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Preparing for, Conducting and Evaluating Workshops for Agricultural Technical School Instructors in Egypt

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MUCIA–AERI Linkage Project

The Agricultural Technical Schools (ATS) of Egypt were designed to prepare skilled workers for the agricultural economy. A project funded by USAID through the Midwest Universities Consortium for International Activities (MUCIA) was designed to prepare ATS instructors for incorporating supervised agricultural internships and agribusiness decision–making skills into their curricula. Workshops were presented, with assistance from university faculty in Egypt, on topics including planning, conducting and evaluating internships, and on selected agribusiness competencies that were relevant to ATS programs. Workshop participants rated the workshops and materials very highly. The ATS instructors also indicated that their competency in teaching the topics had increased as a result of the workshops. The instructors indicated other topics that future workshops could address. The researchers identified a series of lessons learned about conducting workshops in a foreign country and offered recommendations to assist other U.S. faculty in getting involved in international development projects.

Introduction

The Agricultural Technical School (ATS) system in Egypt includes 130 secondary schools throughout the country. The schools, with average enrollments of more than 2,750 students and about 154 instructors each, were originally designed to prepare skilled workers for the agricultural economy of the country (Swanson, Cano, Samy, Hynes, & Swan, 2007). A dearth of suitable teaching materials, insufficient training of the teachers in student–centered instruction, and a lack of linkages with the agricultural industry led to a major project funded by the United States Agency for International Development (USAID) through the Midwest Universities Consortium for International Activities (MUCIA), designed to improve the connection between ATS programs and the agricultural businesses and industries that the schools serve. The hoped–for end result is an increase in the employability of ATS graduates through providing students with suitable internship experiences (MUCIA, n.d.).

The foundation for the work conducted as a part of this project was grounded in the theory of Teacher Adaptive Expertise (Hammerness et al., 2005). This theory proposes that teacher expertise is developed along two dimensions, efficiency and innovation. Expertise in efficiency leads to the ability to accomplish a task with little attention, while expertise in innovation leads to trying new things and changing current practices. Adaptive expertise includes efficiency and innovation. The work of this project focused on developing innovative expertise by introducing new ways of teaching and new content.

Swanson et al. (2007) indicated that engaging ATS students in various practical training activities has not been a priority in Egypt in the past, which lead to the development

and funding of the USAID project. In addition, ATS instructors often lacked the practical skills and experience that are needed by their students. If teachers can be better prepared to involve business and industry in providing decision–making and hands–on experiences for students, both students and agricultural business will gain. Additionally, ATS instructors lack preparation in teaching a variety of agricultural skills, including agribusiness management. However, instructors were positive about their participation in training workshops (Thoron, Barrick, Roberts, & Samy, 2008). Agricultural science and technology is a primary driver of agricultural growth; it needs lots of well–educated people (von Braun, 2008).

The MUCIA project for ATS instructors (MUCIA, n.d.) provided for workshops offered to ATS instructors in Upper Egypt. Workshop leaders from the MUCIA team prepared the workshop materials and activities and then delivered the workshop to university faculty. Those faculty, in turn, taught the ATS instructors throughout the region. In order to provide evaluation feedback to the funding agency and to identify changes to be made in subsequent workshops, workshops should be evaluated (Ayers, 1989). Workshop evaluations should provide guidance to develop short–term learning experiences for the participants, encourage and utilize active learning, and meet the needs of the learners (Myers & Roberts, 2004).

The global economy of the 21st century provides considerable opportunities for professional agriculturalists to engage with people beyond the borders of their own country. This trend has led many agricultural universities to implement programs that provide international experiences for students and faculty. Additionally, faculty from the United States have opportunities to conduct teaching, research and outreach projects in international settings. Although considerable opportunities exist, faculty and students face numerous barriers to international activities. Wingenbach, Chmielewski, Smith, Pina, and Hamilton (2006) reported that barriers to students included stereotypes, language, and concerns for personal safety. Hand, Ricketts, and Bruening (2007) reported barriers to faculty include cost, limited resources, and time commitment. Andreason (2003) identified many of the same barriers and classified barriers as either external or internal factors. Although numerous barriers exist, as Hand et al. noted, faculty also benefit from international activities through personal and professional development.

