

# Journey with New Maps: Adjusting Mental Models and Rethinking Instruction to Language Minority Students

*Miriam Conteh-Morgan*

## Introduction

In reading works published in the past three decades on library instruction to students with limited English skills, one cannot fail to notice the predominant theme running through most of them: the challenges the students face. In one of the earliest articles, for example, Mary Genevieve Lewis (1969), reporting about the “special difficulties” Asian students faced in their educational experiences noted that “...most Asian students come to the American college campus with at least minor, often *serious deficiencies* in English” (271, emphasis added). Other difficulties she cited relate to cultural adjustment and difference in educational and library experiences.

Likewise, in a survey of thirty-one academic library directors done fifteen years later by Goudey and Moushey (1984), most of the respondents named cultural differences, language and communication difficulties, and unfamiliarity with using American libraries as issues that make the library a “laborious place” for foreign students seeking help and conducting research (224). The authors conclude that international students are “confronted by *obstacles of major*

*proportions*” (emphasis added) when they have to use American libraries (218). Similar sentiments were echoed by Boers ten years later in her discussion of the main “obstructions” to international students’ use of libraries; these include “dependent learning environments, difficulty in using new resources [and] English-language ability” (1994, 93); the fourth obstruction she added is their lack of experience with computers.

Natowitz (1995), who analyzed the content of eighteen articles on international students published between 1987 and 1993 to determine their common topics, found that most of them cited three major barriers to effective library use - language, culture and technology. To these three barriers, DiMartino and Zoe (2000) have added undeveloped critical thinking skills.

These works are representative of many others in the literature on academic libraries, and higher education in general. But I have chosen to quote from them in an attempt to draw readers’ attention to two key points that arise from them. The first is the unmistakable sameness in the issues they all discuss. Be

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*Miriam Conteh-Morgan is Assistant Professor, Ohio State University Libraries, email: conteh-morgan.2@osu.edu.*

it thirty-some or two years ago, the topic of educational and cultural differences seems to be a recurring one, in spite of what one might think of its obviousness. The second observation is linguistic in nature, and relates to the semantic similarities between some of the terms these articles use to describe international students' American experiences—*problems, obstacles of major proportions, deficiencies, difficulties, obstructions, barriers, and challenges*. It is worth paying attention to them because these terms help sketch a portrait of international students, as they are viewed through librarians' lenses.

Taking these two observations together—that is, the recurring themes, and the terms used to describe these students' library experiences—what can be deduced is that (a) in the past three decades or so, there has been hardly any noticeable change in the profile of students who come to study in the United States, and (b) that their experiences continue to be marked by struggles. In short, the narrative constructed by the above articles presents international students as flat, non-evolving characters, continually laboring under the weight of linguistic, cultural, and technological disadvantages, as they try to acquire an American education.

I do not in any way wish imply that these descriptions do not reflect some aspect of reality. However, I would argue that the insistence on differences, the negative meanings imputed to them, and the persistence of these in the literature over the decades, have led librarians, whether consciously or unconsciously, to construct a one-dimensional image of international students. These students are depicted as constituting an accretion of deficits, and this image has stuck in the collective minds of librarians. And because the literature has, by adopting a problem-deficit stance, paid more attention to their less-than-positive characteristics, an essentialist image of international students has been constructed, which has led to fossilized mental models of them. The mental models in turn have affected instructional philosophies and the practices derived from them.

In this paper, I propose to discuss how such mental models or entrenched beliefs have hindered critical reflection upon, and the questioning of, some held assumptions. I will apply the "ladder of inference" model taken from organizational learning theory to illustrate how the above-mentioned mental models

can affect instruction to language-minority students and its outcomes. Arguments will also be presented in the second part of the paper on why it is necessary for librarians to adjust their perceptions about these students, including examples of mental models that need to be changed, and suggested ways of creating more pedagogically and culturally responsive learning environments.

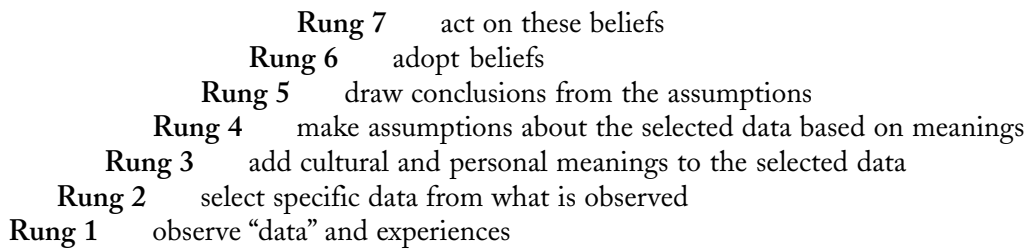
But to better understand the relationship between mental models and outcomes at a general level, we first need to briefly define and understand the theory of organizational learning.

