The Concepts About Print into Greek

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The *Concepts About Print* (C.A.P.) (Clay, 2000) is an authentic tool designed to help teachers observe young children’s growing recognition of the conventions and rules of print. Particularly, C.A.P. assesses children’s understanding of print concepts — book orientation, that print and not the picture carries the message, print direction, letter and word concepts, line and word sequence, letter order within a word, and the meaning of punctuation marks.

The C.A.P. observational task has been designed to assess English-speaking children’s knowledge of print. However, it has been translated into many languages such as French (Bourque, 2001), Spanish (Escamilla, Andrade, Basurro, & Ruiz, 1996), Portuguese (Alves, Aguiar, Castro & Bairrao, 2004), German, Hebrew, Danish, Irish, Slovak and Maori (Clay, 1989; Rodríguez, Hobsbaum, & Bourque, 2003) and seems to work fairly well. It has also been modified in Braille for blind children (Tompkins & McGee, 1984). In other words, C.A.P.’s long application has shown that it measures validly and reliably not only English-speaking children’s knowledge of print, but also that of children who speak other languages.

Recently C.A.P. was translated and standardized into Greek (Tafa, 2008a, 2009). The lack of such assessment tools for Greek preschool and first-grade children highlighted the need for the development of age-appropriate literacy assessment tools which will help teachers gather the necessary information to determine program objectives, and then to organize and apply appropriate literacy activities in their classrooms. C.A.P. seems to be one of these tools. Its items will help Greek kindergarten and first-grade teachers to assess what young children know about literacy.
The Greek version of C.A.P. was administered to a sample of 2,744 Greek children (1,345 boys and 1,399 girls) from all over Greece, of which 1,776 attended kindergarten and 968 first grade. All children were native Greek speakers. The age of the sample children ranged from 52 months (4 years 4 months) to 89 months (7 years 5 months) \((M = 70.80, SD = 9.71)\). In particular, 697 (25.4%) children (343 boys and 354 girls) were 52 to 63 months of age, \((M = 57.93, SD = 3.27)\) and were in the first of the 2 years of kindergarten; 1,079 (39.3%, 536 boys and 543 girls) were 64 to 75 months \((M = 69.53), SD = 3.30)\) and were in the second and last year of kindergarten; while 968 (35.28%, 466 boys and 502 girls) were 76 to 89 months of age \((M = 81.50, SD = 3.40)\) and attended first grade.

In the Greek version, the same order and the same instructions for all the 24 items were followed. Special attention was given to the selection of the Greek words used in the more-challenging items such as 12, 13, 14, or 20. The accuracy of the translation of the 24 items and the administration instructions into Greek was verified by retranslating the Greek text into English. However, two new booklets titled *The Moon Has Gone* (Tafa, 2008b) and *A Sunny Day…* (Tafa, 2008c) were written in Greek because the translation and adaptation of the original C.A.P. booklets did not match the grammar and syntax of the Greek language. Although both stories were based on the original ones, *Follow Me, Moon* (Clay, 2000a) and *No Shoes* (Clay, 2000b), they differed in the plot. The task was administered individually to all sample children from April to June of the 2005–2006 school year. The administration of the task lasted about 15 minutes for kindergarteners and 10 minutes for first graders. Of the 2,744 children, 1,714 (62.5%) were assessed using *The Moon Has Gone*, and 1,030 (37.5%) using *A Sunny Day…*.

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1 In this article, children’s age will be referred to in years: 4–5 years, 5–6 years, 6–7 years.

Because the translation and adaptation of the original C.A.P. booklets did not match the grammar and syntax of the Greek language, two new booklets based on the original booklets but differing in the plots, were written.
The analysis of data (Table 1) showed that the mean correct responses for the three age groups of children increased gradually as the age of the children increased. The mean raw score of 6.69 points for children aged 4–5 years rose to 9.66 points for the 5–6 years old, while it doubled to 18.07 points for the older 6–7 years old children.