Experiential learning, including activities such as supervised agricultural internships, focuses initially on the learner (Roberts, 2006) and follows the widely–accepted problem–solving approach to teaching and learning found in agricultural education (Phipps & Osborne, 1988). Dyer and Williams (1997), in a synthesis of research on supervised agricultural experience in the United States, concluded that the secondary school teacher is central to the success of experience programs. Dyer and Williams also noted that employers can effectively help with programs such as internships. Preparing teachers to supervise programs and to work with potential employers to develop and enhance supervised experience programs in ATS's seems appropriate. Conducting further research in the area of preparing students for career success is a national priority in agricultural education in the United States and can be broadened to include international settings (Osborne, n.d.).

If the ATS are designed to prepare society–ready graduates, then students must be prepared with cognitive skills that include real–world experiences. Teachers must be prepared to develop, coordinate and supervise those experiences in conjunction with agribusiness. In consideration of Finley and Price, (1994) as well as suggestions by Knowles (1984) efforts by MUCIA instructors to facilitate workshops will lead to better content understanding by Egyptian faculty. Workshops can be developed that will assist in providing the needed skills for teachers by preparing in–country faculty to offer educational experiences for ATS instructors beyond the scope of the funded project.

Evaluations of workshops are "almost universally embraced" among educators (Weston, 1986, p.5). Evaluations of workshops help guide future workshops and provide information on workshop participants'

competency and lead to a more effective program (Brown & Kiernan, 2001). Fairweather and Tornatzky (1977) noted the changes made as a result of the evaluation impact the overall program. Israel (2006) stated identification of strengths and weaknesses of training will help provide high quality professional development. Furthermore, formative evaluation of workshops is a highly regarded process used to improve a program (Brown & Kiernan, 2001). This led the researchers to develop a specific set of purpose and objectives for the ATS instructors.

Purpose and Objectives

The purpose of this study was to describe and evaluate the strategies and activities that were being implemented under the MUCIA Capacity Building project to establish supervised agricultural experience (SAE) programs, mainly through internships, and agribusiness decision–making competencies in each of the ATS programs of Upper Egypt. The paper outlines how the strategies that were developed and then reports participant ratings of the workshops. A summary of participant feedback and reflections on the progress of the project is followed by implications for further development and recommendations for others to consider as similar activities are conducted in Egypt and other developing agricultural economies. The following questions were used to guide the study:

1. How did the ATS instructors rate the workshops, learning environment, instruction, workshop components, support materials, and workshop outcomes?
2. To what degree did the workshop participants' competency increase as a result of the workshops?
3. What comments and suggestions did participants have regarding the workshops?
4. What lessons can be learned in teaching workshops in a foreign country?

Methods

Two sets of workshops were delivered, each consisting of three two–day sessions. All participants were selected by the project coordinator. For each set, Workshop I was taught by the MUCIA team; the participants were faculty from the agricultural colleges in Egypt, with instruction conducted in English. Workshop II was co–taught by the MUCIA team and the Egyptian agriculture college faculty; the participants were ATS instructors, with instruction in English translated to Arabic. Workshop III was taught by the Egyptian agriculture faculty; the participants were an additional group of ATS instructors, with instruction in Arabic. Egyptian faculty had participated in workshops in effective teaching. ATS instructors were selected based on their technical program area. All visual and written materials for Workshops II and III were in Arabic. This train–the–trainer model prepared Egyptian agriculture faculty to offer additional workshops to ATS instructors after conclusion of the USAID project. Materials used in the workshops were adapted from *Experiencing Agriculture: a Handbook on Supervised Agricultural Experiences* (Barrick et al., 1992) and from agribusiness curriculum materials available through the Instructional Materials Service at Texas A&M University.

At the end of each workshop for the ATS instructors, an evaluation instrument was administered. The first section of the instrument addressed the rating of the workshops in five key areas using a five–point rating scale (very poor to very good). The second section evaluated the use of support materials and handouts (not useful to very useful). The third portion of the instrument focused on outcomes of workshop participation, asking participants how they could implement the competencies into their program (strongly disagree to strongly agree), while the fourth assessed their competency development in the specific areas of the workshops (not at all to a lot). The last section included an open–ended opportunity for respondents to provide comments and suggestions.

