

A Phase-Model of the Cross-Cultural Learning Process of LIS International Doctoral Students: Characteristics and Interventions

Bharat Mehra

School of Information Sciences, University of Tennessee, 449
Communications Building, 1345 Circle Park Drive, Knoxville, TN
37996.bmehra@utk.edu

This paper develops a phase-model of the cross-cultural learning process of LIS international doctoral students and provides a consolidated, in-depth, and comprehensive look at their experiences that extends prior anecdotal and survey-based efforts. Semi-structured interviews along with informal discussions, analysis of electronic interactions, and observations as a participant researcher identify cross-cultural learning experiences of all the twenty-two international doctoral students from a representative LIS program in the United States. The phases in the model of the cross-cultural learning process represent significant cognitive (thoughts), affective (feelings), and physical (actions) aspects of the experiences of LIS international doctoral students. Mapping participants' concerns and challenges during each phase is used to highlight interventions at the level of discipline, program, faculty, doctoral student community, and individual student that together provide a practical application to the research. Proposed interventions need to be holistically applied in conjunction with each other to promote mutual "two-way" learning where international students learn from the discipline and the discipline learns from the international students. Such an approach suggests symbiotic connections between improvements in effectiveness of student learning and efforts to tap into the cultural knowledge of international students to further growth in internationalization of LIS education in the United States.

Introduction

There have been sporadic and few studies of LIS international doctoral students in the United States (Rochester, 1986; Cveljo, 1996a). Most of them are primarily based on anecdotal and survey-based evidence that yields limited understanding about the experiences of LIS international students (Carnovsky, 1971; Sarkodie-Mensah, 1988; Marques de Oliveira, 1990). The focus of these studies has been on 1) effectiveness of international students learning; and, 2) application of American LIS to the home countries of the students (Robbins, 1978; Kajberg, 2002). Such work presents a deficit approach for it considers that the cultural experiences and potential contributions of international doctoral students are irrelevant or inconsequential in the growth of the discipline in the United States (Saracevic,

1982; Cveljo, 1996b). This paper presents an alternative approach that adopts a “two-way” learning strategy to understand the experiences of LIS international doctoral students. Such an approach recognizes that it is not only the international doctoral students enrolled in LIS programs who gain from the discipline. The direction of learning can be mutual. This research examines where LIS in the United States might learn from its international doctoral students how to promote cultural bridges and further the discipline’s growth towards internationalization. *Internationalization* in this study is broadly conceived in terms of processes incorporating issues and elements that have origins or references other than the United States. Without getting into the vast research and ambiguities surrounding the notion of culture, this paper adopts the meaning of the term as an emergent process of experience where meanings, beliefs, values, practices, modes of interaction, and views, amongst other aspects, evolve in relation to a particular country of origin, resident country, or nationality (Williams, 1973).

Semi-structured interviews along with informal discussions, analysis of electronic interactions across a period of nearly five years, and observations as a participant-researcher are used to identify cross-cultural learning experiences of all international doctoral students enrolled during the time of study in a representative LIS program in the United States. Fifteen female and seven male participants shared their perspectives and experiences in the program and there was much variation in their countries of origin and nationality, time duration in the program and country, age, prior educational and work-related backgrounds, and other dimensions. Owing to a lack of significant numbers in this study to represent the different variables, future research will co-relate these factors with patterns in student responses. Though the author recognizes differences in individual student experiences, yet the goal of this paper is to move to a level of abstraction that generalizes phases in participants’ cross-cultural learning process, and also acknowledges variations within those generalizations.

The research presents the cross-cultural learning process of case-participants in terms of the following eight non-hierarchical phases:

Phase 0: Post-admission before the first semester starts

Phase 1: Program initiation

Phase 2: “Gathering” experiences

Phase 3: “Triggers”—realization of differences

Phase 4: Dyslexic state of existence

Phase 5: Conditioned awareness comparison-contrast to “home”

Phase 6: “De-conditioning” of expectations based on the past

Phase 7: Enlightened adaptation

The eight phases represent significant experiences of LIS international doctoral students in terms of cognitive (thoughts), affective (feelings), and physical (actions) aspects for an individual. During each phase, individual attributes are complemented with people attributes that include resources and the community with whom participants interact with. Cultural and cross-cultural attributes during each phase are expressed via identified concerns and challenges that resulted from mutually impacting variables associated with the individual, socio-culture (language, social interactions), education, program (educator, policies and procedures), and the discipline. Finally, the attribute of interventions (at the level of discipline, program, faculty, doctoral student community, and individual student) captures dimensions in specific contexts of interaction about the participants’ experiences in the entire academic environment. The proposed phase-model of the cross-cultural learning process thus captures the four constituents of any cross-cultural learning process in terms of intersections between individual-people-culture-environment (context) factors. A study of these connections is essential to develop understanding of the nature and development of any cross-cultural learning. Proposed interventions need to be holistically applied in conjunction with each other to promote mutual “two-way” learning where international students learn from the discipline and the discipline learns from the international students. Such an approach suggests symbiotic connections between improvements in effectiveness of student learning and efforts to tap into the cultural knowledge of international students to further growth in internationalization of LIS education in the United States.