### Organizational Learning Theory

Chris Argyris is generally referred to as the father of organizational learning because he was the first to use the term. Together with Donald Schön in *Organizational Learning: A Theory of Action* (Reading, Mass: Addison Wesley, 1978), he studied the behavior patterns of members of organizations. They concluded that certain behaviors prevent individuals from looking into problems within their organizations and learning from them. According to their theory, organizations must closely examine their cultural beliefs and practices to benefit from either a "single-loop learning" experience (identify problems and respond to them by using new processes), or "double-loop learning" (question the basis of a problem and rethink underlying assumptions). Senge (1994) expanded upon this theory to include his so-called five core disciplines necessary for organizational learning: **personal mastery** of the important functions and beliefs of the organization; **mental models** which must be constantly examined to create new attitudes and beliefs; a **shared vision**; **team learning**, and **systems thinking** which implies a shift from focusing on discrete, single-frame vignettes to viewing the organization as a whole system of interrelated structures and processes.

Mental models, the focus of this paper, are defined as the "images, assumptions, and stories which we carry in our minds of ourselves, other people, institutions and every aspect of the world" (Senge et al, 235). They are like the blueprint of a system or how the world works, constructed in the minds of individuals, and called upon when they need to negotiate the world around them (Michell and Dewdney 1998, 275). Residing in the recesses of a person's consciousness, mental models creep upon and shape everyday

Figure 1. Seven Rung Ladder of Inference



decisions and actions, and "may prevent [one] from sensing problems, delay changes in strategy, and lead to action that is ineffective in a new environment" (Lissack and Roos 1999, 46).

The general theory of organizational learning has been applied to libraries, as in how it can help meet the challenges of technological change (Phipps 1993) or transform management practices (Worrel 1995). And there are a number of works on mental models, especially as they relate to patrons' use of technology (Dimitroff 1992; Michell and Dewdney 1998; Brandt 2001; Veldof and Beavers 2002;), but there are hardly any focusing on those of instruction librarians.

### Mental Models and The Ladder of Inference

As an organization, librarians should be asking more fundamental questions about their currently held views regarding international students, and how these affect teaching philosophies and practices. The overarching concern must be, as Stephen Jay Gould put it in another context, about what they could be missing because they put everything into "slots of [their] usual taxonomy" (quoted in Sridhar 1994). Pertinent questions to be asked include: Is it possible for international students' profile to have remained largely unchanged through the years? Are librarians' presuppositions (or, their mental representations of international students) flawed? But even conceding the validity of some of these mental models, could they be used to promote better learning? Are the premises underlying current teaching practices still valid? Are the approaches to, and methods of, teaching producing desired outcomes? Obviously, there are many other possible questions; but I believe that the above are crucial to determining if a philosophical shift is needed to reshape views and actions.

The seven-rung ladder of inference graphically represents how individuals make assumptions about others during an interaction, and how those assumptions inform reactions. As one climbs up the virtual ladder, one incrementally adds details that finally coalesce in the action taken. This generally takes place in an instant, and operates under the radar of conscious and rational thought. Senge's original diagram (243) has been adapted in Figure 1.

The descriptions of the rungs are largely self-explanatory. But according to Senge, there is a direct connection between Rungs 6 and 2, the so-called reflexive loop, because the beliefs adopted the first time impact the data that is selected when a similar situation later presents itself. When people continue to select the same data, and adopt the same beliefs, then it could be said they have formed a mental model that would influence their future actions.

With regard to international students, librarians' mental models may have been reinforced by the literature because the latter has consistently selected three data to define this population: language barrier, cultural/educational difference, and technological challenge. As Delpit might describe it, librarians "do not really see [international students] through [their] eyes..., but through [their] beliefs" (1988, 297). Figure 2 sketches scenarios that describe possible examples of how a librarian can climb the ladder of inference, and illustrates how this can impact instruction.