The instrument was adapted from the work of Israel (2006) for administering in–service training evaluation. The focus of the evaluation was based on principles for effective training and outcome measures of learning environment,

workshop design, and quality of instruction. Individual items on the instrument were grouped into categories utilizing Israel's factor analysis. The instrument was reviewed by a panel of experts associated with the MUCIA project. Post–hoc reliability coefficients were computed for each subscale, with Cronbach's alpha coefficients ranging from .65 to .82. Lower coefficients occurred for subscales of two or three items. George and Mallery (2003) indicated that coefficients are dependent upon the number of items on the scale. Nunnally (1979) argued that reliability coefficients of .50 or .60 are sufficient in early stages of research and on short subscales. Therefore, the instrument was judged to be able to provide reliable results.

The version of the instrument used after Workshops II and III was translated into Arabic by Egyptian university faculty who participated in Workshop I. The Arabic version was then translated back into English by a third party native Arabic–speaking faculty member in the United States. Comparison of the original English version and the translated Arabic version of the instrument was made. The Arabic version translated into English replicated the original version of the survey instrument.

Throughout each workshop, each team member carefully observed and noted responses and reactions to each activity as proposed by Lincoln and Guba (1985). Each evening, the three–member teams met to debrief and reflect on the experiences of the day, identifying themes that emerged. One team member served as the recorder and captured the collective reflections. Upon return to the U.S., one team member transcribed the reflections and provided the other team members opportunities to critique the data (i.e., member–checking).

Results

Responses from each set of workshops were compared and found to be consistent. Frequencies of each set of workshop ratings differed by less than five percent. Therefore, the results from the two workshops were combined and are reported together. There were 83 participants in the two internship workshops, and 60 participants in the two agribusiness workshops. All 143 participants completed the evaluation instrument.

Workshop Rating

Participants were asked to rate the workshop design and logistics on the five–point scale of very poor to very good. For reporting very poor and poor ratings were collapsed and labeled poor; good and very good were combined and labeled good for presentation in Tables 1, 2 and 3. Ninety–seven percent of the internship workshop participants and 100% of the agribusiness workshop participants rated organization of training and meeting room size/comfort good to very good (Table 1). Only 41% of internship participants indicated the length of training was good to very good, while 45% rated length of training average. More than 80% of agribusiness participants rated each part of the workshop good to very good.

Learning Environment

Participants rated the learning environment for the workshops on the same five–point scale as above. Four of the five learning environment items were rated good or very good by 94% to 98% of the respondents (Table 1). Time spent on hands–on activities was rated good or very good by 79% of the internship participants and 75% of the agribusiness participants.

Table 1
Workshop Rating

	Establishing Internships *(N = 83)*			Agribusiness *(N = 60)*		
Survey Item	Poor(%)	Avg(%)	Good(%)	Poor(%)	Avg(%)	Good(%)
			Workshop design and logistics			
Organization of training	0	1	97	0	0	100
The length of training	12	45	41	3	15	81
Relevance to my teaching program(s)	4	6	88	2	4	94
Location (easily accessible)	1	5	92	0	0	99
Meeting room size/comfort	1	1	97	0	0	94
			Learning environment			
Time spent on hands–on activities in the workshop	2	19	79	2	22	75
Opportunities for interaction with other participants	0	4	94	0	2	98
Opportunities for asking questions or comments	0	2	98	0	3	95
Activities to get me involved	0	5	94	0	7	93
Answers to my questions	0	1	98	0	0	98
			Instruction			
Overall ease for me to understand the information	0	1	99	0	5	93
Quality of visual aids	1	4	94	0	0	100
Degree to which the information was comprehensive	0	2	97	0	3	95
Examples for using information in educational events	1	4	95	0	7	91
Overall rating	0	0	100	0	0	100

Note. *N* = 83 & *N* = 60. Original scale: 1 = Very Poor, 2 = Poor, 3 = Average, 4 = Good, 5 = Very Good 9= Not applicable. Responses were collapsed into: Poor, Average or Good; Not Applicable – not reported therefore percentages may not total 100.

Instruction

Four items related to instruction were included on the instrument, with participants rating each item on the five–point scale. All four items related to instruction were rated good or very good by at least 91% of the ATS instructors in both sets of workshops (Table 1).

