

A Model for a Center for Teaching and Learning Excellence: A Catalyst for Program Improvement in Developing Institutions

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Abstract

A focus on the past 20 years has shown an evolution in International Higher Education from the concept of teaching to the concept of learning. As universities in developing nations make the transition to become regional and international in quality it is important to the university administrators and the ministries of education to develop strategies to support this evolution from teaching to learning. This paper argues that an integral piece of this transition is the presence of a center for teaching and learning excellence.

Abstrak

Dalam dua dekade terakhir ini telah terjadi pergeseran fokus pendidikan tinggi internasional, dari konsep pengajaran ke konsep pembelajaran. Ketika perguruan tinggi di negara-negara berkembang memaknai pergeseran ini menjadi kualitas regional maupun internasional, pengelola perguruan tinggi dan kementerian pendidikan perlu mengembangkan strategi untuk mendukung pergeseran fokus dari pengajaran ke pembelajaran ini. Paper ini menggaris-bawahi bahwa salah satu bagian integral dari transisi ini adalah adanya pusat unggulan pengajaran dan pembelajaran.

Key Words: Teaching and Learning, Assessment, Continuous Improvement, Higher Education, Developing Nations

Introduction

The past 20 years have shown an evolution in international higher education from the concept of teaching to the concept of learning (Boyer 1990). This shift involves a complex transition from describing what the teacher does to describing what the student (the learner) does. The outcomes, rather than being grades that the teacher gives, are becoming behaviors, skills, and competencies that the learner demonstrates. As universities in developing nations make the transition to become regional and international in quality it is important

for the university administrators and the ministries of education to develop strategies to support this evolution from teaching outputs to learning outcomes. For example, the recently completed “Observations on Undergraduate Education in Computer Science, Electrical Engineering, and Physics at Selected Universities in Vietnam” has recommended that each university establish a center for teaching and learning excellence (VEF 2006). This recommendation is based on an assessment of practices in Vietnam’s universities at that time and acknowledges that these kinds of centers are currently evident in most international universities.

A recent search on Google revealed 361,000 hits for “Center for Excellence in Teaching and Learning,” and 22,200,000 hits for the same phrase without quotes. Clearly this concept is now imbedded in international higher education. For example, the Catholic University of Portugal

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includes the goal of providing an effective venue for discussions and experience sharing on teaching and learning practices by establishing a Learning and Teaching Center (Henard 2012). The benefit of this is that there has been enough activity in this area that examples of “best practices” can evolve.

Universities in developing nations would be wise to include a center for teaching and learning excellence on their campuses (Roberts 2009). This will necessarily be an ongoing center that prepares graduate students to be university teachers while at the same time preparing and improving the teaching and curriculum development competencies of the existing teachers at the host university and other universities. Because these skills are so intertwined with curriculum development, it is important that such a center be attached to the office of the Chief Academic Officer and have a respected professor or senior lecturer assigned as a coordinator along with an instructional design professional as support staff.

Best Practices in Teaching and Learning

The examination of what it means to transfer discussions from teaching to learning has been prominent in higher education literature for at least 20 years. Typical activities in guiding faculty in designing curriculum and creating new and different strategies can be illustrated by the example of good practices in higher education. The “Seven Principles for Good Practice in Undergraduate Education” were created by Arthur W. Chickering and Zelda Gamson. Lynn Sorenson and Emily Burns from the Brigham Young University summarized these principles for use in their Center. Below are their summaries for each of the seven principles with additional comments regarding developing institutions:

1. Good practice encourages student-faculty contact.

Frequent student-faculty contact in and out of class has been shown to be the most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a

few faculty members well enhances students’ intellectual commitment, and ultimately encourages them to think about their own values and future plans. Therefore developing institutions would be wise to encourage student-faculty interaction. Centers for teaching and learning excellence can become catalysts for this interaction.

2. Good practice encourages cooperation among students.

Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one’s own ideas and responding to others’ reactions improves thinking and deepens understanding. Techniques for developing collaborative education can be taught and encouraged in centers for teaching and learning excellence.

3. Good practice encourages active learning.

Learning is not a spectator sport. Students do not learn much while sitting in classes, listening to teachers, memorizing prepackaged assignments, and spitting out answers. This is what education philosopher Paulo Freire calls the banking system of education where the teacher deposits knowledge into the student. It involves only the transfer of information. Liberating education for developing nations involves acts of cognition rather than mere transfers of information. Students must talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn a part of themselves. Centers of teaching and learning excellence can help teachers learn how to engage students. This is especially important in developing institutions where students may have traditionally been passive receivers of teaching.

