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ABSTRACT

The effectiveness of the Chicago Mastery Learning Reading (CMLR) Program implemented in Ontario's Kettleby Public Schools (KPS) was measured by the students' reading progress and comparisons with the progress of other students in French immersion (FI) and other non-FI programs, including a gifted program. Within six months of CMLR implementation, a test of reading comprehension found the KPS students with slightly higher mean average scores than their non-FI peers and significantly higher scores than their FI peers. A year later, a test of literal comprehension resulted in lower scores for the KPS group than for others, but the difference was marginal when gifted student scores were factored out. Another six months later, a more comprehensive reading test of factual comprehension, inference, and generalization skills resulted in KPS scores equal to the scores of non-FI students when gifted scores were factored out. Item analysis and skills analysis identified apparent strengths and weaknesses of the KPS performance in comparison to other groups, and resulted in recommendations for action. (Author/MSE)

Performance of Grade 5 students

in a CMLR program

on the CTBS Test of Reading Comprehension

October 1985

(Year 3 of a comparative longitudinal study)

Research Department

Division of Planning
and Development

THE YORK REGION BOARD OF EDUCATION

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Performance of Grade 5 students in a CMLR program
on the CTBS Test of Reading Comprehension, October 1985

ABSTRACT

When a Chicago Mastery Learning Reading (CMLR) program was introduced in September 1983 at Kettleby Public School (KPS), plans were made to monitor the progress of KPS students (Ss) in reading over the years and to make comparisons with a variety of YRBE student groups, including Ss in French immersion (FI) and "gifted" programs. Grade 3 was chosen as the study group as current mental aptitude scores were available and matching on IQ was thus facilitated. Initially the KPS Ss were matched overall with the other sub-groups but, over time and with the unequal enlargement of the study sub-populations, the matching was probably compromised.

In April 1984, a test of reading comprehension found the KPS Ss with slightly higher mean average scores than their non-FI peers and significantly higher scores than the FI cohort. In April 1985, a test of "literal" or "factual" comprehension was given again but to a somewhat enlarged study population. All comparison groups scored higher than the KPS Ss, but the difference between the KPS CMLR and other non-FI students was marginal when the "gifted" Ss scores were factored out. Possible causes for this dramatic change in the relative position of the CMLR population were inconclusively examined.

In October 1985, the study group, again somewhat enlarged, sat for a more comprehensive reading test (factual comprehension, inference and generalization skills). Again the average KPS score was below the mean of the non-FI Ss, but this time it equalled the score of the non-FI Ss when the results of the "gifted" were factored out. The scores of the FI Ss were generally superior.

Item analysis and skills analysis identified apparent strengths and weakness of the KPS performance compared to their YRBE peers and the national norm group. This study report concludes with action recommendations for KPS and the relevant superintendencies.

C O N T E N T S

T a b l e s

A p p e n d i x

Performance of Grade 5 students in a CMLR program on the CTBS Test of Reading Comprehension, October 1985

Background

A Chicago Mastery Learning Reading (CMLR) program was introduced in selected classes at Kettleby P.S. in September 1983. Staff were concerned to determine the progress in reading of the KPS students compared with their peers. It was decided to track one participating KPS grade until such concerns were adequately addressed. The monitoring began in April 1984.

The Kettleby grade 3 students were selected for tracking. Grade 3s, including French immersion (FI) students, from four other schools were designated as a "control" or comparison group. An administration of the Otis-Lennon Mental Abilities Test showed the KPS and control groups to be roughly equivalent on mean average IQ scores, with a small difference (not statistically significant) favoring the KPS cohort. The FI students in the control schools averaged slightly higher IQ scores than their non-FI peers.

The KPS and control students sat for a test of English reading (mainly literal comprehension) in April 1984. A modified multiple choice CLOZE procedure was used. The results, as average number of correct responses:

KPS students -- 91%
other non-FI students -- 88
FI students -- 82

Formal instruction in English did not commence for FI students until grade 3. It was anticipated (based on studies elsewhere) that the reading skills of the FI sub-group would grow to match their non-FI peers before long.