### New Maps, New Routes, Same Destination

As Figure 2 demonstrates, everyone may see the same picture but each person will select different aspects of it, add their own personal and cultural meanings, and adopt beliefs derived from them. The challenge facing instruction librarians, as I see it, is the need for them to have an expanded range of data on language-

Figure 2. Climbing the Ladder of Inference

Rung	Examples
1. Observable data	• I hear a non-American accent
2. Data selected	• I notice transposed phonemes; halting English
3. Cultural/personal meaning added	• I determine region/country of origin, student's first language/English proficiency level
4. Assumptions	• student knows little about libraries in general • student has difficulty using/understanding English
5. Conclusions	• student HAS to learn about American libraries • student will be silent/not participate in class
6. Beliefs	• I need to teach as much about American libraries • I should emphasize active/collaborative learning
7. Act on beliefs	• I design course/class activities accordingly

minority students to avoid making un-nuanced assumptions and reaching wrong conclusions. They must be aware of, for example, the changes in the demographics and abilities of the group, and the possible distinctions found within the group of those they simply call “international students.” This necessary first step should lead naturally to a reviewing and changing of their mental models, and the new beliefs would serve as the compass for re-inventing teaching and learning.

### **Student Profile**

As it is now widely known, the number of foreign students studying in the United States increased dramatically in the last half of the 20th century. According to statistics compiled by the Institute of International Education, the number has risen steadily from 34,000 in 1954–55 to almost 583,000 in 2001–02 (<http://opendoors.iienetwork.org>, November 19, 2002). The statistics over the years reveal that the vast majority come from Asia, with China and India occupying the top two spots between 1999 and 2002.

It should not be assumed, though, that all international students come with serious, or any, language deficiencies. Of the top fifteen countries that send the most students, two are native English-speaking ones—Canada and the United Kingdom. Also, students from South Asia such as India and Pakistan, Southeast Asia (e.g., in Singapore and Malaysia), and parts of Africa (e.g., in Sierra Leone, South Africa

and Nigeria) use a nativized variety of English, so the non-standard American usages that might look like “errors” are in fact accepted forms in their variety of English, collectively known as New or World Englishes. Linguists also remind us that the United States, the largest English-speaking nation, accounts for only 20 percent of the world’s users of English (Crystal 1997). And, according to the British Council, an estimated one billion people are learning English around the world (<http://www.britishcouncil.org/english/engfaqs.htm>, January 3, 2002). Indeed, the teaching of English has become a growth industry.

Another salient point to remember is that most international students have learned and used English in different settings and for various purposes before coming to the United States. The majority would have learned English as a foreign language, but those from Europe, where English is now considered a *lingua franca* (James 2000), would have had more opportunities to use the language to communicate with both native and non-native speakers. Others may have used it on their travels abroad, or may have enrolled in short study programs in an English-speaking country. Nor is it uncommon, from my experience as an ESL instructor, to find students who come to America after living in Australia or Canada, or have attended more than one institution in America. So it would not be unreasonable to assume that more students have been exposed to English and have a fair grasp of some vari-

ety of English, academic and non-academic, before their American university experience. While they would not necessarily have a high proficiency in all language areas, their abilities may not be found as wanting as the literature makes it out to be. As many ESL works show, to assume that international students have language problems, without making any kind of distinctions, is to misrepresent the reality.

With regard to various differences and their implication for learning, library literature on international students amply discusses their educational backgrounds that are believed to stifle their critical and independent thinking skills; their home institutions that encourage rote and surface learning processes; and the authority-centered and male-dominated societies that make them passive. These have been seen as hampering students' adjustment to the America learning culture. However, some studies suggest that these perceptions stem from different cultural frames of reference, and argue that, for example, the definitions of critical thinking or passive learning are culture bound. One, a study of students in China (n=129), Malaysia (n=101), and Britain (n=205), showed that there was little statistical difference between British and (mainland) Chinese students' perception of the importance of independent and critical thinking skills to learning (Cortazzi and Jin 2002). Although this surprised British teachers, the researchers note that "this result accords with the Confucian tradition that learning and thinking or reflection are complementary" (63). The same researchers' earlier survey of Chinese students (Jin and Cortazzi 1998) revealed that the students did not consider themselves passive learners in class because they "*mentally* interacted with the teaching" (104, emphasis added), "participated by listening, by thinking (and questioning in their minds)" (106), and because they would "overcome their puzzles and difficulties on their own," they saw themselves as independent learners (104). In yet another study, Indian students in Australian universities believe their success in college stems from their "autonomous efforts to read and comprehend subject matter" (Ninnes et al. 1999, 338).

