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“Do I Need to Know This for the Test?":
Non-target Incidental Memory (NIM) and Associated Factors

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INTRODUCTION

The problem – teaching to the test: Educators do not want to have students learn only what is on a test. A solution might be found in non-target incidental memory (NIM), or learning that happens unintentionally1. NIM allows learning for material that is not explicitly pointed out (as for a test). When some material is pointed out especially (e.g. with a phrase: “This is going to be on the test”), are the surrounding concepts forgotten or learned?

The hypotheses: This study used a novel verbal memorization test to examine two hypotheses.

- There would be a significant amount of NIM.
- Upperclassmen would demonstrate less NIM than freshmen or sophomores.

METHODS

Participants: Participants consisted of BYU undergraduate students, whose ages ranged from 18-31 and included 33 freshmen, 27 sophomores, 25 juniors, and 13 seniors, recruited from friends of the author and through the BYU Sona System. Tests were administered individually and anonymously through an untimed online survey (Figure 1).

Scoring: An indexed incidental memory score (IMS) was calculated for each subject based on the number of words recalled on the lists not specifically memorized. For example, if a subject chose to memorize list B, the sum of scores of the words remembered on list A, C, and D became the IMS for that subject.

RESULTS

> NIM was found as highly significant effect of IMS with a large effect size (t(97) = 5.884, p < .001; d = 1.19).

> Between-subjects ANOVA demonstrated no significant effect of sex (F(1,97) = 28.2, p = .001), year in school (F(3,97) = .22, p = .87), or on the interaction between sex and year in school (F(3,97) = .90, p = .45).

DISCUSSION

NIM – peripheral memory: NIM has a powerful effect: the mind is incapable of wholly blocking out juxtaposed material; rather, it functions similarly to the eye so that there is one area of main focus but also a wider range of peripheral vision that is automatically processed as well. If surrounding material is helpful, overall learning improves2.

NIM is not like explicit memory: Explicit memory shows differences in sex and education level. Although this study used only pilot data, it may be tentatively concluded that NIM does not develop like explicit memory.

Teaching to the test: Highlighting key concepts to be learned for examination is not necessarily harmful to students’ learning. Students who study material specifically for a test will demonstrate NIM and show increased overall learning as long as the surrounding material contains supportive and related content3.

REFERENCES


Figure 1. A sample test for NIM.

Figure 2. All groups demonstrated comparable amounts of NIM. Error bars indicate one standard deviation.