On a 2005 fact-finding trip to Sabah, East Malaysia, three colleagues and I—who were also delivering in-service sessions, books, and other teaching materials to the Seventh-day Adventist primary schools there—found that the teachers wanted puppets and scripts to use in teaching English to their students, all of whom spoke Dusun and Bahasa Malaysia. Upon my return to Walla Walla College (now Walla Walla University) in College Place, Washington, U.S.A., I researched the literature to see what kind of language growth was associated with puppet and script use, finding that a modest number of studies had been done, all of which reported positive effects in terms of efficacy. The first study on the list did not deal directly with puppets but became a seminal study for me about the usefulness of closed captioning for students in grades 7 and 8 who were English Language Learners (ELL). Later, I used the findings from the closed-captioning study to link the idea of ELL students listening to audiotaped puppet scripts while reading the written scripts.

Already aware of the groundbreaking meta-study done with more than 100,000 reading research reports by the National Reading Panel of 2000 and the importance of fluency building by rereading (suggestions were singing, Readers Theatre, and timed readings) from attending International Reading Association presentations by members of the National Reading Panel (S. Jay Samuels, Tim Rasinski, Sally Shaywitz, etc.), I synthesized those findings with my own experiences in teaching English as a Second Language (ESL) in Washington State, as well as American Samoa, and English as a Foreign Language (EFL) in mainland China. Knowing from the work of Samuels and Farstrup and others that fluency is largely a product of an active, growing vocabulary, that it is essential to reading comprehension, and that repeated readings are helpful in building fluency, I came up with the idea of having students read puppet scripts aloud several times while they rehearsed for a subsequent performance to peers or community members to give purpose for each child to do those repeated readings. Later, that purpose also included videotaping the final rehearsal for a more permanent “venue.”

I then planned and implemented a 2006 pilot study with 4th- to 6th-graders at Wild Mango School (the name has been changed) in Sabah, Malaysia, a small mountain school with no electricity but with gorgeous vistas and enviable opportunities for solitude. It was the kind of place where the black
spitting cobra, *Naja sumatrana*, came and went as it pleased, including under the window of my teacher’s quarters.  

After pre- and post-testing using the Woodcock Diagnostic Reading Battery, 1997 (WDRB), realistic puppets, and engaging information-based scripts in print and in audiotaped format were used to determine whether randomly chosen 4th- to 6th-graders would be able to increase their reading comprehension and vocabulary skills in English in contrast with a control group who did only crafts (with directions given in English) or listened to stories read in English. The experimental group, all of whom spent time individually practicing their scripts with me and listening to the script read in English while following along in the printed script, made exciting gains; while the control group, all of whom had spent the same amount of individual time with me listening to stories read in English and making crafts following directions spoken in English, stayed at the same average for pre-test and post-test. A short report on this research was published in 2010 in *The Journal of Adventist Education*.

In 2008, I went back to Sabah to do a follow-up study at Riverside Primary School (the name has been changed), of *Jungle Thorn* fame, again with 4th- to 6th-graders (chosen, as before, because their academic English tended to be two grades lower than that of first-language English speakers of the same age in the U.S.). This time, because of strong teacher and student interest and a much larger school setting than the previous study, I had five different experimental groups doing puppets and scripts, each with four live rehearsals and one performance. Because of limited space and no other adult supervision, I had the crafts groups making props for the puppet plays in the same room and at the same time as the live rehearsals. An unintended outcome of the research was that the children in the crafts/props groups heard all the rehearsals. Analysis of the post-test data showed that students who had made crafts/props while listening to the rehearsals showed more improvement in their English reading comprehension and vocabulary than any of the puppeteers (who also improved). This was a most interesting twist that begged for further research.

When I presented these data at the University of Malaysia-Kota Kinabalu in February of 2009, I was able to return to Riverside Primary School to update the faculty and administration there on my work, as well as to explore opportunities to do further study. I again brought books and craft supplies to add to those that I had left with the school at the end of each previous visit.

During the winter quarter of 2013 while I was on sabbatic-
seemed enthusiastic about learning. Although many of the older students were quite conversant in English, most of the younger ones tended to hold back, although a few ventured a brave “Hello” before running away with a smile.

I was told by the teachers that all of these students had access to television. Some of them had cell phones, and I could tell from our conversations that other technology, such as Internet access, was available to some of them as well. Many of their parents spoke English, which meant that these fortunate children were likely trilingual, at least, with Dusun as their tribal language, Bahasa Malaysia as their national language, as well as English. Others did not have English spoken or read at home. The teachers at Riverside Primary School said it did not always follow, however, that having English-speaking parents gave students a better chance at comprehending English while reading, nor did reading well in the national language necessarily align with reading well in English.