So while American instructors may perceive students from these cultural traditions as not actively engaging with information, openly questioning ideas as is expected of their majority-culture classmates, or as not inclined to learn collaboratively, the students

themselves have different notions of their learning processes and outcomes. And what American instructors see as absent, filtered through their own cultural orientations and expectations, may actually be present in forms they have not recognized.

The stigma these instructors attach to rote learning is also widely discussed in the literature. However, other studies suggest that in using rote, students are in fact "struggling to attain deep understanding of course content," and are using it as a learning strategy to "internali[ze] or ensur[e] accurate recall of well-understood material" (Ninnes et al. 1999, 325). And while rote has been labeled a negative learning strategy, the students believe the experience is a positive one because they see it as a necessary first step toward higher order thinking and successful learning. This conclusion is supported by another study which, in comparing Asian students to Australian students, found that the former made "greater use of deep and achieving approaches to learning" (cited in Ramsay et al.).

There are other studies, of course, with other variables and possibly different results. So these examples above and their interesting findings are not presented here as definitive statements. However, they should make librarians be more cognizant of country and individual differences, and force them to problematize more what has been seen and interpreted as the learning deficiencies of international students.

Another common misperception in the literature concerns the technological readiness of international students. Although Hoffman and Popa (1986) admitted they had wrongly assumed "students from Third World countries had not had the technological advantages of their American counterparts" (358), later works still reflect the same view. The results of a large scale study of over 191,000 students who took the TOEFL examination abroad in spring 1996 and fall 1997 should shed more light on and provide strong validation of the Hoffman and Popa finding. The authors of this study found that 60 percent of all respondents in 1996 and 69 percent in 1997 reported having used a computer once a week or more; and 77 percent and 83 percent at least once a month. They conclude that these figures "might indicate the percentage of students who were at least moderately prepared to use computers in college [in the U.S.]" (Taylor et al. 2000, 579). The highest percentage of fre-

quent users was in Latin America, and the lowest in Africa; although the latter, like all regions, posted some increase usage in the second survey. Given that the students librarians will be working with are drawn from this pool of respondents, it is logical that the latter revise their perceptions about international students' technological deficiency, in light of these high percentages.

In general, the majority of studies on international students focus on those from Asia, perhaps because they typically account for the highest number of international students in English-speaking countries. This I believe has helped blur many of the distinctions between individual groups in the minds of American instructors. However, one important distinction the American academy should become increasingly aware of is the one between the international student and new immigrant. What both groups bring to the classroom is varied, but it is not always easy to tell these apart, especially in one-session, library-teaching encounters.

There are many works showing differences between both groups, in terms of their previous learning experiences, their levels of motivation, and their adjustment to the campus culture in general. To briefly encapsulate some of the differences, international students typically have had sustained instruction in English in their home countries. They attend American institutions because it may be useful for their professional advancement, and their usually high motivation to learn in another language and at a foreign institution is often seen as instrumental to furthering that goal. Some of them may return to their countries armed with American educational credentials and increased chances of professional success, while others may prefer to stay and work in the U.S.

New immigrants comprise a mix of those who settle in the U.S. voluntarily and those forced to leave their native country because of economic and political problems. Students in this category typically come to the U. S. at an earlier age than international students, and have had some years of school experience in the country. They come to the United States with varying English language learning experiences, ranging from none to a number of sustained or intermittent years of formal instruction. They have been called "Generation 1.5" because they still are rooted in their immigrant communities, and are not quite yet second

generation (Harklau et al., 1999). Unlike many international students, they acquire higher oral and aural English proficiencies (mainly through social interaction), and may often identify themselves as bilingual, even if they do not have a very good grasp of English or high proficiency in their heritage languages (Chiang and Schmida 1999). Generally, too, their transition into higher education is easier because of language proficiencies and cultural familiarity.

These basic differences apart, what is clear, though, is that both categories of students belong to a language and cultural minority, a situation which, for some of them, is self-altering. Being in America could be the first time they see themselves as ethnic, religious or cultural minorities, and they therefore are forced to rethink their primary identities and roles—generally pretty stable before now—in the new culture. For example, the international students who decide to stay on in the U.S. would be spurred on by integrative motivational reasons, and would tend to invest more in learning about American English and culture. Additionally, they would have to decide whether their ultimate goal is assimilation into the majority culture or transculturation, the selective adoption of aspects of the new culture to "design" a hybrid of old and new cultures. On the other hand, those who will be returning to their home countries would prefer short-term adjustment strategies, and probably resist attempts to Americanize their speech and habits so as not to make re-integration into their home countries difficult. New immigrants, for their part, generally feel the need to assimilate into the majority culture, and they are more likely to experience a total or partial loss of their heritage languages and culture. Members of both groups may inevitably become transnationals, maintaining some link with their countries and cultures of origin.

