 24/7, making real-time collaboration possible and allowing HEEAP to provide better service by keeping track of participant data in a more organized and efficient way.

In addition, the new site will serve as a universal repository for important documents and materials, such as PowerPoint presentations, faculty projects, videos, photographs, and more. All content types will be properly tagged and categorized for increased search optimization and easy access. Users will be able to search all documents and materials by a specific presenter, at a specific event or venue, or on a certain topic. This feature will facilitate information access, and will be a very powerful tool for program participants and HEEAP staff.

We are really looking forward to these exciting new changes on our HEEAP site and we invite you to visit us periodically to gradually experience our HEEAP 2.0 transition at www.heeap.org. We welcome any comments and feedback as we deploy our new platform. An official announcement will be made once these changes have been implemented. ⚙

SEND PHOTOS AND SUCCESS STORIES

Have you made a successful change to your curriculum? Captured a photo of your students taking part in a new active learning activity? Send your photos and stories to us

at HEEAP, so we can see how you use your HEEAP teaching skills in the classroom! We'll even share them with the rest of the HEEAP community through the HEEAP website or newsletter!

E-mail your photos and stories to Alex Gregory, HEEAP Communication Specialist, at algrego1@mainex1.asu.edu.

Why Women are Central to U.S. Foreign Policy

Remarks by the United States Secretary of State John Kerry in celebration of International Women's Day

During my first week as the United States' Secretary of State, I had the honor of meeting with a group of courageous women from Burma. Two were former political prisoners, and although they had all endured incredible hardship in their lives, each of them was committed to moving forward - providing education and training to girls, finding jobs for the unemployed and advocating for greater participation in civil society. I have no doubt that they will continue to be powerful agents of change, bringing progress to their communities and their country in the years to come.

It's opportunities like this that remind us why it is so vital that the United States continues to work with governments, organizations and individuals around the world to protect and advance the rights of women and girls. After all, just like in our own country, the world's most pressing economic, social and political problems simply cannot be solved without the full participation of women.

According to the World Economic Forum, countries where men and women are closer to enjoying equal rights are far more economically competitive than those where the gender gap has left women and girls with limited or no access to medical care, education, elected office, and the marketplace. Similarly, the U.N. Food and Agriculture Organization estimates that if women farmers had the same access to seeds, fertilizer, and technology as men do, they could reduce the number of undernourished people in the world by 100 million to 150 million.

Yet in too many societies and too many homes, women and girls are still

undervalued, denied opportunities to go to school, and forced to marry as children. Too many lives have been lost or altered forever by gender-based violence. As the father of two daughters, I cannot imagine the pain suffered by the parents of the young woman known as "Nirbhaya," the 23-year old medical student murdered on a New Delhi bus simply for being a woman, or the anguish felt by the parents of Malala Yousafzai, the Pakistani girl shot by extremists as she too rode on a bus, simply for wanting to go to school. But I am inspired by Malala's undaunted commitment to her cause, by Nirbhaya's determination, while dying, to bring her assailants to

"Increasing girls' and women's education and their access to resources also improves the health and education of the next generation. One example of this is taking place in Vietnam."

justice, and by their fathers' courage in speaking out on behalf of their daughters and women everywhere.

No country can get ahead if it leaves half of its people behind. This is why the United States believes gender equality is critical to our shared goals of prosperity, stability, and peace, and why investing in women and girls worldwide is critical to advancing U.S. foreign policy.

We invest in the training and mentoring of women entrepreneurs so they can not only lift up their own families, but also help their countries' economies grow. We invest in girls' education so that they can escape forced early marriage, break the cycle of poverty, and develop into community leaders and engaged citizens. Increasing girls' and women's education and their access to resources also improves the health and

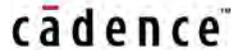
education of the next generation.

One example of this is taking place in Vietnam. Through a partnership between Intel Vietnam, USAID, and Arizona State University, the Higher Engineering Education Alliance Program (HEAAP)'s Vocational Female Students Scholarship Award encourages young Vietnamese women to pursue technical careers. This January, over 700 million VND was awarded to 109 students from 13 colleges and universities in Vietnam, and up to 2.4 billion VND will be awarded through 2014.

Also, in response to the high rate of domestic violence in Vietnam, our Embassy provided response training for female police leaders in 2012 and are planning on continuing the program later this year. The State Department also funds three anti-human trafficking programs in Vietnam that assist victims of trafficking who tend to be primarily women.

Indeed, we work with partners around the world to boost maternal health, strengthen female farmers, and prevent and address gender-based violence because all societies benefit when women are healthy, safe, and can contribute their labor, leadership and creativity to the global economy. U.S. diplomats everywhere work to integrate women fully into peace negotiations and security efforts because bringing women's experiences, concerns and insights to the table can help prevent future conflict and build more lasting peace.

Today, International Women's Day, is a day of celebration. It is also a day when each of us must recommit to ending the inequality that prevents progress in every corner of the globe. We can and we must commit to this so that each of our daughters can ride the bus to school without fear, all of our sisters can fulfill their tremendous potential, and every woman and girl can live up to her full potential. ✨



HIGHER ENGINEERING EDUCATION ALLIANCE PROGRAM

QUARTER 3 NEWSLETTER
SEPTEMBER 2013

Inside:

- 2** All-Female HEEAP Cohort
- 3** Vietnam-U.S. Joint Statement
- 3** Intel HEEAP Vocational Scholarship
- 4** First 2013 Vocational Cohort
- 5** VIED PhD Scholarships
- 5** World Bank Solutions Network
- 6** VULII Year One Assessment Conference
- 6** Upcoming Events
- 6** Send Your Photos and Stories
- 7** Introduction to Engineering Course Workshop
- 7** CTTC Post-Training Presentations



ASU hosts All-Female HEEAP Vocational Cohort

by Alex Gregory

The summer of 2013 saw HEEAP's very first All-Female Vocational Cohort. 14 Female Vietnamese Engineering teachers from Cao Thang Technical College, Ho Chi Minh Vocational College of Technology and the Industrial University of Ho Chi Minh City traveled to Arizona State University, where they spent four weeks completing HEEAP training.

During their time at ASU, the women were able to learn and practice active teaching methods to better engage their engineering students, as well as English speaking and presenting skills.

"My HEEAP training will have a lot of meaning for my college," said Vu Yen Ni, a professor at Cao Thang Technical College's Information Technology Department. "For example, I will share my experiences with my colleagues, and give them simple advice, and this will improve engagement for students in their classes."

Thuy Do Thi Bich from Ho Chi Minh Vocational College of Technology's Electronic and Electrical Engineering Department agreed that the HEEAP

program would prove meaningful—not only to her school, but to Vietnam as a whole.

"I think this program is great," she said. "It can help my country to develop in a lot of ways. I am a teacher, and in my opinion, the teachers should all learn new teaching methods and update their curriculums."

For Vo Ngoc Yen Phuong from the Industrial University of Ho Chi Minh City, the program's effect was also widespread.

"It's improving knowledge of teaching skills for teachers in Vietnam. Not only will I be able to go back and apply my knowledge, but by studying here, I make other teachers curious about HEEAP, and they want to come to the U.S. and participate! I used to see my colleagues participate last year and feel curious," she said.

As HEEAP's first all-female group, the cohort worked not only to improve engineering education in Vietnam, but also to improve women's place in the world of Vietnamese engineering.

They said that currently, females are underrepresented in their engineering classes. "There are not many female students in my classes. The largest number of female students is 10 out of 80 students total," Ni said.

However, with powerful and

committed female role models, this is sure to change.

"It is not difficult to teach a class of mostly male students because they admire me and see me as a strong role model. I enjoy teaching, students and mechanical engineering. Therefore I concentrate all my ability, love and responsibility into my teaching," Phuong said. "My female students are a lot like me, and love technology."

They stressed that differences between men and women add value to the engineering workplace, and that balance is key.

"Men act before they think and women think before they act. Thinking ahead can be a disadvantage, because a lot of time is wasted. However, acting before thinking can cause a lot of mistakes and failed attempts," Phuong said.

Ni agreed that both men and women bring important skills to any engineering workplace.

"I think women are meticulous, diligent, and intelligent. Anything that a man can do, a woman can do as well. If men can become good engineers, women can also do it," she said. "Female engineers are important not only in Vietnam, but they are vital for the field of engineering in general." ⚙️



The women examine equipment in an ASU engineering lab during a tour of ASU's Polytechnic campus.



The Cohort poses for a group photo at ASU's Brickyard.



Faculty work to build a marshmallow tower, learning about teaching soft skills through group projects.

INTEL HEEAP FEMALE VOCATIONAL SCHOLARSHIP



The Intel HEEAP Female Vocational Scholarship aims to provide financial support to female students enrolled in technical programs at Vietnamese vocational colleges, encouraging more young females in Vietnam to pursue technical studies.

The award consists of 6,500,000 VND per year. Female Vietnamese students in their first, second, third or last year earning a vocational diploma

in Electrical, Electronics, Automation, Mechanical, or Mechantronics are eligible. Applicants should have a good GPA and be active in extracurricular activities.

Applications are due September 30, 2013. Interested students can apply or find more information on the award and eligibility requirements online at <http://www.heeap.org/scholarship-english>.

US and Vietnam Presidents Mention HEEAP in Joint Statement, HEEAP Director Attends Washington Luncheon

by Alex Gregory

President Truong Tan Sang of Vietnam and President Barack Obama of the United States of America recognized HEEAP in July, in a [joint statement](#) about their commitment to bilateral relations between Vietnam and the U.S.

The Presidents met in Washington Thursday, where they named HEEAP alongside the Fulbright program as an example of success in the countries' enhancement of educational, cultural and people-to-people ties through bilateral education initiatives.

HEEAP Director Jeffrey Goss had the opportunity to represent HEEAP in Washington, D.C., at a luncheon honoring President Truong Tan Sang.

The luncheon, hosted by Senator John Kerry, welcomed President Sang to Washington to discuss opportunities



for continued cooperation between the countries.

Also in attendance at the luncheon was Vietnam's Minister of Education and Training, Phạm Vũ Luận. Goss was able to meet with Minister Luận, as well as U.S. Agency for International Development representatives, to discuss opportunities for increased research and education collaboration between the two countries.

To read more, view the Presidents' joint statement [here](#). ⚙



Left: Senator John Kerry delivers remarks during the Washington luncheon honoring Vietnamese President Truong Tan Sang.

Right: HEEAP Director Jeffrey Goss pictured with MOET's Minister Phạm Vũ Luận. The two were able to meet with USAID representatives to discuss collaboration opportunities.

Q&A With First HEEAP Vocational Cohort of 2013

The first HEEAP 2013 Vocational Cohort arrived in Tempe in June and spent a month learning English, completing HEEAP training and exploring Arizona. Read what they have to say about themselves, HEEAP and their experiences in Arizona:



Do Chi Phi,
Industrial Electrical Engineering Department, Cao Thang Technical College

Q: How were you chosen to participate in HEEAP training?

First, HEEAP looks for someone with a master's and at least three years of teaching experience. They also look for someone with management skills—someone who will be able to explain things and lead other faculty to learn the techniques, and to successfully implement HEEAP projects. In the past, two different faculties came back and applied their projects very successfully. HEEAP also looks for English skills—the interview for the program was in English. Before the interview, each department nominated a list of candidates. The rector approved that list, and then sent it to HEEAP. Then, HEEAP faculty came to the school and interviewed the candidates. It was a two-month process.

Q: What has been your favorite part of the HEEAP training?

I was interested to learn the new teaching methods and to have the chance to communicate with ASU faculty. They are all very enthusiastic and I've gotten a lot of help from them. I appreciate that! I've also enjoyed activities like dinner, barbecues and fireworks, but the weather is very hot!



Nguyen Anh Van Ha,
Lecturer of Mechanical Department, Ho Chi Minh Vocational College of Technology

Q: What have you learned so far during the training?

There has been a focus on soft skills. In Vietnam there isn't a focus on soft skills so it has been very helpful. We also learned about how to structure a class and now we will be able to apply these techniques when we return to Vietnam.

Q: How will your experience here benefit your school?

We learned a lot on how a teacher should instruct and how to arrange classroom activities. Specifically, how to use teaching tools in the classroom. We will talk among our group and share with Engineering Deans about how to apply methods of think, pair, share, so we can apply in our classes and others.



Nguyen Tan Luy,
Automation Electronics Department, Industrial University of Ho Chi Minh City

Q: How will this experience benefit your school?

When I go back, I'll organize a conference and talk about teaching methods. We'll discuss how to develop our department, and choose one class to try the new methods to see if they work. It could be any class in the engineering college—whether it's a weaker or stronger class is not a problem.

Q: Why did you become a teacher?

I enjoy teaching a lot because I can get knowledge for myself and help students to have a job after university. I'm helping my country, also. Vietnamese education should be developed more and more; education is important to the whole country.



Hoang Dinh Khoi,
Electrical Engineering Department, Industrial University of Ho Chi Minh City

Q: How did you prepare for HEEAP training?

I went to the HEEAP website to find information, and I went to colleagues to know what they had done for their projects. They had many ideas to share about HEEAP training. I also practiced English—very important. I

used software at home to practice and I went to a student club, too.

Q: What have you learned so far at the training?

I've learned about many teaching methods, and the first week, we learned English. We had to give presentations in English to build more confidence. And we learned many interesting methods from Dr. David Benson to use in our universities. One example is outcome-based learning: you must know what the industry needs so you can prepare students to work. ⚙️

ASU and World Bank organize workshop to discuss World Bank Solutions Network

by Alex Gregory

On May 31, ASU and the World Bank organized the World Bank Solutions Network Workshop-- a forum to discuss science and engineering research in Vietnam.

The daylong workshop was held in Ho Chi Minh City, Vietnam. A group of over 60 participants, including academic, government, and industry leaders, participated in the daylong session, collaborating on opportunities to offer support for Vietnamese research.

