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**ABSTRACT**

A study measured the background knowledge of American culture of international students relative to American college students and the extent to which variations in context facilitate their ability to access or supplement this background knowledge. Subjects, three groups of students at Indiana University (27 international students, 28 American freshmen, and 31 American juniors and seniors), were asked to define two lists of identical terms chosen randomly from the appendix of E. D. Hirsch's "Cultural Literacy: What Every American Needs to Know." The first list consisted of the terms with no context provided. The second list consisted of the terms in one of two types of context: the target term was either listed with related words (schema stimulation context) or contained in a sentence (inference stimulation context). Responses were evaluated for amount of background knowledge using an adaptation of J. A. Langer's PReP Model. Results indicated that, while international students have significantly less knowledge of the American culture target terms, they were able to use both types of context as well as the American students to access or supplement their knowledge of these cultural terms. Results also showed no significant differences between the cultural background knowledge of American freshmen and American juniors and seniors. (Six tables of data are included, and 15 references are attached.) (Author/RAE)

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**Comparing American Cultural Literacy  
 and Context Reading Strategies  
 of International Students and American Undergraduates**  
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**A paper presented at the National Reading Conference  
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## Abstract

This study measures the background knowledge of American culture of international students relative to American college students and the extent to which variations in context facilitate their ability to access or supplement this background knowledge. Three groups of students, 27 international students, 28 American freshmen, and 31 American juniors and seniors, were asked to define two lists of identical terms chosen randomly from the appendix of Cultural Literacy: What Every American Needs to Know (Hirsh, 1987). The first list consisted of the terms with no context provided. The second list consisted of the terms in one of two types of context: the target term was either listed with related words (schema stimulation context) or contained in a sentence (inference stimulation context). Responses were evaluated for amount of background knowledge using an adaptation of Langer's PRep Model (Langer, 1984). Results indicate that while international students have significantly less knowledge of the American culture target terms they are able to use both types of context as well as the American students to access or supplement their knowledge of these cultural terms.

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In Cultural Literacy (1987) E. D. Hirsh argues that for people to communicate successfully, they must share background knowledge. This background knowledge can be nationalistic in nature. It is necessary, according to Hirsh, to master one's national culture in order to be fluent in the standard language of the country. Cultural literacy, Hirsh claims, is of particular importance to reading. Readers should have available to them general knowledge over a broad range of topics that they may refer to in order to make sense of what they read.

Cultural literacy has become an issue in American education. Critics argue that defining a national culture would be too confining for such a diverse country as the United States. Proponents contend that teaching a core national culture will raise literacy rates, and school teachers across the nation have begun implementing cultural literacy into their curricula (Greene, 1988).

Largely unexplored to date is the issue of cultural literacy and international students who come to study at American colleges and universities. The issue is not competence in English. Most colleges and universities require international students to document fluency in English as a requirement for admission. The issue, rather, is a lack of American cultural background knowledge. International students may have difficulty understanding reading assignments because they lack the background knowledge that the writers of the textbooks assume of their largely American readership.

This study attempts to measure the cultural literacy, i.e., the background knowledge of American culture (as reflected in

Hirsh's cultural literacy list), of three groups of students (international students, American freshmen, and American upper-classmen, i.e., juniors and seniors) and the extent to which variations in context facilitate their abilities to access or supplement this background knowledge.

This study addresses four working hypotheses:

1. There are significant ( $p < .05$ ) differences among groups (international, freshmen, upperclassmen) of students with regard to background knowledge of cultural literacy items (as listed in the appendix of Cultural Literacy).

2. There are significant ( $p < .05$ ) differences among groups in ability to make use of schema stimulation clues (related words).

3. There are significant ( $p < .05$ ) differences among groups in ability to determine the meaning of items from sentences which provide inference stimulating clues.

4. There are significant ( $p < .05$ ) differences for all groups between scores resulting from inference stimulation clues as compared to scores resulting from schema stimulation clues. (In other words, all subjects will define cultural literacy items better using sentence context than using related word clues.)