In April 1985, another CLOZE reading comprehension test was given. The study group was now in grade 4. More students were included in order to compensate for changes in the original study population (due to transfers into or out of these schools and to non-promotion of some of the original control cohort). The changes more closely balanced the mean average IQs of the KPS group and control group, but now probably put the difference in favour of the control. The changes also provided better balance between the FI and non-FI students in the control group, both with respect to balance in numbers and to mean IQ between these sub-groups. These "balances" required the inclusion of one school that served as a "collector" for gifted non-FI students, including those from other schools in the study. This gifted sub-population produced the highest reading scores, as expected, and called for a factoring out of their scores when comparisons were to be made.

Second year results, as average number of correct responses, were

KPS students -- 79%
*other non-FI students -- 85
**other non-FI students -- 82%
FI students -- 86

(*includes 15 "gifted" students, about 11% of this sub-group)
(**not including "gifted" students)

While it was expected that the re-balancing of the groups and the maturation of English reading skills of the FI students would "close the gap between KPS and control groups," it was a surprise to find such a drop in the KPS scores.

Analysis of data was conducted and various possibilities for the KPS students' perforance were examined. These possibilities were considered.

(1) The CMLR program is not as effective in promoting reading comprehension as alternative methods and materials used in the control schools.

(2) The CMLR program was not effectively taught at KPS.

(3) There was a maladministration of the test at KPS.

(4) Changes in the populations at KPS and other schools did not "average out", but were to KPS's detriment.

(5) Some or all of the above or other factors, including random events.

These tentative conclusions resulted.

Studies elsewhere suggested good results with the CMLR materials and philosophy, so we were not yet prepared to accept possibility (1).

There was no direct evidence to support possibility (2). Since the KPS grade 4 teacher was new to the profession as well as to CMLR, it is possible that the reading program would not be as well executed as the ongoing reading programs at other schools with experienced teachers.

The possibility of a maladministration of the CLOZE test (3) was explored with the teacher, but she believes the testing to be correctly conducted despite some indication that slightly less time may have been given than was called for.

Changes in the population, as described above, was a partial and anticipated factor; KPS "lost" three students during the year and gained two. In a KPS cohort of 25(1984)/24(1985), the transfer factor could not of itself account for the fact that the "mastery level attainment" fell from 88% to 36% of the cohort from 1984 to 1985. (The first two reports define "mastery" and provide details of the test results.) Possibility (4) could only account for part of the decline.

A combination of factors (5) could be possible. Random events, or chance, include not only teacher changes, transfers-in or transfers-out, but also differences in the test come into play in any measurement of achievement. A test instrument includes only a small sample of all possible ways of measuring reading. Given that the absolute range of school average scores was not very great (variation from the mean was only three raw score points in 1984 and four points in 1985) so perhaps chance is a substantial factor in the change in KPS observed performance, even though the differences were beyond the standard error of measurement (estimate of difference between observed score and "true score"). This speculation might be given credence if the KPS score in the third year regressed significantly toward the mean. This, in fact, happened, as we shall see.

Changed conditions, Autumn 1985

The sequel to the Spring 1985 testing occurred in October 1985. There were changes in at least two dimensions that need to be understood since their impact on this longitudinal study is difficult to estimate. The first change is in the test used, the second is in the composition of the study group.

In April 1984 and April 1985 a battery of Ontario-devised and Ontario-normed CLOZE reading passages were used to estimate the reading skills (mainly literal or "factual" comprehension) of the study group. In October 1985 the nationally-normed Canadian Test of Basic Skills (CTBS) reading battery was used. The formats of the CLOZE and CTBS are somewhat different but both require responses from multiple choices. The substantive difference is that while the CTBS also tests "factual" comprehension, it adds many items to test students' skills in deriving inferences (seeing relationships, in large part) and making generalizations (e.g., identifying the most suitable title for a passage). A CTBS "Skills Objectives" list is appended to this report. We should note that a larger range of reading skills was tested in October 1985.

