

Far and Away – Facilitating Employee International Assignments with the Intercultural Knowledge Scale (ICKS)

Bernd Kupka
University of Wisconsin - Green Bay

André M. Everett
University of Otago

The Intercultural Communication Knowledge Scale (ICKS) is introduced as a tool to assess the intercultural knowledge of candidates for international assignments. Practitioners can use the ICKS to conduct reliable needs assessments and training effectiveness evaluations on trainees' knowledge of the target culture to which they are delegated. The 12-item ICKS has performed well in four test studies conducted in New Zealand, the USA, the United Arab Emirates, and Germany, showing high Cronbach's alpha scores, robust test-retest correlations, and high KMO scores; it explains on average more than two thirds of the variance. A three factor model is evident in self tests and retests. Confirmatory factor analyses produced the same solution in peer tests and retests. The three components are target culture knowledge, knowledge acquisition, and unrealistic expectations. Self evaluations show a slight social desirability bias; peer assessments are not tainted by this tendency. The ICKS is sufficiently sensitive to detect most differences over time and between self and peer evaluations. The ICKS enables multinational enterprises to prepare their international cadre effectively, efficiently, and socially responsibly through the ability to customize intercultural communication training based on the results of the scale.

Leaving one's home culture and going to a far and away location with limited knowledge about the new culture's traditions, values, social rules, the ethnic and religious backgrounds, food habits, time management customs, and interpersonal space norms is a major challenge. The Intercultural Communication Knowledge Scale (ICKS) is introduced as a tool for strategic international human resource management (SIHRM) professionals to test expatriates' levels of intercultural communication knowledge (ICK) in preparation of and during international assignments (IAs).

When Joseph Donnelly (played by Tom Cruise) and Shannon Christie (played by Nicole Kidman) in the movie "Far and Away" (Howard, 1992) leave their native Ireland to join the Oklahoma Land Run they enter the unknown territory of the young United States of America. They were the predecessors of today's corporate expatriates sent on global missions to gain strategic competitive advantages for their multinational enterprises (MNEs) (GMAC, 2006). Hocking, Brown, and Harzing (2004) suggest that human resource offices in corporations operating worldwide need to engage in SIHRM practices to prepare their missionaries for the challenges of IAs. Preparation for foreign assignments often occurs through intercultural communication training (ICT) efforts targeted to make expatriates knowledgeable representatives of their organizations (Gudykunst, Guzley, & Hammer, 1996). Defining what to train and constructing resource-cognizant tailor-made ICT programs is a premier challenge for SIHRM practitioners.

A substantial body of literature has developed over the past two decades examining the rationale for, merits of, and approaches to enhancing intercultural communication knowledge; to enable greater focus on the core intention of this paper, specifically the testing and validation of the ICKS instrument, this literature will not be summarized here. Interested readers are referred in the first instance to these key sources (in chronological order): Tung (1981, 1982, 1988); McCroskey (1984); Black (1988); Gudykunst and Hammer (1988); Wiseman, Hammer, and Nishida (1989); Gao and Gudykunst (1990); Gertsen (1990); Hall and Hall (1990); McEnery and DesHarnais (1990); Bird, Heinbuch, Dunbar, and McNulty (1993); LaFromboise, Coleman, and Gerton (1993); Brislin and Yoshida (1994); Guzzo, Noonan, and Elron (1994); Nonaka and Takeuchi (1995); Ting-Toomey (1999); Spitzberg (2000); Caligiuri, Phillips, Lazarova, Tarique, and Burgi (2001); Conway and Briner (2002); Takeuchi, Yun, and Russell (2002); Wiseman (2002); Gudykunst and Kim (2003); Littrell and Salas (2005); Caligiuri and Tarique (2006); Johnson, Lenartowicz, and Apud (2006). The listed scholars generated substantial justification for the development of an instrument such as the ICKS, and provided sufficient guidance in how such an instrument should be developed. The consequence of their reasoning and calls for a suitable measure directly resulted in the creation of the ICKS described here.

Research Questions

Ting-Toomey (1999) urges communicators to prepare themselves better “to develop a greater sensitivity concerning the values, identities, behaviors, and situations” of culturally different groups. She states that “acquiring knowledge is a good first step when we are preparing ourselves to enter into any new culture” (1999, p. 267). To give SIHRM practitioners in MNEs a measure to test the ICK level of future expatriates that can easily be administered, the Intercultural Communication Knowledge Scale (ICKS) was created. The psychometric qualities of the ICKS are examined through the following research questions:

RQ1: What are the psychometric qualities of the ICKS?

RQ2: Are there differences between self- and peer-perceptions of ICK that the ICKS can detect?

RQ3: Is the ICKS sensitive enough to measure changes in self- and peer-perceptions of ICK over time?

RQ4: What are the relationships among the components of ICK?

RQ5: Which biases of the ICKS need to be taken into consideration?

Methods

Matsumoto et al. (2001) state that academics have struggled with the development of valid and reliable diagnostic and predictive assessment instruments because of the culture- and context-specific nature of the involved variables. The scholars suggest to create measures that allow the evaluation of the potential to perform well in any intercultural contact situations.