### Background Knowledge and Reading Comprehension

The relationship between background knowledge and reading comprehension has been well documented. Research in reading in one's first language (Bartlett, 1932; Steffensen, Joag-dev, & Anderson, 1979) as well as in a second language (Johnson, 1981; 1982; Carrell, 1987) indicates that one understands a reading

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passage better when the content of the text is familiar to the reader. The need for background knowledge in reading is based on schema theory (Anderson, 1984); readers construct meaning from the text by relating it to their own background knowledge.

The rationale for measuring the differences of background knowledge between American and international students is based on schema theory research. The seminal study by Steffensen, Joagdev, and Anderson (1979) tested the variable of cultural background knowledge. American and Indian subjects read two texts about culture-specific events. One text described an American wedding, the other, an Indian wedding. The researchers found that subjects had better recall of the familiar text and made culturally inappropriate distortions of the culturally foreign passage.

Johnson (1981) studied the role of cultural background knowledge in reading in a second language. Iranian students understood Iranian folktales translated into English better than American folktales, even when the latter were simplified on the syntactic and lexical levels. Johnson (1982) found that prior experience with the topic of a reading passage is more important to reading comprehension than is the study of the vocabulary words found in the passage.

Carrell (1984a, 1984b) studied the effect of formal schema (rhetorical organization) on the reading comprehension of ESL students. Carrell (1984a) found that students recalled simple narrative stories better than they recalled stories in which episodes violated the temporal sequence. Carrell (1984b) found that students had better recall of texts with tightly organized

rhetorical patterns (comparison, causation, problem/solution) than for loosely organized rhetorical patterns (description). Carrell (1987) investigated the interactive effect of formal and content schema (background knowledge). She found that content schema had a greater effect on reading comprehension than did formal schema.

The rationale for measuring the effect of context in facilitating the recall of background knowledge is based on research by Carrell (1983) and Carroll and Drum (1982).

Carroll and Drum (1982) studied the use of context clues. In a review of the literature, they found that research generally supports the notion that context aids the reader in determining the meaning of unfamiliar terms. One has a better chance at determining the meaning of an unknown word if it is located in the middle of the sentence. Clues to the meaning of an unknown word are more effective if they are located close to the term in question. In a study of eighth graders, they found little difference between the effectiveness of two types of contextual clues - synonym and definition - in assisting the subjects to determine the meaning of the target term.

Carrell (1983) studied how American undergraduates, international undergraduates, and ESL students used background knowledge. She found that non-native speakers use lexical clues and background knowledge to a lesser degree than do native speakers.

### Assessing Background Knowledge

Langer (1982, 1984) has devised a method for teachers to

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orally assess students' background knowledge before assigning a reading. The PReP (PRereading Plan) Model consists of three phases: association, reflection, and reformulation. During the first phase, the teacher asks the students to make associations with a concept related to the reading. During the second phase, the teacher asks the students to reflect on why they responded as they did in phase one. During the third phase, the teacher asks the students to elaborate upon their responses from phase one. The teacher then evaluates the students' responses to determine their degree of background knowledge about the topic of the reading.

Responses that indicate much background knowledge are definitions, analogies, links to other concepts or superordinate concepts. Readers with much background knowledge are ready to begin reading.

Responses that indicate some background knowledge consist of examples, attributes, or defining characteristics. Readers with some background knowledge may be ready to begin reading or may benefit from further elaboration of the concepts presented in the text.

Responses that indicate little background knowledge are tangential cognitive links, words with similar morphemes or similar phonemic units, or first hand experiences. Readers with little background knowledge will need further instruction about the topic before they begin reading.

### Method

This study attempts to measure the background knowledge of three groups of students (international, American freshmen, and

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American juniors and seniors) concerning cultural literacy items. It also attempts to determine the abilities of these groups of students to use two types of context: schema stimulating clues (related words) to reactivate background knowledge of terms, and sentence context clues to infer the meaning of terms.