Cross-Cultural Learning in Information Seeking Research

Though theoretical issues from research domains of culture and identity, globalization, and learning as a process of construction have a bearing on cross-cultural learning, owing to space limitations, a discussion of those is beyond the scope of this paper. Also, in order to maintain focus on LIS education and information science, theorizations of international student experiences from disciplines like cultural studies, sociology, and educational psychology are not directly addressed in this paper except in relation to cross-cultural learning of LIS international doctoral students in the United States.

Understanding the user’s perspective in information seeking and use (Dervin and Nilan, 1986) and in processes associated with information seeking, information gathering, and information giving (Krikelas, 1983), the concept of usefulness in the assessment of information services (Saracevic et al., 1990), relevance studies that provided understanding of context and situational dynamics (Schamber et al., 1990), and the importance of psychological relevance (Harter, 1992) are frameworks in LIS research that have a special relationship to this work. First, these ideas identify learning as a complex mechanism where individuals go through a

dynamic process in learning about a particular subject or “becoming informed.” Second, the importance of contextual realities in information seeking studies helps us better understand the cross-cultural learning experiences of LIS international doctoral students in the United States. However, a limitation in prior information seeking research for this study is their focus on mere information seeking and use. The cross-cultural learning process of LIS international doctoral students includes information seeking, but encompasses aspects that emerge from the entire experience of being in a cross-cultural context. These include additional issues such as: social and psychological adjustment, LIS content mapping, familiarizing with LIS policies and procedures, community building, sharing practice (in the performance of roles), developing language proficiencies, and so on. Similarly, Dervin’s sense-making triangle of situation-gap-use as a perspective to understand user’s information seeking and use processes provides a narrow view of information use to “make sense” of a “gap” in a specific “situation” that the user experiences (1983). The cross-cultural learning process of LIS international doctoral students in the United States involves collecting information and experiences that address not one particular “gap” in a situation, but gaps in the entire reality of experience based on lack of cultural experience and knowledge.

Research on the study of human interactions with information systems provide another area where a focus on user’s problems in the process of information seeking situations (Belkin and Vickery, 1985; Borgman, 1984) and the user’s evaluation of usefulness of information for resolution of the problem (Belkin, 1990; Ellis, 1992) provide limitations in the sense that there is not one “problem” that LIS international students face in their cross-cultural learning process. The entire experience of LIS international students is a “problem” (if one identifies the meaning of the word as a barrier or hindrance) owing to its cross-culture nature. In such a context, evaluation of information provision must be taken into account in terms of meaningful integration and use of information within people’s entire experience. Strategies to measure the effectiveness of information provision, and the usefulness of information resources and support mechanisms, must not identify them as isolated avenues, but their design, implementation and practice need to be expanded to evaluate these as a whole, in combination with each other, in order to reflect what is really meaningful to people using them.

An important idea about focus on the personal meanings that users seek from the information (Bates, 1989; Ingwersen, 1996) is relevant to this research in terms of recognizing the personal experiences that my case-participants shared about their cross-cultural learning process. Here too, the idea is translated from a narrow application of meanings from “information” to making sense of meanings in relation to the entire experience of learning in a new culture. Wilson’s (1977) understanding of the active personal process in information seeking that involves “fitting information in with what one already knows and extending this knowledge to create new perspectives” (Kuhlthau, 2004, p.4) resonates with experiences shared by LIS international doctoral students in this research about the need for opportunities to extend and connect with their past cultural experiences (based on country of origin and/or prior resident country, prior academic and/or work

experience, and prior discipline of graduate studies) to shape their present and future directions of learning and professional development.

The idea of construction of learning in information seeking as a process and its dynamic nature has been proposed in other prior work such as the analogous state of knowledge hypothesis (Belkin et al., 1982) where researchers lay out the process of the user's information seeking from identification of the user's problem to finding a solution that satisfies the information need and solves the information problem. In situations where there is not a specific problem at hand, but the entire nature of experience has to be understood and negotiated, a broader framework is called for, to reflect the nuances and reality in that different situation. The cross-cultural learning process presented in this research proposes interventions that may fill this missing gap. Taylor's significant work on information use environments (1991) and levels of information need in terms of visceral (actual but unexpressed), conscious (internal description in the brain), formalized (formal statement of need), and compromised (presented question or query) also provide limited understanding of constructive process and learning experiences in its focused application of information seeking that does not accommodate or address cross-cultural experiences in its framework.