Instruction librarians therefore need to be aware of the psycho-social changes associated with the new-identity construction, a characteristic inherent in living as a minority in a majority culture. Students' liminal states, resulting from straddling multiple selves and cultures, must be borne in mind when they conduct user and needs analyses before developing courses. Whatever the category students belong to, or the reasons for their limited English skills, librarians should appreciate the differences within the diversity, and that the identity students choose

to construct for themselves has implications for teaching and learning.

### ***Transforming mental models***

The section above has tried to tease out some of the distinctions within and between groups of language-minority students, to dispel the idea of the imagined, homogeneous community of international students. In a way, it tried to show that the reality behind the usual generalizations is in fact more complex than it is made out to be. The main purpose for doing this is to lay the groundwork for more serious, critical reflection, and for the questioning of mental models and dominant ideologies about language-minority students. Knowing more about students with limited English skills is a crucial first step toward unpacking the beliefs and explanations that have hitherto appeared to be justified.

Next, librarians must determine which of their mental models need to be transformed. This entails a deep examination of beliefs, an openness to new world views (akin to switching from the normal to panoramic camera lenses), and a willingness to adjust previous modes of thought and action. This process can be called transformative learning because it involves a transformation of those “taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more ... open, ...capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action” (Mezirow 2000, 7–8).

Which habits of mind need the most urgent attention? I would argue that the most basic mental change librarians need to make is to move beyond what Vivian Zamel (1997) calls the “deterministic stance and deficit orientation” (341), because this mind set underpins virtually all responses to language-minority students. The tendency to believe that language-minority students’ linguistic (in)abilities and national/cultural values and habits are either sub-par, or make them less likely to change and perform as well as American-born students, is a misjudgment. These views form the bases for often-heard laments about the things they do not get taught “over there.” When students’ prior educational experiences are perceived as inadequate for effective learning in the U.S., it inevitably affects attitudes and approaches to teaching them; it sends librarians into a “fill-in-the blanks” re-

flex, and inspires them to adopt remediation perspectives. Instead of deficits, librarians should think differences and reflect on how to use them positively to maximize learning.

Closely tied with this corrective approach to instruction is the mind set that “the American way” is the best solution to successful learning in the U.S. This could in fact be the case. But this normative approach can, if pursued inflexibly and in a doctrinaire manner, result in instructional models that foreground students’ need to lose the learning habits that had worked well for them in the past. Put differently, requiring students to conform to American views or practices inherently implies asking them to “abandon their less prestigious, less socially powerful world views” (Bizzell, 1986, p. 299). The danger with this approach, as Bonny Pierce (1995) notes in a language-learning context, is that because of its culturally hegemonic overtones, it could provoke resistance, and undermine or nullify all efforts at successful learning or teaching because students tend to resist the roles the dominant culture tries to impose on them.

This argument leads to another important transformation that is necessary: the mental model that it is the students who have to conform to new cultures, not their host-country instructors. In this model, adaptation is uni-directional, from foreign to American. However, anyone familiar with intercultural interaction knows that such a position is a recipe for failure in building meaningful relationships. Classrooms should become “contact zones” or “social spaces where cultures meet, clash and grapple with each other” (Pratt, 1991, p. 34) so that responsive teaching and learning can occur. Rather than try to “unif[y] the social world” of their classrooms (Pratt, p. 39), librarians should allow learning cultures to collide so that all participants, student or teacher, are forced to critically examine their prior beliefs and practices, learn about and question new ones, synthesize and appropriate whatever combination suits their educational purposes best. This negotiating will not be without risk – of failure or meeting resistance – but it forces everyone to adjust mental models, and builds “cultural synergy” (Jin and Cortazzi, 1998, p. 114), even as learning takes place. Although this approach would be hard to implement in the typical one-session, library instruction setting, the emerging for-credit models would benefit greatly from it.