The workshop began with a needs analysis, in which guest speakers and breakout groups talked about day-to-day problems that face science and technology research, and the limits of solutions currently available.

Based on this needs analysis, ongoing discussions resulted in an

initial framework for a Solutions Network consisting of four platforms: education and training, policy and analytics, research and development, and catalytic innovation.

The overarching goal of the proposed Solutions Network is to provide access to worldwide resources for individuals in East Asia and the Pacific, allowing for increased work in the areas of technological innovation.

Each of the four platforms were

discussed in more detail in a follow-up session on June 25 in Washington DC. ✪

From left, Ho Chi Minh City University of Technology Rector Vu Dinh Thanh, MOST Deputy Minister Tran Viet Thanh, and World Bank Vietnam Country Director Victoria Kwakwa discuss the need for greater access to resources for scientific and technological researchers in East Asia and the Pacific.



VIED PHD SCHOLARSHIP OPPORTUNITY

HEEAP is pleased to announce that the Ministry of Education and Training (MOET), through the Vietnam International Education Development (VIED), has joined ASU in signing a Memorandum of Agreement to support VIED fellows interested in pursuing Engineering PhD programs here

at ASU.

VIED fellows must continuously meet academic qualifications required by VIED and ASU. Assuming satisfactory progress, VIED will fund the fellow's first two years of study, and ASU will provide all other financial support

required for the VIED fellow to finish his or her degree.

This support includes resources such as a graduate assistantship and/or similar salary support, and payment of all necessary fees. For more information, visit <http://vietnaminstitute.asu.edu/>

UPCOMING HEEAP EVENTS

IWEEE Workshop

September 12-13
 Danang City, Vietnam

The aim of IWEEE 2013 is to provide a forum for academicians and professionals from various educational fields to network, share knowledge and engage in dialogue around the theme of fostering innovation and excellence in engineering education. [Click here](#) for more information.

HEEAP University Group Training

October 14- November 22

Intel HEEAP Female Vocational Scholarship Ceremony

November 30

VULII holds conference to assess progress, lessons learned and future plans

by Alex Gregory

Government and academic representatives, rectors, deans, quality assurance directors and other educational leaders met August 12-13 in Ho Chi Minh City, Vietnam for the Vocational and University Leadership and Innovation Institute (VULII) Year One Assessment Conference.

Participants of all levels evaluated VULII's first year, indicating that strategic planning and data-driven decision making have been two of the program's greatest strengths. Respondents also said they appreciated VULII's ability to connect leaders at various levels within and across institutions.

After evaluating VULII's progress to-date, participants drafted a plan for year two of VULII. While the VULII's first year focused primarily on planning, the second year will involve a much greater focus on implementing those plans.

Deans expressed the need to move further down the leadership chain and include department heads in VULII activities. Therefore, year two of VULII will expand training to include other leadership at colleges.



VULII Participants discuss plans for VULII's next year.

VULII's second year will also bring the implementation of Pearson's Learning Management System for each VULII institution. Pearson Business Development Senior Vice President Karl Engkvist delivered the Year One Assessment Conference's keynote speech, *"Education Technology, MOOCs, Learning Management Systems, Flipped Classrooms—What Next?: How to Leverage Technology to Transform Higher Education in Vietnam."*

The second day of the conference featured additional speakers from Pearson, who discussed the plan for implementation.

"We're all excited about the Pearson system because it will really help the eight HEEAP institutions to leapfrog from doing things by hand to using technology that will enhance the quality of their teaching," VULII Director Dr. Kathryn Mohrman said. ⚙️

SEND YOUR PHOTOS AND SUCCESS STORIES

Have you made a successful change to your curriculum? Captured a photo of your students taking part in a new active learning activity? Send your photos and stories to us

at HEEAP, so we can see how you use your HEEAP teaching skills in the classroom! We'll even share them with the rest of the HEEAP community through the HEEAP website or newsletter!

E-mail your photos and stories to Alex Gregory, HEEAP Communication Specialist, at algrego1@mainex1.asu.edu.

UTE Hosts faculty workshop to design new Introduction to Engineering course

by Alex Gregory

The University of Technical Education of Ho Chi Minh City (UTE) hosted a faculty workshop on June 27, where faculty worked together to create a new course for incoming freshmen. The first-year course, called Introduction to Engineering, will provide students with career orientation, soft skill training and engineering ethics training in order to help them adapt to the college environment and move forward on the way to becoming engineers.

Workshop participants included the leader of the workshop organizing committee, UTE's Assistant Professor Dr. Do Van Dung, along with Dr. Hoa Nguyen, HEEAP Country Manager, Khoi Le Van, HEEAP Country Director, Dr. Ha Anh Tung from Ho Chi Minh City University of Technology (HCMUT) and other UTE faculty.

During the workshop, participants gave presentations and discussed teaching experiences and problems related to students' first year at college. Topics included important skills training, how to encourage innovative thinking, basic knowledge necessary for students to achieve learning goals, and new and effective teaching methods for skill build-



UTE faculty discuss ways to introduce new students to the engineering field.

ing, such as group work and problem resolution.

"Since 2012, UTE has deployed a new 150-credit training program with the CDIO approach (Conceive – Design – Implement – Operate). One of the most important parts in this program is the Introduction to Engineering course. This course gives our students the idea of what engineering is, information related to their majors, career opportunities and foreign languages as well as soft skills, like presenting, working in groups, problem solving and especially motivation to learn, which leads to self-planning, and self-orientation for the future," said Vo Xuan Tien from UTE's Department of Machinery Mechanics.

During his presentation, Tien talked about active learning techniques, bringing joy to the classroom, and arranging the class to avoid affecting other

classes, since introductory courses like this can be very noisy. Another participant, Dr. Vo Viet Cuong, raised the issue of large class sizes, and the audience agreed to try for class sizes of 50.

At the end of the workshop, participants broke into groups to brainstorm ideas to build a completed Introduction to Engineering course, and how to make it effective at the highest level as a part of the 150-credit training program. Issues discussed included important topics to cover, possible industry field trips, development of English skills for first year students, and how to grade these introductory courses.

"Since 2010, we have been trying to create introduction courses. HEEAP was a great leverage that came to us at the right time to implement the changes," Dr. Nguyen Tien Dzong, head of the training department said. ⚙️

CTTC HEEAP FACULTY CONDUCT POST-TRAINING PRESENTATIONS

Now that both the male and female HEEAP 2013 cohorts have arrived back in Vietnam, it's time for HEEAP faculty to share their experiences with their departments. CTTC HEEAP faculty sent us these pictures of their presentation, during which they shared the lessons, techniques and ideas they learned at HEEAP. Way to go, HEEAP faculty!





HIGHER ENGINEERING EDUCATION ALLIANCE PROGRAM

QUARTER 4 NEWSLETTER
DECEMBER 2013

Inside:

- 2** HEEAP University Cohort
- 3** Active Learning with Legos at CTTC
- 3** Call for Association of Southeast Asian Nations-U.S. Science & Tech Fellows
- 4** VEEC 2014
- 4** HEEAP Director Meets with MOST Minister
- 5** HEEAP Cloud Community
- 5** PEER Program Grant Opportunities
- 6** VULII QA Institute
- 6** Upcoming Events
- 7** VULII Move to Action/Rectors Institute
- 7** New HEEAP Staff Members
- 8** Project 911 Fellowships
- 9** Intel HEEAP Scholarships
- 10** HEEAP Faculty Photos
- 10** Send Photos and Stories



ASU hosts Intel-sponsored HEEAP University Cohort

by Alex Gregory

On October 14, 2013, 23 engineering professors from Vietnamese universities traveled to Arizona State University to take part in a HEEAP workshop, where the cohort spent six weeks learning about engineering curriculum design, student success and active learning techniques.

The faculty members came from five different universities across Vietnam: Ho Chi Minh City University of Technology, Danang University of Technology, Ho Chi Minh University of Technical Education, Can Tho University and Hanoi University of Science and Technology.

During their training, the cohort learned valuable lessons that would not only benefit their own classes, but also serve to transform education at their institutions and in their country as a whole.

Faculty from each of the five universities shared that upon their return, they planned to hold workshops and seminars to disseminate the knowledge gained during the HEEAP workshop with the other departments at their universities.

"The first step will be to apply the techniques and methods I learned in my own class," Danang University's Bui Minh Hien said. "Then, these techniques will spread throughout the department, and eventually, they will have the chance to spread to other departments, eventually benefitting the entire school."

Nguyen Cao Tri from Ho Chi Minh City University of Technology's Computer Science and Engineering department agreed, "With more and more faculty applying these methods, the quality of higher education will improve as a whole." "Students will develop more skills at the university, and they will be able to get better jobs in the future. Applying these new methods will bring



Above: The HEEAP Cohort poses for a picture on ASU's Tempe Campus.

Right: From left, Le My Ha from HCMUTE and Dang Bao Lam and Le Duc Dung from HUST build a tower from spaghetti, string and a single marshmallow.



big change," Tri said.

Can Tho University's Nguyen Quan Thanh named several specific techniques he planned to share with fellow faculty. "This was the first time I heard of the "Think, Pair, Share" technique, and also the first time I learned about the "Muddiest Point"—finding out what the most difficult part of a lesson for students is," Thanh said. "When I used to teach, I would just give lectures without collecting feedback. Now, I know how to monitor learning better."

Nguyen Cao Tri added that HEEAP training taught him and fellow faculty to not allow large class sizes to get in the way. "We learned that professors can still do activities and apply active learning techniques even in big classes," he said. "Before HEEAP, we didn't think it could be done if the class was too big, but HEEAP changed our mind and showed us what we can do for our students."

For Le Thanh Phuc, a faculty member from the automotive engineering department at Ho Chi Minh City

University of Technical Education, a focus on curriculum design played an important role in HEEAP training. "I learned to make my classes more efficient and organized for students. The instructors gave information about organization and how to organize our teaching processes, so that students learn as much and as clearly as possible," he said.

Another benefit of HEEAP? The snowball effect. "I will work with faculty to try to revise and improve syllabi so that they adhere to Accreditation Board for Engineering and Technology standards," said Dang Bao Lam, a professor at Hanoi University of Science and Technology's Design of Machinery and Robots department. "And once they hear about my experience, they will want to come learn about the same things in detail, so they will also apply for HEEAP." ⚙️

CTTC hosts “Active Learning with Legos” competition

by CTTC HEEAP Faculty

As a part of the joyful, welcoming atmosphere at Cao Thang Technical College’s (CTTC) “Welcome New Students 2013” event, members of the HEEAP 2013 vocational cohort organized “Active Learning with Legos,” a game-show type competition that created an active, playground-like learning atmosphere for new students while helping them develop soft skills.

The faculty organized the competition, which took place on September 29, into two rounds: preliminary and final. More than 300 Vietnamese engineering students took part in the competition, and thousands more students took part as active spectators.

The HEEAP faculty who organized the competition called it a success, noting that it satisfied their initial criteria. It stimulated the new students’ dynamic thinking abilities and helped them to develop teamwork skills.

In the future, the HEEAP 2013



vocational cohort plans to organize similar game show competitions, creating more useful playgrounds that help students develop the healthy soft skills they need to succeed in the workplace. ✨

Top: Students work together to build with Legos, gaining soft skills such as teamwork and communication.

Right: HEEAP 2013 vocational faculty set up the competition for more than over 300 freshmen engineering students at CTTC.



CALL FOR PROPOSALS: ASEAN–U.S. S&T FELLOWS PILOT PROGRAM

The ASEAN-U.S. Science and Technology Fellows Pilot Program aims to strengthen science and technical (S&T) input to ASEAN strategic S&T priorities by increasing science capacity and the capacity for science-based policymaking. Through USASEAN up to 8 Fellows from ASEAN member countries will be supported to work full-time for one year in their home country ministries. Fellows will promote the use of the best available science to inform the national and ASEAN regional policy process; advance ASEAN regional cooperation

on science and technology; build institutional capacity within ASEAN and between ASEAN and the United States to study regional and transboundary issues; and, deepen people-to-people interaction between ASEAN and U.S. scientists.

The program will provide the opportunity for Ph.D. scientists who are citizens and residents of ASEAN member states to learn about policy-making while contributing their knowledge and analytical skills to their national governments in support of ASEAN S&T priorities.

Fellows may apply to work on one of

the following priority issues: Health, Climate Change, Food Security, Early warning systems for disaster risk reduction, Water Management, and Biodiversity.

Fellows will help inform their home countries’ science and policy cooperation with ASEAN and at the same time, help meet their society’s needs for the most credible and objective scientific information.

For more information, visit USAID.gov.

2014 Annual VEEC to be held in Ho Chi Minh City

by Dr. David Benson

The second annual Vietnam Engineering Education Conference will be held March 25-26, 2014, at the Rex Hotel in Ho Chi Minh City, Vietnam.

This conference will be sponsored by the Higher Engineering Education Alliance Program and the host campus, Ho Chi Minh University of Technology. The conference will focus on the development of collaborations between faculty and government-industry-academic leaders.

A featured keynote presentation will discuss innovative methods in education, involving techniques such as hybrid and flipped classrooms, and Massive Open Online Courses (MOOCs).

Additionally, an industry and academic panel will include discussion of various engineering education topics, such as ways educators can inspire the next generation of engineers, and how to build public-private partnerships in both education and scientific research.

The conference will also feature another keynote presentation-- this



A view of Ho Chi Minh City, Vietnam, where the 2014 VEEC will be held.

one on the development of a national strategy for technical innovation in Vietnam.

Technical sessions at the VEEC will address a variety of topics, ranging from the development of bi-national research and education collaboration to classroom activities which promote and reinforce student engagement.

Furthermore, the conference will include technology exhibits from HEEAP's technology partners.

