

# Traditional classroom teaching enhanced with a web complement / Dan Cern

## Abstract

### Background

Use of Internet as a teaching aid is old news in various formats. Studies relate to online, Web enhancement of traditional learning, and to a hybrid approach in which curriculum is divided between traditional and online methods. Vast research was done on these topics with adults. mainly university students. Few if any studies used high school pupils as subjects.

### Purpose

This paper describes an attempt to assist English as Foreign Language (EFL) pupils by adding to their traditional face-to-face high school lessons a supportive Website. The Website offered both ongoing reinforcement to pupils who needed lesson summaries and specific assistance before tests to those who chose to use it. The core interest of this research is to analyze the effect such a site has on its users. This effect relates to both student marks and to student attitudes towards benefits they attributed to the Website. The intended benefits included substantive help, emotional help and improved personal communications with the teacher.

### Methodology

This quantitative research analyzes the four quarterly test marks and questionnaire forms of 320 pupils of the 7<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> grades in a public Israeli high school. The Website, designed at an amateur level, provided continual assistance. This included lesson summaries, preparation papers before tests, and examples of previous tests as given in class. Shortly after a test was conducted, the site supplied each student with the correct answers and his own test grade. The use of site was on voluntary basis as it did not supply exclusive material.

### Results

The results of this research are divided into three categories.

1. Finding a linear dependence between student satisfaction and achievements on tests.
2. Finding the correlation between usage of site and achievements on tests.
3. Characterizing the relations between gender and test achievements among Site users.

Factor analysis made it possible to relate to three individual aspects of satisfaction. Each of these factors can be represented by a linear equation showing magnitude of a connection between a satisfaction factor and test results. The minus sign in each equation is derived from the questionnaire structure in which greater satisfaction meant lower numerical grading. Pupils who felt that the site answers their personal needs regarding the issue related to in the questionnaire, were asked to express it by marking any rubric between '1' for ascribing significant help to the site and '4' for not getting any help from the site.

### *Substantive Help*

The equation  $y = 81.751 - 4.83x$  expresses the connection between satisfaction from substantive help and test achievements. This factor represents factual help given by the site such as lesson summaries and preparation papers for upcoming tests and any information conveyed in classroom.

### *Motivation*

Pupils attributed improvement in motivation to the site. Improvement in attitude towards English as a school subject, lessening dependence on help from others and improvement in feeling of readiness are all parts of that reported notion. This factor's influence on final mark is phrased in the equation  $y = 82.435 - 4.68x$ .

### *Teacher-Pupil Connection*

The site has also contributed to some pupils' feeling of improvement in the connection between the teacher and his pupil. This connection is given by the equation  $y=81.313 - 4.289x$ .

### *Between-Subjects Effects*

The average grades of site users were higher than those of the control group in statistically significant manner. Site users were found to have a six point average advantage with confidence level of 99.6%.

Within-Subjects Effects: The internal correlation of grades within each group reached a significance of 0.002.

### *Interaction*

The interaction between test events and groups yielded a significance of 0.038.

### **Gender**

Addressing the relationship between gender and success on tests adds another dimension to this work. On average, girls were found leading with higher test scores on each of the quarterly tests with an average advantage of three points. This gap lacks significance and thus cannot serve as proof that gender explains the found gap.

### **Conclusion**

This work adds value by focusing on a high school population, rather than the customary university population. In that perspective, this research serves as a milestone pointing to future work on this population. Other than pure academic value it suggests an efficient and cost effective option for improving success rates of high school pupils.

This work demonstrates how a website which serves as a resource for pupils and enhances their skills and success rates significantly.

### **System No.**

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