THE EFFECT OF A SUGGESTION TO GENERATE INTEREST IN A READING IN HIGHLY HYPNOTIZABLE PEOPLE: A Promising Use in Education

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Abstract: Highly hypnotizable participants in the experimental condition were given a waking state suggestion that a reading not intended to be interesting would be fascinating and remarkable. Controls were given task motivational instructions, in which they were told to try to make it interesting. The suggestion had a major influence on participants’ enjoyment of the reading, though no effect was found for reading comprehension. Qualitative interviews indicated that the suggestion had a profound impact on some, especially those most responsive to hypnosis. The lack of an effect in reading comprehension may be due to large within-group variances. Findings suggest that hypnotic suggestion, when properly employed, may have a potential use in enhancing the learning capabilities of highly hypnotizable people.

Several scholars have called for educators to integrate hypnotic techniques into the educational realm. Dale (1972) suggested that hypnotic experience could help students overcome creative blocks and facilitate divergent thinking. Hammerman (1979) argued that self-hypnosis could facilitate a better memory in learning a foreign language.
Ziegenfuss (1962) lamented that the myths behind hypnosis, such as its association with gullibility or mind control, are hindering researchers in assessing its use in education and called for empiricists to conduct such investigations. More recently, Council et al. (2007, 2008) investigated how hypnosis could assist actors to better portray their roles. Still, a complete effort to have highly hypnotizable people experience hypnotic phenomena as an adaptation to their everyday lifestyle appears to be missing from the literature.

While hypnosis has been investigated and researched for many years, defining hypnosis has been somewhat of a daunting task (see Kirsch et al., 2011). However, regardless of what its exact nature is, many creative teachers often employ suggestion and/or visualization as a motivational or learning tool. The use of guided imagery, practiced by approximately 30% of teachers according to one survey (Barry, 2002), and other techniques intended to make use of students’ imaginations are similar to hypnotic techniques. Mirowitz and Tremonti (1965 as cited in Dale, 1972) shared in this point of view, claiming that mentally preparing students for an assessment or using imagery are forms of hypnosis that are “concomitant[s] of the teaching process” (p. 8). Harvey and Goudvis (2007) see visualization as an effective form of teaching in which students are told to use their senses to derive meaning from a text. Some students who think about an image described in a text, for example, can actually see the picture, but Harvey and Goudvis show that the same technique can produce similar experiences using the other senses: “We have all read an article about a pie baking in the oven or a steak crackling on the grill . . . We can practically taste the meal. Well-written text allows us to taste, touch, hear, and smell images . . . when we read” (2007, p. 137).

Astor (1971) suggested that not only is hypnosis practiced unknowingly by teachers but is often done in an adverse way. He noted that some students are “in a hot, stuffy classroom with a very insipid teacher who insists that they all sit still, hands clasped, feet together on the floor for hours on end, and do nothing but fixate their eyes and ears upon her dullness” (p. 447), believing it to be “the worst example of a form of educational hypnosis that occurs in the educational lives of many children” (p. 447). If hypnosis is practiced antagonistically, albeit inadvertently, with students, then teachers may benefit from using it to enhance instruction.

The concept of employing hypnosis in the classroom is not new. Ziegenfuss (1962) first suggested that hypnosis might serve as a useful tool for teachers. Mirowitz and Tremonti (1965) suggested that it could be used to help increase students’ motivation in learning and to reduce test anxiety. Dale (1972) proposed a number a possible uses of hypnosis for education, including the use of suggestions intended for improvements in concentration, thought, motivation, as well as
“expanding consciousness” (p. 9), but contended that its acceptance by mainstream education is hindered by the negative stigma hypnosis bears. Hammerman (1979) speculated that hypnosis could be a useful tool in foreign language education.

Numerous studies have shown that direct suggestions can effectively improve concentration, self-confidence, and academic achievement (Krippner, 1970). Astor (1971) presented a hypnotic technique that contained suggestions for motivation, concentration, and empowerment. The efficacy of this technique was limited to a single case study, in which hypnosis was combined with traditional therapy to help a student with emotional and learning difficulties achieve academic success, thereby limiting its generalizability. Wark (1996) used an active-alert self-hypnosis protocol, in which suggestions for alertness and concentration were given in lieu of relaxation and sleepiness, to help college students improve their concentration in class. The results suggested that students who were highly imaginative (as measured by the Creative Imagination Scale, Barber & Wilson, 1978) had significantly higher grade point averages (GPAs) compared to their low and medium imagery counterparts.