The VEEC provides an opportunity for participants to develop connections and share best practices, in addition to enjoying the sights and hospitality of Ho Chi Minh City.

It is through our continued partnership

that we will develop efforts which will result in a lasting transformation of education— in both Vietnam and in HEEAP's partner countries.

HEEAP and the VEEC Program Committee are currently accepting abstracts for presentations (no associated papers) for the March 2014 VEEC conference in Ho Chi Minh City. Presentations during technical sessions at the VEEC are expected to run 20-30 minutes each with 10-15 minutes allotted for questions. Abstracts on all topics associated with higher education will be accepted. To submit your abstract or view a list of topics in which the Program Committee is particularly interested in, visit www.heeap.org. ✨

HEEAP DIRECTOR MEETS WITH MOST MINISTER



In October 2013, HEEAP Director Jeff Goss met with Minister Nguyen Quan of the Ministry of Science and Technology. During this meeting they discussed a strategic collaboration to foster bi-national research and innovation between Vietnam and the US. A delegation will be scheduled to visit ASU and drive this project plan forward.

New HEEAP Cloud Community allows former HEEAP faculty to keep in touch, share resources

by Dr. David Benson and Curtis
Thompson

Over the past month, HEEAP launched its new HEEAP Cloud Community (HCC), an online Professional Learning Community currently in its test phase. The HCC is an interactive web-based resource that utilizes aspects of social-networking, cloud computing and electronic file sharing.

HEEAP created this platform to foster real-time knowledge creation, connect HEEAP faculty and facilitate future collaboration and projects.

The HCC will help maintain the connection and energy developed during HEEAP after participants return to their home institutions and busy daily lives.

During a workshop, faculty members from many institutions come together to share new ideas, explore ways to enhance their teaching and create ways to communicate new-found

knowledge to their colleagues. The HCC allows HEEAP to continue conversations and facilitate future interactions among HEEAP faculty.

To accomplish this, the HCC is divided into several sections. The main forum has a social-network component similar to Facebook or LinkedIn. In this section, faculty share updates on their lives and careers, as well as search for project collaborators. This page also serves as the site's main navigation, and here HEEAP administrators can promote conferences, connections with industry, competitions and educational programs.

The HCC also allows HEEAP faculty to create 'books' to share. In these 'books', HEEAP faculty share best-practices, inspiring and encouraging other faculty members. In this way new ideas will be replicated and propagated from faculty to faculty. As inspiration, these pages serve as testimonials of what worked and what didn't work in a class so that one great idea can spawn other great ideas.

HEEAP faculty can also create 'resource books', in which they post large projects and learning resources for key content. For example, during the last HEEAP workshop, faculty

created 'resource books' on topics such as developing design-oriented "Introduction to Engineering" courses and the creation of E3 (Everyday Examples) activities for use in the classroom. The "Introduction to Engineering" resource book contains syllabi, course handouts, instructional design documents and faculty insights on the development of these courses, and is available for faculty to use and customize for their institutions. The E3 resource book contains examples of E3 activities developed in the HEEAP workshop as well as a process for faculty to use in developing (and evaluating) their own Everyday Examples in Engineering activities.

The HCC also allows faculty to create 'working groups' around a given topic. Thus, HCC is more than an online library or repository of information. Faculty can collaborate on education or research initiatives with access to shared documents, discussion boards and content repositories.

As a whole, the HCC uses the latest web 2.0 technologies to facilitate the continuing discussion on education and provides a space for faculty to connect and build collaborations--regardless of location. ⚙

PEER PROGRAM GRANT OPPORTUNITIES

USAID, in partnership with the National Science Foundation (NSF), has launched Partnerships for Enhanced Engagement in Research (PEER) Science, a competitive grants program that invites scientists in developing countries to apply for funds to support research and capacity-building activities on topics of

importance to USAID and conducted in partnership with their NSF-funded collaborators. Types of activities that may be funded under PEER Science include education and training; technology dissemination; application and adaptation of new technologies; support for students, postdoctoral

associates, and researchers; international travel; communications; equipment, materials, and supplies for developing country institutions; and research networks.

For further information, visit HEEAP.org or nationalacademies.org.

UPCOMING HEEAP EVENTS

2014 Vietnam Engineering Education Conference (VEEC)

March 25-26, 2014
Rex Hotel
Ho Chi Minh City, Vietnam

VULII American Council on Education (ACE) Meeting

March 8-11, 2014
Manchester Grand Hyatt Hotel
San Diego, CA

VULII American Association of Community Colleges (AACC) Annual Conference

April 5-8, 2014
Marriott Wardman Park
Hotel - Washington, DC

VULII hosts three-day Quality Assurance Institute

by VULII Staff

On December 10, 2013, VULII hosted a three-day Quality Assurance (QA) Institute in Ho Chi Minh City, instructed by Dr. Kathy Wigal of ASU's College of Technology and Innovation and Dr. Julie Mustard of ASU's School of Life Sciences. Over 55 participants attended.

QA directors and their staff members were invited to attend this special session focused on setting the direction for student course evaluation design and implementation. Course evaluation is an important component of HEEAP and VULII, as professors must provide evidence to government and campus administrators of teaching success.

Deans and department chairs were invited to participate on the afternoon of the first day due to their role in determining the key criteria for teaching effectiveness and instructional quality. During the ½ day session they were asked to refine these criteria and guide quality assurance teams, who will have the responsibility of helping them carry out their course evaluation objectives. QA directors and their staff used the knowledge from the ½ day session as a foundation for their work.

Three important points were covered

during the Institute:

- Evaluation strategy and survey purpose
- Key evaluation criteria for quality instruction
- Using survey results for change and improvement

This workshop served as an opportunity for schools to collaborate with others from their campus to gather effective feedback about the courses they offer. Teams from each college and university worked together to develop valid and reliable evaluation surveys, and to develop ways to use the resulting data for improved teaching and learning. After the workshop Dr. Wigal and Dr. Mustard conducted campus visits, meeting with QA staff on their own campuses. ✨

Bottom: VULII QA Institute participants.

Top: Dr. Kathy Wigal speaks to QA Institute participants about the significance of course evaluations.



HEEAP'S NEW STAFF MEMBERS



Sabrina Carretie,
Assistant Director, Global Programs

Sabrina will serve as the Assistant Director of Global Programs. Her primary duties will focus on managing HEEAP and other international engagement and

development. Sabrina will join HEEAP from the Fulton Schools of Engineering Research Administration Office, where she served as Research Advancement Manager. Sabrina has a Bachelor of Arts in International Relations from the American University of Rome, and a Master of Science in Political Science and a Master of Public Administration from Suffolk University in Boston.



Tran Thi Phuong Thao,
In-Country Program Coordinator

Thao will serve as HEEAP's in-country Program Coordinator. She will support local HEEAP operations from the office in Ho Chi Minh City, Vietnam. Prior to joining the team, Thao was a Program Coordinator at the Center

for International Education and the Office of International Cooperation at the University of Social Sciences and Humanities (USSH), Vietnam National University. Thao has a Bachelor of Arts in English Linguistics and Literature and a Bachelor of Science in Biology from Vietnam National University. She earned a post graduate certificate in Media and Communications Management from the University of Stirling, Scotland.



Top: VULII Vocational Move to Action Workshop participants.

Bottom: VULII University Move to Action Workshop participants.

VULII hosts two Move to Action Workshops and Rectors Institute

by VULII Staff

In October VULII hosted two Move to Action Workshops in Ho Chi Minh City. These workshops served to follow up on the work Dr. Dan Shunk began at the VULII Year 1 Assessment Conference that took place in August.

The workshops were designed for deans and their leadership teams from partner vocational colleges and universities. Over 110 participants attended the trainings focused on developing action plans at the college, school, and department levels.

The workshops emphasized Leading

and Managing for Change and guided participants through practical leadership skill building, specific tools and skills for project management and use of Pearson LMS tools for data collection and analysis. The focus was to provide the tools needed to implement priority projects at each institution. The important takeaways from the workshops were:

- Leadership tools and experience in using those tools
- A project management plan for at least one of the college/school/department goals
- A faculty evaluation model adapted to the specific needs of the institution
- A student course evaluation form, also adapted to the specific needs of the institution

The Workshops were taught by Dr. Kathryn Mohrman the Director of VULII, and Dr. Scott Danielson and Dr. Kathy Wigal of ASU's College of Technology and Innovation.

On October 30, VULII held a one-day workshop for rectors in Ho Chi Minh City. This one-day workshop was led by Prof. Dan Shunk, in collaboration with Mr. Steve Rheinschmidt of Pearson Learning Solutions. The institute focused on valuable topics including getting the greatest strategic value from the Pearson Learning Management System, an overview of the "Delta t" program, a review of advanced leadership models and other discussions about the current higher education situation in Vietnam. Thirteen rectors and vice rectors attended this one-day workshop. ⚙



pursue an engineering Ph.D at Arizona State University

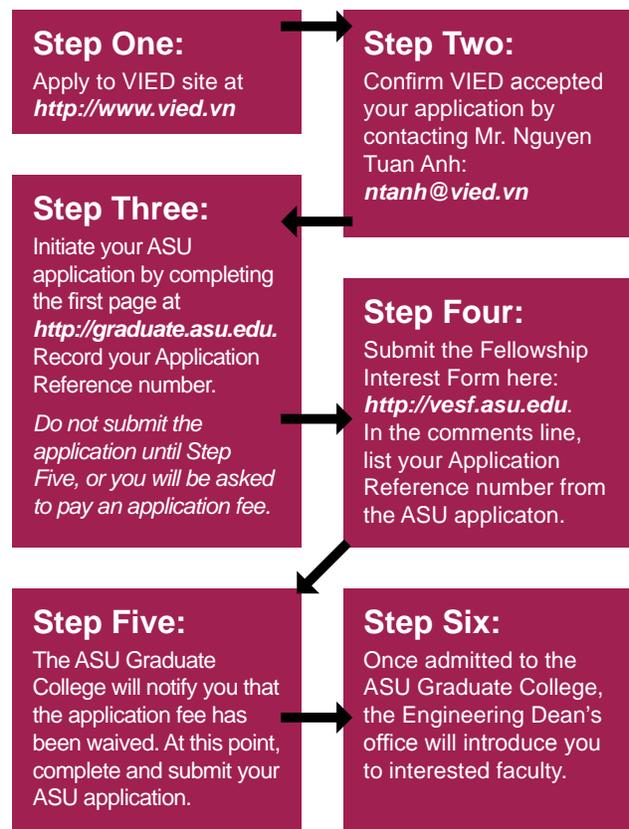


The Project 911 Fellowships are a partnership with the Vietnam International Education Department (VIED) and Arizona State University (ASU). These fellowships provide the opportunity and financial assistance to complete a Ph.D program in Engineering at ASU. To be eligible, applicants must:

- Receive the VIED fellowship from Vietnam
- Meet ASU academic and English language requirements for admission
- Commit to full-time enrollment in an Engineering doctoral degree program at ASU
- Be citizens of Vietnam
- Receive an unconditional offer of admission to the ASU PhD program
- Intend to pursue a PhD in one of the priority academic research areas identified by VIED and/or within the research strengths of ASU

The final selection for the 911 Fellowships will be made jointly by ASU and VIED on the basis of academic merit and research strength.

application map:



For more information, visit <http://vesf.asu.edu>



109 HEEAP Vocational Female Students Scholarship recipients are pictured at the scholarship award ceremony, where Intel and HEEAP granted scholarships totalling 708 million VND.

Intel grants 109 Female Scholarships through HEEAP

by Intel Staff

Intel Products Vietnam granted 109 scholarships Friday, November 29, 2013, awarding female university and vocational students a total value of 708 million VND. Intel awards these Vocational Female Students Scholarships annually under the umbrella of the Higher Engineering Education Alliance Program (HEEAP).

In the program's first two years, female engineering students have received a total of 218 scholarships-- a total value of 1.4 billion VND.

Speaking at the HEEAP Vocational Female Students Scholarship award ceremony, Sherry S. Boger, General Manager of Intel Products Vietnam, said, "Education for girls and empowering women is one of Intel's key focuses in our education

transformation and corporate social responsibility initiatives. With the ambition of increasing the female-to-male ratio in Vietnam technical and engineering studies, we launched the female scholarship program as a part of HEEAP Phase One in 2012 and we have provided many scholarships that give female students the opportunity to excel and maximize their potentials within the engineering major."

"Education transformation, and higher outcome quality are targets of higher human resources from 2011 to 2020. Through their involvement, Intel has contributed a great deal wto this progress via programs for higher education quality that increase the participation of female students in engineering," said Mr. Ma Hoang Le, Head of the Vocational Training section of Ho Chi Minh Department of Labor, Invalids and Society. "Intel's HEEAP female scholarship gives female engineering students more confidence in their capacity, especially for those who study at vocational

schools."

The 109 students receiving this scholarship come from Ho Chi Minh University of Industry, Ho Chi Minh Vocational College of Technology, Cao Thang Technical College, Thu Duc College of Technology, Dong An Polytechnique, Ho Chi Minh Vocational College, Ly Tu Trong Technical College, Nguyen Tat Thanh University, Phu Lam Technical and Economic College, Industry and Trade Vocational College HCMC, Vietnam Singapore Vocational College, Ho Chi Minh University of Technical Education, Can Tho Vocational College.

Any female students in their third year from the above universities and colleges who would like apply for the scholarship in 2014 can download forms and apply online and/or at their school's department. The scholarship will begin accepting applications in September 2014.

Please visit heep.org/scholarship for more details. ⚙

HEEAP Faculty Photos

Active Learning Classroom Pictures

Pham Thuy Ngo, IUH



Chúc mừng ngày Nhà Giáo Việt Nam!

