Scaffolding: Helping or Hindering

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Abstract

Using a fourth grade boy, aged 10, a study was conducted with two questions to be answered: Will there be a significant difference in performance on 3 norm referenced tests with 15 weeks of one-on-one reading intervention? And will the outcome of the tutoring success be affected by the amount of scaffolding given by the teacher?

The data collection occurred over a time span of 15 weeks, meeting with the student twice a week, totaling 30 hours of one-on-one tutoring. The tutoring occurred in the student’s home classroom after school hours for one hour per session. This provided a comfortable, familiar place for the student to focus. The results were derived from the students pre and post test scores. The three tests that were used for the norm referenced testing were the Diagnostic Reading Assessment-Second Edition (DRA-2), the Bayliss/Walker Scales of Holistic Writing Evaluation Grades 1-6 (Bayliss), and the Test of Reading Comprehension- Third Edition (TORC-3).

The DRA showed the most improvement with the pretest score of 10, beginning 1st grade, to 14 which is middle 1st grade on the post test score. The TORC-3 showed no numerical progression. The Bayliss/Walker showed minimal improvement from 6.4 (6 years, 4 months) to 6.9 (6 years nine months.) While these numbers may not be fantastic, there was improvement which this child had not achieved before. I also took into account the child’s confidence level, which I only observed, did not measure.
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Introduction

The purpose of this action research is to decide two questions: Will there be a significant difference in performance on 3 norm referenced test with 15 weeks of one-on-one reading intervention tutoring? Will the outcome of tutoring success be affected by the amount of scaffolding given by the teacher?

The proposal was written because there have been many instances of scaffolding in the last year working with Joe (pseudonym), a student, who is very behind academically. He is a very bright boy who sometimes responds well to prompting and other times shuts down completely.

This topic is interested in this topic for two reasons. One, there needed to be a way to help Joe achieve a least third grade work by the end of our research. Two, when educators are working with a student they use prompts and scaffolding as a crutch instead of thinking on his own. There must be a balance between the two. Joe needs scaffolding.

Background, Issues and Concerns

The research took place at a University Laboratory school. The school is located in a rural town in Northwest Missouri. Joe (pseudonym) was a male, 4th grade student. His class consisted of 18 students, one teacher, one Graduate Assistant, and multiple practicum and observation students.
The bulk of the research took place in the classroom that Joe is in most of the day. The setting was very familiar to him, so there will be minimal distractions for him. It is a very inviting space that he is familiar with, which was crucial for him to be comfortable.

**Practice under Investigation**

The practice that is under investigation in this research paper is the practice of scaffolding in the classroom.

**School Policy to be Informed by Study**

The school policy that will be informed by this study is practice in the classroom. The policy is up to the individual teacher. This is to give every teacher an idea of when to help a student with scaffolding and when to let them try on their own.

**Conceptual Underpinning**

The idea of the zone of proximal development developed by Lev Vygotsky. Scaffolding lends itself to the zone of proximal development. The zone of proximal development is the relationship between what a learner can do without help and what a learner can do with guidance and educational support. The practice of using scaffolding is as old as teaching itself. But, teachers tend to use it improperly. Using scaffolding needs to be used as a tool, not a strategy. To be truly effective, scaffolding requires assessing students first; the students need to show what they already know. This step is ignored most of the time.

This research is based upon the theory that all students can learn. With proper scaffolding each student can achieve success. Although, each success may look different, it is success none the less. For example, there may be a child who struggles with reading and their idea of success is reading at a grade level below where they should be. Still a success.
Statement of the Problem

Scaffolding is being used improperly. Students are being given two extremes; no help when needed or too much help to where it is more of a hindrance to their independent abilities.

Purpose of the Study

This research paper is going to take a look at 2 questions. The first question; Will there be a significant difference in performance on 3 norm referenced tests with 15 weeks of one-on-one reading tutoring? The second question is will that outcome be affected by the amount of scaffolding given by the teacher? The level of scaffolding will be shown as none, some, and all.

Research Question(s)

RQ#1

Will there be a significant difference in performance on 3 norm referenced test with 15 weeks of one-on-one reading intervention tutoring?

RQ#2

Will the outcome of the tutoring success be affected by the amount of scaffolding given by the teacher?

Null Hypothesis(es)

Ho: #1

There is no significant difference in performance on 3 norm referenced tests with 15 weeks of one-on-one reading intervention tutoring.
Anticipated Benefits of the Study

The anticipated benefits of this study are to find a way to help struggling, below grade reading students achieve grade level success. Another benefit will be balancing between scaffolding and leading and how to help educators know the difference, when is it okay to let the students go on their own.

Definition of Terms

Scaffolding: Giving support to students who do not know the material being taught.

Null Hypothesis: The null hypothesis attempts to show that no variation exists between variables, or that a single variable is no different than zero. It is presumed to be true until statistical evidence nullifies it for an alternative hypothesis.

Zone of Proximal Development: Often abbreviated ZPD, is the difference between what a learner can do without help and what he or she can do with help.