Barrios (1985, 2001) developed a program, based on hypnotic principles, in which community college students, identified as being high risk for dropping out of school, learned to use positive imagery and positive self-talk in order to gain greater confidence in themselves, to reduce stress, and to disregard outside influences that may interfere with one’s pursuit of an education. The program had students learn to connect their thought processes with their emotions using biofeedback. In doing so, they learned that they had greater control over their mental processes while learning a greater sense of self-efficacy (Barrios, 1985). Once these tasks were mastered, they learned to apply these skills by controlling their emotions and concentration such as picturing themselves being more focused and accomplishing tasks efficiently and masterfully. The results were dramatic: Those who participated in the program were more likely to apply to a four-year college, had a greater average change in grade points (GPA multiplied by the number of credits completed), and reported reducing recreational drug use.

Numerous other studies, both qualitative and quantitative, have contributed to the body of literature that suggests that hypnosis may be beneficial in education, particularly as a tool to aide in the educative process. Eisele and Higgins (1962) reported case studies of students who overcame test anxiety and improved study habits through self and hetero-hypnotic suggestions for increased concentration, recall, and relaxation; however, they did not produce any quantitative evidence to support their claims. De Vos and Louw (2006), compared both traditional relaxation-based and active-alert hypnosis (Wark, 1996),
coupled with suggestions aimed at reducing stress and overcoming educational difficulties, to two control groups, one using progressive relaxation exercises and the other with no intervention. There was a significant increase in academic performance for participants who experienced either form of hypnosis compared to both control conditions. Johnson and Johnson (1984) randomly assigned people who reported significant test anxiety to either an experimental condition, which included suggestions of relaxation and concentration given prior to a reading comprehension task, or a control group, where no suggestions were given. The experimental group outperformed the control group on the reading comprehension task, but no significant difference was found with respect to recall.

Hagedorn (1969) gave posthypnotic suggestions to an experimental group of college-aged students that a lecture they were about to hear was interesting and that they would recall it with ease, that their personal problems would not interfere with their learning, and that they would be free of distraction. This group had a significantly higher recall score of the lecture compared to a control group, who did not receive these suggestions. Hypnotic susceptibility was not assessed, meaning that given the proportion of hypnotic susceptibility in the population, there may have been people in the experimental group for whom the suggestion was ineffective.

There have been instances where the use of hypnosis did not aide in the educative process. Campbell and Schumann (1981; see also Campbell, 1976) age regressed 20 participants, who grew up with a language other than English but had subsequently forgotten it, to a time when they could speak it in order to see if this would affect recall of that language (see Ås, 1962; and Fromm, 1970). None of the participants in the Campbell and Schuman study were able to produce reliably their native language. However the authors did speculate that the lack of high hypnotic responsiveness among the sample might have impacted the results negatively. Schumann, Holroyd, Campbell, and Ward (1978) investigated whether hypnosis could aide in pronouncing words in the Thai language. Twenty participants with no familiarity with the Thai language were hypnotized and told that they would be able to pronounce words they hear with ease. Overall, there was no effect, though the authors reported that hypnosis was slightly more effective in enhancing pronunciation among those who were highly hypnotizable, but, because the sample size was small, it indicated that the finding had to be interpreted with caution.

Interestingly, the literature has suggested that specific hypnotic phenomena could assist in foreign language acquisition. Raikov (1992) reported a summary of cases in which hypnosis was used with Soviet
students to aide their learning of English.\textsuperscript{1} Participants were told under hypnosis that they would believe themselves to be native English speakers with no comprehension of Russian. Acquisition of English markedly improved following this intervention. Raikov also reported that suggestions to alter one’s personality have similarly enhanced chess playing, painting, and piano proficiency.

Most of the studies reviewed above involve the use of hypnosis as a tool to aide in learning. However, few studies looked at direct hypnotic suggestions to assist in engagement and retention of learning, especially with those who are most hypnotically responsive. Additionally, many of these studies cited were made up of case studies (or a very small sample), correlational analyses, or experiments in which random assignment is not performed. It is this gap in the literature that is addressed in this study. The study, a mixed-methods approach using a randomized experimental design and a phenomenological qualitative component, was an attempt to provide scientific support for a potentially promising pedagogical technique. The methodology of this study employed an advanced hypnotic phenomenon with participants to see if the experience helps them with various tasks relating to learning. Specifically, a suggestion to the effect of finding a typical textbook reading to be extremely fun and fascinating was used to ascertain whether it (a) has the intended effect and (b) enhances reading comprehension compared to a control condition. Additionally, phenomenological inquiry was employed with participants assigned to the experimental condition to gauge more deeply their experience with such a suggestion.

**Method**

**Participants**

Thirty-three people (Female = 75%; White = 82%, Multiracial = 12%, African American = 6%), who met the criteria for high hypnotizability participated in this study. High hypnotizability was assigned to those who responded to at least six items (which included either the fly hallucination or posthypnotic suggestion item) of the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962) during a screening procedure and expressed interest in future study participation. Participants received a gift card for 10 dollars for their participation.

\textsuperscript{1}Raikov did not provide specific details about the specific methodology. Rather, he focused on a general summary of his findings. The only other account in English was provided by Krippner (1980), who found this technique quite impressive.
Procedure

Participants met with the researcher (JCM) at a mutually convenient time. After consent was obtained, participants were randomly assigned either to the control or experimental condition.