Gudykunst (1992) raises attention to another obstacle when he delineates that communicators often have a different perception of their own communication competence than what their interaction partners' evaluations reflect. “Understanding communication

competence, therefore, minimally requires we take into consideration our own and the other person's perspective" (Gudykunst & Kim, 2003, p. 252). Arasaratnam and Doerfel (2005), Caligiuri and Tarique (2006), and Riggio and Riggio (2001) also see value in self-evaluations in the assessment of communication competence as they facilitate the development of a candidate pool through the creation of more self-awareness in future expatriates and the provision of a means to enhance the assignment-candidate fit through educated self-selections. Self-evaluations, however, can only be one element of such an evaluation program. The method to test ICK through the ICKS reflects this understanding and uses a combination of self-assessments and behavioral observations with structured feedback through peers.

Besides the implementation of a behavioral assessment method, Ward and Kennedy (1999) and Wiseman (2002) favor longitudinal research designs to test for differences as a result of cultural learning. Dinges and Baldwin (1996) advise employing a repeated measure design in order to "focus on criteria research in which multidimensional standards of exemplary performance are identified at different points in time and across tasks" (p. 121). Matsumoto et al. (2001) estimate that approximately two months in between measurements gives the relationships between interactants time to develop, allows the training content to have an impact on communicators, and include behavioral observations in a variety of contexts, making the assessment more reliable.

In summary, the development of the ICKS was guided by the concerns raised and suggestions made by Dinges and Baldwin (1996), Gertsen (1990), Matsumoto, et al. (2001), Ruben (1976), Ward and Kennedy (1999), and Wiseman (2002). Efforts were made to follow the best practices guidelines by Schaffer and Riordan (2003) and Umbach (2004). Self- and peer-evaluations are utilized to capture a more comprehensive image of participants' ICK levels. Through a test-retest design, ICK changes in participants as a result of the received training are investigated. The following sections of this paper describe the samples, instrument development, and procedures used to create the ICKS.

Participants

During 2005 and 2006, the ICKS was administered as part of a larger study at eleven universities in four countries: three universities in New Zealand, two in Germany, one in the United Arab Emirates (UAE), and five in the USA, to build four samples of undergraduate students. It is important to point out that the sample from the UAE ($N = 55$) consists exclusively of female students. One university in the South of the USA also recruited predominantly female students to participate in the study. Table 1 outlines the sample characteristics.

The first sample was created for the self-evaluation test, in which 1014 students participated. The average age in this sample was 21.8 years (range 18 to 55). Participants at one German university did not complete the demographic questions. Gender was distributed unevenly due to the reasons described above (54.3% females; 26.1% males). The participants named 57 nations as their countries of birth, among which New Zealand (47.2%), the USA (11.9%), China (9.8%), the UAE (6.4%), and Germany (4.3%) were listed most frequently.

The second sample consists of 587 students who took part in the self-evaluation retest, conducted approximately two months after the test, considered a sufficient time gap to avoid

Table 1. Sample Descriptions

		Self Test	Self ReTest	Peer Test	Peer ReTest
Participating Universities		11	6	6	6
Number of Courses		19	14	14	13
Sample Composition	Pilot Test	22.8%	31.7%	27.6%	28.7%
	Study 1	13.8%	18.6%	22.7%	19.3%
	Study 2	29.9%	43.3%	46.5%	40.5%
	Study 3	33.5%	6.5%	3.3%	5.5%
Number of Students	Total	1014	587	613	529
	Male	265 (26.1%)	213 (36.3%)	152 (34.3%)	133 (35.3%)
	Female	551 (54.3%)	374 (63.7%)	291 (65.7%)	244 (64.7%)
Age	<i>M</i>	21.8	22.0	21.8	21.8
	<i>SD</i>	3.92	3.79	3.67	3.59
	Mode	20	21	20	21
	Min	18	18	18	18
	Max	55	49	48	49
Number of Countries of Birth		57	47	36	43
Nationality Groups	China	9.8%	12.6%	4.6%	5.7%
	Germany	4.3%	n/a	n/a	n/a
	New Zealand	47.2%	52.0%	29.7%	37.8%
	UAE	6.4%	n/a	n/a	n/a
	USA	11.9%	11.9%	4.9%	10.0%
Knowledge of Peer (months)	<i>M</i>			21.10	22.3
	<i>SD</i>			26.42	30.02
	Mode	n/a	n/a	1	3
	Min			0 (<i>N</i> = 3)	0 (<i>N</i> = 3)
	Max			210 (<i>N</i> = 1)	300 (<i>N</i> = 1)
I have a very detailed knowledge of my peer's character in social settings (e.g., birthday parties, etc.)		n/a	n/a	<i>M</i> = 2.35 <i>SD</i> = 1.57 <i>N</i> = 20	<i>M</i> = 2.77 <i>SD</i> = 1.52 <i>N</i> = 272
I have a very detailed knowledge of my peer's character in work /study settings (e.g., banquets, office, class room, etc.)		n/a	n/a	<i>M</i> = 2.70 <i>SD</i> = 1.26 <i>N</i> = 20	<i>M</i> = 3.08 <i>SD</i> = 1.35 <i>N</i> = 273
I have frequently observed my peer in social settings (e.g., birthday parties, shopping in local stores, etc.) interact with people from the target culture.		n/a	n/a	<i>M</i> = 2.16 <i>SD</i> = 1.61 <i>N</i> = 19	<i>M</i> = 2.79 <i>SD</i> = 1.54 <i>N</i> = 271
I have frequently observed my peer in work/study settings (e.g., banquets, office, class room, etc.) interact with people from the target culture.		n/a	n/a	<i>M</i> = 2.10 <i>SD</i> = 1.41 <i>N</i> = 20	<i>M</i> = 2.93 <i>SD</i> = 1.44 <i>N</i> = 273

memory effects (Matsumoto, et al., 2001). Their average age was 22.0 years (range 18 to 49). The gender distribution reflects the described circumstances in that 63.7% were females and 36.3% were males. Respondents registered 47 nations as their country of birth, with New Zealand (52.0%), China (12.6%), and the USA (11.9%) most frequently represented.