Summary

The purpose of this action research is to decide two questions: Will there be a significant difference in performance on 3 norm referenced test with 15 weeks of one-on-one reading intervention tutoring? Will the outcome of research question one be affected by the amount of scaffolding given by the teacher? Joe was worked with for 15 weeks, the first semester of school. Joe was given 3 norm referenced, standardized test the first three days of tutoring. Then Joe was given the same 3 norm referenced the last three days of tutoring. The data
collected was compared to how much scaffolding was provided to the student. The data analyzed will compare the results from the three tests via pretest and posttest.
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Review of Literature

While researching scaffolding and how it affects student achievement there are several peer reviewed articles that are written on the subject. The view of this action research paper is whether or not scaffolding is being done in the classroom, how much, and is it being done correctly. Promoting Teacher Scaffolding in Small-Group Work: A Contingency Perspective, Scaffolding Teachers integrate Social Media into a Problem-Based Learning Approach, and The Beneficiations and Disadvantages of Using Authentic Situation for Scaffolding Students' Science Inquiry Learning.

van de Pol, Volman, and Beishuizen (2012), authored an article about scaffolding in small-group work. They questioned how often and truly present was actual scaffolding. They defined scaffolding as a process. The teacher must first assess the student’s understanding of the material before offering help. Most teachers were offering help without assessing how much the student previously knew about the subject at hand. The study is focusing on how teachers can learn to actually scaffold for their students instead of just helping their students. The study was based on Vygotsky’s social cultural theory (van de Pol, Volman, & Beishuizen, 2012). This theory explains that learning is a social activity and must be done in sequence for optimal understanding (van de Pol, Volman, & Beishuizen, 2012).

This article relates to this Action Research project by relating directly to the point of the paper: scaffolding is a great tool, when used properly. What is scaffolding? What does it look like? To be truly effective, scaffolding requires assessing students first, then providing the specific kind of support needed by the students. In professional experiences, the first step involved in scaffolding is being neglected. The students need to be able to “show what they
know” before we force them to do something they are not quite capable of doing on their own yet. But with a little true scaffolding they will be able to get there.

The effectiveness of teachers in the classroom is always being questioned. Each teacher has their way of helping students succeed. Teachers provide models, explanations, and scaffolding to help their students reach their full potential. The question still remains “is it true scaffolding?”

In an article about integrating social media into problem-based learning, Buss (2012) noted that using social technology to scaffold for students is a reliable source of scaffolding. The students that are sitting in our classrooms today have access to instant information. Using the social media to help with assignments and understanding should be embraced. The researchers found that a child is more likely to understand material if it does not involve a drawn out process of getting to them, such as a teacher lecturing.

This relates to this action research topic because it explores the depth at which teachers can use this complex teaching tool. With the technology that is available in most classrooms, the use of media of all types to convey information to our students. The students of today respond to the use of technology in the classroom. Why not use the social media world to get the attention of students who may need scaffolding to better understand the material at hand?

In a study conducted by Lin and Hung (2011), the researchers used life experience as it pertains to science and science related material would be crucial in scaffolding for the student later on. The study focused on the students and their prior knowledge. It reinforced what the first article was about, trying to assess prior knowledge of the material before giving
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Scaffolding. The authors convey the message that scaffolding is beneficial when done correctly. (Lin and Hung, 2011)

This pertains directly to the topic of scaffolding. There seems to be a right and wrong way to scaffold. If a teacher does not assess what the students don’t already know then they are not helping the students when they scaffold for them when they do not truly need the help. The help needs to come at a time when the student simply cannot complete the task without assistance. Not when it is hard or they may have to work through it. This is when it is a teacher’s instinct to take over and guide the student to the correct response. The student needs to use scaffolding and have it available if, and only if, needed. (Lin and Hung, 2011)
The methods of research for this study are pre and post test scores of three standardized, norm referenced test. The DRA-2, TORC-3, and Bayliss/Walker tests were used at the beginning and end of the tutoring session to ensure continuity. The student was worked with on a regular basis of one hour, three times a week. Again, this was done to keep continuity of the study and to not skew the data being collected.

Research Design

The research taken for this study is a longitudinal study. Tutoring Joe for 15 weeks, one-on-one, twice a week, with a total of thirty tutor appointments. During these fifteen weeks Joe was given scaffolding or prompting that varied in degree. There were three levels of scaffolding. While coding the findings, orange is used for scaffolding all the way through the assignment, pink for scaffolding roughly half the assignment, and yellow for little to no scaffolding. The independent variables are the pretest scores of each norm referenced tests, the dependent variables are the scores of the posttest of each norm referenced test.

Study Group Description

The group used in this research paper is a 4th grade, 10 year old boy. Low test scores coming into study group.

Data Collection and Instrumentation

The data collected was based on the two questions being focused on during the research project. Will there be a significant difference in performance on 3 norm referenced tests with 15 weeks of one-on-one reading intervention tutoring? Will the outcome of the tutoring success be affected by the amount of scaffolding given by the teacher?
The norm referenced tests used were the Diagnostic Reading Assessment-Second Edition (DRA-2), Test of Reading Comprehension-Third Edition (TORC-3), and the Bayliss/Walker Holistic Writing Evaluation Grades 1-6 (Bayliss/Walker).