Experimental condition. Those assigned to the experimental condition ($n = 18$) were told first that they would experience a series of suggestions, including one that may affect how they may be able to read a passage. As a means to facilitate response to further suggestions without using a formal hypnotic induction, a suggestion for hand levitation was used. Participants were then read the joke item from the Stanford Profile Scale of Hypnotic Susceptibility (SPS; Weitzenhoffer & Hilgard, 1963), in which participants are told that a factual statement, not intended to be funny, is actually funny. They were then told the following:

You have seen how you can convince yourself of the most interesting of things. For example, you convinced yourself through hypnotic suggestion that there was a fly in the room or that a joke that is not funny is actually humorous. You could use those same abilities to help you get through a dull or boring task. In a moment I am going to ask you to read a passage. It is from a college textbook on research methods. Like many textbooks out there, it is not intended to be as fun or entertaining as many of the works on fiction people are reading today, such as Twilight or Harry Potter. However, I am going to give you a suggestion that this reading is fun and interesting.

Please close your eyes and listen to the next suggestion: When you open your eyes again, you will be given a passage to read. For some odd reason, you will find it to be incredibly fascinating. It will be as if it were the most interesting and enjoyable text you have ever encountered. You may be surprised by how pleasurable this reading is, and the more you read it, the more remarkable and fascinating it will become, and the more you read the more you will want to read it. Every word will captivate and inspire you. You may even find yourself being amazed by how beautiful writing like this can be! Just let that happen as you experience it. This suggestion will be in effect until you hear me say “Enough of that.” Please open your eyes and begin to read. When you are done reading, please let me know.

Participants then read Chapter 5 (“Research Design”) located on pages 35 to 41 of Social Science Research: Principles, Methods, and Practices (Bhattacherjee, 2012). This reading was considered to be of a suitable reading level to the general public but not inherently interesting enough that one would want to read it for his or her own enjoyment.

After they completed the reading, the suggestion was terminated. Participants then completed a form in which they rated how interesting the reading was, how much they enjoyed it, how much fun it was,
and how easy it was to read, using a 7-point Likert scale. Participants were then given a 10-question multiple-choice test that assessed their comprehension of the reading. Participants then completed an interview based in phenomenological inquiry (Seidman, 2006) in which they reflected upon their experience reading with the suggestion in effect. Demands for honesty were given prior to collecting participants’ quantitative data and at the start of the interview, in which they were told to provide their honest feedback and not what they think the researcher might be looking for, as any kind of feedback they may give is very valuable, including that which may go against what they believe the researcher might be seeking. Following the interview, participants were debriefed and dismissed.

Control condition. After informed consent was obtained, participants \((n = 15)\) in the control condition were given task motivational instructions, in which they were told the following:

You are now asked to read the passage I am about to give you. It is from a college textbook on research methods. Like many textbooks out there, it is not intended to be as fun or entertaining as many of the works of fiction people are reading today, such as *Twilight* or *Harry Potter*. However, if you really try, you can make this reading seem fascinating and fun to read. I know it may seem a little odd to pretend that it is great reading, but just do your best.

These participants read the same passage and completed the same inventory as those in the experimental condition. However, they were not given preceding suggestions nor did they participate in an interview, though demands for honesty were also given in a similar fashion as that given to those in the experimental condition. They were given the option of experiencing the experimental condition, though no formal data, other than informal observations, were collected from those who opted for this. Finally, they were debriefed and dismissed.

**Results**

Quantitative

Preliminary analysis. The four subjective ratings (ease, enjoyment, fun, and interest) were significantly correlated with each other (ranging from .67 to .91), but there was no significant relation between any of the subjective ratings and test score. Table 1 presents the correlation matrix of these variables.

Due to the strong multicollinearity of these rating, multivariate analysis was not appropriate using each as a separate dependent variable. As such, the four subjective ratings were combined into a single
Table 1
Dependent Variable Correlations

<table>
<thead>
<tr>
<th></th>
<th>Interest</th>
<th>Fun</th>
<th>Ease</th>
<th>Enjoyment</th>
<th>Test Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fun</td>
<td>.87</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease</td>
<td>.67</td>
<td>.69</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment</td>
<td>.91</td>
<td>.87</td>
<td>.70</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Test Score</td>
<td>.10</td>
<td>.11</td>
<td>.29</td>
<td>.17</td>
<td>X</td>
</tr>
</tbody>
</table>

Note. N = 33. All correlations in bold are significant (p < .001).