The other change was a growth in the study population from 351 (April 1985) to 379 (October 1985). The changes are actually more dramatic than the numbers indicate and, as a result, call for changes in analysis and also in the confidence that we can place in the validity of this longitudinal monitoring. The single largest change came from the addition of 14 non-French immersion students at a school (not previously in the study) that, as of September, came to house 27 FI students who had been part of the study since 1984. The decision to enlarge rather than decrease the study population is open to challenge. Another significant change in numbers came from "transfer-ins". At the school offering a program for the gifted, the number of these special students rose from 15 to 19; while this more-or-less maintained their ratio in the total non-FI sub-group (about 11 per cent), scores for these children ran so high as to make school-to-school comparisons -- or even the inclusion of their scores anywhere in the study -- of questionable value except to present an aiming mark for CMLR advocates, perhaps. A substantial change in numbers also occurred at KPS; six "new" (i.e., transfer-ins or students not tested in April) students sat for the October reading test. The number of transfer-outs from the study schools is modest, apparently 9, some of whom may actually only have been absent for the test. In all, there are some 46 "new" or "lost" subjects to or from the study population, about a 13% change from April 1985. There is no feasible way to determine whether the original matching on IQ has been maintained or whether, by such chance events as have been observed, the balance tipped to favor the control group. Given that IQ is not invariant over the years, any matching done on the basis of grade 3 scores (December 1983) would be somewhat suspect after two years. The population changes noted above tends to weaken even further our confidence that the matching has been maintained.

One other change should be noted. Most students moving from grade 4 to 5 encountered a new teacher. Some, however, found that their teacher "moved on" with them; this was the case with 13 KPS students. This appears to have been the situation in two other schools (total of two classes or partial classes). It is hard to know whether this has any effect on the matter under study.

Findings, Autumn 1985

CLOZE tests, which yield high correct response rates, were used in both previous testing sessions (see p. 1 for summary of results). The CTBS reading battery yields much lower average scores; the national norm group's median average score (au umn administration) for the grade 5 battery is 29 (of 54, i.e., 54%). The YRBE grade 5 study group median average was 32; this group's mean average score was 31.4, clearly indicative that our study group is at least at the high end of the average range (about 1 standard deviation above the norm).

For the purpose of continuing the comparison on a percentage scale as for the previous tests, here are the mean average number of correct responses:

KPS students -- 53%
*other non-FI students -- 56%
**other non-FI students -- 53%
FI students -- 59%

(*includes 19 "gifted" students, about 11% of this sub-group)
(**not including "gifted" students)

These data show that the KPS sub-group compares as follows to the various other sub-groups:

(1) a substantially lower score (3.1 raw score points on average, or about six per cent) than the FI students;

(2) a somewhat lower score (1.6 raw score points on average, or about three per cent) than all other non-FI students, including the "gifted" sub-group that averaged over 41 raw score points, or about 76% correct);

(3) almost identically (actually 0.1 raw score point higher) with the non-FI sub-group when the "gifted" students' scores are factored out.

When the scores of the "gifted" and FI sub-groups are excluded, the score arrays show yet another pattern of achievement. In the following table, results are shown as mean average raw scores. Corresponding mean grade equivalents (GE) and also building norms (BGE), expressed as percentiles, are shown in brackets. Except for KPS, the school identities have been coded in this table. However, they are identified by "type", briefly, at the foot of the table. Further clarification of "type" is provided on page 6: the reason for this typing is explained therein.

TABLE 1: CTBS Reading Scores, Grade 5
non-FI and "non-gifted" students, Autumn 1985

Sub-group	Raw score	(GE	, BGE[1])
* "E"	34.5	(6.0	99)
** "G"	30.9	(5.4	68)
** KPS	28.8	(5.2	52)
*** "F"	28.6	(5.2	52)
*** "A"	28.2	(5.1	45)
*** "C"	28.0	(5.1	45)
*** "B"	27.7	(5.1	45)
Average	28.7	(53% correct responses)	

* Ss in school with program for "gifted", but not in the program ("type 2")
** Ss in schools with neither a FI or "gifted" program ("type 1")
*** Non-FI Ss in a school with FI program

[1]The GE permits comparison of a student's score with the normative attainment of grade peers; the "building grade equivalent" (BGE), which is reported as a percentile, permits comparison of a school grade average relative to the averages attained in other schools. The BGE relates to norms for schools rather than for individuals. School and individual norms may differ markedly, most noticeably when school performance is much above or below average. For example, an individual score of x may translate to a GE equivalent to the 65th percentile but a school average score of x may translate to the 95th percentile among schools. For further clarification, consult the CTBS Manual for Administrators.

