

# Refining and Disseminating HealthyU: A Health Science Learning Journey

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## Background

According to the Center for Disease Control, the prevalence of children who are overweight has more than doubled in the last twenty years. To address the health threat posed by childhood obesity and lack of health education in underserved schools, interventions are necessary not only to reverse current obesity trends but also to empower youth to develop positive, healthy behaviors that improve their chances of academic, professional, and personal success. We proposed an innovative educational intervention that could be integrated into the regular school curriculum and be used by students, teachers, parents, and community members.



## Community Partner

We partnered with three Redwood City School District (RCSd) schools: Hoover School, Selby Lane School, and McKinley Institute of Technology. RCSd is a diverse school district in San Mateo County that is “committed to the success of each and every student” by “developing students’ full range of developmental needs, intellectual, physical, mental, and social-emotional” (<http://www.rcsd.k12.ca.us>). Through the leadership of its committed staff, the district has continued to strengthen ongoing collaborations with local community organizations and Stanford University in order to provide unique and innovative opportunities for their students.

## Project Description & Goals

### Phase I

With support from the K-12 Initiative (2008-09), **HealthyU** was created as a science-based health education curriculum focusing on four content areas. This model was tested among 300 7<sup>th</sup> grade students at Kennedy Middle School in Redwood City, CA.

### Phase II

With support from an Office of Community Health Seed Grant (2009-10), we tested the revised web based model among approximately 250 7<sup>th</sup> grade students in partnership with Hoover School, Selby Lane, and McKinley Institute of Technology, three Redwood City School District schools.

### Project Goals

- (1) To further refine the curricula to develop the sustainability of its use after the duration of the project year.
- (2) To implement and evaluate the revised web-based curricula among participating students.
- (3) To assess the web-based module’s impact on changing knowledge of basic health science and healthy behavior.

## Methodology

### Participants

Approximately 250 7<sup>th</sup> grade students of diverse ethnicities from Hoover, Selby Lane, and McKinley, with supervision from 7<sup>th</sup> grade science and physical education teachers.

### Intervention

Four web-based health education modules, in conjunction with regular school curriculum.

- Healthy Weight
- Physical Activity
- Nutrition
- Sleep

### Assessment

Students completed pre and post questionnaires on knowledge and healthy behavior.