A variable named (and henceforth to be referred to as) task satisfaction score. An analysis of the task satisfaction score revealed notable skewness (−1.64) and kurtosis (2.16) in the experimental condition, though the values were roughly within the normal range for the control (skewness = -0.43; kurtosis = −1.1). A square root transformation (Howell, 2007), in which each value is subtracted from a constant, one point greater than the largest value and is square rooted, was performed. As a result, skewness and kurtosis values were roughly within the normal range for both the experimental (skewness = 0.85; kurtosis = 0.49) and control (skewness = 0.58; kurtosis = −1.07) conditions. The homogeneity of covariance matrices assumption was assessed using the Box test which was not significant (M = 3.67; F = 1.14; p = .33), confirming that this assumption was met. There were no outliers in the distribution of data, either in its entirety or according to distribution. Subsequent analysis used the test score and task satisfaction score as dependent variables.

Main analysis. Table 2 presents means and standard deviations for both the task satisfaction and test score. A one-way multivariate analysis of variance (MANOVA), with the Condition as the independent variable and Test Score and Task Satisfaction Score serving as the

Table 2
Means and Standard Deviations of the Task Satisfaction and Test Score

<table>
<thead>
<tr>
<th>Task satisfaction</th>
<th>Test score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (n = 15) M SD</td>
<td>Experimental (n = 18) M SD</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>3.87 0.70</td>
<td>2.53 1.11</td>
</tr>
</tbody>
</table>

Note. Lower values on the task satisfaction indicate greater satisfaction with 1.0 being the strongest possible value.
An overall main effect was found, $F(2, 30) = 8.04, p = .002$. A main effect was found for the Task Satisfaction Score, $F(1, 14.80) = 16.59; p < .001, \eta^2 = .04$. The effect for Test Score was not significant, $F(1, 1.70) = 0.32, p = .58$.

*Additional post hoc analysis.* As the study progressed, it became apparent, through interviews with participants, that the suggestion was ineffective for some participants, namely those with lower hypnotic susceptibility scores (see qualitative analysis). To assess the possible influence of this variable, participants were divided into two levels of hypnotic responsiveness using cut scores used by Barnier and McConkey (1998). Participants with Harvard scores of 6–8 were grouped as “low” (meaning simply that they were on the lower end of the range of HGSHS:A scores in this sample), and those with a score of 9–12 were grouped as “high.” Assumptions were tested and met for this analysis. A 2 (low vs. high) x 2 (control vs. experimental) MANOVA found main effect was found for Task Enjoyment Score, but not Test Score, by condition but not by hypnotic responsiveness. An interaction was also found for Task Enjoyment Score x Group, but not for Test Score x Group. Table 3 provides the means and standard deviations of

<table>
<thead>
<tr>
<th>Harvard</th>
<th>Condition</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task satisfaction</td>
<td>Control</td>
<td>4.23</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>1.97</td>
<td>0.79</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3.63</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>3.09</td>
<td>1.13</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Score</td>
<td>Control</td>
<td>5.50</td>
<td>3.27</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>6.67</td>
<td>2.00</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>6.78</td>
<td>1.72</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>6.78</td>
<td>2.49</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Due to transformation, lower values on the task satisfaction indicate greater satisfaction with 1.0 being the strongest possible value.
Table 4
A MANOVA of Task Satisfaction and Test Score According to the Level of Suggestibility and Experimental Condition

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>F</th>
<th>η_p</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>2, 28</td>
<td>10.69</td>
<td>.43 (.04)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Harvard Level</td>
<td>2, 28</td>
<td>0.76</td>
<td>.05 (&lt;.01)</td>
<td>.48</td>
</tr>
<tr>
<td>Interaction</td>
<td>2, 28</td>
<td>4.07</td>
<td>.23 (.02)</td>
<td>.03</td>
</tr>
<tr>
<td>Task Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>1, 29</td>
<td>22.04</td>
<td>.43 (.04)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Harvard Level</td>
<td>1, 29</td>
<td>0.74</td>
<td>.02 (&lt;.01)</td>
<td>.49</td>
</tr>
<tr>
<td>Interaction</td>
<td>1, 29</td>
<td>8.20</td>
<td>.22 (.02)</td>
<td>.008</td>
</tr>
<tr>
<td>Test Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>1, 29</td>
<td>.50</td>
<td>.02 (&lt;.01)</td>
<td>.49</td>
</tr>
<tr>
<td>Harvard Level</td>
<td>1, 29</td>
<td>.71</td>
<td>.03 (&lt;.01)</td>
<td>.41</td>
</tr>
<tr>
<td>Interaction</td>
<td>1, 29</td>
<td>.50</td>
<td>.02 (&lt;.01)</td>
<td>.49</td>
</tr>
</tbody>
</table>

Note. Values in parenthesis indicate regular eta squared values.

the dependent variables for both main and interaction effects. Table 4 presents F ratios for both analyses.