Analyses

The data suggest that there may be at least four "streams" or "types" to be found among the schools selected for this study, at least with respect to reading achievement:

(1) two schools with neither FI nor "gifted" programs (we may call this "mainstream," but to avoid argumentative labelling, they are merely called "type 1" schools hereafter);

(2) four schools with both a non-FI and FI program ("type 2" schools);

(3) one school with only FI students ("type 3");

(4) one school with no FI students but with a program for "gifted" students and a program for students in neither a "gifted" nor FI program ("type 4").

With so few schools in this study, it would be only a tentative conclusion to say that reading score differentiation can generally be found among the types of schools. Reading achievement differentiation is occurring across the sub-groups within our schools. It apparently relates to the mental aptitude scores of the students in each sub-group.

As Table 1 shows, KPS students averaged almost exactly at the mean of all the non-FI, non-"gifted" students. Perhaps this is the only valid expectation, given that students with higher Otis-Lennon Mental Abilities Test scores (e.g., in the "gifted" program and, on average, in the FI cohort) normally perform better on reading or other achievement tests.

The CTBS test scores can be used to rank order reading skills identifiable with student (Ss) sub-groups within the study and, in some cases, within schools:

Rank	Sub-group
1	Ss in "gifted" programs
2	Other Ss in school with "gifted" program
3	FI Ss in schools with non-FI Ss
4	FI Ss in FI only school
5	non-FI Ss in schools without FI program
6	non-FI Ss in schools with FI program

Since the number of schools and students participating in the study is relatively small and not necessarily representative, further research would be necessary to determine whether this pattern is general.

Skills analysis

A reasonable question to ask is whether the CMLR materials and methods deal with the skills that the CTBS purports to measure. If they do not "cover" the skills to at least the same degree as programs in the comparison schools, KPS students may suffer by comparison.

To try to answer this question, two first steps were taken: (1) the skills objectives stated for the CTBS were identified and (2) the CMLR program was examined to determine whether and when these skills were addressed. In the appendix the CTBS "Test R: Reading -- Skill Objectives," as supplied by the test publisher, are listed and defined. Some notes for further consideration by teachers are appended. Also in the appendix are the CMLR's lists of where each (but one*) of the CTBS Skill Objectives are addressed in grades 3, 4, or 5 in the CMLR materials (the CMLR colour-coded books are named and the teaching units are identified). The CTBS test battery includes reading passages at the grades 3 through 7 level, but our CMLR lists are only relevant to the grade 5 level.

From inspection we can confirm that the CMLR program apparently provides for teaching of the tested skills. Only the KPS teachers could attest to the "covering" of the material or to how well the substantive content matches the demands of the test. Similarly, there is uncertainty to the true match between what reading skills are "taught" in the other schools and what is tested. The best estimate of match is probably student performance as it indicates "what was learned."

How well then did the KPS compare, on the various reading skills, with the comparison sub-groups? Table 2 helps us here. In this tabulation we have data for 18 "difficult" items; these were attempted by the great majority of the 379 students in the study and each item was unsuccessfully answered (incorrect response or no response) by anywhere from 30 to 69 per cent of the test-takers.**

Table 2 groups the skills, identifies the items, and shows the percentage of the national norm group that correctly answered each item. To the right side of this table we see how all the YRBE study group performed, then how the major sub-groups (FI/non-FI) of students did, and finally, how the KPS students fared.

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* CTBS skill objective G7 ("Mood") is not tested at the grade 5 level

** These items are drawn from the first 35 (of 54) items in the test. At least 85 per cent of all students attempted these items. The other 17 items were relatively "easy" and correctly answered by at least 70 (up to 100) per cent of the group. The KPS did fairly well, compared to their YRBE peers, on many of these items. Response patterns by school or group tend to show random error more than anything else at this level.

Table 2: Performance on 18 difficult items of the CTBS Reading Comprehension Test, Form 6, Level 11 (Grade 5) Fall Administration, 1985

		Correct Response Rate (%)				
			** York Region Performance			
*Skill	Item#	National Norm	Combined (N=379)	FI(N=183)	Non-FI(N=196)	KPS
F1	45	45%	48%	56%	41%	37%
F1	60	34	47	53	42	20
F1	64	41	54	56	52	47
F2	39	70	65	67	62	63
F3	48	40	48	50	47	40
F3	49	48	51	50	52	47
F3	55	54	66	69	63	57
F3	63	43	50	52	48	47
I1	35	57	51	53	49	63
I1	53	60	63	68	58	63
I3	31	57	65	69	60	57
I3	51	39	54	60	49	37
I4	36	54	57	61	52	47
G1	50	38	40	43	38	43
G3	58	50	59	60	59	47
G3	59	45	54	61	46	43
G6	61	43	47	51	42	53
G6	62	44	45	48	41	53