The DRA-2 is a comprehension, fluency, and engagement test. For this research purpose the comprehension level is what was analyzed. The test has the student read a leveled reading book while the administrator of the test marks mistakes made while using the time it takes the student to read to a certain point laid out. There are charts to use with the materials to get the actual scores.

The TORC-3 is similar to the DRA-2, but goes deeper into the comprehension, fluency, and accuracy of the reader’s reading abilities. They do this by having numerous subtests in each section. This gives the administrator a deeper understanding of what deficiencies the student may have.

The Bayliss/Walker test is a test of a students’ true writing ability. This has the student write a paragraph (or more based on level being tested at.) The chart and administrators observations are all taken into account and a score is given to determine the actual writing age of the student.

Statistical Analysis Methods

The statistical analysis done in this research was a descriptive analysis of the pre and posttest successes of each test administered.
Findings

The results of the 15 weeks of tutoring and the statistical analysis are promising. The data collected was based on two questions that are the focus of this research project: Will there be a significant difference in performance on 3 norm referenced tests with 15 weeks of one-on-one reading intervention tutoring? Will the outcome of the tutoring success be affected by the amount of scaffolding given by the teacher?

Joe showed significant improvement in both his reading and writing. At the end of our tutoring sessions I re-tested Joe using the TORC-3, the DRA, and the Bayliss Writing Assessment. He showed significant improvement. According to the Bayliss, Joe’s writing went from a beginning first grade level to a beginning second grade level. Improving an entire grade level in the fifteen weeks we were together.

The DRA results were encouraging. Joe moved up to the 34(third grade, fourth month) DRA. His accuracy rate was 93%, comprehension level was 14, some comprehension. This is compared to his pre-tutoring scores on the level of 28 (second grade, eighth month) accuracy 93%, comprehension level 10. This was very encouraging to see after our time together.

The TORC-3 results were a little less extreme then the Bayliss and the DRA. His previous Reading Comprehension Quotient was 68. That did not change this time around. While some of the subtests scores went up by one or two points, it was not enough to push him out of the 2nd percentile ranking for General Reading Comprehension.
The data that was collected where for the pretest results and the post test results and how they compared to each other. The mean of the pretest score of the DRA-2 was 10 and the posttest score was 14. The mean was 12, median also 12, maximum was 14, the minimum 10, and the standard deviation was 2.83. The TORC-3 had the same score for the mean, median, maximum, minimum which was 68. The scores did not move for that test. The standard deviation was 0. And the Bayliss/Walker pretest was 6.4 and the post test score was 6.9. The mean was 6.65, median 6.5, maximum 6.9, minimum 10, and the standard deviation was 0.35.
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Conclusions and Recommendations

During this research on scaffolding and its effects on the interest and effort of the student there have been three conclusions made, based on tutor observations and students responses. Scaffolding is often used incorrectly in today’s classrooms, as evident in the articles referenced in this paper. When used correctly, scaffolding is a major tool for teachers with struggling readers and writers. Finally each teacher must have the goal of independence for their students.

With Joe, he was a very reluctant, self-conscious student. He was very self-conscious of himself and his literacy abilities. In the classroom there were comments of “I can’t do this,” “I need help,” “I’m dumb.” In this particular case, Joe did need help. He had no literacy skills when it came to comprehension and writing. Through his sessions, he has attained some of the basics needed to build from.

Will there be significant difference in performance on three norm referenced tests with 15 weeks of one-on-one reading intervention tutoring? The answer is there was not a significant difference in performance. But, there was significant difference in his attitude towards his ability to do literacy on his own. There was slight, numerical, improvement in the post testing data compared to the pretesting data.

Will the outcome of the tutoring success be affected on by the amount of scaffolding given by the teacher? Absolutely. The amount, more importantly, the level of scaffolding given by the teacher has a direct effect on the performance of the student on three standardized tests. These results are evidence of this claim.
This experience has proven to be an invaluable one. Scaffolding will only help students, when administered with the students’ independence being the final goal. The teacher or tutor must be willing to guide the student to autonomy. The goal every teacher should have is to have all students be able to complete the tasks on their own. That will only come if the teachers and tutors show them the way.

The recommendations that arise from this research are that teachers use pretesting and post testing to drive instruction. The educator must know what the students already know about a subject. Then use the pretest to guide their instruction. If a student does not have much knowledge at the beginning of the unit then there is a need for much scaffolding. As the unit progresses the amount of scaffolding needs to decrease, at the rate that is conducive to the students learning. The educator should have a plan laid out to ensure that the student becomes an independent learner towards the end of the unit. If the student comes to the unit with considerable knowledge, little to no scaffolding may be required.

Scaffolding requires an educator to really know their student’s abilities. There will be numerous chances for differentiation in a classroom. This means that what is right for one student may not be appropriate for another. That is why, as is shown in this study, it is crucial to find out what the students know from the beginning of each lesson or unit being presented.
References