To further investigate the interaction effect of hypnotizability and condition upon task satisfaction score, participants were divided into four groups: low hypnotizable control, high hypnotizable control, high hypnotizable experimental, and low hypnotizable experimental. A one-way analysis of variance (ANOVA) was conducted and revealed significant differences among the variances of each group, $F(3, 29) = 10.09, p < .001$. A Scheffe’s post hoc analysis was then used to explore the differences among each group. Using a critical alpha value of .05, the high hypnotizable experimental group’s mean was significantly greater than that of the high hypnotizable and low hypnotizable control groups. There was not a significant difference between the high hypnotizable experimental group and the low hypnotizable experimental group; however, there was a trend for the high hypnotizable group to score higher ($p = .07$).

Qualitative Component

Of the 18 participants in the experimental group, 16 participated in the qualitative interview, as data collection ceased when saturation was reached (see Creswell, 2003). Coding and subsequent identification of themes were conducted by highlighting unique words and phrases that described the experience of reading while the suggestion was in effect. When a new or unique theme emerged, previously analyzed cases were reexamined to ascertain whether that phrase could also apply to them. For this reason, most cases had several themes assigned to each.
To ensure coding reliability, assignment of codes and themes was conducted by both the investigator (JCM) and an assistant (DMF). There was 94% agreement, and the few discrepancies were resolved easily.

Overall, there were two groups that emerged based on the coders’ analysis of transcripts. One group \((n = 14)\) found that the suggestion had some effect for them, and the other \((n = 4)\) reported no noticeable effect on their ability to read the passage. Among the former group, seven distinct themes emerged (the number of participants who were cited for each of them is provided in parentheses along with the letter heading that corresponds with Table 5, which lists the occurrences of each qualitative theme for each participant).

The first theme was a sense of reading with unanticipated excitement, dedication, or zeal. Although all members of this group reported that the suggestion had some effect on their interest of the reading, these participants reacted to the reading with unusual fervor while the suggestion was in place. As one participant stated: “I just kept blazing through, keep reading, like gusto, a hunger for it . . . I’m really surprised because I don’t know if I read with so much zeal, almost anything . . . that was something I actually thought was cool.”

### Table 5
**Occurrences of Each Qualitative Theme for Each Participant**

<table>
<thead>
<tr>
<th>Participant</th>
<th>HGS: A score</th>
<th>Task satisfaction</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A B C D E F G Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>12</td>
<td>27</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>25</td>
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<td>25</td>
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<td>32</td>
<td>8</td>
<td>26</td>
<td>X X X X X</td>
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<td>15</td>
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<td>21</td>
<td>X X X X X</td>
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<tr>
<td>9</td>
<td>12</td>
<td>28</td>
<td>X X X X</td>
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<td>13</td>
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<td>12</td>
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<td>2</td>
<td>12</td>
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<tr>
<td>19</td>
<td>6</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

*Note. A = Read with excitement, dedication, or zeal; B = Reading became easier than anticipated; C = Focused, absorbed, or unaware of setting; D = Reading became important or applicable; E = Reacted to response to suggestion with delight; F = Desired to have this ability for assigned readings; G = Read more carefully.*
The second theme was that the reading was easy, presumably more than what was expected and as a result of the suggestion. For them, this suggestion made the reading much clearer to understand, as least compared to when they would be made to read something. Some reported comprehending the passage on the first read, when normally it may have required several readings to comprehend it. A third theme was that participants became so deeply absorbed into the reading that they became less aware of internal and external stimuli, especially that which may interfere with their ability to read. For one participant, this was quite profound: “When I was focusing on the piece of paper [while] reading, basically around me, everything kind of went. I didn’t even notice the color of the table . . . the only thing that had any color were the words in front of me.”

The fourth theme applied to the reading taking on greater relevance and importance to the reader. Some of these participants were people involved in fields that do not involve the topic of the reading passage. Nevertheless, they reported having a personal connection to the theme of the reading. A fifth theme centers on participants’ reaction to the suggested effect. These people were very impressed that they had the capability to make the reading interesting. The sixth theme consists of a desire to have this experience outside of the experimental setting. That is, they wish they could make use of it when they actually have to read sometime in the future. The final theme is that the reading was done with greater care, characterized by rereading sections or reading more slowly.

Disconfirming cases. There were four cases in which the suggestion had no perceivable effect or had at least a questionable effect. All four shared in common that they scored on the lower end of hypnotic susceptibility; each scored either a 6 or 7 on the HGSHS:A. However, there were also participants that also scored in the lower range but still reported an effect resulting from the suggestion.

An interesting discrepant case was that of Participant 28. Of all of the participants, she was the oldest (age = 57 years) and one for whom the most time had passed since college. Interestingly, she scored a 12 on the HGSHS:A but was the only one in the experimental condition to ask if she could stop reading before reaching the very end. For her, the difficulty of the passage hampered her ability to read it. Interestingly, the suggestion was judged by the coders to have some influence; she did report that the reading became unexpectedly interesting (though with

2Although they were not interviewed and not included in the qualitative analysis, because qualitative saturation had been obtained by then, 2 additional participants, each with HGSHS:A scores of 6, reported postexperimentally that the suggestion had no effect for them.
less intensity as reported by others). When she given a reading of a technical nature, such as this one, she reported experiencing anxiety, which ended up hampering the effect of the suggestion. In this case, while the suggestion had some effect, another variable played a clear and significant role in how she viewed the reading. That is, a lack of understanding hindered her ability to use the suggestion in an effective way.