### Subjects

Three groups of students enrolled at Indiana University during the spring semester, 1988, participated in the study: 1. 27 international students (6 undergraduate students and 21 graduate students; 2. 28 American freshmen; and 3. 31 American upperclassmen (juniors and seniors). A comparison of the Verbal SAT scores for the freshmen (mean = 416) and upperclassmen (mean = 446) showed no significant differences. The national mean SAT Verbal score for 1985 was 431 (Lisack and Shell, 1986). (The slightly higher mean score for the upperclassmen may be due to the higher attrition rates of underclassmen.)

The international students (mean TOEFL score = 557) were enrolled in either a writing class or an American culture class in addition to regular university classes. Eighteen of the international students had lived in the U.S. less than one year. The 27 international students in the study represent 13 countries: 8 Chinese (Taiwan); 7 Southeast Asians; 4 Arabs; 3 Chinese (Republic of China); 3 Japanese; 1 Korean; and 1 Columbian.

### Materials

Background knowledge in this study is measured by a word definition task using a 2% sample of items from the appendix of

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Cultural Literacy. The items were selected using a table of random numbers. The subjects were presented with two versions of identical items and were asked to define them. Written directions were provided.

Each item from the first version was listed by itself, with no context provided. Each item from the second version was given in one of two types of context. This was to determine the effect that type of context would have in reactivating background knowledge. Each odd-numbered item from the second version was presented with other related words that could potentially be associated with the term but that did not allow for inferencing or guessing the meaning from context. Synonyms and definitions were not used. This condition is called schema stimulation context.

Term	Schema Stimulation Context
yuppie	<u>yuppie</u> , baby boom, affluence
mercury	<u>mercury</u> , thermometer, temperature

Each even-numbered item from the second version was presented in a sentence that could allow for one to infer the meaning of the term from the context. This condition is called inference stimulation context.

Term	Inference Stimulation Context
Scotland Yard	Officers from <u>Scotland Yard</u> were first to arrive at the scene of the murder.
obscenity laws	<u>Obscenity laws</u> and antipornography legislation are usually struck down in court as a violation of free speech.

Langer's PReP Model (Langer, 1984) was adapted for this

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study to assess the degree of background knowledge of the target items from the appendix of Cultural Literacy. Subjects responded in writing rather than orally. A four point scale was developed: 0 = no evidence of background knowledge; 1 = little evidence of background knowledge; 2 = some evidence of background knowledge; 3 = much evidence of background knowledge. Criteria for each rating were established during a pilot study during the fall semester of 1987.

Subject responses were evaluated for the quantity of background knowledge for the No Context and Context versions. Twenty-five per cent of the subjects' responses were double graded. Inter-rater reliability was as follows:  $r = .968$  for the No Context version;  $r = .912$  for the Context version.

### Procedure

Six forms of the instrument, each consisting of sixteen items from the Hirsh list were developed. The subjects administered the instrument during regular class time during the spring semester of 1988. There was no time limit, although most subjects completed the task in 20 minutes. After subjects completed the first version (No Context), they read directions that indicated they should turn to the next page where they would find the same terms as on the first version. They were instructed to try to give a better definition of the terms than they did on the first version. They were instructed not to look back at the first version once they had begun the second version. If they could not give a better definition on the second version, they were to write, "Same" next to the term on the second version.

Results

Hypothesis #1: There are significant ( $p < .05$ ) differences among groups with regard to background knowledge of cultural literacy items.

A one-way analysis of variance showed significant differences among the groups for background knowledge of cultural literacy items for both the no context version,  $F(2,83) = 14.901$ ,  $p < .0001$ , and the context version,  $F(2,83) = 12.112$ ,  $p < .0001$ . Pair-wise t-test comparisons showed significant ( $p < .0001$ ) differences between the international and the American subjects for both versions, but not between the American freshmen and American upperclassmen.

Hypothesis #2: There are significant ( $p < .05$ ) differences among groups in ability to make use of schema stimulation clues (related words).

A one-way Anova showed significant differences among groups for raw scores for items with schema stimulating cues,  $F(2,83) = 7.678$ ,  $p < .001$ . A pairwise t-test comparison showed significant ( $p < .001$ ) differences between the international students and the American students, but non-significant differences between the American freshmen and the American upperclassmen.