Tran Thi Ngoc Chau, CTTC



SEND YOUR PHOTOS AND SUCCESS STORIES

Have you made a successful change to your curriculum? Captured a photo of your students taking part in a new active learning activity? Send

your photos and stories to us at HEEAP, so we can see how you use your HEEAP teaching skills in the classroom! We'll even share them with the rest of the HEEAP community

through the HEEAP website or newsletter!

E-mail your photos and stories to Gila Aispuro at Gila.Aispuro@asu.edu.

- ▶ DR. MAI'S CLASSROOM SUCCESS.....2
- ▶ NEW HEEAP CLASSROOM LOCATION..... 2
- ▶ HEEAP VIETNAMESE PROFESSORS RECEIVE PRESTIGIOUS GRANT.....3
- ▶ HEEAP IS GROWING!.....4
- ▶ IMPORTATNT INFO.....5



FACULTY QUARTERLY NEWSLETTER
MARCH 2013

Higher Engineering Education Alliance Program

CTTC Implements Active Learning Through Student Competition

By Christina Silvestri

Engineering departments across Vietnam's Cao Thang Technical College (CTT) collaborated to initiate a university-wide student "tower" contest based on HEEAP learning methods.

The competition attracted more than 200 students across engineering departments, including mechanical, electrical and automation. The students were divided into 36 teams of four to five and underwent a preliminary competition to construct the highest tower in 30 minutes. Each team was given newspapers, glue, tape, scissors and colored paper to construct their towers, which were judged based on correct measurements. From there, 20 teams were chosen to participate in the final competition October 26, where four winning groups were selected.

Professor Thong Nguyen, who teaches manufacturing technology at CTTC, said the main objective was to introduce students across engineering disciplines to what the faculty learned attending HEEAP 2012 workshops.

"We wanted our students to improve their teamwork and soft skills

through the contest," said Nguyen, who is also the head of the school's Department of Mechanical Manufacturing.

Instructors believe the competition encouraged student creativity, confidence and coordination skills. Nguyen said more than 400 students came out to support their peers in the final round.

"In the contest, each group had its own ideas, but required close links between the team members," said student contest winner Le Thi Thanh Hieu.

Concurring, another student winner of the tower contest, Le Viet Cuong, said, "Through the contest, I found to work in a group how to use good communication skills. We [my team] always had the motto: 'Play hard, enthusiastic and best.'

CTTC currently employs active learning components in nine courses within the mechanical, electronics departments, consistent with its 2012 project proposal that aims to prepare CTTC post graduates with necessary skills for the global engineering workplace.

However, the contest was the first university-wide attempt at implementing HEEAP learning methods.

With this success, CTTC adminis-



One of the winning student teams stand by its award-winning tower at CTTC.

trators plan to host similar competitions to replicate what instructors have learned attending HEEAP workshops, in addition to training 12 technical faculty members in active learning techniques by January 2013.



Dr. Mai's Classroom Success

By Christina Silvestri

An electrical engineering professor has found student success through introducing HEEAP teaching methods in his classroom at the Danang University of Technology (DUT) in Vietnam.

Dr. Nguyen Hoang Mai, who also heads the Automation Department at DUT, attended the HEEAP 2012 University Program in August where he learned how to redesign his course syllabus to accommodate active learning teaching methods, like teamwork, to enable critical thinking and interpersonal communicative skills among students and faculty. Upon returning to Vietnam, he immediately implemented what new teaching methods he learned to his classroom.

HEEAP aims to bring together government, academia, and industry to modernize Vietnamese public higher education in engineering.

Dr. Mai first introduced teamwork as a HEEAP technique to

his classroom, where each group, comprised of five to seven students, had to work together to solve chapter problems. Under his guidance, the students independently researched from books and the Internet to craft physical models that they then presented in class.

"My courses are special lectures of electrical engineering, so professional knowledge [is] important for students," he said.

Besides theory-based knowledge, Dr. Mai supplements his class lectures by lending his own knowledge of experience as a professional engineer. After the first part of a lecture, Dr. Mai said he engages his students in participative dialogue through evaluative questions. He believes his students enjoy the interactive classroom environment because they are comfortable and retain "good knowledge for their futures."

Previously, Dr. Mai taught in the classic teaching meth-

od commonly known as "passive learning," where the professor dictates knowledge directly from the syllabus in lecture format to the students who then read, write and take exams on a pass-fail basis. In effect, the student's knowledge depends on the knowledge of faculty, where there is little opportunity to develop skills in an interactive environment, Dr. Mai said.

Dr. Mai also noted he has connected with students on a personal level since implementing active learning techniques.

"My students ask me questions about specialized professional life more and more," he said.

After the fall semester is over, Dr. Mai plans to train more DUT faculty in HEEAP teaching methods, saying, "I see that HEEAP teaching has many changes for Vietnam's education."

STUDENTS IN DR. MAI'S CLASSROOM AT THE DANANG UNIVERSITY OF TECHNOLOGY PRACTICE THEIR SOFT SKILLS BY PRESENTING THEIR FINDINGS TO THE CLASS.



WE'VE MOVED!



The department of Global Outreach and Extended Education has moved to the ISTB4 building on the ASU Tempe campus.

- This research focused building hosts the School of Earth and Space Exploration and several Ira A. Fulton Schools of Engineering departments and labs.
- Within the new space is a state of the art classroom in which all future HEEAP trainings will be held.
- The classroom features 7 collaboration pods where HEEAP faculty will be able to work and share their laptop display with their group, collaborate on the same document, and share their display with the instructor's display at the front of the classroom. The design of the space was intended to foster collaboration among the participants and provide a learning environment where participants can work in small groups or as one large cohort.
- The multimedia classroom is equipped to synchronously deliver video to international partners and will also be used to deliver graduate level courses to ASU students. Capture technology allows for activity to be recorded, packaged and shared with project participants and all stakeholders.

HEEAP Vietnamese Professors Receive Prestigious Grant

By *Christina Silvestri*

We are proud to announce the achievements of **Dr. Phan Hong Phuong** and **Dr. Hanh Nguyen**, who were selected among a small group of individuals to be 2013 Vietnam Education Foundation (VEF) Visiting Scholars to serve as ambassadors from their country. They each had to demonstrate superior academic achievement and commitment to the educational and scientific development of Vietnam, with a proposed outlined development plan. The VEF is an independent U.S. government agency for professional development created by Congress.

Dr. Phuong will work to develop a UWB antenna design procedure that can contribute to a generalized design process for UWB transceivers in Professor Constantine A. Balanis' lab at ASU. During her one-year stay, she hopes to network among career professionals and learn more about American culture.

Dr. Nguyen will work to upgrade her course, "Electrical components in electric power plants and substations" at Hanoi University of Science and Technology (HUST), and will initiate a sustainable collaboration between HUST and ASU in the field of power systems engineering. She looks forward to participating in academic conferences and seminars while developing her teaching skills.

HEEAP University and Vocational Faculty Development Trainings

UNIVERSITY COHORTS

- April 15- May 24, 2013
- June 3- July 12, 2013
- July 15- August 23, 2013
- September 9- October 18, 2013

VOCATIONAL COHORTS

- June 3- June 28, 2013
- July 8- August 2, 2013
- More to be announced soon!



The HEEAP program is growing!

Please Join Us In Welcoming Four New Members To The Team:



Dr. Benjamin Benson, Senior Lecturer

Dr. David Benson joins the Ira Fulton Schools of Engineering and the HEEAP Program at ASU from Kettering University in Flint, MI where he was an Assistant Professor of Mechanical Engineering. Dr. Benson obtained his Ph.D. in Mechanical Engineering from Michigan State University in 2004 and conducted post-doctoral research in Solar Astrophysics at Michigan State University. Prior to joining HEEAP, Dr. Benson's research focus was divided between flow control methods for high speed inlets and education research characterizing the degree of academic diversity present in higher education. His recent education efforts have focused on the development of classroom tools to improve student access to content and to remediate/reinforce core skills and content understanding. Recent papers have focused on the thematic development of entrepreneurship and social entrepreneurship concepts within core courses; the use of reading logs to both promote transfer of content responsibility and teach lifelong learning skills; and the development of rubrics and peer-to-peer education methods which promote metacognitive processing. When not in the classroom or developing educational units, Dr. Benson enjoys spending time with his family, hiking in Utah, Colorado and North Dakota (and soon Arizona!) and cooking recipes from all over the world.



Le Van Khoi, HEEAP Country Director

Khoi joins the HEEAP Program as the new in country director for Vietnam. He is an experienced PR & Soft Skills trainer. Throughout his career he was worked with more than 6,000 university students from over 30 universities/colleges across Indochina, as well as various organizations including UNESCO, Ministry of Education & Training, GlaxoSmithKline, Biz Tequila, VATC, ARTI, Tan Tao Corporation, Dong Tam Corporation, VietGate, Le & Associates, and Petrolimex. For his excellent work Khoi received the Award for Great Contribution to Education Service by the Ministry of Education & Training of Vietnam, as well as the award for Great Contribution to the Youth by the Youth Union. Khoi was a recipient of the prestigious Fulbright scholarship to attend the Maxwell School at Syracuse University, where he obtained a Master's Degree of Public Administration. He is currently a member of the Vietnam Fulbright Selection Committee. In his spare time, Khoi enjoys photography, tennis and Vietnamese culture.



Jose Quiroga, Coordinator- Global Partnerships

Jose served as the Vice President of Operations at Predictive Technologies Corporation. As the Vice President, Jose assisted with conceptualizing and implementing the company's web-based, open-collaboration platform for education and made recommendations to the CEO regarding the company's performance. Prior to Predictive Technologies, Jose held several administrative positions in the ASU Office of the President, coordinating the University's relations with international academic institutions and governments in the fields of research, entrepreneurship, and academic programs. Jose holds a Master's of Science in Electrical Engineering from Tecnologico de Monterrey, MX and a Bachelor's of Science in Biomedical Engineering from Arizona State University. He enjoys outdoor activities, exercising and spending time with his family.



Gila Aispuro, Coordinator- Global Partnerships

In her previous position Gila managed the Accounts Receivable of the CCF- Communications Department. In addition to her financial responsibilities, Gila coordinated large scale community gatherings, press conferences, and partnership events with other organizations. Gila has worked with a variety of non-profit organizations throughout her career. She received her Master's of Science degree in Practicing Sustainable Development from Royal Holloway, University of London. She enjoys traveling and learning about foreign cultures. She is very excited to be working with HEEAP and getting to know the faculty from Vietnam.

Important Information

UPCOMING CONFERENCES



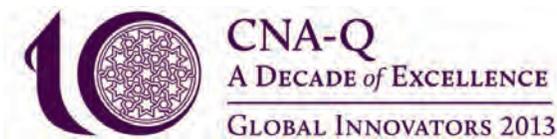
"Transforming Boundaries through Innovation and Partnerships"

HEEAP in partnership with Can Tho University will be hosting the first annual Vietnam Engineering Education Conference. The inaugural Conference will bring together industry, government and academic leaders with faculty to discuss the transformation of engineering education in Vietnam. The conference will take place March 19-20th, 2013 at the Golf Hotel in Can Tho City.

Register now: <http://heep.org/conference>



International Conference on Engineering and Applied Sciences
Date: March 13-15, 2013
Location: Tokyo, Japan
Registration: <http://www.iceaas.org/>



Global Innovators 2013
Date: April 13, 2013
Location: Doha, Qatar
Registration: <http://www.globalinnovators2013.com>



Asia- Pacific International Congress on Engineering & Natural Sciences
Date: April 16-18, 2013
Location: Bangkok, Thailand
Registration: <http://www.apicens.org/>



DATE TO REMEMBER:

⇒ **March 8, 2013:** Application Deadline for HEEAP University and Vocational Faculty Trainings taking place on:

- June 3- June 28, 2013
- June 3– July 12, 2013
- July 8- August 2, 2013



The HEEAP Alumni Facebook site has moved!

Like us at:
<https://www.facebook.com/heep>

U.S.– VIETNAM TRIVIA

1. Vietnam's national sport is:
a) Jianzi b) Soccer c) Badminton
2. The Vietnamese written language is based in:
a) Chinese b) Arabic c) Latin
3. How many stars are there in the American flag?
a) 75 b) 50 c) 53
4. What bird stands as the symbolic U.S. emblem?
a) Bald Eagle b) Raven c) Peacock

Answer Key: 1)b 2)c 3)b 4)a



Information for News

Intel Corporation in Vietnam received the Award for Corporate Excellence from Secretary of the United States (ACE 2012)

Highlights

- Intel Corporation in Vietnam for the first time won the Award for Corporate Excellence presented by the Secretary of States.
- ACE Award 2012 is to recognize the efforts of Intel Vietnam in the forefront of environmental protection and improvement of education for the community.
- Intel Vietnam is one of 11 companies entered the finals from 82 nominations worldwide and won the large multinational enterprises category.

Ho Chi Minh City, Vietnam, December 7, 2012 - Today, Intel Corporation in Vietnam held a ceremony to receive the Award for Corporate Excellence 2012 presented by Secretary of the United States (ACE 2012). This is the first time Intel Vietnam receives this prestigious award presented by the Secretary of United States Hillary Rodham Clinton presented. The ceremony officially announced and the award were held in Washington DC on November 28.

2012 is the second year in a row that the U.S. Embassy in Vietnam nominated Vietnamese Intel for ACE Award 2012. After being nominated in August, on the 24th of September, the Embassy in Vietnam announced Intel Vietnam has been selected as one of 11 finalists names ACE 2012. Until October, it was announced to become the ACE award winner in 2012 for multinational enterprises category.

The winning of Intel Vietnam in ACE Award 2012 is a example that corporation can fulfill their citizenship responsibilities, as well as influential and continuation of Intel in Vietnam. The selection acknowledged the efforts of Intel Vietnam in the leading of environmental protection through the solar power, the participation in educational programs that can brought changes and focus on improving teaching and curriculum programs through the Technical Study (IVS), the Higher Engineering Education Alliance Program (HEEAP). This work includes sending the local faculty to the training programs in the Universities of the United States and provides scholarships to children, youth and women in difficult circumstances.