An important area of work that proved significant towards understanding the cross-cultural learning process of LIS international doctoral students is Kuhlthau's research on the information search process and the constructive process of seeking meaning (2004). Though Kuhlthau's research does not acknowledge cross-cultural experiences and focuses only on information seeking, yet the work is instrumental in recognizing the "classic triad of thoughts, actions, and feelings central to any constructive process [that] is rarely taken into consideration in study or discussion of information-seeking behavior" (Kuhlthau, 2004, p. 6). This research extends Kuhlthau's constructed model in the broader context of the cross-cultural learning process of LIS international doctoral students in the United States. The phase-model in this paper presents a non-hierarchical, experiential, open-ended and more flexible understanding of the constructive process of learning as compared to a stage-model. The research presents actions, thoughts, and feelings as inter-related in the process of sense making as reflected in the cross-cultural learning experiences shared by my case-participants.

Phase-Model of the Cross-Cultural Learning Process

The conceptual structure presented in the following model of the cross-cultural learning process represents various phases of progress of the participants that reflect student perceptions of their experiences and their choice and abilities to conceptualize and communicate about those experiences. The phases are also shaped by additional intersecting factors in the progress of LIS international doctoral students. Participants reported these factors to include structural aspects in the specific program (for example, "...after I passed the qualifying exam..."), progress made in terms of temporal dimensions ("... during my first week...in the

second year I...”), emotional experiences (“...I was shaken but it made me realize...”) and psychological journeys that participants experienced (“...I was lost and confused...”). The identified main feature for each phase is expressed in its title to represent participants’ different modes of conceptualizing their progress. For example, Phase 0 and Phase 1 are identified in terms of temporal dimensions associated with structural phases in the educational program; Phase 2 and Phase 6 are identified in terms of the main doing activity that the participants engage in (consciously or subconsciously) during that phase; Phase 4, Phase 5 and Phase 7 are identified by the state of the participants; and Phase 3 is identified by a combination of an element that participants encounter during the phase and the state that participants reach after that encounter.

The phase-model of the cross-cultural learning process represents an intertwining of experiences associated with the academic learning process and the cross-cultural adaptation process. The goal of the academic learning process in the LIS doctoral program is clear in making students understand the broad dimensions of the discipline, while at the same time, carve out their own focused area of research. The goal of the cross-cultural adaptation process is, however, not so clear since different students perceive and adapt in different ways. The phase sequencing in the cross-cultural learning process reflects this dual nature of the goals. For example, the first and last phase (namely, Phase 0 and Phase 7) mark the poles of the academic learning process and represent the time when students start and complete the program respectively. This is an expression of the clarity in the goal of the academic learning process. However, to represent an individual student’s experiences in the cross-cultural adaptation process, the intermediate phases in the process are not always sequential and interchangeable. The incorporation of the cross-cultural element in the learning process calls for some flexibility in the process and that is represented by the non-sequential nature of the intermediate phases. These phases can also be seen to represent non-sequential emotional, psychological, and/or symbolic phases in the individual’s journey of experiences, rather than actual physical temporal phases of progression.

Additionally, multiple schema are incorporated and represented in the model of my case-participants’ cross-cultural learning process. For example, elements of individual-people-culture-environment intersections are represented and overlap with thoughts, feelings, actions, resources, concerns and challenges, and interventions. Acknowledging multiple schemes allows for a more holistic picture that recognizes different modes of conceptualization as well as celebrates the overlaps and intersections between their various domains. Also, it is important to note the conscious choice of “phase” (as compared to a “stage”). Except for the first and last phase of the cross-cultural learning process that mark the temporal start and end of the process respectively, all the intermediate phases (as well as some dimensions of the first and last phase) are not always sequential and may reflect overlapping and intermixing elements, based on the experiences of different participants. Hence they are not identified as “stages”—a description that implies a more fixed and rigid dimension of temporal experience.

The phases of progress and their characteristics in cross-cultural learning, as well as the interventions presented in this paper, are broadly based on patterns documented for the specific participants involved in this particular case-study. This limitation will be addressed in future research that will test the applicability of the model to other students. It is beyond the scope of this paper to discuss similarities or differences between the experiences of international and American students in a doctoral program or other programs of study.

Phase 0: Post-admission before the First Semester Starts

The first phase in the cross-cultural learning process is the post-admission period before the students start the first semester. During this time, most of the participants were in their countries of origin or in other resident countries and had to make special travel arrangements to come to the United States. Five out of the twenty-two participants were already in the United States and completed or transferred from their prior programs of study in the United States to join the current doctoral program. Table 1 identifies the thoughts, feelings, actions, and resources that participants sought during this phase.