### Analysis

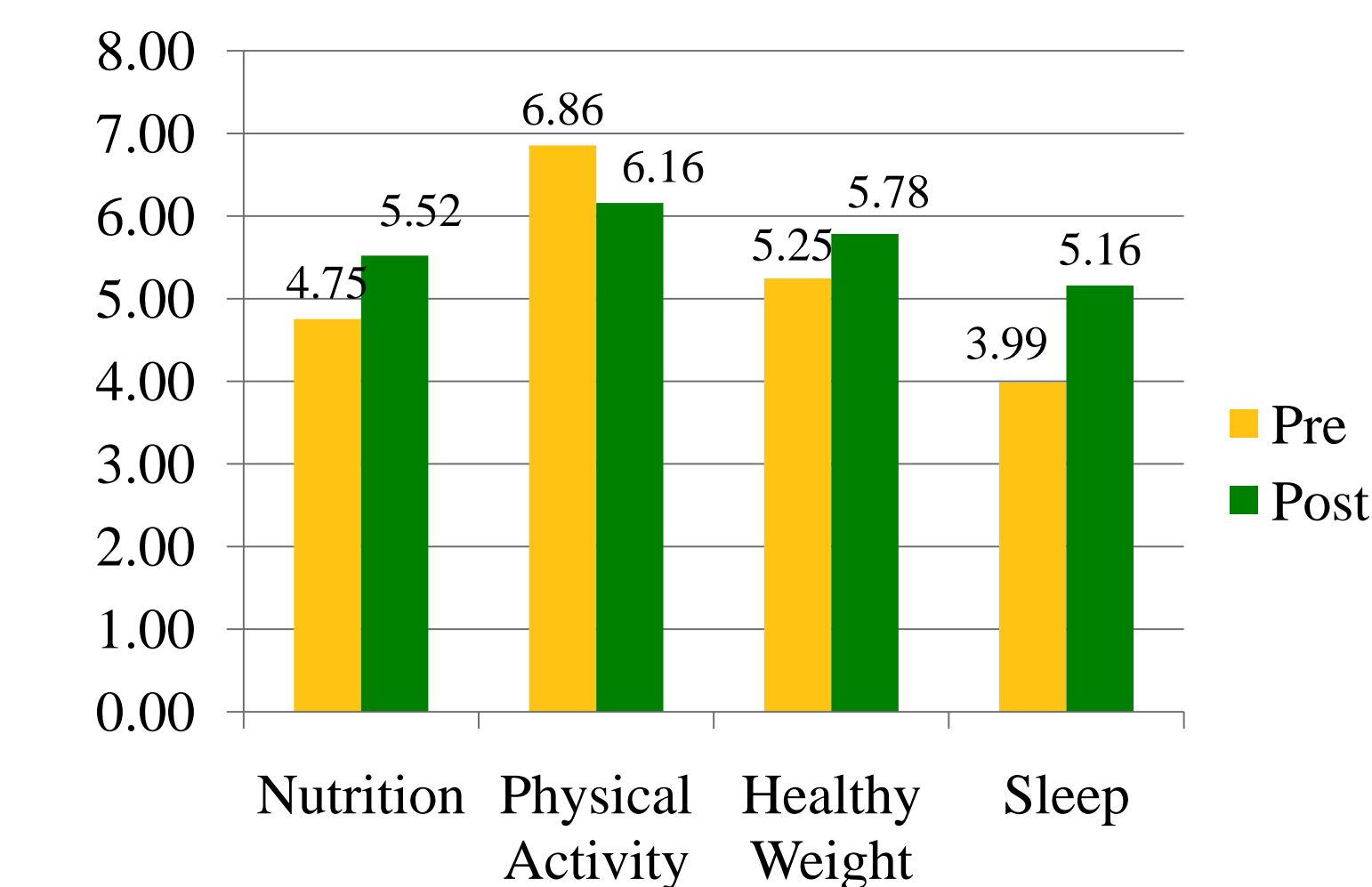
Statistical analysis of matched pre-post questionnaires to evaluate change in knowledge and/or healthy behavior.