Due to cultural considerations, participants from the UAE refused to complete peer evaluations altogether, and demographic data were not collected in every sample of the peer evaluations. In the peer evaluation test, which was conducted parallel to the self-evaluation test, 613 students participated. They made up the third sample. Age, gender, and nationality distributions were comparable to the self tests. The peers knew the students they selected for the peer-evaluation for an average length of 21.1 months. They rated their knowledge of the students on six-point Likert-type scales (0 = strongly disagree; 5 = strongly agree; plus a “don’t know” option) on four questions to indicate whether they knew the students in social and/or work/study contexts and whether they had observed them frequently interacting with foreign culture natives in social and/or work/study situations. The scores for these variables in the peer test indicate that the peers had slightly more knowledge of their partners in work/study contexts than in social contexts and had observed them in both situations similarly frequently.

The fourth sample consists of 529 peer evaluation retest participants. This retest was conducted concurrently with the self-evaluation retest, and peers rated the same person as in the initial peer evaluation test. The demographic qualities of the peer retest are comparable to the other three samples in categories such as age, gender, and nationality. The peers in the retest knew their partners on average 22.3 months. Using the same rating scales, the peers had observed their partners more frequently in both circumstances and consequently their knowledge of the subjects across contexts had improved.

Procedure

McCroskey (1984) points out the difficulty of operationalizing any component of ICC, while Dinges and Baldwin (1996) state that operationalization of the components of ICC is under-developed. Despite this challenge, items for the ICKS were generated based on an extensive literature review of ICC-related research reports. ICKS items were carefully worded in English with the intent of remaining semantically parsimonious and topic-focused. Considering the diversity of the participants in these studies, it is yet to be determined whether the use of the English language in the ICKS is a hindrance to its international usability (Harzing, 2005).

The authors followed the recommendations of Frey, Botan, and Kreps (2000) and DeVellis (2003) for the formulation and arrangement of ICKS items closely in order to assure a logical flow of relevant, parsimonious, and non-threatening closed statements. The suggestions to solve problems associated with self-description inventories forwarded by Nunnally (1978) were taken into consideration. The scaling of the items in the ICKS follows Nunnally’s (1978) suggestions. It is absolute, in numeric intervals, and attempts to avoid response styles by employing an even number of answer choices on the six-point Likert-type scale from 0-5 (totally disagree – totally agree). An answer option outside the scale of “don’t know” is, however, provided in order to avoid forcing participants to make uncomfortable judgments or skipping questions (Frey et al., 2000; Nunnally, 1978). The ICKS can be used either in a paper-pencil or online format.

The formation of the ICKS and its anticipated components of target culture knowledge and knowledge awareness followed Schaffer and Riordan’s (2003) advice for best practices in intercultural research. The items for the target culture knowledge aspects of the ICKS were

newly generated with guidance from the ideas of Gao and Gudykunst (1990), Gudykunst and Kim (2003), Hall (1959, 1966, 1976), Harris and Moran (2000), and Spitzberg (2000). The work of Berlew and Hall (1966), Caligiuri, et al. (2001), Porter and Steers (1973), and Spitzberg (2000) inspired the creation of the items for the knowledge acquisition facet of the ICKS.

After a pilot test in 2005 was conducted at two universities in New Zealand, that primarily served the purpose of instrument purification, three additional studies were carried out at two universities in New Zealand, two in Germany, five in the USA, and one in the UAE. Participants took classes with intercultural education components, such as International Management, Cross-Cultural Psychology, Intercultural Business Communication, Foundations of International Management, Intercultural Communication, and Foundations of Multicultural Education.

The initial ICKS test was run two or three weeks into the semester. Participating students were given the option of finding their peers by themselves, based on their preferences and level of acquaintance. On rare occasions when students did not know anybody in the class, they were matched by the investigator and/or the course instructors. They were instructed to get to know one another and submit their ICKS one week later.

Students used their student IDs. Peer IDs were obtained directly from peers. Most students in New Zealand earned five percent of their grade in class participation credit, depending on the completion of all four evaluations. This incentive does not compromise the data quality in online surveys (Cobanoglu & Cobanoglu, 2003). Students who did not want to contribute to the study were given the option to earn that credit through alternative assignments. Students in the USA, UAE, and Germany took part either entirely voluntarily or because they could earn extra credit by participating in the studies. Ethical approval was obtained at the lead institution and additionally whenever required or requested at other participating universities. Following Matsumoto, et al.'s (2001) advice, the ICKS retest was conducted approximately two months after the test round.

Results

RQ1: What are the Psychometric Qualities of the ICKS?

To test whether ICKS data is fit for factor analytical inspections, the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was calculated. Dziuban and Shirkey (1974) describe that KMO scores above 0.90, which the ICKS reaches in all samples, can be interpreted as "marvelous." Hence, the factor structure of the ICKS is suitable for statistical examination.