**Table 1. First Phase (Phase 0) of the Cross-Cultural Learning Process—
Post-Admission before the First Semester Starts**

ID FEATURE: Admission and acceptance into the program (Time: Before the start of the first semester)			
Thoughts	Feelings	Actions	Resources & People
Reflecting on the move to a new country and educational program	Excitement, fear, doubt, uncertainty	Exploring various sources (local/global, digital/non-digital) for any information and support Finishing prior work and/or academic obligations Completing official arrangements to travel procedures (passport/visa/ticket purchases and health check-ups)	Talking to others in resident country about potential plans Interacting with school authorities and faculty in the new program via distance Seeking online resources about the new school, city, program, etc. Consulting American school website and faculty homepages

Phase 1: Program Initiation

The second phase in the cross-cultural learning process is the program initiation period when the students start their period of study during the first semester at the new school. The phase includes exposure and initiation of students into their new work obligations as research and/or teaching assistants. Table 2 identifies the thoughts, feelings, actions, and resources that participants sought during this phase. For example, participants reported meeting (and/or sending e-mails to) university and program administrators in response to specific queries (for example, “how many courses am I required to take as an international doctoral student to maintain full-time status?”). Participants recognized that if their work supervisor was their assigned advisor, then it had been much easier for them to monitor their learning process. Some participants mentioned not knowing who their advisor was, and most of them reported not knowing basics like what to do during their program initiation period.

**Table 2. Second Phase (Phase 1) of the Cross-Cultural Learning Process—
Program Initiation**

ID FEATURE: Students get initiated into the program and start their studies in the first semester			
Thoughts	Feelings	Actions	Resources & People
Feeling lost and isolated, at personal and academic fronts	Uncertainty Internalized expectations to succeed Don't know how to do well	Completing issues related to moving and studying at university in the United States (getting a bank account, renting a place to stay) Enrolling in classes Attending a school LIS orientation Attending university-level orientations	University and program administration Meetings with advisor Team preparation meetings for research and/or teaching Meeting with other doctoral students by chance

Phase 2: “Gathering” Experiences

During the third phase in the cross-cultural learning process, students begin to engage in “gathering” experiences, to consciously and/or unconsciously observe, mentally record, and try to make sense of their realities in order to navigate their journeys in their LIS cross-cultural learning process. Table 3 identifies the thoughts, feelings, actions, and resources that participants sought during this phase. For example, thoughts that participants experienced during this stage related to finding relevance and validity in their experiences, in terms of connections among their past, present and future trajectories and goals. All participants reported that this

phase was marked by getting exposed to an entirety of new experiences in terms of their socio-cultural dimensions, educational system, research process, and LIS in terms of its new boundaries and vocabulary. The difference in the entire socio-cultural experience, accentuated in the context of the LIS academic learning process, led to a sense of social and psychological isolation for the participants. Most participants reported that if they had been exposed to discussions of cultural and academic differences during program initiation efforts, they would have had better expectations about the nature of differences, how to cope with the differences, and the role of personal initiative in making adjustments.

**Table 3. Third Phase (Phase 2) of the Cross-Cultural Learning Process—
“Gathering” Experiences**

ID FEATURE: Students begin to mentally record their new realities to navigate their LIS learning process			
Thoughts	Feelings	Actions	Resources & People
Difficulty to grasp new cultural and educational, and discipline-based experiences	Overwhelmed with information overload and new experiences Social isolation	Talking with other students Building support networks with whomever participants interact with Exposure to different learning experiences in classes (readings and lectures)	Self efficacy and personal motivation to recognize how/what needs to be done Other LIS doctoral students, especially from resident country Students and faculty in classes and research work Student friends in other programs

Phase 3: “Triggers”—Realization of Differences

The fourth phase in the cross-cultural learning process is marked by the occurrence of “triggers” that awaken the student to the reality that things are different from their earlier expectations and experiences. Such triggers are real and/or perceived incidents that students experience and internalize to represent markers of realization of the difference. Such a realization may take place immediately during the occurrence of the perceived or real event, some time after the experience, or much later, after the student is able to internalize and make sense of that experience. Any moment of perceived or real experience can play such a trigger. Triggers can range from an innocuous comment by an instructor in class, perceived verbal and/or non-verbal behaviors of others, someone’s response to something the participant says or does, or something the student symbolizes to represent a certain meaning. Table 4 identifies the thoughts, feelings, actions, and resources that participants sought during this phase. For example, owing to differences in

perception of faculty-student hierarchies based on different socio-cultural experiences, most participants did not feel comfortable enough to engage with faculty about issues of concern, unless they felt that it was an extreme emergency. Additionally, the option to post on the school listserv for doctoral students was followed only if the participant perceived the situation to be very important and/or urgent.