To further examine the possible effect of hypnotic susceptibility on the impact of the suggestion, the presence of qualitative theme for each participant is listed in Table 5 along with his or her HGSHS:A score and task satisfaction score. A sum of the instance of each qualitative theme for all participants is also presented.

The correlation between the HGSHS:A score and task satisfaction score was significant, $r = .58, p = .02$. The correlation between the HGSHS:A score and the qualitative sum score was not significant but did reveal a trend, $r = .49, p = .08$.

**Discussion**

This study investigated what hypnosis can do or, more specifically, what a suggestion can do to one’s ability and one’s interest in reading a passage that’s not supposed to be interesting. The results show that hypnosis can, when properly employed, actually make this happen for people who are more capable to experience hypnosis, even when knowledge of such an ability was initially unknown to them, and was most pronounced for those who were most hypnotizable (i.e., HGSHS:A of 9–12). This suggests that hypnotic ability, at least in this area, can be quite useful. However, the current study is limited to interest in reading and, a little bit more broadly, to the educational realm.

One unfortunate outcome was that the suggestion did not enhance reading comprehension compared to task motivational instructions. This was disappointing given that people who find texts to be interesting and relevant tend to have better reading comprehension than those who do not (Hidi, 2001). However, it is important to note that many studies that support such a claim employ correlational or within-subjects designs (Hidi, 2001). While it is possible that the suggestion used is simply not effective in producing enhanced reading comprehension, an alternative is that there is an effect that was masked by diverse individual differences. Some participants, both in the control group and the experimental group, were very proficient readers. Even if they found the reading uninteresting, they were still able to absorb the information and perform well on the test. Conversely, there were some people who had notable problems with the reading. Some reported anxiety issues when reading while others had specific impairments that affected encoding.
Still, the robust effect in enhancing interest suggests that hypnosis has a potential use in education (see Mohl & Davis, 2015). Unlike in other studies that have used direct suggestions to reduce anxiety (Johnson & Johnson, 1984) or enhance memory (Hagedorn, 1969), this study used a suggestion aimed at making something uninteresting become interesting. This is in contrast to other studies, where something like neutral hypnosis (Jacobson, Kramer, Tharp, Costa, & Hawley, 2011; Jacobson et al., 2013), in which participants are hypnotized and simply taught a lesson in that state, fails to augment learning. In this study, suggestion was used in a very specific way for an educational purpose. Specifically, its strategy was to enhance one’s level of interest in a very strong fashion so that participants would become more engaged in a reading that is otherwise not inherently engaging.

Although the findings of this study are promising in regard to inspiring interest and engagement in learning, there are clear limitations and ethical considerations in regard to the use of this information. Although suggestion may facilitate interest in reading, as indicated by this study’s data, and could perhaps be found to enhance comprehension with an improved design, suggestion should not be considered a mechanism that can improve learning in any instance. It will likely not overcome the challenges presented by attentive or memory disorders. However, it could perhaps be used in conjunction with other types of educational interventions or accommodations. A well-known adage attributed to Martin Orne states that one should not use hypnosis to treat something one is not prepared to treat without hypnosis. Likewise, perhaps one should not teach something using hypnosis if one is unable to teach without hypnosis.

There were some limitations of this study. One problem was the reading itself. Although the reading was not supposed to be interesting, it actually did pique the interest of some participants, even those in the control group. For example, a number of participants were psychology majors who were learning about research methods. While the reading itself may have not been terribly exciting, the subject matter at hand was relevant enough to them to get through the entire reading. Nevertheless, participants in the experimental condition, some of whom were also psychology majors (the distribution of participants who reported being psychology majors was roughly equal between the two groups), did indicate that the suggestion had a very strong impact on them but they tended to find the reading less compelling when asked to view the reading during the interview phase of this study. However, future studies should consider assessing reading passages to ensure low-interest ratings before employing them in similar research.

It is also not known to what degree demand characteristics may have played a role in this study (Orne, 1959). While participants were implored to give honest feedback, there is always the chance that
participants were providing, perhaps quite implicitly, data that were in line with the investigator’s hypothesis. This is especially concerning given that the differences found between the experimental and control groups were among subjective measures (task satisfaction) and not behavioral measures (reading assessment score). A future study could use a surreptitious observation design (Kirsch, Silva, Carone, Johnston, & Simon, 1989), in which participants are unknowingly observed to assess differences in reading behavior (such as attentiveness to task, speed of reading, etc.) compared to a group of low hypnotizable simulators. Nevertheless, an assumption of phenomenological inquiry is that participants are motivated to express honestly and openly their subjective experience of whatever is of interest. This assumption was met, at least to some degree, as it was shown, contrary to our initial assumptions, that suggestion was not effective for all participants and tended to be qualitatively different to those for whom it was effective. Thus, we accept participants’ reactions, albeit with some caution, as genuinely valid.