Exploratory factor analyses reveal a three-factor solution in self evaluation tests and retests. The first factor comprises eight items and forms the Target Culture Knowledge Scale (TCKS). The second factor unifies three items and establishes the Knowledge Acquisition Scale. A single item makes up the third factor, called Unrealistic Expectations. Peer evaluations, however, showed a two-factor model with the items for target culture knowledge and knowledge acquisition loading together on one factor, and the item for unrealistic expectations crystallizing again as a separate factor. In this factor arrangement, the items for knowledge acquisition loaded distinctively lower on the first factor, hinting at the

Table 2. ICKS Descriptives and Factor Loadings (* Reverse Scored)

Statistics	Self Test			Self ReTest			Peer Test			Peer Retest		
	N = 772			N = 620			N = 377			N = 325		
	M	SD	Loading (Factor)	M	SD	Loading (Factor)	M	SD	Loading (Factor)	M	SD	Loading (Factor)
Age	21.8	3.92		22.0	3.79		21.8	3.67		21.8	3.59	
Min-Max	18-55			18-49			18-48			18-49		
Traditions	2.99	.99	.78 (1)	3.20	.91	.77 (1)	3.34	1.00	.72 (1)	3.37	.95	.78 (1)
Values	3.06	.97	.80 (1)	3.24	.87	.81 (1)	3.35	.97	.77 (1)	3.43	.94	.78 (1)
Rules	3.01	.99	.83 (1)	3.21	.94	.82 (1)	3.31	1.04	.78 (1)	3.38	.95	.75 (1)
My Ethnic Background	2.91	1.07	.81 (1)	3.05	.99	.81 (1)	3.23	.99	.85 (1)	3.24	1.00	.86 (1)
My Religious Background	2.86	1.16	.75 (1)	3.02	1.09	.78 (1)	3.05	1.08	.82 (1)	3.18	1.01	.86 (1)
Food	3.24	1.05	.72 (1)	3.36	1.00	.70 (1)	3.31	1.05	.77 (1)	3.31	1.03	.69 (1)
Time Management	2.92	1.14	.75 (1)	3.11	1.08	.77 (1)	3.11	1.03	.84 (1)	3.20	1.07	.69 (1)
Space Norms	2.91	1.07	.77 (1)	3.11	1.04	.75 (1)	3.22	.97	.79 (1)	3.35	.96	.73 (1)
Target Culture Knowledge	2.98	.84	n/a	3.07	.83	n/a	3.23	.80	n/a	3.27	.81	n/a
Know How to Gain Knowledge	3.70	.92	.55 (2)	3.74	.87	.72 (2)	3.66	.93	.71 (2)	3.76	.83	.75 (2)
Know How to Clarify Vague Content	3.41	1.01	.70 (2)	3.42	.95	.74 (2)	3.41	.99	.79 (2)	3.52	.97	.79 (2)
Being Non-Judgmental	3.66	.97	.84 (2)	3.67	.93	.82 (2)	3.48	.90	.80 (2)	3.55	.85	.70 (2)
Knowledge Acquisition	3.59	.73	n/a	3.55	.76	n/a	3.56	.78	n/a	3.50	.75	n/a
Unrealistic Expectations*	2.35	1.15	.99 (3)	2.47	1.15	1.00 (3)	2.86	1.14	1.00 (3)	2.70	1.18	1.00 (3)
IC Knowledge Scale	3.00	.56	n/a	3.11	.61	n/a	3.25	.65	n/a	3.21	.66	n/a

same three- factor solution that emerged in self evaluations. Consequently, a three-factor matrix was forced in peer evaluation tests and retest, ignoring common conventions for Eigenvalues (third factor Eigenvalues are .95 in peer tests and .83 in peer retests). Under these circumstances a clean and consistent three-factor structure was adopted for the ICKS. Table 2 displays the results of the factor analytical analyses.

The three factors of the ICKS explain a fairly dependable amount of variance. The eight items symbolizing the Target Culture Knowledge Scale is the strongest component of the ICKS, and explains 42.78% (self test), 41.58% (self retest), 44.30% (peer test), and 41.22% (peer retest) of the total variance. The second ICKS factor, the three-item Knowledge Acquisition Scale, is less descriptive, as it explains 14.52% (self test), 17.75% (self retest), 20.15% (peer test), and 21.79% (peer retest) of the total variance. Finally, the third factor of the ICKS, the item representing Unrealistic Expectations, explains the least amount of the total variance with 8.55% (self test), 8.41% (self retest), 10.88% (peer test), and 8.43% (peer retest).

In combination, the three ICKS factors of target culture knowledge, knowledge acquisition, and unrealistic expectations explain 65.85% (self test), 67.74% (self retest), 74.53% (peer test), and 71.43% (peer retest) of the total variance. Factor loadings are generally robust and range from 0.55 – 1.00 across all four samples and all scales. In total, 2.1% ($N = 1$) of the items have loadings in the 0.50 range, 4.2% in the 0.60 range, 54.2% in the 0.70 range, 31.3% in the 0.80 range, 2.1% in the 0.90 range, and 6.3% load at 1.00 on their factors, providing the ICKS with a durable factor configuration.

In addition to this factor formation, the ICKS reaches high Cronbach's alphas as indicators of its reliability. Steadily high reliability scores range between 0.87 and 0.92 in all four samples. The construct stability of the ICKS is substantiated through admissible test – retest correlations in self and peer evaluations. Another quality of the ICKS is its relative freedom from a social desirability bias. It performs impeccably in peer evaluations when correlated with a modified version of Crowne and Marlowe's (1964) Social Desirability Scale (SDS). In self evaluations, the ICKS shows few marginal correlations with the SDS. This finding is corroborated by low SDS averages in all four samples, which is indicative of the level of sincerity and self-determination participants demonstrated in all samples. Table 3 illustrates the results in detail.