**Assessment Choices**

Because there is no known standardized test in English literacy that is normed on Sabahan students (the school itself did not have a common test that all the teachers used), I again used the Woodcock Diagnostic Reading Battery to establish a baseline for both experimental and control groups and to administer post-tests after using puppets and scripts. I did have concerns about cultural aspects of the test, however—for example, when examining one illustration in the test, even I as a native English speaker could not tell that the drawing was supposed to represent a hat (except that I knew it was supposed to rhyme with cat, which the students obviously did not figure out, since they all missed that one). Another problem was that the test used words and phrases but not sustained text, so there was a lack of analyzable data regarding important reading processes such as recognition of known vocabulary terms embedded in text, fluency rates, and comprehension based on contextual clues. Nonetheless, the information gathered from pre- and post-tests with this instrument would establish useful comparisons with the two previous study results. The Dynamic Indicators of Basic Early Literacy Skills maze test (Dynamic Indicators of Basic Early Language Skills—DIBELS Daze, currently renamed DIBELS Maze) was also incorporated into this 2013 research. I found it useful to measure syntactic knowledge across a sentence, in which the student must choose which of three words makes sense in that sentence.

**Research Question and Some Answers**

The overarching research question was this: “Which of three randomly chosen treatment groups utilizing puppets, props, and informational scripts will most benefit the reading comprehension of the 93 4th- through 6th-grade students attending Riverside Primary School?” Only children who could obtain signed parental permission were allowed to participate in the research, however, so the final number of participants was 55, far short of the desired 75. Reading comprehension growth of students was measured by comparing pre-test and post-test scores on the Woodcock Diagnostic Reading Battery Test Clusters.

In keeping with the wishes of the principal, all the 4th- through 6th-grade students (Primary 4, 5, and 6) were pre-tested individually with the Woodcock Diagnostic Reading Battery Comprehension Clusters, after which those who brought in signed parental permission were randomly assigned to one of three groups: Crafts alone (C), Crafts With Rehearsal (CWR), Puppet Script No. 1 or Puppet Script No. 2 (both dubbed “rehearsal” or just “R”). After students were randomly assigned to the various parts in each of the scripts (R) and a matching number of students were placed in each of the other two groups (C or CWR), the remaining 33 with signed parental permission papers were randomly placed in three Readers Theatre groups, using a cleverly written, purchased script on the topic of frogs and their declining numbers. The reason this grouping was done is that there would be no more time to rehearse for and produce a video of the rest of the students in other groups, but the children were so eager to participate that we did not have the heart to tell them they had to go back to their regular routines while some of their peers were allowed to “play” with puppets and crafts.

All 4th- through 6th-grade students were also pre-tested and post-tested in classroom groups with the DIBELS Daze test. These data are not included, however, in the following analysis for two reasons. First, this assessment was particularly difficult for some of the students to understand, due to the cultural context of the wording. Second, following direc-
tions given in English to whole groups proved intimidating for some of the students. Being from a cooperative culture, several of them leaned over to ask their classmates for assistance during test time. While some of these behaviors were caught and recorded on the test papers of those students who initiated the whispered conversations, the data had to be invalidated even for those who stopped testing in order to respond to their classmates’ calls of distress.

All groups, no matter the assigned tasks, met for the same amount of time and were exposed to approximately the same amount of English, although the receptive versus expressive aspects of their English-literacy exposure varied, depending upon in which group the students had been placed, with Rehearsal (R) and Readers Theatre groups obviously using more expressive language than the Crafts alone (C) or Crafts With Rehearsal (CWR) groups. In other words, students had to talk more to practice the puppet scripts and the Readers Theatre.

The following graphs show some comparative data derived from analysis of the Woodcock Diagnostic Reading Battery Comprehension scores, revealing the difference between pre-tests and post-tests. Each is titled and labeled with explanatory material, with more description below the visual. Data are examined respectively by grade level, male versus female, and overall by research category.

An analysis of the first chart shows that students in Primary 4 (4th grade) overall did not gain in reading comprehension or English vocabulary from Crafts alone (C)—shown in blue on the chart—or from Readers Theatre—shown in purple on the chart. They, along with both the other grades, improved most in reading comprehension through Crafts With Rehearsal (CWR)—shown in red on the chart. Although all three groups did gain in reading comprehension and vocabulary from doing the puppet plays, it is clear that the Rehearsal (R) strategy—shown in green on the chart—did not produce the highest gains.

Grade 5 students really shone in Crafts With Rehearsal (CWR), somewhat less in Rehearsal (R), and even less so in Readers Theatre. The Crafts alone (C) strategy, shown in blue, was almost useless to them in terms of gaining in reading comprehension.