4. *Good practice gives prompt feedback.*

Knowing what you know and don't know focuses learning. Students need appropriate feedback on performance to benefit from courses. In getting started, students need help in assessing existing knowledge and competence. When students are confident in their new knowledge they can move on to the next step. In class, students need frequent opportunities to perform and receive suggestions for improvement. At various points during their studies at college, and at the end, students need chances to reflect on what they have learned, what they still need to know, and how to assess themselves. Developing institutions can benefit from providing prompt and continuous feedback to students. These processes can be developed at centers for teaching and learning excellence.

5. *Good practice emphasizes time on task.*

There is no substitute for time on task. Learning to use one's time well is critical for students and professionals alike. Students need help in learning effective time management. Allocating realistic amounts of time will help students to learn effectively and teachers to teach effectively. How a developing institution defines time expectations for students, faculty, administrators, and other professional staff can establish the basis for high performance for all. This will improve both the student and the developing institution.

6. *Good practice communicates high expectations.*

High expectations are important for everyone. It is just as important for the developing institution to have high expectations for the poorly prepared and those unwilling to exert themselves as it is for the bright and well-motivated. Expecting students to perform well becomes a self-fulfilling prophecy when teachers and developing institutions hold high expectations for

themselves and make extra efforts. These high expectations can be reinforced and coordinated with the assistance of a center for teaching and learning excellence.

7. *Good practice respects diverse talents and ways of learning.*

There are many roads to learning. Students bring different talents and styles of learning to college. Brilliant students in the seminar room may be all thumbs in the lab or art studio. Students rich in hands-on experience may not do so well with theory. Students need the opportunity to show their talents and learn in ways that work for them. Then they can be guided to learning in new ways that do not come easily. Centers for teaching and learning excellence can assist teachers in developing institutions to develop ways of addressing multiple learning styles (Chickering 1991).

These seven practices are not intended to be all inclusive or prescriptive, but rather to be an example of the work that is currently available as a resource for a center for teaching and learning excellence in a developing institution.

Many universities in developing nations are in the process of moving from a top-down lecture presentation to the more student centered, learning outcome oriented classroom. These universities and institutes can benefit from the work that has been done in developed nations regarding support for this new pedagogy (Roberts 2013).

Best Practice in the Assessment of Student Learning

As teaching has moved to become more outcomes oriented, it is increasingly important that assessment becomes meaningful. Any center for teaching and learning excellence should not only support learning but also support sophisticated assessment that can document that learning in a meaningful manner. The assessment principles listed below were developed under the auspices of the American Association for Higher Education (AAHE) Assessment Forum with

support from the U.S. Fund for the Improvement of Postsecondary Education with additional support for publication and dissemination from the Exxon Education Foundation in 1991. Copies may be made without restriction. These strategies continue to hold true today and can be the backbone of a center for teaching and learning excellence in a university or institute in a developing country. The following nine descriptions of strategies are based upon the AAHE Assessment Forum with modifications by the author to relate these strategies to developing institutions in developing nations:

The assessment of student learning begins with educational values. This is a critical first step in assessment. Assessment is not an end in itself but a vehicle for educational improvement. Effective assessment requires a clear understanding of what will be assessed. The implementation of this assessment begins with and enacts a vision of the kinds of learning educators most value for students and strive to help them achieve. Educational values should drive not only what the educator chooses to assess but also how it is done. Developing institutions should be cautioned that where questions about educational mission and values are skipped over, assessment threatens to be an exercise in measuring what's easy, rather than a process of improving what is important.

Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time. Effective assessment is a complex process because learning is a complex process. Effective assessment entails not only what students know but what they can do with what they know. Effective assessment involves not only knowledge and abilities but values, attitudes, and habits of mind that affect both academic success and performance beyond the classroom. Assessment should reflect these understandings by employing a diverse array of methods. This should include methods that call for actual performance, using them over time to reveal change, growth, and increasing degrees of integration. Such an approach aims for a more complete and accurate picture of learning, and therefore firmer bases for improving the students' educational experience. Institutions in developing nations often have assessment that is

more likely to be one-time test oriented with a high dependence on rote responses. Centers for teaching and learning excellence can help these institutions develop and implement a more comprehensive assessment program.

Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes. Assessment is a goal-oriented process. Effective assessment entails comparing educational performance with educational purposes and expectations. These purposes and expectations should be derived from the institution's mission, from the teachers' intentions in program and course design, and from knowledge of the students' own goals. In institutions where program purposes lack specificity or agreement, the assessment process can push those institutions toward clarity about where to aim and what standards to apply. Effective assessment can also help developing institutions to pay attention to where and how program goals will be taught and learned. For the developing institution, clear, shared, implementable goals can become the cornerstone for assessment that is focused and is useful.

Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes. Information about outcomes is of high importance; where students "end up" matters greatly. But to improve outcomes, educators need to know about student experience along the way—about the curricula, teaching, and kind of student effort that lead to particular outcomes. Assessment can help the developing institution understand which students learn best under what conditions. These institutions will then have the capacity to improve the whole of their students' learning.

Assessment works best when it is ongoing, not episodic. Effective assessment is a process whose power is cumulative. Though isolated, "one-shot" assessment can be better than none, improvement over time is best fostered when assessment entails a linked series of cohorts of students. For the developing institution this may mean collecting the same examples of student performance or using the same instrument semester after semester. The point is to monitor progress toward intended goals in a spirit of continuous improvement. Along the way,

the assessment process itself should be evaluated and refined in light of emerging insights. Centers for teaching and learning excellence can aid developing institutions in efforts toward continuous improvement.

Assessment fosters wider improvement when representatives from across the educational community are involved. Centers for teaching and learning excellence can help developing institutions understand that student learning is a campus-wide responsibility, and assessment is a way of enacting that responsibility. Therefore, while assessment efforts may start small, the aim over time is to involve people from across the entire educational community. Lecturers play an especially important role, but assessment's questions can't be fully addressed without participation by student-affairs educators, librarians, administrators, and students. Assessment may also involve individuals from beyond the campus (graduates, trustees, employers) whose experience can enrich the sense of appropriate aims and standards for learning. Effective assessment is not a task for small groups of experts but, rather, it is a collaborative activity.

Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about. Effective assessment recognizes the value of information in the process of improvement. But to be useful, information must be connected to issues or questions that people really care about. This implies assessment approaches that produce evidence that relevant parties will find credible, suggestive, and applicable to decisions that need to be made. The assessment must accurately answer the question regarding what the student knows and can demonstrate. It means thinking in advance about how the information will be used, and by whom. The point of assessment is not to gather data and return "results"; it is a process that starts with the questions of decision-makers, that involves them in the gathering and interpreting of data, and that informs and helps guide continuous improvement in the developing institution.

Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change. Assessment alone changes

little. Its greatest contribution comes on campuses where the quality of teaching and learning is visibly valued and worked at. On such campuses, the push to improve educational performance is a visible and primary goal of leadership; improving the quality of undergraduate education is central to the institution's planning, budgeting, and personnel decisions. On such campuses, information about learning outcomes is seen as an integral part of decision making, and avidly sought. Developing institutions can use a Center for Teaching and Learning Excellence as a catalyst for this improvement.

Through assessment, educators meet responsibilities to students and to the public. There is an especially compelling public stake in education in developing nations. In these nations, developing institutions have a responsibility to the publics that support or depend on them to provide information about the ways in which their students meet goals and expectations. But that responsibility goes beyond the reporting of such information; their deeper obligation—to themselves, their students, and society—is to improve. Those to whom the developing institutions are accountable have a corresponding obligation to support such attempts at improvement.

These principles are not meant to be all inclusive but rather examples of the kind of work that can be a resource for the center for teaching and learning excellence. Clearly understanding and carefully implementing these nine strategies will improve both the center for teaching and learning excellence and the institute or university.

Certificate in University Teaching

The center for teaching and learning excellence can be the source of improvement of university lecturers' pedagogical thinking and skills. According to Liisa Postareff, Sari Lindblom-Ylänne, and Anne Nevgi (2007) there has been an identified need to improve these skills and as a result the training of lecturers has become a widespread trend in many countries. There is significant evidence (Postareff et al. 2007) that formal training for new and existing university lecturers can improve the quality of teaching in the university. Graham Gibbs and Martin Coffey (2004)

have studied the effectiveness of university teacher's training in 22 universities in eight countries and have found a range of positive changes in teachers in the training group relative to untrained teachers from a control group. The center can become the source of certification for new and existing university teachers. For example, the University of Missouri-St Louis offers a Certificate in University Teaching through their Center for Teaching and Learning. Another very comprehensive example of a college teaching certificate for graduate students is from Iowa State University in Ames, Iowa. The Iowa State program addresses the English language skills of international students as a prerequisite for the program and therefore is included in this narrative. This would also apply in the program at a university in a developing nation. What follows is a description of the Iowa State University Graduate Student Teaching Certificate (GSTC):