Intel/Page 2

This year, ACE has selected 11 U.S. companies from 82 nominations of embassies worldwide. There are two companies were chosen for their important role in the diaspora, as good corporate citizens, promote sustainable development and to support the needs of the communities in which the company is operating. Besides Intel Vietnam is the winner in the category of large multinational enterprises, company Sorwathe in Kigali, Rwanda, won the small and medium enterprise category.

ACE is the prestigious award that Secretary of State awarded annually, beginning in 1999, for American businesses operating in every region of the world. The business was nominated for and won the leading in social responsibility activities and contribute to the growth and development of the economy in the country where they are working. Ministry of Foreign Affairs of the United States is committed to working with the business community to promote job responsibilities around the world and promote efforts to improve life in the native country as well as abroad. For more information, please visit: <http://www.state.gov/e/eb/ace>.

Information about Intel

Intel (NASDAQ: INTC) is a world leader in innovative new Intel computer design and develop essential technology as the foundation for the world's computing devices.

For more information about Intel, visit www.intel.com/pressroom & blogs.intel.com.

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Editor Contact: Jessie Lee, (65) 6226 5886

NI partners with ASU through HEEAP to enhance the engineering education ecosystem in Vietnam

News Highlights

- NI joins HEEAP as an industry alliance partner to advance engineering education in Vietnam
- NI boosts education and research collaborations with universities in Vietnam to accelerate the growth of its emerging high-tech sector

Ho Chi Minh City, Vietnam, June XX, 2013 - National Instruments (NI) and Arizona State University Ira A. Fulton Schools of Engineering (ASU) today announced a strategic collaboration to transform the standards of engineering education in Vietnam by using the latest hands-on and experimental tools for research and teaching.

NI joins the Higher Engineering Education Alliance Program (HEEAP) and as part of this partnership, NI will invest by providing increased access to software, hardware and training for the eight engineering universities and technical vocational institutions in the alliance. The commitment through the NI graphical design system platform, which includes training and certification courses in NI LabVIEW is valued at US\$7 million.

The collaborative efforts between NI and HEEAP will enable teachers, students and researchers to accelerate learning and innovation in all aspects of engineering from undergraduate curriculum to post-graduate research, design & development; and ultimately expand the talent pool of highly skilled technical workforce and aid the growth of the high tech sector in Vietnam.

HEEAP is administered by ASU in partnership by the government of Vietnam, the United States Agency for International Development (USAID), the Intel Corporation, Siemens, Candence, Danaher Corporation and other industry partners.

“We are very excited NI is joining HEEAP and our efforts to support Vietnam’s 2020 Higher Education Strategic Plan, says Mr. Jeffrey Goss, Director of HEEAP and Associate Vice Provost for Vietnam/SE Asia Programs at ASU. “NI is a very scientific and research oriented company and this corporate DNA will help bring value at many levels to the Vietnamese engineering program transformation.”

Since it opened an office in Ho Chi Minh City in 2011, National Instruments has significantly increased its support for Vietnam’s academic and research community towards advancing capabilities in engineering.

“Nurturing and enabling the next generation of innovative engineers and scientists is an integral component of our long term growth strategy in Vietnam. We are delighted to work with HEEAP to provide leading edge technology tools to transform classroom theories into experimental learning,” says Mr. Victor Mieres, Vice President of Emerging Markets for Asia/Rest of the World, National Instruments.



Vietnam is a key market for National Instruments in Southeast Asia. In addition to academic institutions, the company has been supporting local and multinational companies in the automotive, oil & gas, manufacturing, building & infrastructure industries.

“Vietnam has set a target for its electronics exports to reach US\$40 billion by 2017; and this goal will definitely require international support in human capital development and cooperation in the global value chain. As the leader in automation, test and measurement industry, we want to invest and strengthen the local engineering ecosystem in Vietnam to help build a strong and sustainable nation of innovators,” Victor adds.

About National Instruments

Since 1976, National Instruments (www.ni.com) has equipped engineers and scientists with tools that accelerate productivity, innovation and discovery. NI’s graphical system design approach to engineering provides an integrated software and hardware platform that speeds the development of any system needing measurement and control. The company’s long-term vision and focus on improving society through its technology supports the success of its customers, employees, suppliers and shareholders.

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About HEEAP

Through the Higher Engineering Education Alliance Program (HEEAP-heep.org), founding partners United States Agency for International Development (USAID) and the Intel Corporation partnered with the Arizona State University Ira A. Fulton Schools of Engineering (ASU) and an expanding industry consortia to collaborate on the transformation and modernization of top engineering and technical vocational universities in Vietnam. This includes university leadership development, faculty development, curriculum innovation, and university engagement.

HEEAP will focus on transforming the existing theory-based engineering and technical vocational programs through higher education enterprise modernization and robust applied and hands-on instructional approaches. These new instructional and pedagogical approaches will graduate students who are work-ready with both project and applied skills and technical communication competencies required by multinational corporations. Global engineers need the skills, knowledge, and leadership qualities that cultivate: self-reliance, social and cultural capital, appreciation for lifelong learning, creativity, conflict-resolution and team-building skills, ethics, understanding of economics and business, and more. Visit: heep.org

Industry Sector Industry Automation Division

Ho Chi Minh City, April 15, 2011

Siemens Helps Universities Develop Next Generation of Vietnamese Engineers with US\$71 Million In-Kind Software Grant to the Higher Engineering Education Alliance Program

In-kind software provided by Siemens PLM Software to Vietnamese Universities to further enhance engineering education in Vietnam

Ho Chi Minh City, April 15, 2011 - Siemens today announced an in-kind software grant with a commercial value of US\$71 million to the Higher Education Engineering Alliance Program (HEEAP). The in-kind software grant, provided by Siemens PLM Software, a business unit of the Siemens Industry Automation Division and a leading global provider of product lifecycle management (PLM) software and services, will help universities develop the next generation of Vietnamese engineers.

HEEAP, developed in collaboration with the government of Vietnam, the United States Agency for International Development (USAID), the Arizona State University Ira A. Fulton Schools of Engineering (ASU), Siemens, and Intel Corporation will collaborate with top technical universities in Vietnam to advance their Electrical and Mechanical Engineering curricula. The goal is to develop a highly skilled technical workforce that will attract and sustain a healthy high-tech manufacturing industry, thus positioning Vietnam to compete among high-tech centers of excellence.

HEEAP focuses on developing and advancing interdisciplinary and applied engineering and vocational curriculum through instructional innovation and university level transformation. Working with the Ministry of Education and Training, partner university leadership, and industry leaders, the project focuses on faculty instructional innovation and university level transformation needed to succeed in the emerging Vietnamese high-tech sector.

The in-kind software grant made through Siemens PLM Software's [GO PLM™ initiative](#), will provide its [NX™ software](#), a comprehensive digital product development solution; and [Tecnomatix® software](#), a best-in-class digital manufacturing solution, to Ha Noi University of Technology, Da Nang University of Technology, Can Tho University, Ho Chi Minh University of Technical Education, and the Ho Chi Minh University of Technology.

“Advanced technology like the PLM software is critical to preparing our students for the challenges of a global economy. We are pleased to partner with Siemens PLM Software to give students in Vietnam access to state-of-the-art tools that provide the knowledge and experience that will help them be successful in a highly competitive marketplace,” Jeffrey S. Goss, Director, Vietnam Higher Engineering Education Alliance Program and Assistant Dean, Global Outreach and Extended Education for ASU's Ira A. Fulton Schools of Engineering.

“Siemens is pleased to support the universities with the state-of-art Siemens PLM Software technology in their education program,” said Erdal Elver, President and CEO, Siemens Vietnam. “This is our commitment to Vietnam as part of our corporate social responsibility. I sincerely wish the program a very successful start and bring down-to-earth benefits to the participants for their career development.”

“Siemens PLM Software provides universities with access to PLM technology, which otherwise would be out of reach for the academic community, giving students a distinct advantage by being able to use the same PLM technology widely-used by leading multi-national manufacturing companies around the globe,” said Rajiv Ghatikar, General Manager, APAC and Australasia, Siemens PLM Software. “The experience gained in the use of these tools better prepares students for today’s highly-competitive manufacturing jobs requiring full knowledge of modern technologies.”

Siemens PLM Software’s Global Opportunities in Product Lifecycle Management (GO PLM™) initiative leads the industry in the commercial value of the in-kind grants it provides and brings together four complementary community involvement programs focused on academic partnership, regional productivity, youth and displaced worker development and the PACE (Partners for the Advancement of Collaborative Engineering Education) program. GO PLM provides PLM technology to more than one million students yearly at nearly 10,800 global institutions, where it is used at every academic level – from grade schools to graduate engineering research programs. For more information on GO PLM and the partners and programs it supports visit www.siemens.com/partners/goplms.

About the Higher Engineering Education Alliance Program (HEEAP)

Through the Higher Engineering Education Alliance Program (HEEAP), the United States Agency for International Development (USAID), the Arizona State University Ira A. Fulton Schools of Engineering (ASU), Portland State University Maseeh College of Engineering and Computer Science (PSU) and Intel Corporation will collaborate with top technical universities in Vietnam to advance their Electrical and Mechanical Engineering curricula, considered the "bread and butter" degrees for technology manufacturing. The goal is to develop a highly skilled technical workforce that will attract and sustain a healthy high-tech manufacturing industry, thus positioning Vietnam to compete among high-tech centers of excellence.

About Siemens PLM Software

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with 6.7 million licensed seats and more than 69,500 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit www.siemens.com/plm.

Siemens Vietnam dates back to 1993, when our representative offices were officially established in Hanoi and Ho Chi Minh City. Since then, Siemens has participated in numerous Vietnam’s infrastructure projects, particularly in all key areas of the economy such as energy, industry, healthcare and transportation. In order to create a solid basis for enhancing cooperation with local partners, Siemens Ltd. was founded in September 2002 to provide solutions and services related to Siemens products and systems. The rapid expansion of its business relations with Vietnam prompted to establish Siemens Automation Systems Limited in 2005 to produce busbar trunking systems. To date, Siemens is an

integral part of Vietnamese economy and is committed to further contribute to the socio-economic development of Vietnam. For more information please visit our website: www.siemens.com.vn

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News Release

New investment will accelerate progress in modernizing engineering education in Vietnam

NEWS HIGHLIGHTS:

- *HEEAP expansion consists of six components (1) Leadership development (2) Faculty development (3) Curriculum, lab and infrastructure; (4) Distance education (5) Diversity and instructional expert development; and (6) English, and will begin the implementation from 2013 to 2017 with the Accreditation Board for Engineering Technology (ABET) criteria.*
- *Today's event is a Signing Agreement between Vietnam's Ministry of Education and Training (MOET) and Arizona State University (ASU) to invest in the expansion of the Higher Engineering Education Alliance Program with a focus on faculty training for Vietnam technical universities with an estimated investment of \$4 million.*
- *Another 1,000 faculty members will benefit from this or expansion of HEEAP and about 12 more industry partners to join the HEEAP expansion.*
- *The estimated value of the expansion will be up to \$40 million, which was committed by Ministry of Education, General Department of Vocational Training – Ministry of Labor, Invalid and Social Affairs, Intel, and industries partners. The commitment from Intel is \$7 million.*

HANOI, August 20, 2012 – Vietnam's Ministry of Education and Training (MOET), General Department of Vocational Training – Ministry of Labour, Invalid and Social Affairs (GDVT - MOLISA), the United States Agency for International Development (USAID), Intel Corp., and Arizona State University (ASU), in partnership with government agencies, universities and colleges in Vietnam, are intensifying efforts to modernize higher engineering education in the country through the Higher Engineering Education Alliance Program (HEEAP).

MOET and ASU are the first two partners to sign an implementation agreement on the HEEAP expansion, focusing on faculty training on innovative instruction methods, curriculum development, and English improvement with an estimated investment of \$4 million.

“The Vietnamese government is very pleased with the outcomes of the HEEAP project to be strong partners to rapidly upgrade our higher education system; that is why we decided to support HEEAP expansion with our financial commitment,” said MOET Vice Minister Bui Van Ga.

HEEAP was established in 2010 with funding from USAID and Intel. It is administered by ASU's Ira A. Fulton Schools of Engineering. To date the program has trained more than 100 faculty members from Vietnam's universities and colleges in advanced methods for teaching engineering at ASU.

The expanded phase of HEEAP will also have other funding partners, including GDVT-MOLISA and Intel Corp., and other industrial partners and will be carried out in close collaboration with USAID. The estimated financial investment of the expansion will be up to \$40 million,

HEEAP aims to accelerate economic development by providing a more highly trained workforce in Vietnam to meet the growing needs of global high-tech industries. Ultimately, HEEAP will strengthen education and research collaboration, as well as business ties, between Vietnam and the United States.

One component of the HEEAP expansion will establish a distance-learning network that will enable students across the country to take online courses. There will be upgrades of data systems used by the engineering education programs in Vietnam's colleges and universities.

The new investment will enable the program to provide training to an estimated 1,000 faculty members, and bring engineering programs into compliance with requirements set by leading higher education accrediting organizations, specifically the ABET (Accreditation Board for Engineering Technology) and the CDIO (Conceive — Design — Implement — Operate).

Since the start of the program, other industry partners like Siemens, Honeywell, Danaher and Cadence have joined the program. These companies have provided equipment, simulation and software tools and training of faculty.

During the expansion of HEEAP, the alliance expects to add at least 12 new industry partners within the next five years.

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About USAID

The United States Agency for International Development (USAID) is the lead agency for the U.S. Government providing economic development and humanitarian assistance to people around the world. USAID/Vietnam's programs help reduce the incidence of HIV/AIDS avian influenza, facilitate education, trade and economic development, provide support for persons with disabilities, and provide disaster assistance. Additional information about USAID/Vietnam is available at <http://vietnam.usaid.gov/>.