* See the "Skills Objectives" sheet for descriptions of these skills

** For 379 students in eight schools

This table seems to be telling us this about KPS students' reading skills:

(1) on skill F1, the KPS Ss score below both the national norm group and their YRBE Peers;

(2) on skill F2, the KPS Ss score below the national norm, but comparable to their YRBE peers;*

(3) on skill F3, the KPS Ss scored slightly better than the national norm, but below the YRBE attainment level;

(4) on skill I1, the KPS scores were clearly superior on one item (35) that has been tentatively identified as having two more-or-less equally plausible answers and may, based on our research, discriminate negatively against very bright Ss;

(5) on skills I3 and I4 the KPS Ss scored slightly below the norm group and also below even the other non-FI YRBE students;

(6) on skills G1 and G6, the KPS scores are superior to the national and non-FI YRBE standards;

(7) on skill G3, the KPS scores are lower than other groups.

In summary, although the KPS students did comparatively well on the easier half of the first 35 items, they did more poorly, with a few exceptions, on the "harder" items, whether compared to their non-FI YRBE peers or to other comparison groups. Strangely, the KPS cohort did well on the two items (35 and 39) that gave the YRBE students the most difficulty when compared to the national norm.

One other analysis was performed. This also involved looking at "hard" test items, in this case the eight items related to the last story. This passage is about (at the very least) the late grade 6 reading level in terms of content and questions. Moreover, since this is a "power" (timed) test, slower readers and those encountering difficulties do not make it to or through the last passage. In this administration, one in three students did not begin the last story's questions and 42 per cent gave no response to the very last item.

Table 3(a) shows the average correct response rate, as a percentage, item-by-item (#76 - #83), attained by the national norm population, the whole YRBE study group, the FI cohort, the non-FI cohort (including the "gifted" Ss), and the KPS sub-group. Average correct response rates over the whole passage are also given. The skill associated with each item is also shown.

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* Item 39, the only item for skill F2, seems to require the I2 skill (". . . draw conclusion from factual details relating to classification") and is one of the few items producing significantly lower YRBE scores, compared to the national norm.

Table 3(a): Average correct response rate (%)
by item for the last reading passage of
The CTBS READING COMPREHENSION TEST
Level 11, Grade 5, Autumn 1985

			** York Region Performance			
*Skill	Item#	National Norm	Combined (N=379)	FI(N=183)	Non-FI(N=196)	KPS
I2	83	19	17.7	16.4	18.9	20.0
G2	82	28	19.5	18.6	20.4	36.7
G3	81	25	20.3	19.7	20.9	16.7
F1	80	19	25.1	23.4	26.5	30.0
F2	79	30	33.2	33.3	33.2	36.7
G2	78	48	45.1	43.7	46.4	40.0
F1	77	45	38.3	41.0	35.7	30.0
F3	76	32	31.7	27.9	35.2	33.3
Avg. correct response rate		31	29	28	30	30

Items 76-83 are based on the last reading selection in the test

* See the "Skills Objectives" sheet for descriptions of these skills

** For 379 students in eight schools

Over the eight items, the KPS results meet or exceed the national or local standards five times. Of the four F skill items, the KPS Ss scores were superior thrice. But on the three G skill items they were, overall, just average despite a remarkably better showing on the G2 item which proved very difficult for their YRBE peers. On the one I skill item they were slightly above the norm and control groups.

If we can generalize from all the skill analysis data, then we can suggest that the KPS students:

(1) do well on the easiest (grade 3 level passages) and hardest (grade 6+ level stories) items, but not so well on F1 and F2 items drawn from grade 4-5 passages;

(2) do well on I1 and I2 skill items, not so well on I3 and I4;

(3) do better on G1, G2, and G6 items but do relatively poorly on G3 items.