One last mental adjustment I will advocate is for librarians to try to understand more precisely what language-minority students need. The best way to do this is to learn from them. Library literature shows that the voices of international students are largely absent from the discourses about them, and many librarians either base their “knowledge” about them “on speculations and observations about libraries in other parts of the world” (Sarkodie-Mensah, 1994, p. 110), or on what library or international office staff say about them (for example, Goudey and Moushey; Baron and Strout-Dapaz, 2001). As Stephen Brookfield reminds us, “Researching students’ perceptions of our actions and words alerts us to problems that our behavior is causing and to mistakes we might otherwise miss” (p. 93). This is the hallmark of critically reflective teaching. Instead of filtering survey questions through perceptions held by others, open-ended surveys eliciting narrative responses from the students themselves might be more helpful in planning and teaching courses.

There is a growing number of works in current library literature recommending that librarians adopt new mental models for dealing with of today’s majority-culture undergraduates, the “computer” generation who favor visual stimulation and multi-tasking. But because language-minority students seem to remain trapped in a time capsule, fewer such calls have been made on their behalf. These examples of adjusted mental models should help librarians remember that they constantly need to ask new questions about the profile and needs of all the students they teach.

### ***Reinventing teaching and learning***

To realize the benefits of an adjusted mental model, instruction librarians would need to reinvent their teaching, and tailor their classes to be more pedagogically and culturally responsive. The suggestions offered here are derived from the recommended adjustments discussed above.

As mentioned earlier, librarians may have the well-meaning inclination to want to fill the perceived knowledge gaps in language-minority students, gaps which they think result from failings in their educational preparation. This is not in itself a bad proposition because some lacunae do exist, and learning is all about expanded horizons. But when they believe that the students are blank slates, they see it as their mission to correct the situation. Inevitably, they could

become “banker-teachers” (in the Freirean sense), in that they decide on what gets deposited (or to be learned), without knowing exactly what or how the students think they want to learn, or how already known material can be used to teach what they need to know. Interestingly, such a philosophy actually replicates the authoritarian model of teaching that librarians decry. However, by replacing this philosophy with one that calls for more participation by students, in which instructors learn what the students want to learn or how they want to learn, the teaching and learning experience might be more successful for both instructor and student.

In the reinvented learning environment, the American learning culture must not be presented as the standard; instead, students and librarians must be made to see it as just another possible way of learning. Language-minority students would naturally use familiar modes of learning as their default option in a new situation. But if they feel that they need to have only the one option of working in the new way, their attempts at learning would hardly be successful. Therefore, it is pedagogically sounder to encourage them to learn using a combination of methods and strategies made up of the already familiar and the new methods of the majority culture; they may be more willing and open to the latter as a result. Because they will be able to exercise some choice for self-determination, this would give them the feeling that they have some control over their learning. In fostering such an environment, librarians would have provided students with opportunities for asking questions of themselves and for seeking answers regarding the learning strategies that work for them in new situations, or what actions they need to take to produce desirable learning outcomes.

To achieve this goal, librarians themselves must be part of the collaborative learning process, not only as facilitators of learning, but as learners too. They must make an effort to learn about their students’ cultures of learning from the students themselves. Through the exchange of knowledge, librarians and students will be engaged in what has been called “conversations of respect” (Hill 1991), and together help construct new ways of knowing and doing. In this engagement, “the participants expect to learn from each other, ... expect to change at least intellectually as a result of the encounter... In such conversations,



one participant does not presume that the relationship is one of teacher to student... The participants are co-learners" (47).

Creating a culturally responsive classroom also means allowing students to recognize their multiple selves and be aware of the multiple literacies they must acquire and use. Therefore, the continua along which they must necessarily operate must be acknowledged. As insights from sociolinguistic studies reveal, language users select and operate in different languages and modes of speech, depending on the context and the participants involved. So recognizing that students can similarly "codeswitch" by using a variety of learning styles and strategies, or moving in and out of different cultures in the same learning activity would make it easier for librarians to understand how their students work and learn. It might be more useful to see language-minority students as biculturals who move in and out of the many possibilities at their disposal, rather than as people who are developmentally progressing toward the target, or majority, culture.

### Conclusion

This paper has tried to demonstrate why librarians need to continually revise their ways of looking at their language-minority patrons. Their language and cultural differences do not necessarily translate into deficiencies or lower abilities. The impulse to frame any difference or deviation as negative is normal human behavior, as the ladder of inference suggests; but if people view the bigger picture, become aware of their mental models, and periodically conduct self-checks, what they might uncover would lead to transformations and philosophical shifts that would be in the best interest of those with whom they interact. For language-minority patrons, this concept needs to be applied so that it can trigger a shift in the decades-old thinking, and a re-evaluation of the way instruction is provided to them. The concept can also be applied to other areas of librarianship especially in the interest of improving service and social dynamics in the workplace.

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