The significant differences between the groups could well be attributed to the higher initial background knowledge of the American students (See hypothesis #1). Hypothesis #2 was further tested by examining for:

- a. significant gains on schema stimulation scores made by all groups beyond initial background knowledge;
- b. significant differences among groups (international,

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American freshmen, American upperclassmen) in gains in the schema stimulating condition.

### Hypothesis #2A:

In the schema stimulation condition, a score of 24 was possible. Mean scores for groups were as follows: International = 9.52; Upperclassmen = 13.3; Freshmen = 14.2; In this condition, groups gained from 1.926 points for international students to 1.419 points for upperclassmen.

A T-test for raw score gain for schema stimulation clues for aggregate scores of all groups showed significant differences,  $T = -2.1072$ ,  $p < .05$ . T-tests for each group indicated that the schema stimulation gain was significant for the international students only ( $p < .05$ ). (See Table I)

Table I

Pairwise T-Test Comparisons for Gains Made  
Using Schema Stimulation Clues

	No Context Mean	Schema Stimulation Mean	Significance Level
All Groups	10.767	12.42	$p < .0183$
International	7.59	9.52	$p < .04$
Upperclassmen	11.9	13.3	ns
Freshmen	12.57	14.2	ns

### Hypothesis #2B:

A one-way Anova showed no significant differences among groups for gains resulting from schema stimulation clues; all groups gained about equally. Comparing the percentage of gain

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for each group, however, indicates that international students gained approximately twice as much as American students. The differences among groups for percentage of gain were not significant. (See Table II)

Table II

Anovas Comparing the Amount of Gain for all Groups  
Using Schema Stimulation Clues

	Groups			Significance Level
	International	Upperclassmen	Freshmen	
Mean	1.926	1.419	1.643	ns
Percentage of Gain	50.5	28.7	29.0	ns

Hypothesis #3: There are significant ( $p < .05$ ) differences among groups in ability to determine the meaning of items from sentences which provide inference stimulation clues.

A one-way Anova showed significant differences among groups for raw scores for items with inference stimulation clues,  $F(2,83) = 10.989$ ,  $p < .0001$ . A pair-wise t-test comparison showed significant differences between the international students and the American students ( $p < .001$ ), and between the American freshmen and the American upperclassmen ( $p < .05$ ). It is interesting to note that the freshmen scored significantly higher than the upperclassmen. (See Table III)

Table III

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### Pairwise T-Test Comparisons between Groups for Items with Inference Stimulation Clues

	Groups		
	International	Upperclassmen	Freshmen
			Significance Level
Mean	9.296	13.32	p<.001
Mean		13.32	15.42
			p<.03

Hypothesis #3 was further tested for:

- a. significant gains on inference stimulation scores made by all groups beyond their initial background knowledge;
- b. significant differences among groups (international, upperclassmen, freshmen) in gains made using the inference stimulation context.

#### Hypothesis #3A:

A T-test for raw score gain for the inference stimulation clues for all groups showed significant differences,  $T=-3.9351$ , ( $p < .0001$ ). Pair-wise t-test comparisons indicated that each group made significant gains using inference stimulation clues. (See Table IV)

Table IV

### Pairwise T-Test Comparisons for Gains Made Using Inference Stimulation Clues

Group	No Context Mean	Inference Mean	Significance Level
International	6.37	9.296	p < .0169
Upperclassmen	10.19	13.32	p < .002
Freshmen	12.07	15.42	p < .007

Hypothesis #3B:

A one-way Anova showed no significant differences among groups for gains resulting from inference stimulation clues; all groups gained about equally. Comparing the percentage of gain for each group, however, indicates that international students gained approximately 25% more from inference stimulation clues than did the American freshmen, and about the same as the American upperclassmen. The differences among groups for percentage of gain were not significant. (See Table V)

Table V

Anovas Comparing the Amount of Gain for All Groups  
Using Inference Stimulation Clues

	Group			
	International	Upperclassmen	Freshmen	Significance Level
Mean	2.926	3.161	3.357	ns
Percentage of Gain	44.7	42.0	33.1	ns

Hypothesis #4: There are significant ( $p < .05$ ) differences for all groups between scores resulting from inference stimulating clues as compared to scores resulting from schema stimulating clues.