Even though Grade 6 students did not gain as much from Rehearsal (R) as the other two groups, without it there would not have been as much gains for Crafts With Rehearsal (CWR), as those students in CWR were able to hear English repeatedly rehearsed for the play. They did much better than the other two grades with Crafts alone (C), the group that did not hear any rehearsals, but instead met with the researchers who gave them directions in English regarding how to make certain props for the play. The researchers stayed with them the whole time, the exact same allotment as all the groups received, to help with difficulties or questions.

For the next set of data (see Chart 2), analysis revealed that males improved most in Crafts alone (C), shown with the blue bar, while female reading comprehension in that group plummeted. From observer-comment notes, it ap-
peared that the females were quite content to do their crafts and chat in their native language (Dusun), while males tended to ask for directions, which were given in English. Keep in mind that these were mixed groups of males and females, so there was exactly the same opportunity for interaction in English for the girls as there was for the boys, since there were two native-English-speaking teachers/researchers in that room.

Crafts alone (C) was not assessed in 2008, although a version of Crafts alone (C) had been used in the 2006 study at Wild Mango School with non-growth results. At that time, the crafts assigned to that group were not related to the puppet plays that other students/puppeteers were practicing out of the view and hearing of those doing crafts.

Crafts With Rehearsal (CWR), shown by the red bar, was the treatment group that gained the most in reading comprehension and vocabulary for males and females considered together. This followed the findings from the 2008 study, even though at that time the student work was measured by three different sets of instruments (DIBELS, Oral Reading Fluency and Retell Fluency). Because the crafts were all about making props for the puppet plays, being in the same room with the students who were rehearsing the puppet scripts in English and hearing the researchers give directions and feedback in English seems to have provided enough direction and practice in hearing English without the stress of having to be the one producing oral English (especially for the males).

The females did somewhat better in Rehearsal (R) groups and considerably better in Readers Theatre than did the males. Readers Theatre had not been used in 2005 or 2008, so there were no other data with which to compare. Farstrup and Samuels and others believe that Readers Theatre’s choral reading can increase fluency in the target language. The children read the scripts without attempting to memorize (which was also the case in the Rehearsal, or R, groups).

From analysis of the combined data, clearly Crafts With Rehearsal (CWR) was the strategy that built the highest gains in reading comprehension as measured by the pre-tests and post-tests of the Woodcock Diagnostic Reading Battery Subtests for reading comprehension. Rehearsal (R) was, however, necessary to give those doing crafts (CWR) the opportunity to hear English without being placed under stress in terms of having to speak the target language. That they were using their hands to make props while immersed in an atmosphere in which they were surrounded by English language from the rehearsing students as well as the researchers, is bolstered by Syed-Ahmad’s findings when he studied learning-style preferences in a somewhat older group in the same region. He discovered that using manipulatives in that culture was preferred to material being presented only in a visual or an auditory modality.

Here is anecdotal evidence (gathered by the author) for building English skills while working with crafts at the same time as listening to rehearsals done in English (CWR): One Grade 6 (Primary 6) female in the CWR group, upon telling us her Grade 5 (Primary 5) brother, one of the puppeteers (R), was ill and would not be able to attend the day we videotaped the results, begged, “Please let me read his part. I know it really well.” The only way she could possibly have learned it was from her listening to him reading his part while she was doing Crafts With Rehearsal (CWR), since we did not allow the students to take their scripts home, in order to ensure that every student received the same amount of time with the material. Furthermore, at no time during group work were the scripts ever in the hands of the Crafts With Rehearsal (CWR) students.

Discussion and Potential Impact of the Research

Caution must be exercised in drawing conclusions because this was a convenience sample based upon intact classrooms in the host school, and thus, no generalization can be made outside of the population from which the sample was drawn. However, it is of interest that, based upon observation of non-overlapping confidence intervals, there was a 95 percent likelihood of statistically significant growth in the reading comprehension and English vocabulary of four students in this study:

1. One female in Grade 4 (Primary 4) Readers Theatre went from a 0.1 to the 1st percentile;
2. One male Grade 5 (Primary 5) student in Crafts With Rehearsal (CWR) went from a 0.1 to the 3rd percentile;
3. One female in the Grade 6 (Primary 6) Crafts With Rehearsal (CWR) group went from the 50th to the 73rd percentile; and

![Chart 3. Reading Comprehension Percentile Gains Overall (Woodcock Diagnostic Reading Battery Standard Scores), Combining All Three Grade Levels.](http://jae.adventist.org)
4. One female in Readers Theatre went from the 31st to the 58th percentile.