RQ2: Are there Differences between Self- and Peer-Perceptions of ICK that the ICKS can Detect?

For the analyses of differences between self and peer perceptions of ICK, responses were compiled of participants who had submitted a self test and a retest and about whom their peers had completed a test and a retest evaluation. A paired-samples t test was used to investigate potential differences. The results in the test round for the TCKS ($N = 311$; self $M = 2.88$; peer $M = 3.27$; $t(310) = -6.41$, $p = .000$), the Knowledge Acquisition Scale ($N = 309$; self $M = 3.51$; peer $M = 3.63$; $t(308) = -2.27$, $p = .024$), Unrealistic Expectations ($N = 238$; self $M = 2.46$; peer $M = 2.97$; $t(237) = -5.25$, $p = .000$), and the ICKS ($N = 315$; self $M = 2.96$; peer $M = 3.32$; $t(314) = -8.06$, $p = .000$) document significant disparity between self and peer appraisals.

Table 3. ICKS Psychometric Properties

Statistics	Self Test		Self ReTest		Peer Test		Peer Retest	
	N = 772		N = 620		N = 377		N = 325	
Number of Factors	3		3		3		3	
KMO	.92		.90		.94		.92	
Total Variance Explained	65.85%		67.74%		74.53%		71.43%	
Range of Factor Loadings (Principle Component Analysis with Varimax Rotation)	.55-.99		.70-1.00		.71-1.00		.69-1.00	
Cronbach's Alpha	.87		.88		.92		.91	
Social Desirability Scale (SDS) (Range 0-8)	M = 3.12 SD = 1.80		M = 2.79 SD = 1.92		M = 2.96 SD = 1.88		M = 2.86 SD = 1.99	
Correlation SDS vs.								
Target Culture Knowledge	$r(1010) = .13, p < .01$		$r(586) = .15, p < .01$		$r(591) = -.02 (n/s)$		$r(512) = .07 (n/s)$	
Knowledge Acquisition	$r(1010) = .07, p < .05$		$r(585) = .06, (n/s)$		$r(590) = .03 (n/s)$		$r(514) = .07 (n/s)$	
Unrealistic Expectations	$r(918) = -.05, (n/s)$		$r(541) = .04, (n/s)$		$r(504) = -.01 (n/s)$		$r(431) = -.01 (n/s)$	
Intercultural Knowledge Scale	$r(1012) = .07, p < .05$		$r(586) = .11, p < .01$		$r(598) = .00 (n/s)$		$r(522) = .04 (n/s)$	
Test – ReTest Difference								
Target Culture Knowledge	$t(502) = -6.21, p < .001$		$t(394) = -1.43 (n/s)$		$t(395) = 2.48, p < .05$			
Knowledge Acquisition	$t(502) = -1.41 (n/s)$		$t(282) = 3.37, p < .001$		$t(405) = .29 (n/s)$			
Unrealistic Expectations	$t(435) = -4.18, p < .001$							
Intercultural Knowledge Scale	$t(504) = -5.76, p < .001$							
Test – ReTest Correlations								
Target Culture Knowledge	$r(503) = .42, p < .001$		$r(395) = .45, p < .001$		$r(396) = .35, p < .001$			
Knowledge Acquisition	$r(503) = .26, p < .001$		$r(283) = .30, p < .001$		$r(406) = .46, p < .001$			
Unrealistic Expectations	$t(436) = .27, p < .001$							
Intercultural Knowledge Scale	$t(505) = .38, p < .001$							

Retest differences between self and peer assessments were evaluated using the same “ideal” samples and procedures as described above. The means of the TCKS ($N = 311$; self $M = 3.13$; peer $M = 3.33$; $t(310) = -3.32$, $p = .001$) display a significant difference between self- and peer-perceptions of ICK. The gaps between self and peer evaluation means of the Knowledge Acquisition Scale ($N = 313$; self $M = 3.59$; peer $M = 3.52$; $t(312) = 1.43$, $p = .15$), Unrealistic Expectations ($N = 238$; self $M = 2.70$; peer $M = 2.73$; $t(237) = -.23$, $p = .817$), and the ICKS ($N = 317$; self $M = 3.16$; peer $M = 3.24$; $t(316) = -1.78$, $p = .075$) are insignificant in retests and demonstrate similar perceptions of students and their peers.

RQ3: Is the ICKS Sensitive Enough to Measure Changes in Self- and Peer-Perceptions of ICK over Time?

Investigations of developments in ICK self evaluations over time were conducted using answers from students who had submitted ICKS tests and retests. To check for differences, a paired-samples t test was conducted. The scale means of the TCKS ($N = 503$; test $M = 2.83$; retest $M = 3.08$; $t(502) = -6.21$, $p = .000$), Unrealistic Expectations ($N = 436$; test $M = 2.45$; retest $M = 2.72$; $t(435) = -4.18$, $p = .000$), and the ICKS ($N = 505$; test $M = 3.05$; retest $M = 3.22$; $t(504) = -5.76$, $p = .000$) illustrate significant increases. In contrast, the Knowledge Acquisition Scale ($N = 503$; test $M = 3.52$; retest $M = 3.57$; $t(502) = -1.41$, $p = .160$) remains fairly stable.