Workshop Components & Overall Rating

The workshops were taught in six sections, each addressing one component of the project. All six components of both sets of workshops were rated good or very good by at least 92% of the workshop participants (Tables 2 and 3). Overall, the workshops were rated good or very good by 100% of the ATS instructors who participated in the workshops (Table 1).

Table 2
Workshop Components for Internships Instruction (N = 83)

Workshop Components	Poor(%)	Average(%)	Good(%)
Concept of SAE	0	8	92
Need for SAE	0	2	98
Examples of SAE	2	5	92
Planning/conducting SAE	0	2	98
Establishing internships	0	6	94
Establishing internship center	1	4	94

Note. *N* = 83. Original scale: 1 = Very Poor, 2 = Poor, 3 = Average, 4 = Good, 5 = Very Good 9= Not applicable. Responses were collapsed into: Poor, Average or Good; Not applicable – not reported therefore percentages may not total 100.

Table 3
Workshop Components for Agribusiness Instruction (N = 60)

Workshop Components	Poor(%)	Average(%)	Good(%)
Agribusiness skill–gap analysis review	0	2	95
Identifying appropriate agribusiness for an ATS program	0	0	100
Utilizing five types of problems in decision making	0	0	100
Teaching agribusiness skills	0	3	92
Teaching decision making through agribusiness skills	0	0	97
Creating problem–based activities for individual ATS programs	0	2	96

Note. *N* = 60. Original scale: 1 = Very Poor, 2 = Poor, 3 = Average, 4 = Good, 5 = Very Good 9= Not applicable. Responses were collapsed into: Poor, Average or Good; Not applicable – not reported therefore percentages may not total 100.

Support Materials

ATS instructors who participated in the internships workshops rated handout materials very useful (72%) and internship scoring rubrics moderately useful (45%) or very useful (48%) (Table 4). Participants in the agribusiness workshops rated skills of analysis, types of problems, and creating activities very useful (63% – 67%) and teaching agribusiness skills moderately useful to useful (Table 5).

Table 4
Support Materials for Internships Workshop (N=83)

Item	Not useful (%)	Slightly useful (%)	Fairly useful (%)	Moderately useful (%)	Very useful (%)	Not answered (%)
Handouts (in general)	0	0	1	27	72	0
Internship scoring rubrics	0	0	3	45	48	4

Table 5
Support Materials for Agribusiness Workshop (N=60)

Item	Not useful (%)	Slightly useful (%)	Fairly useful (%)	Moderately useful (%)	Very useful (%)	Not answered (%)
Skill gap analysis results	0	0	2	33	65	0
Five types of problems	0	1	2	30	67	0
Teaching agribusiness skills	0	0	5	45	48	2
Creating problem–based activities	0	0	0	37	63	0

Workshop Outcomes

Participants rated the workshop outcomes in terms of their perceived ability to utilize the competencies taught (strongly disagree to strongly agree). For reporting very poor and poor ratings were collapsed and labeled poor; good and very good were combined and labeled good for Table 6. At least 91% of the ATS instructors agreed or strongly agreed with statements regarding use of information, commitment, and confidence in their ability to utilize what was taught in each of the workshops within their schools (Table 6).

Table 6
Workshop Outcomes

Survey Item	Establishing Internships *(N = 83)*			Agribusiness *(N = 60)*		
	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)
I have opportunities to use the information in my school	1	7	90	0	7	91
I am committed to using information from this training in my school	0	0	99	0	2	98
I am confident in my ability to utilize what was taught in the workshop	0	2	97	0	2	98

Note. $N = 83$ & $N = 60$. Original scale: 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree. Responses were collapsed into: Disagree, Neither agree nor disagree, or agree. No answer – not reported therefore percentages may not total 100.

Competency Development

The fourth section of the instrument addressed the degree to which the workshop increased ATS instructor competency on a four–point scale (not at all to a lot). The ATS instructors in the internships workshops indicated that their level of competency increased "a lot" in three areas; educating their students about internships (86%), use workshop activities in their classroom teaching (82%), and educating others in a workshop setting (81%) (Table 7). The two lowest scoring items (with less than 70% of the participants responding that their competency increased "a lot") included

instructors working with the local agribusinesses (65%) and working with families and employers (64%). ATS instructors in the agribusiness workshops indicated that their level of competency increased "a lot" in all seven areas, ranging from 75% to 87% (Table 8).