It would also have been interesting to compare qualitative data between participants in the experimental group and the control group. Such a comparison, however, is not possible given that only those in the former group participated in the interview. We were originally interested in understanding the phenomenology of the suggested experience. Had the control group also been interviewed, it would have permitted us to assess whether the same qualitative themes emerged, as it could suggest that the qualitative data were the results of demand characteristics.³ It is suggested that follow-up studies should use this thorough approach.

Finally, the generalizability of the study is limited. This study was done in a laboratory-like environment and not in an actual classroom. Both conditions received some type of instruction, and such an intervention might not be given in an actual classroom environment. In the experimental condition, there was a suggestion given in the waking state. In the control group, they were given task motivational instructions in which they were specifically told to try to make this interesting. It is not known how often teachers in classrooms give such motivational instructions to students across the country. It could be that task motivational instructions are more effective than what might be

³It should be noted that almost all control group participants elected to experience the experimental manipulation since having the opportunity was one of their rights as a participant. Many, most of whom were in the higher range of hypnotizability, reported informally and often to their surprise that the reading had become more interesting. Some even reported a “trance logic” like experience, in which they were very interested in the passage while reading it yet knowing at the same time that they had no reason to think so.
told to students in everyday classrooms (e.g. “Please try to read this” or “I think you’ll find this interesting”). It could very well be that motivational instructions actually can make a reading more interesting compared to a situation in which no instructions of that kind are given. This shortcoming should not take away from the efficacy of the actual suggestion. Nevertheless, future studies ought to use an actual null group and three conditions: One gets the suggestion, one gets task motivational instruction, and the third group gets no instructions at all.

This is the first empirical study, to the best of our knowledge, to show the usefulness of hypnotic responsiveness, outside the therapeutic realm, for those who can actually experience hypnosis. That is, there are people out there who have this latent ability known as high hypnotizability in which they can have very profound experiences. Although these experiences might be very interesting, this study shows that the experience can actually have a beneficial use to promote personal gain, perhaps even to contribute to what might be a flow experience (as indicated by the transcendent experiences) or something of great value to them.

The use of suggestion in this manner may be the key for some students to experience greater success in school. An e-mail message sent from a participant, a current student in college, after completing this study illustrates this particular potential for a positive benefit. Through the use of her own imagination and self-talk, she reported figuring out a way to induce the effect for enhanced interest for assigned readings and class lectures. In doing so, she reported being more engaged in her studies and wishing to examine the extent of this ability further: “If I could do more with this I would love to, because honestly it has changed me . . . this whole experience has been life changing.” Two other participants contacted the author, after some time had passed following their participation in the study, inquiring about the possibility of learning how to use suggestion for their own purposes (not surprisingly, these two were participants were, based on their interviews, assigned to the theme of desire to use the suggestion with actual assigned readings). In addition to providing benefit to individuals, this research can contribute to positive social change in the educational system. Although the strategies would not apply to everybody, employing suggestions to enhance learning with students who are able to respond to them could be a beneficial educational tool. This statement should be taken with caution, as it is not a panacea to education. No educational technique is. However, in a field in which many people are demanding new ways in which things are taught, this can be a very useful option. It may be as simple for some as to instill a suggested interest in a reading passage, which could lead to better study habits and test performance, especially with standardized assessments that usually contain readings that are not intended to be interesting and are often outright boring,
As promising as this approach may be, it would require open-minded administrators, teachers, parents, students, and members of the community and a significant amount of additional education to dispel the myths about hypnosis.

Such a concern notwithstanding, it should be noted that participants were not formally hypnotized in the main procedure of this study. Instead, those in the experimental condition were given a “warm-up” hand levitation suggestion that was intended to facilitate participants’ responses to the suggestion for enhanced interest. The reasoning behind this was largely speculative. Hull (1933) found that, while hypnotic inductions did increase hypnotizability, he was unable to find the same effect for waking suggestions. However, there were a number of considerations that Hull overlooked that tend to imply the contrary (see Mohl, 2008, 2012). Whether the hand levitation did augment response, the suggestion of increased reading (as well as the preceding joke item of the SPS) cannot be determined by this study. However, what is clear is that this effect was found without the use of a “classic” hypnotic induction. Thus, it is possible to have this experience without formal hypnosis, which may be an important factor for someone when deciding whether to assimilate such a technique into one’s pedagogical toolbox.

