

**AQT (A Quick Test of Cognitive Speed):
Cross-Cultural/Cross-Linguistic Performance Criteria**
A RANdiagnostics White Paper by Elisabeth H. Wiig, Ph.D. 12, July 2006

A. Introduction

The four tables below present AQT criterion cut-off times (sec) for the following languages/cultures:

- Table 1. Germanic Languages (English, Scandinavian)
- Table 2. Bilingual Hispanics (Spanish/English) in the US.
- Table 3. Middle Eastern speakers of Arabic
- Table 4. West African speakers of Krio.

B. Cross-Cultural/Cross-Linguistic AQT Criteria

Table 1. AQT criterion cut-off times (sec.) for native speakers of American English and Scandinavian (Germanic languages) with education at or beyond Grade 9 (N = 300).

Language/Culture	Performance Range	Test 1* (Color)	Test 2* (Form)	Test 3** (C-F)
<i>US English</i> (Grades 9 +)	<i>Color-Form</i>			
	Typical	< 25	< 30	< 60
	Slower-than-Typical	26-345	31-39	61-70
	Atypical	> 35	> 40	> 70
	<i>Color-Number</i>			
	Typical	< 25	< 20	< 50
Slower-Than-Typical	26-35	21-30	51-60	
Atypical	> 35	> 30	> 60	
<i>Scandinavian: Danish, Norwegian, Swedish</i> (Grades 9+)	<i>Color-Form</i>			
	Typical	< 25	< 30	< 60
	Slower-than-Typical	26-35	31-40	61-70
	Atypical	> 35	> 40	> 70
	<i>Color-Number</i>			
	Typical	< 25	< 20	< 50
Slower-than-Typical	26-35	21-30	51-60	
Atypical	> 35	> 30	> 60	

* AQT Tests 1 and 2 measure perceptual speed (recognition + response time).

** AQT Test 3 measures cognitive speed (perceptual speed + cognitive overhead).

Table 2. AQT criterion cut-off times (sec.) for US bilingual Hispanic (Spanish/English) speakers based on level of formal education (N = 95).

Language/Culture	Performance Range	Test 1* (Color)	Test 2*	Test 3**	
Spanish/US Hispanic	A. Elementary (Grades 1-7)	<i>Color-Form</i>			
		Typical	< 35	< 40	< 80
		Slower-than-Typical	36-40	41-50	81-100
		Atypical	> 40	> 50	> 100
		<i>Color-Number</i>			
		Typical	< 35	< 25	< 60
	Slower-than-Typical	36-40	26-35	61-70	
	Atypical	> 40	>35	> 70	
	B. Secondary (Grades 8+)	<i>Color-Form</i>			
		Typical	< 30	< 35	< 70
		Slower-than-Typical	21-34	36-45	71-79
		Atypical	> 35	> 45	> 80
<i>Color-Number</i>					
Typical		< 30	<20	< 60	
Slower-than-Typical	21-34	21-30	61-74		
Atypical	> 35	> 35	> 70		

* AQT Tests 1 and 2 measure perceptual speed (recognition + response time).

** AQT Test 3 measures cognitive speed (perceptual speed + cognitive overhead).

Table 3. AQT criterion cut-off times (sec.) for native Middle-Eastern speakers of Arabic based on level of formal education (N = 90).

Arabic (Middle East)	Performance Range	Test 1* (Color)	Test 2*	Test 3**
A. Elementary Education (Grades 2-8)	Color-Form	< 35	< 40	< 75
	Typical	36-39	41-49	76-94
	Slower-than-Typical	> 40	> 50	> 95
	Atypical			
	Color-Number	< 35	< 30	< 65
	Typical	36-39	31-34	66-79
Slower-than-Typical	> 40	> 35	> 80	
Atypical				
B. Secondary Education (Literate) (Grade 9+)	Color-Form	< 30	< 30	< 65
	Typical	31-39	31-49	66-79
	Slower-than-Typical	> 40	> 50	> 80
	Atypical			
	Color-Number	< 30	< 20	< 55
	Typical	31-39	21-34	56-69
Slower-than-Typical	> 40	> 35	> 70	
Atypical				

* AQT Tests 1 and 2 measure perceptual speed (recognition + response time).

** AQT Test 3 measures cognitive speed (perceptual speed + cognitive overhead).

Table 4. AQT criterion cut-off times (sec.) for native West African speakers of Krio with elementary or secondary formal education (N = 164).

Krio Speakers (West Africa)	Performance Range	Test 1* (Color)	Test 2*	Test 3**
A. Elementary Education (Grades 1-8)	Color-Number:			
	Typical	< 30	< 20	< 90
	Slower-than-Typical	31 – 35	21 -25	91-110
	Atypical	> 35	> 25	> 110
	Color-Animal:			
	Typical	< 30	< 40	< 110
Slower-than-Typical	31 – 35	41 – 50	111- 130	
Atypical	> 35	> 50	> 130	
B. Secondary Education (Literate) (Grade 9+)	Color-Number:			
	Typical	< 30	< 20	< 75
	Slower-than-Typical	31 – 35	21 – 25	76 – 95
	Atypical	> 35	> 25	> 95
	Color-Animal:			
	Typical	< 30	< 35	< 100
Slower-than-Typical	31 – 35	36 – 45	101 – 125	
Atypical	> 35	> 45	> 125	

* AQT Tests 1 and 2 measure perceptual speed (recognition + response time).

** AQT Test 3 measures cognitive speed (perceptual speed + cognitive overhead).