In answer to the question of how well the skills dealt with in the CMLR materials relate to the skills tested, the test results suggest a reasonably good fit. But there are considerable achievement variations, with indications that some skills are not adequately dealt with yet. On the other side of the coin, CMLR materials for grades 3, 4 and 5 deal with some reading skills (G4, G5, and G8) not really tested by the grade 5 level of CTBS.

In answer to our concerns over the Spring 1985 CLOZE test results, it would now appear that the dramatic "dip" in KPS scores then did not represent a trend. The Autumn 1985 CTBS scores put KPS somewhere in the "middle of the pack". We can detect, from the CTBS results, that the "fact" skills (literal comprehension) of the KPS students do have much room for improvement and that the "dip" possibly reflected deficiencies in skill objectives F1 and F2 in the Spring and Autumn of 1985.

Table 3(b) gives details of the performance of the non-FI students (including the gifted at school "E") at the seven schools with non-FI programs. This break-out adds the following particulars:

(1) on four of the eight items, the KPS Ss average correct response rate is the highest or second only to that of the school "E" cohort;

(2) even on their weakest items, the KPS sub-group ranks no lower than fifth.

Table 3(b): Average correct response rate (%)
by item for the last reading passage of
THE CTBS READING COMPREHENSION TEST
Grade 5, Non-French Immersion Students (N=196)

		York Region* non-FI average performance							
School Code =		A	B	C	KPS	E	F	G	By-item %
Item #	Skill								
83	I2	0.0	15.8	21.4	20.0	32.0	10.5	12.8	18.9
82	G2	0.0	10.5	14.3	36.7	18.0	18.4	23.1	20.4
81	G3	0.0	15.8	28.6	16.7	28.0	21.1	17.9	20.9
80	F1	0.0	10.5	21.4	30.0	40.0	23.7	23.1	26.5
79	F2	16.7	10.5	14.3	36.7	54.0	28.9	28.2	33.2
78	G2	33.3	31.6	42.9	40.0	74.0	28.9	43.6	46.4
77	F1	16.7	31.6	57.1	30.0	44.0	28.9	33.3	35.7
76	F3	16.7	15.8	35.7	33.3	40.0	26.3	25.6	35.2

Avg. correct response rate for this story = 29.7%

* I.e., for these seven schools with non-FI students only

Recommendations for further action

It is recommended

1. That Kettleby Public School principal and appropriate staff should review the test data and this report (also the report "French Immersion Studies, Year 3", recently distributed, which adds other analytic data on grade 5 students' performance on the CTBS). In this review they will want to consider, among other matters:

   (a) how well the CMLR materials and methods address the skills which do not appear to have been as well attained in KPS as in other YRBE schools (especially by non-FI students, perhaps), namely

   F1, F2; I3, I4; G3

   (b) and also that skill area that non-FI YRBE students as a whole did not appear to have attained to any greater degree than the national norm group, namely

   Generalization

   The CMLR Indices (see Appendix) will help locate exercises relevant to these skills. The CTBS Teachers Manual also suggests skills-related learning activities (pp. 37-39).

2. That the Superintendent of Planning and Development and the Superintendent of Schools, Area 2, receive this report for information and for any follow-up activities they deem appropriate.

3. That the Research Officer and Testing Officer review the Autumn 1985 CTBS reading scores attained by the grade 4 and grade 7 KPS students and report any possibly significant variations between KPS scores and those of appropriate comparison schools or groups, and that they report out findings to the principal of Kettleby Public School by May 1, 1986.

4. That the principal of Kettleby Public School, after consultations as he sees fit, indicate (by June 1, 1986) to the Research Officer and Testing Officer any further monitoring activities wanted for 1986-87.

APPENDIX

CANADIAN TESTS OF BASIC SKILLS

Test R: Reading

SKILLS OBJECTIVES

F **Facts:** To Recognize and Understand Stated Factual Details and Relationships (Literal Meaning)

- F1 Description: To understand factual details relating to description of people, places, objects, and events
- F2 Categorization: To understand factual details relating to classification
- F3 Relationships: To understand functional relationships, time, and sequence
- F4 Contextual Meaning: To deduce the meanings of words or phrases from context

I **Inferences:** To Infer Underlying Relationships (Interpretative Meaning)

- I1 Cause and Effect: To understand cause, effect, and interaction
- I2 Draw Conclusions: To draw conclusions from information and relationships
- I3 Traits and Feelings: To infer traits, feelings, and emotions of characters
- I4 Motives: To infer the motives and reasons for the actions of characters