**Table 4. Fourth Phase (Phase 3) of the Cross-Cultural Learning Process—
“Triggers”—Realization of Differences**

ID FEATURE: Marked by occurrence of “triggers” that awaken the student to the difference in realities			
Thoughts	Feelings	Actions	Resources & People
Lost and doubtful about position in the program and culture	Confused, anxiety	Finding help and support and talking to anyone who participants interact with	Doctoral students in shared classes and/or research projects Listserv for doctoral students Other LIS doctoral students from the home country Consult advisor only in urgent situations, owing to socio-cultural perceptions of difference in faculty-student hierarchies and formal-informal distances

Phase 4: Dyslexic State of Existence

The fifth phase in the cross-cultural learning process represents a “dyslexic” state of existence for international students in terms of their inability to make connections between incomplete and isolated pieces of information that can be connected only through cultural knowledge and experiential understanding that students lack. Table 5 identifies the thoughts, feelings, actions, and resources that participants sought during this phase. For example, participants’ felt a need for a complete picture stemming from a cultural and disciplinary disconnect. An important note during this period is that initial interaction with class materials and the discipline during student’s progress resulted in creating characteristics of the dyslexic state. Student’s further use of materials and readings, in classes and beyond, helps alleviate the impacts of the state, to further progress.

**Table 5. Fifth Phase (Phase 4) of the Cross-Cultural Learning Process—
Dyslexic State of Existence**

ID FEATURE: Inability to make connections between incomplete/isolated information			
Thoughts	Feelings	Actions	Resources & People
To make sense from isolated frames of reference and limited sense of understanding	Need for complete picture	Adjusting to perceived US-centrality in LIS education	Class discussions with faculty/students
	Disconnect with culture/discipline	Taking classes in LIS and other disciplines	Reading class materials
		Expanding breadth and depth of reading	Readings from different areas in LIS

Phase 5: Conditioned Awareness and Comparison-Contrast to “Home”

The sixth phase in the cross-cultural learning process represents students’ conditioned awareness/responses to cultural and/or academic experiences based on comparison and contrast with a perception and picture of “home.” “Home” symbolizes a range of students’ past experiences that emerge from residential, discipline-based, and/or personal settings and interactions. Comparing and contrasting brings about responses to academic and/or cultural experiences that relate the student’s past and current experiences on the same “measuring stick” in order to make sense of the new socio-cultural realities. Table 6 identifies the thoughts, feelings, actions, and resources that participants sought during this phase. For example, by getting exposure and participating in a range of activities, participants tried to trace similarities and differences between their prior and current experiences and see broader interconnections between them.

**Table 6. Sixth Phase (Phase 5) of the Cross-Cultural Learning Process—
Conditioned Awareness Comparison-Contrast to “Home”**

ID FEATURE: Awareness conditioned from comparison-contrast in student’s past-current experiences			
Thoughts	Feelings	Actions	Resources & People
Develop a limited understanding of experiences See similarities-differences in past-current cultural/academic practices-	Internalize the “dominant” American way of doing things	Getting involved in different research/teaching activities	Limited reading
	Feel disadvantaged when there is lack of recognition/practice of earlier experiences	Students judge experiences based on scrutinizing differences	Larger research/teaching experiences
	Nostalgically romanticize or disregard past experiences		Broaden their professional network and discipline exposure

Phase 6: “De-Conditioning” of Expectations Based on the Past

The seventh phase in the cross-cultural learning process represents a phase of “de-conditioning” expectations based on the past. “De-conditioning” does not mean that the students erase all past experiences and encounters. What “de-conditioning” means in this context is the ability not to measure each and every present and future experience based on comparison and contrast to earlier experiences. “De-conditioning” recognizes each experience on its own terms and draws broader connections between various seemingly disparate experiences (cultural and/or academic). The phase is marked by a gradual process of realization of broader interconnections in the discipline and the relationship of those to the participant’s own specific area of research. This phase realizes the student’s own particular focused area and she/he is able to place that in the context of the discipline and its global dimensions. Table 7 identifies the thoughts, feelings, actions, and resources that participants sought during this phase. For example, interacting with people from other cultural backgrounds (especially other LIS doctoral students) helped provide participants with exposure to multiplicity in ways of doing things. It also helped participants recognize the validity and diversity of research interests in LIS-related settings.

**Table 7. Seventh Phase (Phase 6) of the Cross-Cultural Learning Process—
“De-Conditioning” of Expectations Based on the Past**

ID FEATURE: Recognition of broader connections between various seemingly disparate experiences			
Thoughts	Feelings	Actions	Resources & People
Ongoing realization of the differences and similarities in cross-cultural experiences and accepting them on their own terms	Patience, hard work, and faith in ultimately finding the goal towards focused research	Attempts of sense-making in different situations via own limited experiences Slow progress to focus on specific research within larger discipline Discussing with people about their own processes of work and thinking Exploring avenues of job opportunities via conferences and networking	Taking more courses Rigorous reading Faculty and other students Support of advisor and committee members People from diverse cultural and academic backgrounds

Phase 7: “Enlightened” Adaptation

The eighth phase in the cross-cultural learning process represents an “enlightened” adaptation phase at the cross-cultural and the academic levels of experience. This

phase is the culmination of the cross-cultural learning process for international doctoral students in LIS and is followed generally by getting a job in the United States, the country of origin, or another country. In the context of cross-cultural experiences, “enlightenment” represents a phase of understanding the different cultural and/or academic experiences on their own terms. Students are able to see the similarities and differences between experiences in terms of a larger understanding of the intersections between the individual, people, culture, and the environment (the context). These express themselves in making connections between the local and the global, home and host, and other realities of experience. In the context of LIS academic experiences, “enlightenment” represents broadly understanding the discipline and even working in different areas within it, and in addition, locating and identifying one’s own focused area of research and work within it. Table 8 identifies the thoughts, feelings, actions, and resources that participants sought during this phase.