The reliability values for all age groups of children and for the total sample were high and acceptable for a task of this type, while the standard error of measurement for all age groups of children (ranged from 1.60 to 1.70) and for the total sample (1.77) was quite low. In particular, the Cronbach’s alpha reliability coefficient for children aged 4–5 years was 0.76, for 5–6 years was 0.81, for 6–7 years was 0.78, and for the total sample was 0.91. Moreover, the value of the Cronbach’s alpha reliability coefficient for each group of children assessed by each of the two booklets was 0.91 and 0.92 respectively, which was quite high indicating that whichever booklet is used to assess children’s knowledge about print, the measurement will be reliable.

The reliability of parallel forms and the inter-scorer reliability of the task showed values quite high and statistically significant. The Pearson r correlation coefficient of children’s raw scores in both measurements was 0.90 (p = 0.01), indicating the almost perfect linear correlation between the two parallel forms of the task and the Cohen’s kappa coefficient of concordance (Norusis, 1993) was 0.66 (p < 0.001), indicating that the degree of agreement between the two administrators’ scores was sufficiently high.

Comparisons between the reliability values of the present study with those of other studies showed similar results (see Clay, 1966; Pinnell, McCarrier, & Button, 1990 in Clay, 2005; Gilmore, 1998 in Clay, 2005), and in some cases the Greek version has higher reliability coefficient than that of the original version (see Perkins, 1978 in Clay, 2005; Escamilla, 1992 in Clay, 2005).

Special care was taken for the task validity. Although the content validity was assumed to have been proven in the original English version, the task was translated into Greek and retranslated back into English. For the evaluation of the concurrent validity, 38 (19 kindergarten and 19 first grade) teachers’ scorings were collected as an external criterion. The Pearson r correlation coefficient between children’s scores given by their teachers and children’s scores in the task varied from 0.30 to 0.87 in kindergarten, while in the first-grade classes it varied from 0.22 to 0.92, scores which were quite high and acceptable for a task of this type. For the evaluation of the construct validity, a principal components analysis with Varimax rotation was performed separately for kindergarten and first-grade children (see Tafa, 2009). The analysis revealed four factors: (a) print direction concepts, (b) letter and word concepts, (c) punctuation, and (d) letter, word, and line sequence. All items except item 1 loaded onto one of the four factors, and the number of these factors that resulted from the present study is similar to those that resulted in the Day and Day (1979) study. In both groups of children, all factors had eigenvalues above 1 and each factor explained at least 5% of the total task variance. In addition, the high construct validity of the Greek C.A.P. has been proven by the following: Firstly, the children’s correct responses increase as their age increases (see Table 1). Given, that as children grow older their knowledge about print also increases the difference in their performance according to their age is an indicator of the task construct validity. Secondly, the correlation coefficient between teachers’ assessments and the children’s raw scores is at a satisfactory level. Thirdly, the high Cronbach’s alpha reliability coefficients show that the task has a high degree of internal consistency.

As far as the difficulty level of each item is concerned, the data analysis showed that there are easy items answered correctly by the vast majority of children in each age group, and difficult ones answered correctly by a smaller percentage of children. Particularly, items 6, 9, 10, 12, 13, 14, 15, 16, 17, 18, and 20 are extremely

| Table 1. Sample Children’s Performance Per Age Group |
|-----------------|-------|-----|------|-------|-------|------|
| Age             | N     | min | max | M     | SD    | S    |
| 4–5 Years       | 697   | 0   | 18  | 6.69  | 3.45  | 11.88|
| 5–6 Years       | 1,079 | 0   | 24  | 9.66  | 3.93  | 15.44|
| 6–7 Years       | 968   | 0   | 24  | 18.07 | 3.54  | 12.57|
| TOTAL           | 2,744 | 0   | 24  | 11.87 | 5.99  | 35.83|

N = number of children; min = minimum; max = maximum; M = mean; SD = standard deviation; S = variance.
difficult for children aged 4–5 years, while they continue to be difficult—though to a lesser degree—for older children aged 5–6 years. For the first graders aged 6–7 years, items 10, 12, 13, 14, and 18 continued to be difficult (see Tafa, 2009). However, in any such type of task there should be easy and difficult items, since there are children who have grasped the concepts about print early in their life, while there are others who have difficulties in learning them. Similar results in the difficulty level of test items have also been shown in studies with English-speaking children (Clay, 1970 in Clay, 2000).