College teaching certificate programs are developing in the United States to help better prepare graduate students who wish to become lecturers and professors. Iowa State University's GSTC aims to enhance the professional development of graduate students who want to become professors in four-year schools of higher education emphasizing teaching. The certificate provides teaching knowledge and experience, focused as much as possible in the home discipline, for graduate students across the university. It is not a state teacher certification program.

Students enrolled in the certificate program take 12 credits, including at least three credits of a teaching methodology course and three credits of a teaching practicum, and attend four Center for Excellence in Learning and Teaching (CELT) teaching events. These CELT activities are an integral part of this certificate.

There are admission standards for the Iowa State University program. Students must already have a graduate degree or be admitted to a graduate program at the university, where they have completed at least nine hours, before being admitted to this certificate program. In developing nations, the current lecturers would be the candidates for a program such as this.

The students are required to complete the following courses, practica, and seminars:

3 credits teaching methodology course, such as:

- Higher Education 561, College Teaching
- Agricultural Education 520, Instructional Methods for Teaching in Agricultural Education
- Chemistry 555, Chemical Pedagogy
- English 500, Teaching English Composition
- Psychology 633, Teaching of Psychology
- Other teaching courses approved by certificate administrator;

3 credits teaching practicum (supervised by the Teaching Practicum Coordinator and a departmental faculty mentor); and

4-7 credits of special seminar.

There is an English language requirement at Iowa State University for students who are not native English speakers. This is stated as follows: If North American English is not the native language, the student must have proof of the following requirements:

TOEFL Paper (PBT): 587
TOEFL Computer (CBT): 240
TOEFL Internet (iBT): 95
IELTS: 7.0
SPEAK/TEACH: Level 1

These standards for English are similar to expectations of graduate students in other research universities in the United States. For example, the University of California, Los Angeles requires a TOEFL Paper of at least 560, a TOEFL iBT of 87, and an IELTS of 7.0. Similar expectations should also be the standards for the certificate at the universities in the developing nations. An immediate benefit of this is that English language skill is integrated into the preparation for university teaching.

This example from Iowa State University is meant to be an example of one of the many programs that are in place at research universities to support

graduate students in developing skills to become better teachers. The center for teaching and learning in universities in developing nations can implement similar programs for both the graduate students and the existing lecturers.

Research Support

The center for teaching and learning excellence will also be a place where lecturers can come to get support in designing and publishing their research. As a minimum it should provide assistance in editing papers and guidance in submitting papers. Assistance in research design, including statistical analysis could eventually be available through the Center for Teaching and Learning Excellence. Some examples of the kind of support for research and publishing that is available at international standard universities are supplied below.

For example, the Center for Research Support at Southern Mississippi University provides assistance at any or all steps in the research process. Assistance ranges from simple advice to total involvement in the process. In the statistical process of research, there is a research consultant who tries to ensure that clients are fully aware of what is being done so that the process becomes educational as well as useful. Although much of the support at Southern Mississippi University supports social science research, the amount of support needed by science and technology disciplines can also be emphasized in the universities in developing nations.

Research assistance at Southern Mississippi University includes:

- Reading and critiquing grant proposals to check the evaluation component or statistical procedures (if necessary, planning such components);
- Designing or revising a research instrument to ensure that it will answer the questions the researcher has posed;
- Validating an instrument to determine the reliability and validity of the scores it produces
- Selecting a sample so that correct generalizations are possible with the results;

- Conducting the survey/research within appropriate ethical constraints and within the guidelines of the USM Institutional Review Board;
- Compiling the data, with appropriate coding, into computer-readable files;
- Analyzing the data with appropriate statistical procedures and with safeguards against data snooping;
- Displaying the results appropriate to the original questions of the research;
- Teaching seminars or classes on statistical software (particularly SPSS and AMOS) or on statistics/research;
- Providing consultation to users whose research articles receive a “revise and re-submit” request from a journal; and
- Providing support on designing and implementing program or project evaluation.