About Intel

Intel (NASDAQ: INTC) is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for the world's computing devices. Additional information about Intel is available at www.intel.com/pressroom and blogs.intel.com.

About ASU

Arizona State University is a New American University—a major public educational institution, a premier research center and a leader in innovation. Our vision is described by our three core principles: excellence in scholarship, access to education and impact in our global community. As a New American University, ASU is intellectually vibrant, socially conscious and globally engaged. More information: <http://www.asu.edu/>
Information about ASU's Ira A. Fulton Schools of Engineering: <http://engineering.asu.edu/>

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Editor Contact: Jessie Lee, (65) 6226 5886

NI partners with ASU through HEEAP to enhance the engineering education ecosystem in Vietnam

News Highlights

- NI joins HEEAP as an industry alliance partner to advance engineering education in Vietnam
- NI boosts education and research collaborations with universities in Vietnam to accelerate the growth of its emerging high-tech sector

Ho Chi Minh City, Vietnam, June XX, 2013 - National Instruments (NI) and Arizona State University Ira A. Fulton Schools of Engineering (ASU) today announced a strategic collaboration to transform the standards of engineering education in Vietnam by using the latest hands-on and experimental tools for research and teaching.

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HIGHER ENGINEERING EDUCATION ALLIANCE PROGRAM

2014 QUARTER 1
NEWSLETTER

Inside:

- 2** Pearson Update
- 2** CTTC Competition Of Computer Skills
- 3** Project 911 Fellowships
- 4** Fulton Engineering Schools Expand Role In International Education Alliance
- 6** Quality Assessment Institute
- 6** Deans' Institute For University Deans And Department Heads
- 6** National Instruments Innovation Design Competition For Young Entrepreneurs In Vietnam
- 7** HVCT Engineering Design Construction Seminar
- 8** Cuộc Thi Thiết Kế Sáng Tạo Dành Cho Doanh Nhân Trẻ Việt Nam
- 9** February/March Newsletter
- 10** Women's Day Articles
- 11** CTTC Electrical Knowledge Student Competition
- 12** "Understanding And Improving Yourself – Control Your Mind"
- 12** HVCT Technical English Group (Pictures)
- 12** Upcoming HEEAP Events



PEARSON

Update

Steve Rheinschmidt
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As reported in the December 2013 newsletter, Professor Dan Shunk led a one-day VULII workshop in collaboration with Steve Rheinschmidt of Pearson on October 30, 2013 in Ho Chi Minh City. A portion of the workshop focused on getting the greatest strategic value from Pearson LearningStudio.

In February, Steve Rheinschmidt and Octavio Heredia traveled to Vietnam to build on the October workshop. From February 24 to March 6, Heredia and Rheinschmidt lead strategic workshops at three HEEAP partner universities - DUT, UTE and CTU. During the two-day workshops each university was asked to share its eLearning strategy and vision.

Short term goals were documented, specific actions required to reach goals were assigned and completion dates were set. Initial measures were established to determine progress and overall eLearning implementation success.

Each university requested a demonstration of LearningStudio which included a look at live web-

enhanced courses, student participation data, exam statistics, general course set-up, course content, tools, and more. LearningStudio administrator page training was provided to a small group of program administrators at each university.

Where time permitted, Heredia and Rheinschmidt worked one-on-one with key university stakeholders sharing best practices around program communication, training, and process efficiency.

Beginning in mid-April, Rheinschmidt will facilitate periodic follow-up conversations with distance learning leaders. These conversations will allow for consulting on any challenges confronting the distance learning projects and will help maintain project momentum.

All HEEAP partner universities have access to use Pearson's Learning Studio, an online learning management system (LMS), free of charge through 2018. In addition to LMS technology, Pearson is providing faculty training, tier two technical support and project management. ASU is providing the eLearning program administrator.

CTTC Olympic Competition of Computer Skills 2014

By Nhi Nguyen

On March 30, 2014, the CTTC HEEAP July 2013 group organized their first Olympic Competition of Computer Skills at Cao Thang Technical Institute. With approximately 100 students, the participants are tested on their office computer literacy; this includes Word, Excel, PP, Internet, computer hardware, etc. The competition requires strong collaborative group work, presentation, and effective communication. With those components, teams of three will use problem solving skills to pass through the qualifying round, quarter-final, semi-final, and the final round. On April 19, 2014, 3 teams were announced to qualify for the semi-final round, including 3 secondary teams with the second highest scores. As the semi-finals are approaching, the contestants are suggested to become familiar with the detailed outline of the competition as well as additional practices to the quarter-final round. The winner of the competition will be announced on April 29,. More updated news regarding the competition will be posted on the Olympictinhoc Caothang Facebook page.
Facebook link: <https://www.facebook.com/olympictinhoc.caothang>



Steve Rheinschmidt spent 2001-2012 with the Iowa Community College Online Consortium where he was Executive Director from 2003-2012 and Online Student Services Manager from 2001-2003.

The ICCOC is a voluntary, self-sustaining partnership between seven Iowa Community Colleges to offer online courses and degree programs and provide comprehensive student support services.



pursue an engineering Ph.D at Arizona State University

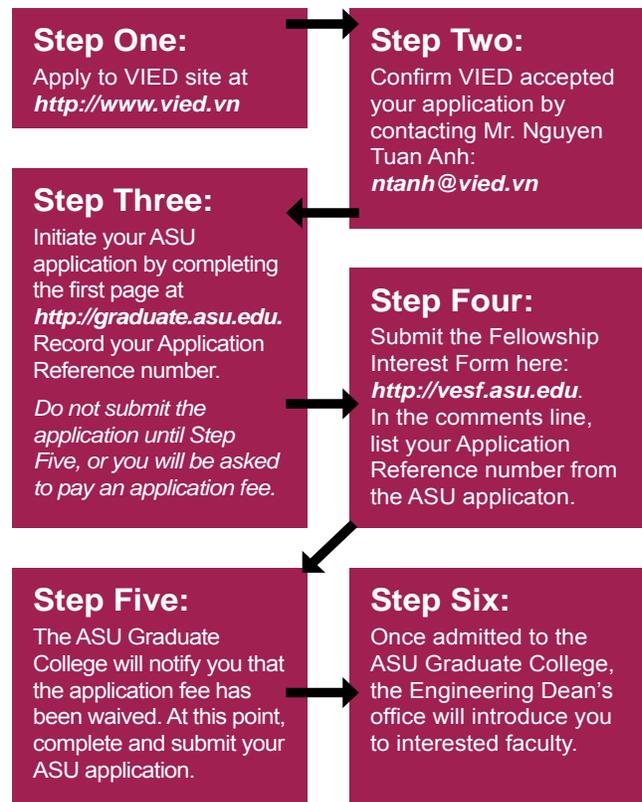


The Project 911 Fellowships are a partnership with the Vietnam International Education Department (VIED) and Arizona State University (ASU). These fellowships provide the opportunity and financial assistance to complete a Ph.D program in Engineering at ASU. To be eligible, applicants must:

- Receive the VIED fellowship from Vietnam
- Meet ASU academic and English language requirements for admission
- Commit to full-time enrollment in an Engineering doctoral degree program at ASU
- Be citizens of Vietnam
- Receive an unconditional offer of admission to the ASU PhD program
- Intend to pursue a PhD in one of the priority academic research areas identified by VIED and/or within the research strengths of ASU

The final selection for the 911 Fellowships will be made jointly by ASU and VIED on the basis of academic merit and research strength.

application map:



For more information, visit <http://vesf.asu.edu>

Fulton Engineering Schools expand role in international education alliance

by Joe Kullman



Marco Santello (left), director of the School of Biological and Health Systems Engineering at Arizona State University, joined other prominent participants at annual Vietnam Engineering Education Conference. Photo courtesy Shalom An Tran.

Arizona State University continues to foster stronger international economic, education and research ties through its role in the Higher Engineering Education Alliance Program (HEEAP).

The alliance recently hosted its second annual Vietnam Engineering Education Conference, drawing hundreds of government, industry and academic leaders from the United States and Vietnam. Their goal is to modernize engineering education in Vietnam to produce the more highly trained workforce necessary to boost the growth of the high-tech industry in Southeast Asia.

The conference spurred progress in broadening business and education partnerships between the two countries, as well as setting the stage for open exchanges of research aimed at producing technological innovations, said Jeffrey Goss, an assistant dean in ASU's Ira A. Fulton Schools of Engineering.

Goss also is executive director of the engineering schools' Global Outreach and Extended Education, which administers HEEAP.

The alliance was established in 2010 by United States Agency for International Development (USAID) and the Intel Corp., in partnership

with ASU. Since then, working in collaboration with the Vietnam Ministry of Education and Training, HEEAP has taken significant steps to advance the teaching of engineering at leading technical universities and vocational training colleges throughout Vietnam.

Hundreds of faculty members at those schools have received high-level instructional training, both in Vietnam and at ASU. A distance-education network has been established that enables students at multiple campuses in Vietnam to get instruction in the same courses simultaneously.



The Honorable Dr. Bui Van Ga, Deputy Minister of Vietnam's Ministry of Education and Training addressed the conference participants. Photo courtesy Shalom An Tran.

In addition, HEEAP is supporting a program to train education leaders in Vietnam in up-to-date skills for the administration of technical education institutions, including the revenue enhancement and policy development efforts necessary for the schools to be competitive regionally and globally.

Major high-tech companies such as National Instruments, Siemens, Cadence, Danaher and Pearson have become HEEAP partners in the past few years.

"We foresee growing the annual HEEAP conference into an event involving more of Southeast Asia," especially as the Association of Southeast Asian Nations (ASEAN) Economic Community begins implementing its master plan in 2015, Goss said.

"At this year's conference we already had expanded participation from Laos, Thailand, Singapore and The Phillipines, and from more U.S. universities," he said.

One new HEEAP-related endeavor in the works is a collaboration between ASU and Vietnam National University

in Ho Chi Minh City to develop new biomedical engineering research and a product innovation center.

A presentation related to the project was given at the conference by Marco Santello, director of the School of



William Colglazier, Science and Technology Advisor to the U.S. Secretary of State, U.S. State Department was a keynote speaker at the conference. Photo courtesy Shalom An Tran.

Biological and Health Systems Engineering, one of the Ira A. Fulton Schools of Engineering.

Santello said the collaboration presents an opportunity to design a framework that can guide future efforts to foster international entrepreneurship through partnerships of universities and industry in various countries.

The project is expected to provide opportunities for student and faculty exchanges between ASU and Vietnam universities involving both educational and research activities. Building such mutually beneficial relationships will provide socioeconomic benefits to both countries, Santello said.

In late April, a delegation from Vietnam's Ministry of Education and Training will visit ASU to discuss the impact of HEEAP and additional collaborations between ASU and the government of Vietnam.

New projects to be discussed during the visit include a joint venture to establish a bi-national master's degree program in cyber security and a training center to promote doctorate-level engineering education to feed the pipeline for future faculty members at Vietnam colleges and universities.

ASU and Vietnamese officials will also discuss ideas for expanded support of HEEAP's objectives.

In addition, a senior delegation from the Vietnam Ministry of Science and Technology and the World Bank will visit ASU to discuss ideas on how government, industry and higher education institutions can establish international research centers or institutes that would focus on innovation, entrepreneurship and technology transfer.

Quality Assessment Institute

by Dr. Kathryn Mohrman



On March 27th and 28th, more than 40 QA professionals and other administrators met in Ho Chi Minh City for a hands-on workshop emphasizing the application of assessment evaluation principles and practices to the process of accreditation and certification (e.g.: ABET, AUN-QA). Participants worked in small groups to explore accreditation fundamentals and options, and began the development of plans for program assessment and continuous improvement that are an essential component of any

accreditation and certification process. Workshop attendees worked in institutional teams to draft program objectives and program outcomes. Leadership development instruction was continued as well, as participants practiced the consensus process through hands-on problem solving activities. Finally, six institutions provided a presentation updating colleagues on their progress on the course evaluation pilot projects (HVCT, CTU, UTE, IUH, CTTC, HCMUT). This resulted in excellent collaborative discussion and shared best practices.



Deans' Institute for university deans and department heads

by Dr. Kathryn Mohrman

On March 17-18 in Ho Chi Minh City, and March 20-21 in Danang, a total of 82 administrators, faculty members, and QA professionals participated in Deans Institutes. The focus of both workshops was program assessment and preparation for evaluation by regional or international accrediting bodies.

Participants learned about the differences between course assessment and program assessment, and practiced developing valid and reliable measures for program assessment. They also explored the strengths and weaknesses of three major accreditation/evaluation systems in engineering: Conceive-Design-Implement-Operate (CDIO), ASEAN University Network-Quality Assurance (AUN-QA), and Accreditation Board for Engineering and Technology (ABET). In addition, each university team reported on the progress at the home institution in program management and evaluation.

National Instruments, through its Planet NI program and in collaboration with HEEAP presents:

The 2014 National Instruments Innovation Design Competition for Young Entrepreneurs in Vietnam

National Instruments in collaboration with HEEAP is proud to present the 2014 NI Innovation Design Competition for Young Entrepreneurs in Vietnam.

The goal is to nurture innovation and entrepreneurship among future and recent engineering graduates in Vietnam and to submit market-ready projects that support the sustainable development of the local community.

Through the Planet NI program, we will provide selected student teams access to NI's development platforms to design prototypes and solutions that meet local challenges in Vietnam. NI will offer tools, training, and consulting to help turn value-added ideas into functional prototypes using

the NI myRIO embedded hardware platform and NI LabVIEW system design software.

Have you ever had an idea for a project that can become a business and benefit the local community? Bring it to life through this competition. With our resources and support, you can make your ideas a reality.