ICKS peer evaluation differences between tests and retests were examined incorporating responses from peers who had completed both test and retest for the same student. With paired-sample t tests, examinations of means of the TCKS ($N = 395$; test $M = 3.26$; retest $M = 3.32$; $t(394) = -1.43$, $p = .153$) and the ICKS ($N = 406$; test $M = 3.37$; retest $M = 3.36$; $t(405) = .29$, $p = .772$) render no significant developments. However, the Knowledge Acquisition Scale ($N = 396$; test $M = 3.64$; retest $M = 3.53$; $t(395) = 2.48$, $p = .014$) and Unrealistic Expectations ($N = 283$; test $M = 2.98$; retest $M = 2.70$; $t(282) = 3.37$, $p = .001$) record significant decreases. Table 3 displays the results.

RQ4: What are the Relationships among the Components of ICK?

Table 4 presents the results of the analyses of the relationships of the components of ICK. The patterns of association are inconsistent across samples and factors. The biggest sample, the self tests, delivers the strongest and most logical results. The other three samples support the initially assumed two-factor structure of the ICKS by delivering fairly strong and consistently positive correlations between TCKS and knowledge acquisition. The remaining correlations between unrealistic expectations and TCKS or knowledge acquisition are not as intuitive and require further analysis.

Particularly intriguing are the changing correlation patterns between unrealistic expectations and the TCKS and the Knowledge Acquisition Scale. The change from significant, negative correlations in the self tests to positive insignificant correlations between TCKS and Unrealistic Expectations in all other samples is noteworthy. Similarly, the correlations between Knowledge Acquisition and Unrealistic Expectations are negative and significant in self tests, yet change to positive and inconsistently significant relationships in

Table 4. ICKS Sub-Scale Relationships

	Self Test		Self ReTest		Peer Test		Peer ReTest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
TCKS	2.98	.84	3.07	.83	3.23	.80	3.27	.81
Knowledge Acquisition	3.59	.73	3.55	.76	3.56	.78	3.50	.75
Pearson Correlation Coefficient	$r(1008) = .48$ $p < .001$		$r(585) = .49$ $p < .001$		$r(586) = .60$ $p < .001$		$r(504) = .59$ $p < .001$	
Unrealistic Expectations	2.35	1.15	2.48	1.17	2.90	1.17	2.72	1.14
Pearson Correlation Coefficient	$r(917) = -.17$ $p < .001$		$r(541) = .07$ (n/s)		$r(504) = .06$ (n/s)		$r(428) = .03$ (n/s)	
Knowledge Acquisition vs. Unrealistic Expectations, Pearson Correlation Coefficient	$r(916) = -.13p < .001$		$r(541) = .02$ (n/s)		$r(504) = .10$ $p < .05$		$r(431) = .23$ $p < .001$	

the other samples. The only consistent interdependence is the correlation between TCKS and Knowledge Acquisition, which is reliably significant and positive.

RQ5: Which Biases of the ICKS Need to be taken into Consideration?

Variables such as age, gender, previous foreign culture experiences (FCE), or country of acculturation, can obscure the true nature of scale results. The ICKS was analyzed for the influence of these potential confounding variables. Correlation coefficients were computed for age, FCE (measured in the total number of months spent in contact with different cultures), and Hofstede's (2001) five cultural dimensions for the country in which participants lived the longest before they were fifteen years of age, called country of acculturation. FCE data was only collected in the self evaluation test round. Parallel to these analyses, a one-way analysis of variance was used to scrutinize ICKS scores for the influence of gender.

In self evaluation tests and retests, the ICKS is almost completely free of biases against age, Hofstede's Masculinity/Femininity Index, Uncertainty Avoidance Index, or Long-Term Orientation Index. Peer evaluations are generally free of predispositions for Hofstede's Power Distance Index, Masculinity/Femininity Index, Individualism/Collectivism Index, Uncertainty Avoidance Index, and Long-Term Orientation Index in ICKS tests and retests.

However, in all samples females almost consistently rate themselves and their peers higher, and interculturally more experienced participants claim to have more target culture knowledge. A bias based on the country of acculturation of participants is more frequently detectable in self evaluations for the Individualism/Collectivism Index, so that individuals from cultures with a collectivistic tendency rate themselves as more knowledgeable. In peer