Another example at a smaller private university still provides the same kinds of support for faculty research. The mission statement for the Academic Research Support Center at Cameron University in Oklahoma and a summary of the services provided:

The Academic Research Support Center provides resources and opportunities for faculty, staff, and students in conducting basic and applied research in support of their academic pursuits and to enhance the reputation of Cameron University. Particularly, the center strives to support all pre-award aspects of the proposal development process and to serve as a liaison between external funding agencies as well as internal departments including Payroll, the Vice President for Academic Affairs, and the Office of the President.

Services Provided by the Academic Research Support Center at Cameron University are listed below:

- Identify financial resources to support grant activities at Cameron University;
- Assist faculty and staff in the development and submission of internal and external grant applications;
- In cooperation with the relevant administrative units on campus serve as a liaison between the university and funding source;

- Track Institutional Review Board (IRB) and Human Subjects Training submissions;
- Provide administrative oversight for Human Subject Pool (Experimetrix), Research Extra Credit and Cameron University Research Experience; and
- Provide administrative oversight for the appointment of graduate research assistants to support faculty.

Centers for teaching and learning excellence in developing institutions in countries where English is not a predominant language should, at a minimum, provide editorial and proof reading assistance in research article writing in English.

These are some examples of the kinds of support currently available in medium level institutions with international standards. Therefore there should be similar services available at universities and institutes in developing nations.

The Scholarship of Teaching and Learning

A new and expanding area of research is the scholarship of teaching and learning. This involves applying systematic theory based strategies to teaching all the disciplines of higher education and sharing the results by having them published in international and local journals. This has the advantage of improving the quality of learning in the university while at the same time increasing the reputation of the institution.

One journal in the field is the *Journal of the Scholarship of Teaching and Learning (JoSoTL)*, founded in 2001, it is a forum for the dissemination of the scholarship of teaching and learning in higher education for the community of teacher-scholars. The peer-reviewed journal promotes scholarship of teaching and learning investigations that are theory-based and supported by evidence. *JoSoTL*'s objective is to publish articles that promote effective practices in teaching and learning and add to the knowledge base.

The themes of the journal reflect the breadth of interest in the pedagogy forum. The themes of articles include (as described in their website):

1. Data-driven studies: Formal research projects with appropriate statistical analysis, formal hypotheses and their testing, etc. These studies are either with a quantitative or qualitative emphasis and authors should indicate the appropriate domain. Acceptable articles establish a research rigor that leads to significant new understanding in pedagogy.
2. Reflective essays: Integrative evaluations of other work, essays that challenge current practice and encourage experimentation, novel conclusions or perspectives derived from prior work
3. Reviews: Literature reviews illuminating new relationships and understanding, meta-analysis, analytical and integrated reviews, etc.
4. Case studies: These studies illustrate scholarship of teaching and learning and its applications, usually generalizable to a wide and multidisciplinary audience.
5. Comments and communications: Primarily, these are comments based on previously published *JoSoTL* articles, but can also include book reviews, critiques and evaluations of other published results in new contexts or dimensions.

Another electronic journal that publishes twice a year in the scholarship of teaching and learning is from Georgia Southern University. The description from the web site is reported below:

International Journal for the Scholarship of Teaching & Learning (IJ-SoTL) is an open, peer-reviewed, international electronic journal published twice a year by the Center for Excellence in Teaching at Georgia Southern University to be an international vehicle for articles, essays, and discussions about the scholarship of teaching and learning and its applications in higher/tertiary education today. All submissions undergo a double-blind peer-review process.

Scholarship of teaching and learning is a key way to improve teaching effectiveness, student learning outcomes, and the continuous transformation of academic cultures and communities. Through research questions and methodologies applied to teaching

and learning, the making public of that research and its results so that it can be analyzed, and through the constructing of an available, growing body of knowledge, understanding, and wisdom about the teaching and learning processes and outcomes, college and university teaching is seen as a serious intellectual activity that can be evidence and outcome based.

Scholarship of teaching and learning is an international momentum or movement. *IJ-SoTL* seeks to be a virtual commons for research articles, invited essays, and reflections about the value, implementation, and development of scholarship of teaching and learning in various academic contexts and cultures. The Editorial Review Board of *IJ-SoTL* is profoundly strong and international in scope, and the goal is for submissions, published papers, and the readership to be truly international. Through email, published responses to articles, and a listserv, *IJ-SoTL* encourages your participation, questions and comments in order to foster international conversations about scholarship of teaching and learning, as well as international collaboration.