You have a chance to win cash prizes and a trip to NIWeek 2015 in Austin, Texas, USA. From inexpensive medical devices to building the world's fastest vegetable oil-powered vehicle, we want to see how students like you are engineering a better world using the LabVIEW graphical development environment.

Price Information

Submit the most innovative and relevant prototype to win prizes. Planet NI representatives will select the top two projects and choose one winner from those finalists. Paper submissions featuring videos that exemplify their technical applications will also be required.

First Price

- \$600 USD cash¹⁾
- 1 LEGO® MINDSTORMS® NXT programmable robotics kit
- Opportunity to present project paper at global NIWeek conference
- Airfare and accommodation for one (1) member from the winning team to travel to Austin, Texas, to attend NIWeek 2015²⁾
- Paper published on ni.com

Second Price

- \$300 USD cash³⁾
- 1 LEGO® MINDSTORMS® NXT programmable robotics kit
- Paper published on ni.com

Important Dates

- March 1, 2014—Call for abstract submissions
- May 31, 2014—Closing date for abstract submissions
- June 16, 2014—Announce top 10 abstracts
- September 15, 2014—Closing date for final paper submissions
- September 30, 2014—Results and winners announced
- October 2014—Award ceremony, prize distribution (more details to follow)

Eligibility Criteria

To be eligible to enter this competition, a team must be made up of three (3) or fewer individuals, all of whom must:

- Be ± 2 years from engineering school graduation and 18 years of age or older on the date of entry and be enrolled as a student in an academic program of an accredited college or university that awards associate's, bachelor's, master's, or doctorate degrees
- Have one professor or industry project adviser
- Use NI myRIO and LabVIEW in their project application
- Write an original technical paper, including an abstract
- Submit an abstract for the paper by 23:59 CDT on May 31, 2014, which is the closing date for abstract submission
- Submit the final paper and all related materials no later than 23:59 CDT on September 15, 2014

The employees of NI and its subsidiaries, affiliates, advertising agencies, and promotional partners and the relatives and household members of those employees are NOT eligible to enter.

This contest is sponsored by NI and is restricted to the following country only:
Vietnam

Contest Details:

<http://heep.org/article/2014-national-instruments-innovation-design-competition-young-entrepreneurs-vietnam>

¹⁾ 12.5 million VND; ²⁾ NI is not responsible for visa process and fees; ³⁾ 6.25 million VND

**ENGINEERING DESIGN
CONSTRUCTION SEMINAR AT
HVCT**

by Dr. Nguyen Hoa

On 12th April, 2014, the female HEEAP 2013 cohort from HVCT organized a seminar on engineering design in instruction. This was a great opportunity for the HEEAP alumni to share their knowledge on innovative teaching methods to their colleagues.

The workshop started with a lecture on active learning from an expert of University of Technical Education. A designing contest followed up in which participants had to form teams to replicate a Lego model. Contestants were required to limit their internal communication to hand and body gesture only. The shape of the model had to be memorized and no drawing or photo was allowed.

Although it looked like the conference hall was turned into a playground, it was the perfect set-up for workshop organizers to help participants explore the importance of team work in engineering design. The participants were actively engaged in the contest which is exactly the way the organizers want them to learn and in the future apply these activities in their own classes.

This workshop is the first one in the series of activities that HEEAP alumni of HVCT plan to implement at their campus.

Pictures can be found on the
HEEAP FLICKR SITE



Chương trình PlanetNI của National Instruments, phối hợp với HEEAP xin thông báo:

2014 Cuộc thi Thiết Kế Sáng Tạo dành cho Doanh Nhân Trẻ Việt Nam

Đối Tượng Tham Gia

Bạn là sinh viên đang theo học các ngành khoa học và kỹ thuật tại Việt Nam, và từ 18 tuổi trở lên

Bạn đang có một ý tưởng có thể trở thành một sản phẩm thương mại hay dịch vụ

Khi Nào

1/3 – Kêu gọi nộp ý tưởng

31/5 – Thời hạn cuối nộp ý tưởng

15/6 – Thông báo những ý tưởng xuất sắc nhất được lựa chọn vào vòng tiếp theo

15/9 – Hạn chót nộp bài dự thi

30/9 – Thông báo kết quả chung cuộc

Ở Đâu

Hãy theo dõi để biết chi tiết địa điểm tổ chức tại Việt Nam

Mục Đích

Biến những ý tưởng của bạn thành hiện thực nhằm thương mại hóa và cải thiện cộng đồng.

Trải nghiệm những công cụ thiết kế và phát triển công nghệ cao như ngôn ngữ lập trình NI LabVIEW và nền tảng nhúng NI myRIO có thể tái cấu hình được bằng phần mềm

Giải thưởng:

Giải nhất – 600 USD tiền mặt (tương đương 12.500.000 đồng) và 1 bộ kitLEGO® MINDSTORMS®, bài báo được đăng trên ni.com, và cơ hội tham dự hội nghị NIWeek 2015 tại Austin, Texas, Hoa Kỳ

Giải nhì – 300 USD tiền mặt (tương đương 6.250.000 đồng) và 1 bộ kit LEGO MINDSTORMS, bài báo được đăng trên ni.com

Liên hệ với chúng tôi tại HEEAP.org hoặc Facebook.com/planetni và gửi câu hỏi đến dang.loan@ni.com.



FEBRUARY-MARCH WAS A BUSY TIME FOR HEEAP VIETNAM WORKSHOPS

by Dr. David Benson



February and March were a busy time for ASU's HEEAP faculty. At the end of February, Dr. David Benson and Dr. Kathy Wigal travelled to Vietnam to run a series of workshops. Dr. David and Dr. Kathy started in HCMC giving workshops at UTE and CTTC before taking the long drive to Can Tho to give two workshops at CTU. Their last stop was up in Danang where they gave one last workshop before returning to Arizona. Dr. David then returned to Vietnam in March to conduct a short working group session at UTE on the structuring of capstone courses before managing the technical sessions at the VEEC conference in HCMC.



The first of the two workshops that Dr. David and Dr. Kathy presented focused on methods for integrating design projects in to any and every class. Dr. David and Dr. Kathy showed that design problems could be structured by examining the design process to identify project frameworks which would be applicable to a classroom setting and then creating scenarios which rely on content relevant to the class for the students to complete. The goal of this activity is to create open-ended and team centered projects which can be completed by students in just several class periods or less. The workshop contained two examples of how this can be accomplished in a classroom setting. The first example had faculty devising timing diagrams for cam-follower systems from first principles by exploring a paper cut-out cam-follower system. The other example had faculty using their Statics knowledge to develop and propose repairs to an American architectural treasure, Frank Lloyd Wright's Fallingwater. This workshop was

conducted at each of the locations that Dr. David and Dr. Kathy visited and was featured on NHK television (Japan Broadcasting Corporation) as a part of a feature on educational change in Vietnam. This video aired on March 10th, 2014 and can be viewed at <http://www3.nhk.or.jp/nhkworld/newline/201403102118.html>.

The second workshop was related to course level assessment and continuous improvement and was designed to respond to our partners' requests to include information and instruction on ABET syllabus preparation. The workshop linked course level outcomes development, classroom instructional activities, and assessment techniques at the appropriate cognitive levels. Participants explored linkages between course level outcomes and program level outcomes. One example that was used to demonstrate this concept involved the faculty learning (or re-learning) about concave and convex mirror systems. The faculty then either participated in or designed classroom assessments at different levels of Bloom's Taxonomy. The planning process for instructional



improvement was likewise linked to the continuous improvement process necessary for any accreditation or certification. To facilitate the designing of an ABET syllabus, an instructional packet was also generated to provide guidance in the writing of Course Learning Outcomes and the organization an ABET-Oriented Syllabus.

Women's Day Article

International Women's Day took place on March 8, 2014. HEEAP would like to congratulate and celebrate all women, especially our female participants throughout the years. Congratulations and thank you for all you do to make this world a better place! Below are two exemplary women engineers that have been part of our training cohorts at ASU.

Phan Hong Phuong

*HEEAP University cohort 2010
VEF Scholar 2013-2014*



In the summer 2010, I was one of the lucky Vietnamese faculty who came to ASU to attend the HEEAP training course. During this period, I had chance to visit Professor Constantine Balanis' laboratory with perfect facilities for research in my area - the field of Electromagnetics and Antenna Design. I met two of his Ph.D. students who were working there when I visited, and both of them were women! At that time, I only could wish myself to have an opportunity to work with them.

It is great to be a VEF visiting scholar at ASU. Now I am working with Professor Constantine Balanis, a well-known scientist who has written two famous books that are being used as textbooks on Antenna Theory at many universities in the world. Such an opportunity I could see only in my

dream! Alix, one of two women I met three years ago has just defended her thesis and now, there are no more female Ph.D. students in the lab. However, I still see many other female faculty here, at least much more than that at our School of Electrical and Electronics Engineering, Ho Chi Minh City University of Technology in Vietnam.

Dr. Constantine Balanis helps me a lot in my research, even corrects every grammatical or spelling mistake in my research papers even though he is very busy with his research group. I also have significant help from Dr. James Aberle who always gives valuable suggestions in every detail of my project. Dr. Balanis' Ph.D. students come from different countries - Lybia, India, Iran, China, they are smart and so friendly that I feel quite comfortable in this international working environment. I attend several ASU courses in my field and find out that the professors whom I know here such as Dr. C. Balanis, Dr. J. Aberle are really brilliant educators. With their professional experience in industry and active instructional methods, plus their nice teaching manner, they inspire me to get more knowledge in this difficult field - Electromagnetics. I have never enjoyed any engineering class so much before!

In the second semester, I have a wonderful chance to gain my experience in teaching. Having the recommendation from my ASU professors, the School of Electrical, Computer and Energy Engineering, ASU had me to teach an undergraduate class. Honestly, at the beginning I felt a bit scared. I had passed all my undergraduate as well as graduate years studying in Kiev, Ukraine, certainly not an English

speaking country, so I think my English cannot be as good as of my colleagues who have studied in the US, Australia, or even France. What I was scared of is I might not understand questions from my US students. But finally, realizing that this chance may come only once in my life, and there is no better way of practicing as taking part in the process, I decided to take the class. It seemed to me that it was even unexpected for the US students to see that their professor was a woman! But everything is going very well, smoothly with my teaching now. There is not only good feedback from some students that makes me happy, but also some very severe comments that help me correct any mistakes I have made to improve myself and to provide the best service for my students - the first-class clients of an educational system. This experience is invaluable for me, now I am quite confident to say that I am professionally refreshed. There are usually many opinions saying that Engineering is just for men's brains as men have better health, they are more capable to critical thinking, logical analysis of a problem, etc. Maybe they are right, there are plenty of other things more interesting and suitable for women than Engineering, but the thing I would emphasize here is the passion for knowledge in some specific areas. If you have that passion for Engineering plus your good background and a little bit capability gifted by God, you can learn very fast and have great success whether you are a man or a woman. And how can you get that passion? My answer is, if you have an opportunity to work at a place with all facilities for research and meet people who can inspire you as I do at ASU.

Learn more about the VEF Scholarship program [HERE](#)

Tran Thi My Dung
HEEAP University Cohort 2013



There is a great change in my mind, about the role of women in engineering fields, when I took part in the HEEAP workshop at Arizona State University in 2013. It was a wonderful opportunity for me to learn and practice effective presentation skills

in English, curriculum design following the Accreditation Board for Engineering and Technology (ABET) standards and engagement students learning methods. The most important thing that I have realized since the workshop is the role of women in engineering. Women in engineering can do good as well as men in technical fields. In team working, women not only support good ideas but also help the group have a good connection and make decisions. In addition, women can help other members in designing the products with small and aesthetic details. Since coming back to Vietnam, I have changed

my teaching methodologies by applying the skills that I had the benefit of valuable experiences from the HEEAP program. I and HEEAP alumni have organized a workshop about redesign curriculums following ABET standards, in order to spread out to other faculty members. I currently enjoy teaching classes and feel more confident in my role as a female faculty member in engineering. I hope every woman engineering lecturer will be a good mirror for students, especially for female engineering students to follow. Furthermore, this can help improve the number of female students in technical fields.

ELECTRICAL KNOWLEDGE STUDENT COMPETITION ORGANIZED BY CTTC

By Nguyen Tuan, CTTC Lecturer

A workshop was organized by the CTTC HEEAP 2013 June group on the topic of Electrical Knowledge. The purpose of the workshop was on improving professional knowledge. With the principle "Practice makes perfect" this workshop was designed to help students improve their theory and gain valuable hands on experience. This workshop also assisted in the development of soft skills for students such as

teamwork, presentation and problem solving skills. With active support from the school managing board, the CTTC HEEAP 2013 June group organized an "ELECTRICAL KNOWLEDGE" mini game.

The competition was organized over 2 rounds, preliminary and final. It attracted 24 teams making up a total of about 100 students. The participants worked with the presence of an actively cheering

audience made up of hundreds of students.

The competition was inaugurated on 28/03/2014 at Cao Thang Technical College. With 24 teams through the qualifying round, they will have 9 teams in the final round. The final round time: 11/04/2014 and 28/04/2014 to choose the winners.

<https://www.flickr.com/photos/99708978@N08/sets/72157644076527581/>



“UNDERSTANDING AND IMPROVING YOURSELF – CONTROL YOUR MIND”

by Nguyen Tuan, CTTC Lecturer



This past March, the CTTC HEEAP Faculty coordinated a unique workshop with the desire to equip students with soft skills and assist them in understanding themselves in a fundamental way. With the active support from the school managing board, the HEEAP June 2013 faculty, organized the workshop entitled “UNDERSTANDING AND IMPROVING YOURSELF – CONTROL YOUR MIND.” The workshop took place on 14/03/2014 at Cao Thang Technical College. Participants in the seminar included:

- Dr. Le Xuan Lam, Vice Rector.
- Mr. Le Van Khoi, Country Director, HEEAP.
- CTTC Faculty Members
- Speaker Ho Ngoc
- More than 300 engineering students

During the seminar speaker Ho Ngoc presented on the following topics:

- Discovering passion.
- The power of passion.
- The power of the brain.
- Method intellectual exercises.
- Maintaining passion.
- Conscious, subconscious and unconscious.
- Thoughts that are harmful for mental and physical health.
- Thoughts which are beneficial for mental and physical health.