The higher the discrimination index, the better the item contributes to the discrimination potential of the task (Georgousis, 1999). A discrimination index rating 0.40 and above is considered to be satisfactory, while it is marginally accepted when it ranges from 0.20 to 0.30 (Ebel & Frisbie, 1986; Mehrens & Lehmann, 1978). However, Ebel (1972, sited in Georgousis, 1999) argues that 10% of the items should have a discrimination index ranging from 0 to 0.20. In the Greek version, the data analysis showed that the majority of the items have a satisfactory discrimination index above 0.40, which means that the items’ discrimination indices for each age group of children and for the total sample seemed to be satisfactory and acceptable. In other words, the Greek task validly classifies children according to their performance. Of course, there are items which are very difficult for younger children aged 4–5 years, and have a very low discrimination index (see Tafa, 2009). However, these items are absolutely necessary for older children who already know how to read. Comparisons of this study’s items’ power of discrimination with that of other studies cannot be made since, as far as we know, the items’ discrimination indices were not measured in the original version of the C.A.P. task.

While the results did not show significant differences between children who attend schools in Athens, Attica with those of the rest of Greece ($t = 0.534$, $df = 2,742$, $p = 0.59$), they did show a small advantage in favor of girls (girls: $M = 12.09$, $SD = 5.87$; boys: $M = 11.64$, $SD = 6.09$), a difference marginally significant when tested by the two group $t$-test ($t = 2.007$, $df = 2,742$, $p = 0.045$). However, in a task comprising 24 items and in which the mean score of the whole sample is $M = 11.87$, with a standard deviation of 5.97, the difference of approximately half a point (which is within the standard error of measurement) is considered to be too small to countenance establishing two sets of normative tables. Consequently, one conversion table of raw scores to standardized scores was constructed for both groups.

The standardized scores used in the original version of C.A.P. for English-speaking children (Clay, 2000, 2005) were stanine scores. These standardized scores were also used for the standardization of the Greek version. Table 2 represents stanine scores equivalent to raw scores in 6-month intervals for children aged 52–75 months, and in 7-month internals for children aged 76–89 months. The conversion of raw scores to stanine scores showed that the Greek sample children have grasped the concepts about print to a level similar with their English-speaking counterparts which were assessed by the original version of this task (see Clay, 2000).

In summary, the findings of the present study showed that the Greek version of the C.A.P. observational task seems to work fairly well with Greek beginning readers. The Greek C.A.P. will help Greek educators to discover reliably and validly what children

| Table 2. Conversion Table of Raw Scores to Stanine Scores |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Age         | Stanine Score | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 52–57 Months | Raw Score   | 0–1 | 2 | 3–4 | 5–6 | 7–8 | 9 | 10–11 | 12–14 | 15–24 |
| 58–63 Months | Raw Score   | 0–2 | 3 | 4–5 | 6–7 | 8–9 | 10–11 | 12–13 | 14–15 | 16–24 |
| 64–69 Months | Raw Score   | 0–2 | 3–4 | 5–6 | 7–8 | 9–10 | 11–12 | 13–14 | 15–16 | 17–24 |
| 70–75 Months | Raw Score   | 0–3 | 4–5 | 6–7 | 8–9 | 10–11 | 12–13 | 14–15 | 16–17 | 18–24 |
| 76–82 Months | Raw Score   | 0–11 | 12–13 | 14–16 | 17–18 | 19 | 20 | 21–22 | 23 | 24 |
| 83–89 Months | Raw Score   | 0–12 | 13–14 | 15–16 | 17–18 | 19–20 | 21 | 22 | 23 | 24 |

Note: 6-month intervals for children aged 52–75 months and 7-month intervals for children aged 76–89 months.
already know about print, what they have to learn, and who of them needs extra help. By using this task, Greek teachers will easily evaluate whether or not young children know the way to use the books, the concept of words and letters, the directional rules of print, that print and not the picture carries the message, and that there are punctuation marks that signal meaning. In other words, the Greek C.A.P. will help teachers to be better prepared to advance children’s understanding about print.

References


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