As stated on their website, the bamboo plant is the symbol for *IJ-SoTL*. It grows around the world, it grows rapidly, its sections are as steps in the process of growth and awareness, and it always has green shoots and leaves as signs of its vitality. Bamboo has been a symbol for longevity, strength, and grace. It bends without breaking while having a tensile strength similar to steel. It has had a great reputation in both ancient and modern civilizations for its effective uses and for taking root in all sorts of climates. Such is scholarship of teaching and learning and such is the goal for *IJ-SoTL*.

These two journals summarize the key kinds of activities that comprise the scholarship of teaching and learning. The center for teaching and learning excellence at universities in developing nations should have the results of current research on teaching and learning available to the teachers and researchers in addition to supporting the faculty in designing research in teaching and learning in the environment of the developing nation. These journals will support the development of pedagogy in developing institutions in two ways. First, the

journals provide a source of successful strategies for improving teaching and learning. Second, they provide a venue for teachers and scholars in developing institutions to share their ideas and successes. The presence of a center for teaching and learning excellence at a developing institution should not only disseminate existing research regarding the scholarship of teaching and learning, it should also encourage the lecturers at the university to publish their scholarship.

Model Centers for Teaching and Learning Excellence

There are many successful centers for teaching and learning excellence throughout the world. The three selected here represent a center in North America, a center in Asia, and a collaborative center between universities in two nations.

A sophisticated example of a successful center is the Indiana University Center for Innovative Teaching and Learning (CITL). Indiana University has created a nationally recognized model of comprehensive, integrated services with the intention of promoting excellence in teaching and learning throughout the university. In order to achieve this the CITL offers instructional and curricular consulting to the faculty (lecturers), provides information literacy to continually update faculty, and provides access to and instruction in instructional technologies (Morrone 2013).

Another example is the Center for Learning Enhancement and Research (CLEAR) at the Chinese University of Hong Kong. Similar to Indiana University, CLEAR provides support in teaching and learning, assessment and evaluation, and research. A unique feature of CLEAR is the series of working papers that have been developed to document success in teaching and learning at the Chinese University of Hong Kong. These working papers provide insights and evidence for improving pedagogy and also provide discussion and presentations for eventual publication in refereed journals.

It would be advantageous for a university in a developing nation to team with a university from a more developed nation or region to establish these

Centers for teaching and learning Excellence. One example is the cooperation between An-Najah University in Israel and Northwestern University in the United States. An-Najah University established a Center for Excellence in Learning and Teaching (CELT) in collaboration with Northwestern University. Similar to the needs in developing nations and many developed nations, the goal of the center has been to enable a transition to a more learner-centered environment and at the same time increase technology assisted instruction, assessment and student management. As a result of this project, An Najah University developed a strategy to assure that lectures participated in the transition and created multi-specialist teaching fellow teams (Daragmeh et al. 2012).

Summary

The center for teaching and learning excellence can be a source of training and support for college and university teachers throughout the area in addition to supporting the lecturers and professors at the host university. The Center should provide the following services:

- Introduction to best practices in teaching and learning,
- Support in developing curriculum and methods of delivering the curriculum,
- Introduction to best practices in assessment,
- Support in developing curriculum with assessment criteria as an integral part of the curriculum design,
- Support in research design and editing for journal publication in the disciplines of the university and in the scholarship of teaching and learning,
- Provision of courses and workshops that may lead to certification in college and university teaching, and
- Support in using the results of research to improve teaching.

In order to be successful, the center must be an integral and ongoing part of the university with

funding that is consistent and robust to assure that the lecturers, professors and researchers are continuously improving and the students are receiving the most benefit from their time on campus. This includes a physical facility to house the activities and staff to support the faculty. Funds should be available to support curriculum development software that will coordinate curriculum development with assessment design. One model would be to have a respected professor who is known as an excellent teacher assigned part time administrative responsibilities for the center.

Because assessment strategies will become an integral part of curriculum design, additional money should also be available to establish a broader university-wide assessment program.

The key to the success of these activities is that the center must be implemented in such a way as to be constantly changing in response to new curriculum, changes in society, science, and technology and increased pedagogical knowledge. This will assure that the host university will be continually improving. By establishing a center for teaching and learning excellence the lecturers, professors and academic leaders of universities and institutes in developing nations will be able to benefit from the experiences and scholarship of lecturers, professors, and researchers over the past 25 years. The vast knowledge available in the scholarship of teaching and learning and the many examples of successful centers for excellence will enable universities in developing nations to move quickly once a decision is made to implement such a center.

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