During the seminar, excited and enthusiastic students were eager to participate and asked many insightful questions. After 3 hours of vigorous participation, the seminar succeed in achieving the targets of providing the students with a better understanding of themselves and improving their confidence.



More pictures can be found on the HEEAP FLICKR SITE

Pictures of HVCT Technical English Group



To see more pictures:

<https://www.flickr.com/photos/99708978@N08/sets/72157644076410241/>

Upcoming HEEAP Events

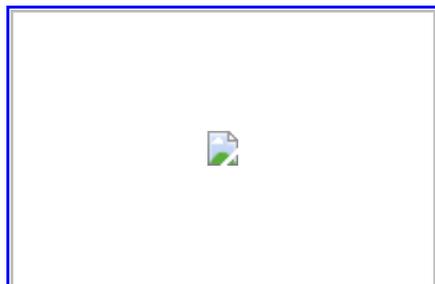
- **Vocational Faculty Development Workshop #1 (ASU)**
May 19 - June 13, 2014
- **Vocational Faculty Development Workshop #2 (ASU)**
September 8 - October 3, 2014
- **University Faculty Development Workshop (ASU)**
June 30 - August 8, 2014



Danaher finances five technology universities

3/4/2012 2:36:05 PM

By Kinh Luan - The Saigon Times Daily



Amir Aghdai (R), chairman of Tektronix Inc. under Danaher Corporation, and headmaster Vu Dinh Thanh of HCMC University of Technology sign the memorandum of understanding in HCMC
- Photo: Kinh Luan

HCMC – Three U.S. companies under the umbrella of Danaher Corporation, namely Tektronix, Fluke and Keithley, have pledged to give financial support worth US\$300,000 for five local technology universities in the country.

Amir Aghdai, chairman of Tektronix Inc., said this financial package would be presented to universities under the Higher Engineering Education Alliance Program (HEEAP) through scholarships and test and measurement equipments.

The three enterprises on Thursday signed a memorandum of understanding (MOU) with four universities, comprising HCMC University of Technology, HCMC University of Technical Education, Can Tho University, and Danang University of Technology. Meanwhile, Hanoi

University of Technology will sign the MOU with the sponsors later.

With the MOU, students of the five universities will have the opportunity to access modern industrial equipments like oscilloscopes, digital multimeters, and arbitrary waveform generators among others.

HEEAP is a collaborative program between the United States Agency for International Development (USAID) and universities and some industrial groups. The program was launched in Vietnam in 2010 via a three-year long commitment between USAID and Intel Vietnam as two main sponsors.

In

Đóng

Ho Chi Minh City, April 15, 2011 - Siemens today announced an in-kind software grant with a commercial value of US\$71 million to the Higher Education Engineering Alliance Program (HEEAP). The in-kind software grant, provided by Siemens PLM Software, a business unit of the Siemens Industry Automation Division and a leading global provider of product lifecycle management (PLM) software and services, will help universities develop the next generation of Vietnamese engineers.

HEEAP, developed in collaboration with the government of Vietnam, the United States Agency for International Development (USAID), the Arizona State University Ira A. Fulton Schools of Engineering (ASU), Siemens, and Intel Corporation will collaborate with top technical universities in Vietnam to advance their Electrical and Mechanical Engineering curricula. The goal is to develop a highly skilled technical workforce that will attract and sustain a healthy high-tech manufacturing industry, thus positioning Vietnam to compete among high-tech centers of excellence.

HEEAP focuses on developing and advancing interdisciplinary and applied engineering and vocational curriculum through instructional innovation and university level transformation. Working with the Ministry of Education and Training, partner university leadership, and industry leaders, the project focuses on faculty instructional innovation and university level transformation needed to succeed in the emerging Vietnamese high-tech sector.

The in-kind software grant made through Siemens PLM Software's GO PLM™ initiative, will provide its NX™ software, a comprehensive digital product development solution; and Tecnomatix® software, a best-in-class digital manufacturing solution, to Ha Noi University of Technology, Da Nang University of Technology, Can Tho University, Ho Chi Minh University of Technical Education, and the Ho Chi Minh University of Technology.

"Advanced technology like the PLM software is critical to preparing our students for the challenges of a global economy. We are pleased to partner with Siemens PLM Software to give students in Vietnam access to state-of-the-art tools that provide the knowledge and experience that will help them be successful in a highly competitive marketplace," Jeffrey S. Goss, Director, Vietnam Higher Engineering Education Alliance Program and Assistant Dean, Global Outreach and Extended Education for ASU's Ira A. Fulton Schools of Engineering.

"Siemens is pleased to support the universities with the state-of-art Siemens PLM Software technology in their education program," said Erdal Elver, President and CEO, Siemens Vietnam. "This is our commitment to Vietnam as part of our corporate social responsibility. I sincerely wish the program a very successful start and bring down-to-earth benefits to the participants for their career development."

"Siemens PLM Software provides universities with access to PLM technology, which otherwise would be out of reach for the academic community, giving students a distinct advantage by being able to use the same PLM technology widely-used by leading multi-national manufacturing companies around the globe," said Rajiv Ghatikar, General Manager, APAC and Australasia, Siemens PLM Software. "The experience gained in the use of these tools better prepares students for today's highly-competitive manufacturing jobs requiring full knowledge of modern technologies."

Siemens PLM Software's Global Opportunities in Product Lifecycle Management (GO PLM™) initiative leads the industry in the commercial value of the in-kind grants it provides and brings together four complementary community involvement programs focused on academic partnership, regional productivity, youth and displaced worker development and the PACE (Partners for the Advancement of Collaborative Engineering Education) program. GO PLM provides PLM technology to more than one million students yearly at nearly 10,800 global institutions, where it is used at every academic level – from grade schools to graduate engineering research programs.

For more information on GO PLM and the partners and programs it supports visit www.siemens.com/partners/goplms.

About the Higher Engineering Education Alliance Program (HEEAP)

Through the Higher Engineering Education Alliance Program (HEEAP), the United States Agency for International Development (USAID), the Arizona State University Ira A. Fulton Schools of Engineering (ASU), Portland State University Maseeh College of Engineering and Computer Science (PSU) and Intel Corporation will collaborate with top technical universities in Vietnam to advance their Electrical and Mechanical Engineering curricula, considered the "bread and butter" degrees for technology manufacturing. The goal is to develop a highly skilled technical workforce

that will attract and sustain a healthy high-tech manufacturing industry, thus positioning Vietnam to compete among high-tech centers of excellence.

About Siemens PLM Software

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with 6.7 million licensed seats and more than 69,500 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit www.siemens.com/plm.

Siemens Vietnam dates back to 1993, when our representative offices were officially established in Hanoi and Ho Chi Minh City. Since then, Siemens has participated in numerous Vietnam's infrastructure projects, particularly in all key areas of the economy such as energy, industry, healthcare and transportation. In order to create a solid basis for enhancing cooperation with local partners, Siemens Ltd. was founded in September 2002 to provide solutions and services related to Siemens products and systems. The rapid expansion of its business relations with Vietnam prompted to establish Siemens Automation Systems Limited in 2005 to produce busbar trunking systems. To date, Siemens is an integral part of Vietnamese economy and is committed to further contribute to the socio-economic development of Vietnam. For more information please visit our website: www.siemens.com.vn

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U.S.-backed International Alliance Holds First Conference on Bolstering Engineering Education



USAID Mission Director Joakim Parker speaks at the Vietnam Engineering Education Conference. Photo: USAID

CAN THO, March 19, 2013 -- The U.S.-supported Higher Engineering Education Alliance Program (HEEAP) opened its first conference to provide leaders in government, industry and academia an opportunity to discuss and collaborate on improving engineering education throughout Southeast Asia.

Hosted at Can Tho University, the two-day Vietnam Engineering Education Conference focuses on ways to build sustainable higher education systems, methods to assess performance of engineering education programs and innovation instructional methods. The event features a "Technology Avenue," with exhibits on advanced engineering simulations software, engineering design tools, learning management systems and student robotics labs.

"HEEAP advances engineering undergraduate learning and instruction through an innovative faculty development program," said An T. Le, Consulate General of the United States in Ho Chi Minh City. He noted that women play an important role in the science and technology and economic development. "We are proud that HEEAP works to boost women's participation in engineering."

Other conference participants include William Colglazier, the Science and Technology Advisor to the United States Secretary of State and leaders from HEEAP alliance partners: Joakim Parker, Mission Director of United States Agency for International Development (USAID), Sherry Borger, General Manager of Intel Products Vietnam, Linda Rae, President of Keithley Instruments, Tektronix ASEAN, and rectors from eight universities and vocational colleges in Vietnam.

HEEAP was established in 2010 through a partnership of USAID, Intel Corporation and Arizona State University's Ira A. Fulton Schools of Engineering. A total of 122 lecturers were trained under HEEAP from 2010 to 2012 and are working on innovation projects to transform engineering education. The expansion of HEEAP is from 2013 to 2017 with an estimated investment of \$40 million. They focus on leadership development, faculty development, curriculum, lab and infrastructure, distance education, diversity and instructional expert development, and English.

The goal is to graduate work-ready students to provide a highly trained workforce in Vietnam to meet the growing needs of global high-tech industries. Ultimately, HEEAP intends to strengthen education and research collaborations and business partnerships between Vietnam and other countries, including the United States.

HEEAP is planning to make the conference an annual event.

For more information on HEEAP, visit visit: <http://heep.org>

U.S. Announces \$2.5 Million Program to Support Higher Education in Vietnam

HANOI, July 13, 2010 – The U.S. government is establishing a \$2.5 million partnership that will team American universities and the private sector in efforts to enhance the quality of engineering education at Vietnam’s top technical universities.

In collaboration with the government of Vietnam, the United States Agency for International Development (USAID) is working with Arizona State University, and Intel Corporation as part of the new Higher Engineering Education Alliance Program. Intel’s anticipated contribution to the program totals \$1.5 million.

The three-year public-private partnership will work closely with the Ministry of Education and Training (MOET) and technical universities in Vietnam to advance their electrical and mechanical engineering curricula and instruction leading to a highly-skilled technical workforce to strengthen the emerging high-tech manufacturing in Vietnam.

“The countries that lead in innovation have these things in common: an excellent higher education system and a strong alliance between academia and industry. This is what we are working to create here, so that Vietnam will become one of the global leaders in high-tech,” says Rick Howarth, General Manager of Intel Products Vietnam.

Through a selective process, ASU’s Ira A. Fulton Schools of Engineering are hosting the first cohort of 25 engineering faculty for the instructional training component through August 20th, 2010. The faculties represent Hanoi University of Technology, HCMC University of Technology, Can Tho University, HCMC University of Technical Education, and Da Nang University of Technology.

“This project exemplifies ASU’s vision of fostering global engineering education,” said Deirdre Meldrum, dean of the ASU Ira A. Fulton Schools of Engineering. “We want to establish collaborations in research, curriculum, knowledge exchange and innovative engagement throughout the world. This program is the beginning of what will become a long-term collaboration between our faculty and students and our Vietnamese institutional partners.”

The partnership has evolved from cooperative U.S. Vietnam efforts to improve education in areas – particularly engineering -- that are vital to Vietnam’s economic growth, investment, and employment.

The project partners will recruit and train engineering professors and students from Vietnamese universities, develop curricula, and increase collaboration between universities and industry.

Through its activities since 2000, USAID has worked with the government of Vietnam in areas of economic growth, prevention and treatment of HIV/AIDS, and vulnerable groups' access to educational and other social services. In total, USAID has contributed \$330 million for development and relief activities in Vietnam.

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MOU SIGNING CEREMONY OF VOCATIONAL TECHNOLOGY EDUCATION ALLIANCE PROGRAM

On April 14, 2011, Ho Chi Minh University of Industry, Cao Thang Technical College, Ho Chi Minh City Vocational College of Technology, Intel, USAID and Arizona State University signed the MOU for the Vocational Technology Education Alliance Program. Total investment for this program is around USD 2million and Intel's investment is around USD 1 million.

Prof. Dr. Ta Xuan Te, rector of Ho Chi Minh University of Industry said: "This program will equip our faculties with new teaching methodology which will ultimately contribute to a better technician graduates who qualified the demands of Intel and other high tech companies. These efforts will help to increase Vietnam's labor force quality and competitiveness in the world economy."

The Higher Engineering Education Alliance Program is a public-private partnership among USAID, Intel, MOET and schools to advance their electrical and mechanical engineering education and instruction leading to a highly-skilled technical workforce to strengthen the emerging high-tech manufacturing in Vietnam. The alliance commenced in 2010 with 5 Vietnamese universities and has expanded to vocational colleges since 2011.

"This Alliance Program aims not only to provide a qualified technical pipeline for Intel Vietnam but also to turn Vietnam into one of the global leaders in high-tech" said Rick Howarth, Intel Vietnam General Manager.

Through a selective process, ASU's Polytechnique School will host a leadership workshop for the rector board in May and the first cohort of 23 engineering faculty for the instructional training component through September and October 2011 from Ho Chi Minh University of Industry, Cao Thang Technical College, Ho Chi Minh City Vocational College of Technology

Dr. Nguyen Thi Hang, Rector of Ho Chi Minh City Vocational College of Technology said: "we are happy to be a partner of this program and commit to do our best to achieve the program's objective".

The partnership has evolved from cooperative U.S. Vietnam efforts to improve education in areas – particularly engineering -- that are vital to Vietnam's economic growth.