Suggestions for Future Studies

The suggestion could have augmented encoding and subsequent memory. However, the large amount of variance within each group may have overshadowed that effect. In this study, it could be that an effect does indeed exist, but it was overshadowed by large within-group variances necessitating a considerably larger sample size to notice the effect. It is strongly recommended, therefore, that future studies use a counterbalanced within-subject design. Other factors, such as amount of education, testing anxiety, and the number of years since having last been in school, may have been notable factors in this study. Future studies should try to account for these variables, which, could further elucidate the effect of the suggestion upon both interest in reading and reading comprehension, though a much larger sample size is needed in order to account properly for such potential covariates.

The criterion for “high” suggestibility used in this study was somewhat lower than in others. Participants with HGSHS:A scores of 6 or 7, who might elsewhere be categorized as medium hypnotizables (e.g., Peter et al., 2015), were included in this study. On the other hand, participants in this study also had to pass either the fly hallucination or posthypnotic item, both of which are more difficult to pass and thought to need a greater amount of hypnotic aptitude. Still, several on the lower end of suggestibility in this sample did not respond to the suggestion, while all of those scoring 11 or 12 responded to the suggestion.
in some way and often while having a very profound experience. It is suggested that future follow-up studies use more conservative criteria for participant selection.

Finally, although the suggestion did tend to augment interest in reading, follow-up studies with the recommended methodological improvements are needed to ascertain whether suggestion for enhanced interest can facilitate reading comprehension. On a larger scale, the possible use of hypnosis in education is still a largely unexplored area. How else can suggestions be used in education? It would be interesting to see whether such a suggestion could be used to facilitate interest in class lectures, as opposed to just reading passages. In this study, the suggestion was given by an individual trained and experienced in hypnosis. It would be interesting to see whether high hypnotizables can learn to produce the phenomena by themselves. If such a technique could be developed, then even more people who are apt at experiencing such a suggestion may use it. Still, future investigations are needed to examine these questions, but the answers they may bring may certainly be of interest to us all.

**Acknowledgments**

This report is based on the doctoral dissertation of the lead author. The lead author would like to thank the Psychology Department at Ursinus College for providing access to their classes for recruitment purposes. A special thanks is extended to Emily Orne for her insight and support.

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**References**


**Der Effekt einer Suggestion, um in hoch hypnotisierbaren Menschen Interesse an einer Lektüre hervorzurufen: Eine vielversprechende Anwendung in der Erziehung**

John C. Mohl, Donna M. Finigan und Lisa M. Scharff

Abstract: Unter experimentellen Bedingungen wurde hoch hypnotisierbaren Teilnehmern im Wachzustand eine Suggestion gegeben, daß eine Lektüre, die absichtlich nicht interessant sein sollte, phaszinierend und
EFFECT OF A SUGGESTION


STEPHANIE REIGEL, MD

L’effet d’une suggestion visant à susciter l’intérêt pour la lecture chez les personnes très facilement hypnotisables: une utilisation prometteuse en enseignement

John C. Mohl, Donna M. Finigan et Lisa M. Scharff

Résumé: Des participants facilement hypnotisables dans une situation expérimentale ont reçu une suggestion en état de veille qu’une lecture qui n’était pas supposée être intéressante serait fascinante et remarquable. Les membres du groupe de contrôle ont reçu des instructions motivationnelles leur demandant d’essayer de rendre leur lecture intéressante. La suggestion hypnotique a eu une influence majeure sur le plaisir de lire des participants, bien qu’elle n’ait eu aucun effet sur la compréhension de la lecture. Des entrevues qualitatives ont indiqué que la suggestion a eu une profonde influence sur certaines personnes, particulièrement celles qui ont été les plus sensibles à l’hypnose. L’absence d’un effet sur la compréhension de la lecture est peut-être due à des écarts intra-groupe. Les résultats donnent à penser qu’une suggestion hypnotique, lorsqu’elle est bien utilisée, peut être utile dans l’amélioration des capacités d’apprentissage des personnes facilement hypnotisables.

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El efecto de una sugerencia para generar interés en una lectura en personas altamente hipnotizables: Un uso prometedor en educación

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Resumen: Los participantes altamente hipnotizables en la condición experimental recibieron una sugerencia, en estado de vigilia, de que encontrarían fascinante y extraordinaria una lectura que no pretendía ser interesante. A los controles se les dieron instrucciones motivacionales para la actividad, en donde se les dijo que procuraran hacerla interesante. La sugerencia tuvo una fuerte influencia sobre el placer de la lectura de los individuos, aunque no se encontró ningún efecto sobre la comprensión lectora. Las entrevistas cualitativas indicaron que la sugerencia tuvo un profundo impacto en algunos,
especialmente aquellos más receptivos a la hipnosis. La ausencia de efecto en la compresión lectora podría deberse a la gran varianza intra-grupos. Los resultados indican que la sugerencia hipnótica, al utilizarse apropiadamente, podría potencialmente ser utilizada para mejorar las habilidades de aprendizaje de personas altamente hipnotizables.

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