Table 7
Competency Development for Internships Skills (N=83)

Survey Item	Not at all(%)	A little(%)	Some(%)	A lot(%)	Not Sure(%)
Ability to teach students on this topic	0	1	5	86	8
Use workshop activities in my own teaching	0	0	6	82	10
Design and lead a workshop on this topic	0	0	5	81	14
Collaborate with local businesses	0	1	26	65	8
Ability to work with families and employers on this topic	0	3	23	64	10
Ability to design internships with students	0	0	10	71	18
Effectively evaluate internship	0	0	10	74	17
Design an award recognition system for successful internships	0	1	15	70	14
Understanding the roles the student, teacher, employer, parents, and community have regarding internships	0	1	10	74	15

Table 8
Competency Development for Agribusiness Skills (N=60)

Survey Item	Not at all(%)	A little(%)	Some(%)	A lot(%)	Not Sure(%)
Mastery of the training's information	0	0	13	87	0
Ability to teach Agribusiness skills to students	0	3	17	80	0
Ability to teach decision–making to students	0	0	22	78	0
Use workshop activities in my own teaching	0	0	22	77	1
Design and lead a workshop on this topic	0	0	18	82	0
Ability to design decision–making lessons	0	0	15	83	2
Effectively evaluate student learning	0	0	23	75	2

Comments and Suggestions from Participants

The final portion of the instrument provided an opportunity for the respondents to share their comments and suggestions. Comments were reviewed by the researchers for the purpose of gaining additional clarity of participant ratings. Comments and suggestion cannot be generalized to all participants. The following themes emerged. The ATS instructors in the internship workshops indicated that they planned to implement the knowledge gained about internships in a very systematic process; they frequently provided the steps they plan to take to implement internships at their local school. ATS instructors intend to educate their peers, students, families, businessmen, and industry. They also noted that building relationships and understanding is a key to success.

Suggested improvements to the workshop could include a longer training period. Participants also noted the need for more group time with workshop instructors. Financial support for internships, building industry support, actual farm visits made with workshop presenters, and workshops to improve teaching techniques were topics the ATS instructors recommended for future workshops. Instructors in the agribusiness workshops also indicated their plans for implementing the agribusiness competencies into their teaching. A number of instructors indicated that the workshops needed to be longer, and they suggested marketing strategies as a topic for future workshops.

Lessons Learned

Observations and reflections are based on the daily self–reflections that were conducted by the teaching teams for all four workshops. These observations were originally reported by Roberts, Thoron, Barrick, and Samy (2008). Observations are presented as lessons learned about conducting workshops in a foreign country and specifically working with Egyptian faculty and instructors.

Lessons learned about conducting workshops in a foreign country.

- *Background information* – Understanding the background and situation for the country in which the workshops are being conducted, the overall project, and the participants of the workshops was important. Visiting an ATS would be helpful prior to the workshops.
- *Planning* – Having a clear vision for workshop goals and objectives was important. Planning teaching strategies is more of a concern, since active learning is not common in the local culture.
- *Flexibility* – Although goals were identified in advance and content was outlined, it was important to remain flexible. Daily self–assessment was important.
- *Language* – Effectively translating the true meaning of an idea from one language goes beyond simply translating words, particularly when using oral communication. Learning and using a few Arabic words was well–received by the participants.
- *Translation* – When using translators, it was helpful to have people that are familiar with the content being presented. Some participants did find the translation approach distracting at times.
- *Selection of presenters* – For the second and third workshops, it was critical to select faculty who clearly understood the content, were good teachers, and were able to quickly and effectively translate.
- *Interpersonal connections* – Making connections with the workshop participants aided in the overall effectiveness of the workshops.

Lessons learned about working with Egyptians.

- *Social Learners* – When given the opportunity for discussion, they enjoyed opportunities to interact with each other and team members. Sometimes this can be time–consuming.
- *Inquisitiveness* – When given the opportunity, participants liked to ask questions.
- *Innovativeness* – Participants were open to new ideas, hungry for new materials, and welcomed our assistance. Participants were cautioned that content and process must fit the local situation rather than the U.S. system of education.