**Table 8. Eighth Phase (Phase 7) of the Cross-Cultural Learning Process—
“Enlightened” Adaptation**

ID FEATURE: Understand connections between local and global, home and host, other realities			
Thoughts	Feelings	Actions	Resources & People
Recognizing hybridized experiences	Synthesizing and integrating	Representing range of cultural and academic experiences	Discussions and networking with others
Understanding broad disciplinary nature	Wanting to complete the doctoral program	Searching and locating “best fit” for job; planning the move	Self-understanding and self-motivation
	Wanting to get a job, make plans to move	Developing and completing focused research	School and faculty support

Interventions during the Cross-Cultural Learning Process

This paper recommends interventions during different phases of the cross-cultural learning process at the level of the discipline (see Table 9), program (see Table 10), faculty (see Table 11), doctoral student community (see Table 12), and individual student (see Table 13).

Table 9. Interventions at the Level of the Discipline during All Phases in the Cross-Cultural Learning Process

Cross-Cultural Learning Phase	Kinds of Interventions
Phase 0	Develops global image that may provide students exposure to a range of multicultural and multidisciplinary experiences
Phase 1	Develops marketing of LIS global image; Incorporates students' past experiences; Creates clear disciplinary awareness (boundaries, activities)
Phase 2	Providing basic competencies/discipline clarity; Goes beyond US-centricity in LIS; Conceptualizes human/social-technology interactions in research
Phase 3	Establishes clear procedures/resources to clarify cultural misunderstanding/misinterpretation
Phase 4	Allows students to share past cultural/academic experiences; Taps into international students as "gatekeepers" to connect with global constituents
Phase 5	Develops understanding in students to engage with their different past, current, and future experiences
Phase 6	Projects an image where people with diverse academic and cultural backgrounds and areas of research may "fit in"
Phase 7	Provides social and technical infrastructures to support sharing interviewing experiences/skills across institutions/countries

Table 10. Interventions at the Level of the Program during All Phases in the Cross-Cultural Learning Process

Cross-Cultural Learning Phase	Kinds of Interventions
Phase 0	Makes students aware of a mental map of progress; Provides students overview/details of policies; Makes new students part of the LIS community
Phase 1	1-2 days orientation workshop to introduce academic process/policies; Outlines detailed mental map of progress in program/discipline for students
Phase 2	Develops grasp of discipline; Provides opportunities to share past cross-cultural experiences and express language/communication skills
Phase 3	Informs students of the complete picture of their future progress in the program; Provides complete/clear information about policies/procedures
Phase 4	Provides complete information about boundaries/cultural domains in the discipline; Allows for two-way learning in LIS education
Phase 5	Allows for sharing of past cultural/academic experiences; Provides a physical and cultural space in LIS to address multicultural issues
Phase 6	Supports hybrid model in education that recognizes multiplicity and diversity at different levels
Phase 7	Supports student efforts in finding and preparing for applicable “fit” in potential work situations and opening

Table 11. Interventions at the Level of Faculty during All Phases in the Cross-Cultural Learning Process

Cross-Cultural Learning Phase	Kinds of Interventions
Phase 0	Advisor/supervisor nurtures personal ties with the new student
Phase 1	Faculty introductions; Advisors/supervisor guiding meetings/outlining work
Phase 2	Provides greater advising; Builds ties/insures student professional growth
Phase 3	Schedules regular meetings to just focus on individual student's progress; Gives critical advice progress in an encouraging and optimistic tone
Phase 4	Provides complete information; Avoids cultural phrases/lack of explanation
Phase 5	Helps to understand dimensions of LIS work in different countries; Shows connections in LIS work across the world
Phase 6	Keeps the students on track to develop their own area of research in the discipline that will make significant contribution to world knowledge
Phase 7	Provides guidance and advise to students to become worthy members in the academic environment

Table 12. Interventions at the Level of the Doctoral Student Community during All Phases in the Cross-Cultural Learning Process

Cross-Cultural Learning Phase	Kinds of Interventions
Phase 0	Establishes welcoming efforts for new students via electronic avenues; Initiates mentorship efforts for pairing new and “older” students
Phase 1	Conducts meetings to build community; Discusses relationship between discipline domains and student journeys; Furthers mentorship efforts
Phase 2	Conducts formal and informal meetings and get-togethers to provide avenues for sharing of experiences
Phase 3	Promotes personal/professional support; Organizes interactions with faculty, administration, and others, to clarify policies/procedures
Phase 4	Provides formal and informal opportunities for personal and interdisciplinary cultural sharing and exchange
Phase 5	Provides opportunities for sharing US and non-US experiences; Studies similarities/differences in LIS domains of application in different countries
Phase 6	Promotes interactions between various constituents in LIS
Phase 7	Exchanges experiences of interviewing and job search