## Results

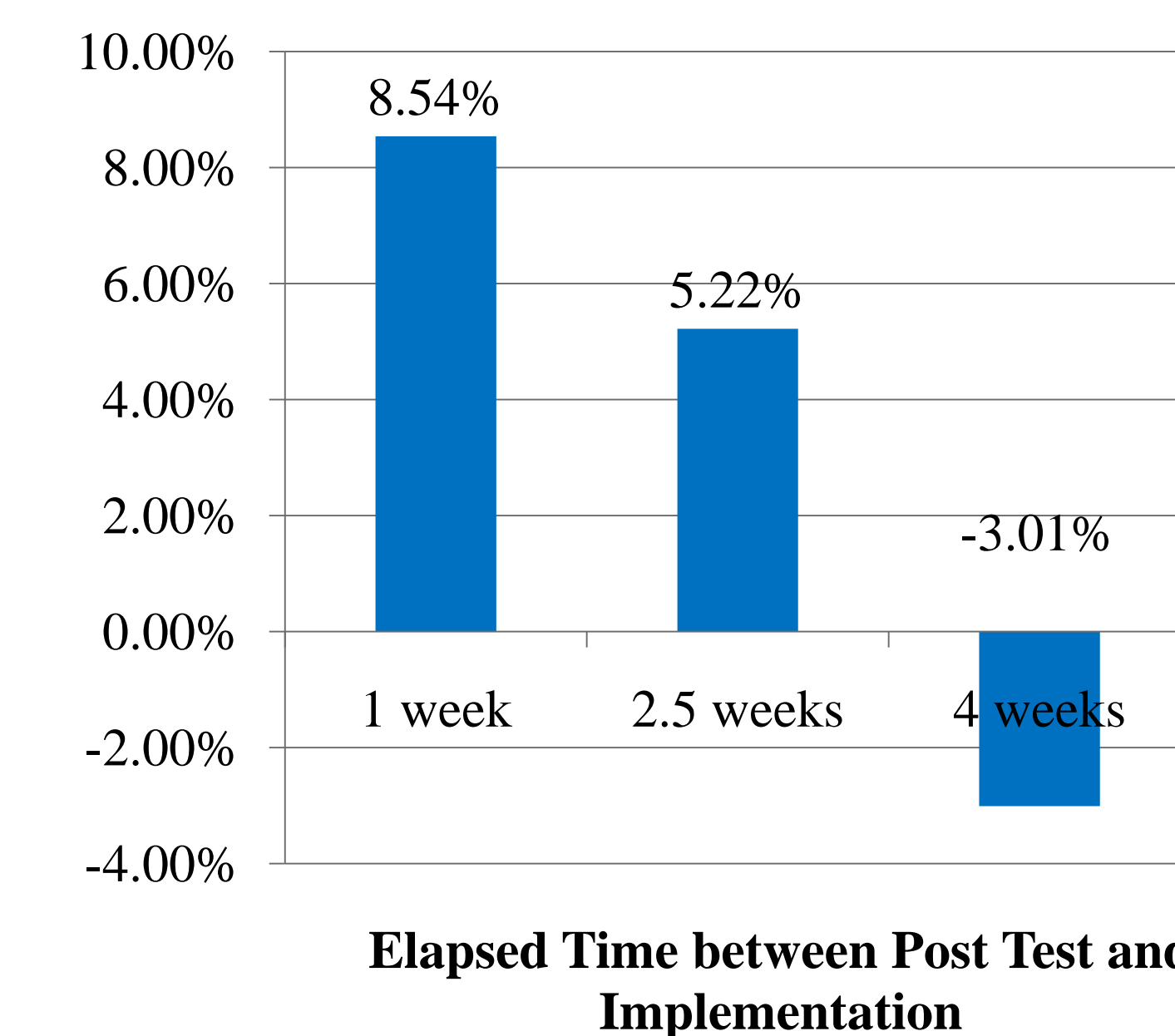
- Successful in accomplishing three project goals.
- Students who received the web-based modules showed a modest but promising overall knowledge improvement. Increase in sleep knowledge was the largest, statistically significant change among all students.
- Observed short-term statistically significant increase in knowledge one week after implementation. After four weeks, initial benefits were no longer visible. We are currently investigating ways to improve the retention of knowledge over a longer period of time.

## Results (cont.)

**Figure 1. Change in Mean Pre-Post Knowledge Score, 1 Week after Implementation**



**Figure 2. Percent Change in Pre-Post Knowledge Scores, by Elapsed Time**



**Table 1. Change in Mean Pre-Post Behavior Score, by Individual Questions (Selected)**

Question	Category	% Change
During the past 30 days, did you do any of the following things to lose weight or to keep from gaining weight? Eat less food, fewer calories, or foods low in fat	Positive Healthy Weight Behavior	6.29%*
During the past 30 days, did you do any of the following things to lose weight or to keep from gaining weight? Go without eating for 24 hours or more (also called fasting)	Negative Healthy Weight Behavior	-3.70%*

\*Statistically significant at  $p < 0.05$ .

## Conclusion

### Lessons Learned

- With continued dissemination and evaluation, this model has the potential to aid schools in the transformative shift towards positive health behaviors.
- Approaches to improve retention of knowledge and behavior change are necessary. We are currently exploring ways to address this issue.

### Plans for Continued Development

- Dissemination of web-based tool to Redwood City School District teachers.
- Expansion and improvement of current program with new elements to increase knowledge and behavior change and retention.

The HealthyU curriculum is free and available online for educational purposes with previous notification to the investigators as described on the main page. For more information, please visit: <http://healthyu.stanford.edu>.

### Acknowledgements

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