- *Conservative/traditional* – Although participants were open to new ideas, it was difficult for them to shift their mindsets to new ways of doing things. In other words, it was difficult for them to "think outside the box." There was some reluctance to being perceived as going against the system.
- *Rewards* – Both the university faculty and secondary teachers seemed excited about implementing new educational activities without obvious extrinsic rewards.

Conclusions, Recommendations and Implications

ATS instructors were positive regarding their experience in the internship and agribusiness workshops. However, since instructors indicated that they can and will use the information in their teaching, there may not be a need for major changes in content. Working with businesses and industries that could accept a student intern and working with students' families are skills that ATS instructors do not have and do not believe their competency increased. Future workshops should concentrate on helping ATS instructors develop those skills, perhaps through role–playing exercises and on–site visits. Further, ATS instructors may also benefit from additional workshops on how to effectively teach internship and agribusiness skills and how to evaluate student learning.

Based on feedback from the workshops, it appears that Egyptian ATS instructors recognize the benefits of experiential learning (Roberts, 2006), much the same as their American counterparts (Phipps & Osborne, 1988). It also appears that the instructor will be the key to successful implementation of these experiences, which aligns with what Dyer and Williams (1997) found with U. S. secondary agriculture teachers. It is recommended that follow–up research be conducted to see the extent that supervised internships and agribusiness decision–making competencies were actually implemented.

The international activities conducted during this project were rewarding for all team members. Faculty are strongly encouraged to consider engaging in international development activities and programs (Roberts et al., 2008). Based on the observations and experiences, five recommendations for implementation are offered.

Know The Potential Audience, Learn The Culture, and Understand The Local Situation

Prior to working in an international setting, immerse yourself in their culture. The temptation is always to "Americanize" others, imposing upon them the values and structures that are common in the United States. Learn to appreciate that educators in other countries typically have few incentives to create change, but they may be more intrinsically motivated than American educators. Remember that people are people, regardless of any animosity or differences between governments. These recommendations are supported by Andreasen's (2003) work, which gave similar recommendations, including understanding the purpose of the project; learning about the culture and people; starting with an open mind; and have an appreciation for interaction with people.

Plan Well, And Be Prepared To Alter Plans As The Activity Or Program Progresses

Communication can be difficult at times, so concepts are more important than words. Be prepared to have multiple ways of explaining concepts. When facilitating workshops, specific instructions and time allotments can help control time in cultures that are less time–dependent. These suggestions are also supported by Finley and Price's (1994) text *International Agriculture* and principles of adult learning (Knowles, 1984).

Provide Opportunities For Young Faculty To Become Engaged

The temptation for administrators when advising new faculty is to encourage them to devote as much time as possible in establishing a research program and then spend some time on their teaching. The undocumented assumption is that international experiences will hinder progress in one or both areas. Instead, life sciences administrators should encourage and support short–term international involvement so that faculty become comfortable with the lessons

learned and potentially identify teaching and research collaborators at foreign institutions. Further, these types of experiences probably lead to better teaching in the U.S institution.

Enlist Experienced Faculty To Mentor Newer Faculty

Every institution has faculty who, over a period of time, have acquired international experience, through research, teaching and/or extension programs. Administrators should call upon those faculty to advise and mentor newer faculty who are ready to take that first step into international programs. Experienced faculty can stress the results of their experiences, including a broader appreciation for U.S. and global agriculture and economies, the importance of having clear goals for international experiences, and contributions to other parts of the faculty member's teaching, research and outreach work.

Provide Informal Seminars/Workshops To Share Ideas And Experiences

When faculty return from international work, whether it was leading a short–term study abroad activity or a six–month sabbatical, experiences can be shared with a broad audience through informal seminars and workshops. Activities such as these can help newer faculty prepare proposals for international work and prepare themselves for some degree of international involvement.

Summary

Providing in–service workshops for instructors in foreign countries can provide two benefits. First, the instructors develop enhanced teaching skills, with the end result being better educated graduates and a stronger agricultural economy for the country. Secondly, faculty from the United States have the opportunity to learn new cultures and develop new skills in working within a foreign country. Those skills can be shared with others so that they are prepared to work in a new environment for teaching and learning.

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