G **Generalizations:** To Develop Generalizations from a Selection (Evaluative Meaning)

- G1 Main Idea: To recognize the main idea or topic of a paragraph or selection
- G2 Organization: To understand the organization of a paragraph or selection
- G3 Application: To apply information through generalization or prediction
- G4 Purpose: To recognize the author's purpose, motive, or intention
- G5 Viewpoint: To recognize the author's viewpoint, attitude, or bias
- G6 Figurative Language: To interpret figurative language
- G7 Mood: To recognize the mood or tone of a selection
- G8 Style: To recognize qualities of style or structure

For further detail on the three major skill categories (facts, inferences, generalizations) and on the number of test items for each of the 16 skill objectives see the CTBS Teacher's Guide, pp 35-37 (available on loan: contact the Research Office).

The Teacher's Guide also provides information on how to conduct individual and group analysis of performance (pp 31-34) and also offers suggestions for developing skills in each of the three major skill categories. (pp. 38-39).

CMLK: Index to reading comprehension skills measured by the CTBS
GRADE 3

	SKILLS	COLOUR, DESCRIPTION, AND UNIT(S)
Facts		
F1	Description	Orange, Comprehension, 7, 9
F2	Categorization	Orange, Comprehension, 1
F3	Relationships	Orange, Comprehension, 2, 4, 6
F4	Contextual meaning	Orange, Word attack/Study Skills, 13 Orange, Comprehension, 6
Inferences		
I1	Cause and effect	Orange, Comprehension, 8
I2	Draw conclusions	Orange, Comprehension, 3, 8
I3	Traits and feelings	Orange, Comprehension, 9
I4	Motives	Orange, Comprehension, 8
Generalizations		
G1	Main idea	Green, Comprehension, 8 Orange, Comprehension, 4
G2	Organization	Green, Comprehension, 8
G3	Application	Green, Comprehension, 7,10,11,12 Orange, Comprehension, 2, 4-7, 10
G4	Purpose	Orange, Comprehension, 9

CMLR: Index to reading comprehension skills measured by the CTBS
GRADE 4

	SKILLS	COLOUR, DESCRIPTION, AND UNIT(S)
Facts:		
F1	Description	Blue, Comprehension, 7, 8
F2	Categorization	Orange, Comprehension, 1
F3	Relationships	Blue, Comprehension, 2
F4	Contextual meaning	Blue, Comprehension, 5
Inferences:		
I1	Cause and effect	Blue, Comprehension, 6
I2	Draw conclusions	Blue, Comprehension, 6
I3	Traits and feelings	Blue, Comprehension, 9
I4	Motives	No Specific Teaching Activities
Generalizations:		
G1	Main idea	Blue, Word Attack/Study Skills, 11 Blue, Comprehension, 1
G2	Organization	Blue, Word Attack/Study Skills, 11 Blue, Comprehension, 1, 2
G3	Application	No Specific Teaching Activities
G4	Purpose	No Specific Teaching Activities
G5	Viewpoint	Blue, Comprehension, 3
G6	Figurative language	Blue, Comprehension, 7
G8	Style	Blue, Comprehension, 7

CMLR: Index to reading comprhension skills measured by the CTBS
GRADE 5

	SKILLS	COLOUR, DESCRIPTION AND UNIT(S)
Facts:		
F1	Description	Tan, Comprehension, 1, 3, 6, 7
F2	Categorization	Tan, Comprehension, 1
F3	Relationships	Tan, Comprehension, 4, 7
F4	Contextual meaning	Tan, Study Skills, 3
Inferences:		
I1	Cause and effect	Tan, Comprehension, 1, 4
I2	Draw conclusions	Tan, Comprehension, 1
I3	Traits and feelings	Tan, Comprehension, 1, 3
I4	Motives	Tan, Comprehension, 1, 3
Generalizations:		
G1	Main idea	Tan, Comprehension, 2, 4
G2	Organization	Tan, Comprehension, 2, 4, 7
G3	Application	Tan, Comprehension, 1, 5
G4	Purpose	Tan, Comprehension, 2, 4
G5	Viewpoint	Tan, Study Skills, 5
G6	Figurative language	Tan, Comprehension, 6
G8	Style	Tan, Study Skills, 5