Table 13. Interventions at the Level of Individual Student during All Phases in the Cross-Cultural Learning Process

Cross-Cultural Learning Phase	Kinds of Interventions
Phase 0	Initiates new school networks; Conceptualizes plan to map progress; Develops an “individually-tailored” program outline
Phase 1	Develops support networks; Learns discipline boundaries/learning process
Phase 2	Develops personal initiative and self efficacy skills
Phase 3	Promotes and applies self efficacy and personal motivation skills
Phase 4	Creates awareness of cultural bias in LIS knowledge; Shares non-US experiences to develop global understanding of the discipline
Phase 5	Does not internalize dominant centrality of US-based knowledge; Understands the expanse of the discipline and their own position in it
Phase 6	Develops and completes dissertation research
Phase 7	Juggles and pushes the ball to roll on many fronts

Owing to space limitations, the following are select interventions at various levels highlighted in response to specific concerns and challenges participants identified during each cross-cultural learning phase:

- **Concern/Challenge during Phase 0: “Will I be able to cope in the new cultural environment and succeed in the new program/discipline and what experiences will that involve?” Program Intervention: Make students aware of a conceptual/mental map of future progress in the program/discipline and provide students more individualized, interactive, and “just-in-time” information to avoid a state of information overload.**
- **Concern/Challenge during Phase 1: Students need more guidance, explanation of policies and procedures, and frequently “orchestrated” opportunities to interact with others in the LIS community. Faculty Intervention: Formal and informal introduction to all faculty and their work; Supervisor outlines clear goals and expectations of project work; Advisor ensures regular meetings with student to provide guidance and insure professional growth.**
- **Concern/Challenge during Phase 2: How to develop a conceptualization of the field and overcome difficulty in combining technology and human/social**

issues at the level of the discipline? **Discipline Intervention:** Recognition that there are various modes of conceptualization and terms to represent the discipline of “library and information science” in other countries.

- **Concern/Challenge during Phase 3:** Perception of ambiguity and openness in educational requirements and program-specific policies and procedures. **Program Intervention:** Provide strategies for reification of community narratives so that new students can tap into past-recorded student experiences for seeking information, advice, and support.
- **Concern/Challenge during Phase 4:** Inability to make connections between incomplete/isolated information owing to a lack of cultural knowledge, individual learning style, language-related experiences, limitations in the specific educational materials, and new expectations/practices in teaching and learning. **Program Intervention:** Provide understanding of connections between various concepts/frameworks and give complete information about LIS historical and socio-cultural developments in the United States.
- **Concern/Challenge during Phase 5:** Making sense of the culture and academic process in relation to finding an individual LIS research niche based upon past academic involvements in different activities. **Program Intervention:** Allows for sharing of past cultural/academic experiences in ways that contribute towards discipline’s growth.
- **Concern/Challenge during Phase 6:** How to develop and process personal area of research, interact with others to find job openings, and identify a “fit” between student’s own experiences and interests and potential hiring agency’s expectations? **Individual Intervention:** Continued pursuance towards focusing, developing, and completing dissertation research.
- **Concern/Challenge during Phase 7:** Anxiety about completing dissertation research, meeting time deadlines, getting a new job and moving to a new place. **Individual Intervention:** Calls for juggling and pushing the ball to roll on many fronts that include completing and depositing dissertation, making the move and planning to settle in a new place, and organizing and getting work permits and permissions.

Conclusion

The phase-model of cross-cultural learning of LIS international doctoral students is significant in information science research for it provides an approach to understand the particular context of study (i.e. LIS education) via building theory and drawing synergetic connections between a representational framework and interventions of practice. Such an effort brings research and practice together, while at the same time, in proposing “two-way” learning, the phase-model shows a strategy towards “sparkling synergies” between countries/cultures based on mutual learning for both international and American students.

The model of the cross-cultural learning process broadly captures attributes associated with the four constituents of any cross-cultural learning community, namely, the individual, people, culture, and the environment in specific contexts. A significant finding in this research is that the proposed interventions at various levels (discipline, program, faculty, doctoral student community, and individual student) need a holistic application that constructively implements them in conjunction with each other. Such an effort will provide meaningful solutions since it stems from a realization of the deep connections between improvements in effectiveness of student learning and growth of the discipline to further internationalization. *The logic is that making student learning effective will allow students to tap into their best potential that will thereby help them contribute according to their best abilities and strengths. Part of those strengths and realities of international students are their past cultural and educational experiences in other countries. Improvements in effectiveness of student learning, are thus, directly tied to a provision of opportunities to tap into their abilities and strengths that include nurturing past cultural connections from their countries of origin/resident countries and work-related/academic settings.* By doing so, LIS will further internationalization in terms of building cross-cultural bridges of exchange and developing globally represented knowledge and practice. The phase-model of the cross-cultural learning process provides one way of understanding the experiences of international doctoral students and identifying interventions that may help towards this goal.