Table 5. ICKS Biases against Age, Gender, and Country of Acculturation

	Age	Gender	FCE	Hofstede's PDI	Hofstede's ICI	Hofstede's MFI	Hofstede's UAI	Hofstede's LTO
TCKS Self Test	$r(812) = -.02$ (n/s)	$F(1,811) = 3.33$ (n/s)	$r(813) = .10$ $p < .01$	$r(786) = .12$ $p < .001$	$r(786) = -.09$ $p < .01$	$r(786) = .02$ (n/s)	$r(786) = .11$ $p < .01$	$r(674) = .03$ (n/s)
Knowledge Acq. Self Test	$r(812) = .03$ (n/s)	$F(1,811) = 7.83$ $p < .01$	$r(813) = .13$ $p < .001$	$r(786) = .06$ (n/s)	$r(786) = -.02$ (n/s)	$r(786) = .02$ (n/s)	$r(786) = .05$ (n/s)	$r(675) = -.02$ (n/s)
Expectations Self Test	$r(735) = .02$ (n/s)	$F(1,734) = .04$ (n/s)	$r(736) = .12$ $p < .001$	$r(713) = -.06$ (n/s)	$r(713) = .09$ $p < .05$	$r(713) = .04$ (n/s)	$r(713) = .08$ $p < .05$	$r(612) = -.08$ $p < .05$
ICKS Self Test	$r(814) = .00$ (n/s)	$F(1,813) = 5.80$ $p < .05$	$r(815) = .18$ $p < .001$	$r(788) = .07$ (n/s)	$r(788) = -.02$ (n/s)	$r(788) = -.03$ (n/s)	$r(788) = .03$ (n/s)	$r(676) = -.03$ (n/s)
TCKS Self Retest	$r(586) = .06$ (n/s)	$F(1,584) = 1.22$ (n/s)	n/a	$r(563) = .19$ $p < .001$	$r(563) = -.19$ $p < .001$	$r(563) = -.06$ (n/s)	$r(563) = .08$ (n/s)	$r(521) = .15$ $p < .001$
Knowledge Acq. Self ReTest	$r(585) = .09$ $p < .05$	$F(1,583) = 9.88$ $p < .01$	n/a	$r(562) = .08$ (n/s)	$r(562) = -.03$ (n/s)	$r(562) = .04$ (n/s)	$r(562) = .04$ (n/s)	$r(521) = .02$ (n/s)
Expectations Self ReTest	$r(541) = -.05$ (n/s)	$F(1,539) = .21$ (n/s)	n/a	$r(522) = .01$ (n/s)	$r(522) = .00$ (n/s)	$r(522) = .02$ (n/s)	$r(522) = .03$ (n/s)	$r(483) = -.01$ (n/s)
ICKS Self ReTest	$r(586) = .05$ (n/s)	$F(1,584) = 4.56$ $p < .05$	n/a	$r(563) = .12$ $p < .01$	$r(563) = -.13$ $p < .01$	$r(563) = -.02$ (n/s)	$r(563) = .03$ (n/s)	$r(521) = .07$ (n/s)
TCKS Peer Test	$r(434) = .11$ $p < .05$	$F(1,411) = 1.59$ (n/s)	n/a	$r(306) = .09$ (n/s)	$r(306) = -.08$ (n/s)	$r(306) = -.03$ (n/s)	$r(306) = .03$ (n/s)	$r(294) = .05$ (n/s)
Knowledge Acq. Peer Test	$r(429) = .07$ (n/s)	$F(1,404) = 7.15$ $p < .01$	n/a	$r(303) = .02$ (n/s)	$r(303) = .01$ (n/s)	$r(303) = .02$ (n/s)	$r(303) = .04$ (n/s)	$r(292) = -.03$ (n/s)
Expectations Peer Test	$r(371) = .06$ (n/s)	$F(1,438) = 4.07$ $p < .05$	n/a	$r(264) = -.09$ (n/s)	$r(264) = .13$ $p < .05$	$r(264) = .06$ (n/s)	$r(264) = .09$ (n/s)	$r(254) = -.15$ $p < .05$
ICKS Peer Test	$r(436) = .11$ $p < .05$	$F(1,438) = 6.70$ $p < .01$	n/a	$r(308) = .02$ (n/s)	$r(308) = .03$ (n/s)	$r(308) = .02$ (n/s)	$r(308) = .05$ (n/s)	$r(296) = -.07$ (n/s)
TCKS Peer Retest	$r(362) = .12$ $p < .05$	$F(1,360) = 7.86$ $p < .01$	n/a	$r(429) = .14$ $p < .01$	$r(429) = -.18$ $p < .001$	$r(429) = -.08$ (n/s)	$r(429) = .14$ $p < .01$	$r(406) = .16$ $p < .001$
Knowledge Acq. Peer Retest	$r(366) = .13$ $p < .05$	$F(1,364) = 16.68$ $p < .001$	n/a	$r(429) = .03$ (n/s)	$r(429) = -.07$ (n/s)	$r(429) = -.07$ (n/s)	$r(429) = .12$ $p < .05$	$r(405) = .06$ (n/s)
Expectations Peer ReTest	$r(307) = -.13$ $p < .05$	$F(1,305) = 5.55$ $p < .05$	n/a	$r(368) = -.08$ (n/s)	$r(368) = .13$ $p < .01$	$r(368) = .06$ (n/s)	$r(368) = .05$ (n/s)	$r(349) = -.15$ $p < .01$
ICKS Peer Retest	$r(372) = .08$ (n/s)	$F(1,370) = 17.18$ $p < .001$	n/a	$r(435) = .05$ (n/s)	$r(435) = -.05$ (n/s)	$r(435) = -.04$ (n/s)	$r(435) = .08$ (n/s)	$r(410) = .02$ (n/s)

evaluations an age bias is observable, in that older peers rate students as more knowledgeable. Table 5 displays the results of the bias analyses in detail.

Discussion

The agenda of this investigation was to develop a reliable, robust, and straightforward instrument that SIHRM professionals can use to appraise candidates for and trainees in MNEs' expatriation programs. Psychometric explorations have illustrated that the ICKS fills the void that was detected in practitioners' tool kits for socially responsible SIHRM procedures.

Diverging from literature-based expectations, the ICKS features a three-factor structure, consisting of the Target Culture Knowledge Scale, the Knowledge Acquisition Scale, and the item for Unrealistic Expectations. The proposed first two factors have materialized as suggested, while the strong and steady emergence of Unrealistic Expectations as a separate factor could have two causes. It is the only item in the ICKS that is reverse-coded and it has a clearly different structure and tone than the other items. Whether either or both causes are the reason for the current factor arrangement remains to be investigated.