A T-test of scores using schema and inference stimulating clues showed significant differences for all groups,  $T = -3.9455$ ,  $p < .0001$ . T-tests for each group showed that American freshmen and American upperclassmen scored significantly higher using inference stimulation clues. There were no significant differences between scores for schema and inference stimulation clues

for international students. (See Table VI)

Table VI

Pairwise T-Test Comparisons of Groups for Differences in Gains  
Made Using Schema vs Inference Stimulation Clues

Group	Schema	Inference	Significance Level
All Groups	1.65	3.15	p <.00005
International	1.92	2.92	ns
Upperclassmen	1.42	3.16	p <.005
Freshmen	1.64	3.35	p <.003

#### Discussion

This study found that international students enrolled at a major American university have significantly less background knowledge of American culture than do American college students. This difference in cultural background knowledge, while expected, suggests that even international students who are highly competent in English may have difficulty reading texts which contain references to American culture.

Somewhat surprisingly, this study found no significant differences between the cultural background knowledge of American freshmen and American juniors and seniors. Two or three additional years of college did not significantly increase the background knowledge of upperclassmen as measured by Hirsh's cultural literacy items.

This study also addressed the ability of international students to use two types of context: 1. schema stimulation context and 2. inference stimulation context. The schema

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stimulation context consisted of words related to the target term that could potentially help access background knowledge of the term. The inference stimulation context consisted of sentences which could allow inferring the meaning of the term.

This study found that international students gain about the same amount of knowledge as American students using both types of context, schema stimulation (related words) and inference stimulation (sentences). That is, there were no significant differences among groups in the amount of background knowledge gained using these two types of context. However, the degree to which the schema stimulation increased background knowledge differed among groups. The schema stimulation gain was significant for the international students only. In terms of the percentage of gain using schema stimulation clues, the international students gained about twice as much as the Americans. This may be due to the initial low background knowledge of the international students compared to the American students.

The degree to which inference stimulation clues increased background knowledge was significant. All three groups of students (international, American freshmen and American upperclassmen) gained significantly (from 44.7% to 33.1%) using inference stimulation clues. In terms of percentage of gain, the international students gained about the same amount as the American upperclassmen, but about one third more than the American freshmen.

A comparison was made between the gains made by using each type of context. Results indicate that the additional background knowledge gained from sentence context (inference stimulation

clues) was significantly greater than the additional background knowledge gained from related word (schema stimulation) context for the American students. While international students gained more from sentence contexts, the difference in gains was not statistically significant.

This study suggests that international students, while initially recalling significantly less about American culture than their American counterparts, are able to use related words to access background knowledge of terms related to American culture and they are able to infer the meaning of unknown cultural terms from sentence contexts. Indeed, international students improve their knowledge by twice the percentage of American students with the simple addition of words related to target ideas. Providing a full sentence context can improve international student performance nearly 45%.

Several implications for instruction can be drawn from the results of this study. Instructors can attempt to assess the amount of background knowledge international students have about a given topic, perhaps by using the Prep Model (Langer, 1984). Consider, for example, a lecture or reading in which the term Prohibition occurred frequently and was important for comprehension. In a discussion section, an instructor could write related terms on the board such as the 20s, alcohol, and bootleggers along with the target term and query students to see if they understand how these terms are related.

In a lecture, an instructor could give a short summary statement about what the term means. One could state that

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Prohibition was the outlawing of alcoholic beverages in the U.S. during the 1920s until 1933 when it was rescinded. Or the lecturer could use the term in an extended sentence context: "Prohibition, by the way, was largely ineffective because alcoholic beverages were easily purchased on the black market." Before making a reading assignment, an instructor could select terms specific to American culture which are pertinent to understanding the reading and give a brief summary of the terms or explain how the terms relate to the topic of the reading.

This study is also pertinent to teachers of English as a Second Language. ESL teachers should be aware of the importance of cultural background knowledge in reading texts that contain cultural references. They can address this issue by incorporating American cultural knowledge into their curricula.

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