References

- Bates, M. (1989). The design of browsing and berry picking techniques for the on-line search interface. *Online Review*, 13, 407-424.
- Belkin, N. J. (1990). The cognitive viewpoint in information science. *Journal of Information Science*, 16, 11-15.
- Belkin, N. J., Brooks, H. M., & Oddy, R. N. (1982). ASK for information retrieval. *Journal of Documentation*, 38, 61-71.

Belkin, N. J., & Vickery, A. (1985). *Interaction in information systems: A review from document retrieval to knowledge-based systems* (Library and Information Systems Research Report 35). London: British Library.

Borgman, C. (1984). Psychological research in human computer interaction. *Annual Review of Information Science and Technology*, 19, 33-64.

Carnovsky, L. (1971). *The foreign student in the American library school*. Chicago: University of Chicago Graduate Library School.

Cveljo, K. (1996a). *Internationalizing LIS degree programs: Internationalizing library and information science degree programs—Benefits and challenges for special librarians*. Paper presented at the Mid-Missouri Chapter SLA Meeting, Columbia, MO, April 25, 1996. Retrieved August 15, 2004, from <http://www.sla.org/content/SLA/professional/businesscase/octeng/cveljo.cfm?style=text>

Cveljo, K. (1996b). International students in American library and information science schools. *Encyclopedia of Library and Information Science*, 57, 209-269.

Dervin, B. (1983). *An overview of sense-making research; Concepts, methods, and results to date*. Seattle, WA: School of Communication, University of Washington.

Dervin, B., & Nilan, M. (1986). Information needs and uses. *Annual Review of Information Science and Technology*, 21, 3-33.

Ellis, D. (1992). The physical and cognitive paradigms in information retrieval research. *Journal of Documentation*, 48, 45-64.

Harter, S. (1992). Psychological relevance and information science. *Journal of the American Society for Information Science*, 43, 602-615.

Ingwersen, P. (1996). Cognitive perspectives of information retrieval interaction. *Journal of Documentation*, 52, 3-50.

Kajberg, L. (2002). Cross-county partnerships in European and global library & information science (LIS) education at the crossroads. In *Restructuring and adapting to European standards: Overcoming regional variations in needs and interests in education for LIS*, Tei, Thessaloniki, Greece, 16-18 October, 2002. The European Association for Library & Information Education and Research (EUCLID) conference 2002.

Krikelas, J. (1983). Information-seeking behavior: Patterns and concepts. *Drexel Library Quarterly*, 19, 5-20.

Kuhlthau, C. C. (2004). *Seeking meaning: A process approach to library and information services*. Westport, CN: Libraries Unlimited.

Marques de Oliveira, S. (1990). The compatibility between American library and information science programs and foreign countries' needs: An exploratory study. In J. L. Tallman & J. B. Ojiambo (Eds.), *Translating an international education to a national environment* (pp. 83-104). Pittsburgh, PA: School of Library and Information Science.

Robbins, J. C. (1978). *Celebrating diversity: A report on and plea for multicultural graduate library education*. Presented at the Annual Conference of the Association of American Library Schools, Chicago, IL, January, 1978.

Rochester, M. K. (1986). *Foreign students in American library education: Impact on home countries*. New York: Greenwood Press.

Saracevic, T. (1982). The U.S. information science programs and foreign students: One-way or two-way street? In A. E. Petrarca, C. I. Taylor, & R. S. Kohn (Eds.), *Information Interactions, Proceedings of the 45th Annual Meeting* (pp. 266-267). New York: Knowledge Industries.

Saracevic, T., Mokros, H., & Su. L. (1990). Nature of interaction between users and intermediaries in online searching: A qualitative analysis. In *ASIS '90: Proceedings of the 53rd ASIS Annual Meeting, Toronto, Ontario, November 4-8, 1990, 27*, (pp. 47-54). Medford, NJ: Learned Information.

Sarkodie-Mensah, K. (1988). *Foreign students and U.S. academic libraries: A case-study of foreign students and libraries in two universities in New Orleans* (Louisiana. Doctoral dissertation, University of Illinois at Urbana-Champaign).

Schamber, L., Eisenberg, M., & Nilan, M. (1990). A re-examination of relevance toward a dynamic, situational definition. *Information Processing and Management, 26*, 755-776.

Taylor, R. S. (1991). Information use environments. In *Progress in communication sciences* (pp. 217-255). Norwood, NJ: Ablex.

Williams, R. (1973). A base and superstructure in Marxist cultural theory. @ *New Left Review, 82*, 3-16.