From the various research data collected on Sabahan 4th- through 6th-grade (Primary 4 through 6) students by this researcher since 2005, including interviews with teachers and “observer-comment” notes while immersed in the studies, using puppets did increase reading comprehension for the children tested. Puppetry is part of the culture of Borneo, of which Sabah forms the northern part; from interviews conducted with teachers there in 2005, it was clear that they wanted puppets to be part of teaching English to their students.

In addition to being useful for learning English (the teaching of which is now being encouraged by the Malaysian government), puppets and scripts are engaging for children. When interviewed regarding their views on the research done with puppets in 2013, the Riverside Primary School staff and teachers said that the children and the teachers enjoyed the change of routine. Since there is no existing standardized test of reading comprehension in English for Sabahan students, the data could potentially be useful to the school personnel in Riverside Primary School in determining how to measure growth in language acquisition, as well as how to engage children in learning English.

Using Puppets and Scripts in the Classroom

How can teachers in other Seventh-day Adventist schools around the world use the results of this study to inform their own classroom work? One suggestion that interrelates reading, writing, speaking, listening, viewing, and visually representing (communicating ideas through art, drama, and graphics) is as follows: Teachers could set up exciting Reading Writing Workshops (RWW), as I have done with my college-level students, where each student first selects a realistic puppet from the animal kingdom and then conducts research (in the library and online) to identify a minimum of seven facts (teacher’s choice regarding the number) about that bird, mammal, reptile, or insect. During RWW sessions, the first 10 weeks of the two-quarter-long topic, the students write a letter in several drafts to their teacher, explaining the amazing things they have found. This process is supported by peer reviews (a minimum of four peer reviews each must be documented) and individual feedback from the teacher. This well-crafted, carefully reviewed letter is then presented in a specially created Author Chair (go to https://wallawalla.edu/academics/libraries/curriculum-library/crafts/authors-chair/ to see photos of some regular chairs transformed into themed chairs that my students and I have made and sat in for this purpose).

After the Author Chair presentation, teachers can help children do more with their letters. For example, in additional RWW iterations, the child could learn how to gradually transform that letter into an engaging puppet script in a genre I call “hybrid narrative and informational script writing.” That means they add narrative that incorporates setting, plot, characters, dialogue, and the need to resolve a problem, but there are also marvelous informational tidbits.
(and some bombshells) that the student has discovered. At the end of 10 weeks (which is how long the college students take to do this with a RWW once per week), the triumphant script writers can stage the puppet play to audiences comprised of fellow classmate(s), K-12 ELL students, parents, and church and/or community supporters.

My pre-service teacher candidates and I have many times used original puppet scripts and lively puppets for language lessons with children at the local Farm Labor Homes,13 where the enthusiastic students, all ELLs, have enjoyed writing their own scripts and performing them to audiences of their peers and parents. A formal study with before-and-after results of reading comprehension is planned for this group.

The interest that has been engendered as I have presented these data to in-service educators and pre-service teacher educators appears to indicate that the use of puppets and original scripts could serve a useful purpose in teaching English Language Learners (ELLs). This is particularly true in countries such as Sabah, where the alternative is often decontextualized language instruction due to lack of affordable English-language sources.

This article has been peer reviewed.

Tamara Dietrich Randolph, PhD, is Professor Emeritus in the School of Education and Psychology at Walla Walla University in Walla Walla, Washington, U.S.A. Dr. Randolph has given presentations based on the research findings from this series of studies in Sabah at venues such as the International Reading Association; Oxford University, U.K.; University of the Southern Caribbean, Trinidad; and the National Conference for Rural Schools at University of Malaysia-Sabah. She has also published peer-reviewed journal articles on the topic. In addition, Dr. Randolph has self-published several children’s books based on pictorial data gathered in this research venue: Jungle Thorn—The Rest of the Story (2009); Children of Sabah: Melkendorf (2009); Children of Sabah: The Shorty Series (2009); Children of Sabah: Belorna (2006); Children of Sabah: Jidi (2006); and Ernitysae: A Child of Sabah (2005). These books are distributed free to schools in Sabah and available online. The extension of the Jungle Thorn story is also available online at http://teacher.tammy4ever.wordpress.com for teachers to print out and use in their classes, if desired.

Recommended citation:

NOTES AND REFERENCES
3. S. Jay Samuels and Alan E. Farstrup, What Research Has to Say About Fluency Instruction (Newark, Del.: International Reading Association, 2006).
9. In Sabah, the elementary schools, covering grades 1 to 6, are called “primary” schools.
10. Farstrup and Samuels, What Research Has to Say About Reading Instruction.
11. Ahmad, “Learning Style Preferences and Academic Achievements Among PKPG (TESL) Students.”