The 12-item ICKS is characterized in both self- and peer evaluations by consistently high factor loadings, internal consistency scores, explained variance, and solid test – retest correlations, demonstrating adequate construct stability. ICKS and subscales mean differences between administrations indicate that it is sufficiently sensitive to be used to measure training effectiveness. In self evaluations, participants claim to have learned a great deal about the target culture and that their expectations of host culture natives became more realistic during the training, while they maintain a high level of knowledge about how to acquire more information about the target culture. In contrast, peers perceived students to have lost some focus on how to acquire more knowledge about the target culture and that their expectations have become slightly more unrealistic, while they also registered a slight increase in target culture knowledge.

Looking at the results of the social desirability tendencies in responses of students and peers it becomes evident that students want to perceive themselves as more knowledgeable while peers see students' development from a different perspective. This dichotomy provides valuable feedback to intercultural trainers who can adjust their training programs accordingly with immediate feedback sessions, interactive training elements, and self-observant reviews via video tapes, to name just a few examples.

The proposed interdependence of the TCKS and the Knowledge Acquisition Scale is confirmed in all four samples. This means in practical terms, that trainers should not attempt to separate between these two elements of ICK and ought to train them simultaneously. Specifically, trainees should be exposed to anthropological, sociological, and communication information about the target culture and trainers should open trainees' eyes concurrently for the pathways of how to acquire more information about the target culture in appropriate and effective ways. Counter-intuitively, the data suggest that expectations can be addressed as a separate element of IA preparations. When, where, and how this could be managed is beyond the scope of this investigation and needs to be addressed in a different, more specialized forum.

It is important for practitioners to know that the ICKS is not entirely free of a social desirability bias in self evaluations. Equally important is that females have a tendency to rate themselves and their peers higher than males seem to do. Not surprisingly, participants who have had more intercultural exposure claim to have more ICK, as could be expected given Kolb's (1984) social learning principles of concrete experiences, reflective observation, and abstract conceptualization, i.e., knowledge creation. When SIHRM professionals administer the ICKS they not only ought to test for the masking potential of these confounding variables but also need to take them into consideration when training programs are constructed and conducted.

Repeated administrations of instruments such as the ICKS could serve SIHRM personnel to enhance corporate ICK levels, making MNEs more popular, prosperous, and strategically oriented global players (Caligiuri & Tarique, 2006). Such SIHRM procedures could induce feelings of corporate commitment, support, and social responsibility in MNEs' international cadre, possibly resulting in more positive citizenship behaviors and organizational commitment, as well as increased job involvement and satisfaction (Guzzo et al., 1994). Such developments might reduce staff turnover of internationally experienced personnel, reducing costs to search, select, and train new future expatriates. Therefore, the suggestion is made to administer the ICKS not only during the selection and training processes for training needs and effectiveness assessment purposes, but also while corporate representatives are abroad and once they are reintegrated in the home office to keep them up-to-date, involved, and motivated. On-site evaluations should be conducted three to six months into the IAs to find potentially necessary additional ICT or mentoring needs. To maintain their ties with the locals of their former host location, repatriates could serve as mentors to their successors, which would keep them in the information loop, be included in trust-building/-maintaining relations with host culture natives, and give them a sense of accomplishment and importance for the global success of MNEs.

Despite its best endeavors, this research effort has limitations. The main note of caution addresses the point that study results were obtained through the cooperation of convenience samples of university students, who are not ideal research subjects on SIHRM issues because they are considered captive samples as "their participation was part of their organizational obligations" (Dinges & Baldwin, 1996, p. 119). Furthermore, these students were not involved in actual intercultural training courses but attended classes that had an intercultural education element. Most students who enrolled in participating courses had a general interest in intercultural issues. Expatriates, however, and particularly their families, are not always enthusiastic about certain target cultures they are assigned to (Noe & Barber, 1993).

Conclusion

The ICKS is a new, psychometrically sound, and practical instrument for SIHRM practitioners to assess candidates' ICK for specific IAs. It can be used for selection decisions and training needs determinations. Through the parallel administration of ICK self and peer evaluations SIHRM professionals receive richer information of the actual state of candidates' and trainees' ICK. Moreover, the ICKS is sufficiently sensitive to detect ICK developments in trainees between administrations. Therefore, the ICKS provides SIHRM personnel and intercultural trainers with a means to evaluate ICT program effectiveness, which should not

only make a contribution to responsible and efficient resource allocations but also to a continued support of corporate missionaries once they are abroad. The ICKS is a significant contribution to the equipment of SIHRM professionals who aspire to employ socially responsible SIHRM procedures for future, current, and returning expatriates and their families.

Future research should investigate how less traditional ICT methods, such as mentoring, can enhance ICK. Crocitto, Sullivan, and Carraher (2005) suggest a mentoring system that facilitates the development and sharing of knowledge between mentors and expatriates. The profile of mentors, their actual jobs descriptions, and the timing of such efforts, however, still seem to be fuzzy concepts in the SIHRM field (Kupka, 2003). To be effective in their role, mentors' ICK qualifications should be assessed. Future studies ought to explore how the ICKS could be used for this purpose, who should be involved, and when should such assessments be conducted?

Additionally, Oddou, Mendenhall, and Ritchie (2000) describe short-term business travel as a method to enhance ICK through the acquisition of realistic expectations about the host culture, and knowledge and skills to interact effectively and appropriately with HCN. However, due to the limited available time to achieve the goals of these assignments increased stress with consequently more opportunities for erroneous behavior might cloud the success of short-term IAs. Logically, ICK assessments to determine ICT needs are in order for short-term operations. When and how should this be addressed? Can the ICKS be used for this purpose?

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