ABSTRACT

The purpose of this pilot study is to design and implement an innovative classroom-based nutrition education study that involves using the five senses (sight, smell, touch, taste, hearing) in order to teach preschool children about exotic, locally available fruits and vegetables. During the six-week project time-frame, trained student research project assistants introduced the children (n=150) to the respective fruit or vegetable for that day through an activity, which involved music, dance, book reading, arts and crafts, or movement. Children tasted pre-weighed portions of the featured fruit/vegetable upon completion of lesson plan for that day. Using videotaped observations and rating scales, research assistants observed the children and recorded sensory-based explorations and interactions using the Willingness to Engage and Willingness to Taste Rating scale with the fruit or vegetable and peer interactions. This presentation will highlight methodological protocols planned for video-coding sensory observations and peer interactions.

METHODS

- The video footage (6 WEEKS, >100 hrs) from the FruitZotic Research Project will be watched and coded by highly trained, independent raters for outcomes based on the state early learning metrics and early learning and development standards.
- Using the Teaching Strategies GOLD Assessment System, in partnership with teachers in 2 preschool classrooms in a local school, State Learning and Development Standards and Child Assessment Portfolio Objectives will be identified.
- Children’s sensory exploration focused video-coding web plan will be designed by Technology Leader (Ganguri, Harish) to expand on the Standards and Objectives related to domains: social-emotional, physical, language, cognitive, literacy, science, and the arts.
- A subset of the videos will be rated online by Technology-led Team using an observational protocol addressing science standards to support learning/assessment in an early childhood classroom for assessing Willingness to Engage, Explore and Taste.
- For example, children will be rated on a Level of 1-9 (Figure 2) for using their senses to observe the results of their explorations, which is a basic science skill.

RESULTS: Documented Sensory Learning

- Children were given a *pre-weighed sample of the fruit or vegetable (4.0 g sample per fruit or vegetable)
- Prompts and questions guided the children through sensory exploration
- Use your magnifying glass to make the vegetable bigger, like this.
- What color is the vegetable?
- What does the vegetable smell like?
- What does it sound like when you break it apart?
- Touch the vegetable with your fingers. What does it feel like?

*Ohrus Scale CL Series Model 201

STUDY AIM AND SCIENTIFIC RATIONALE

- To develop evidence-based (1, 2) child-outcomes based protocols for video-coding sensory observations and peer interactions in the context of a classroom sensory intervention aimed at children's engagement with and consumption of locally available exotic varieties of fruits and vegetables –food/nutrition and movement strategies.
- “Child based outcome (CBO) standards” are defined as State based expectations for what young children should know and be able to do prior to entering kindergarten.
- RATIONALE: A key science learning standard for young children is to understand and apply the skills of scientific inquiry (National Research Council 1996).

INTRODUCTION: (Exotic varieties) Fruits & Vegetables are Flavonoid/Antioxidant Sources; However uninvestigated critical research area in Sensory Exploration with Children.

RESULTS: Documented Sensory Learning

Table 1. FruitZotic Sensory Intervention ( FOR LESSON PLANS, PLEASE CONTACT Kannan @ srmathik@gmail.com

<table>
<thead>
<tr>
<th>Fruit/vegetable weight (g)</th>
<th>Pre-fruit/vegetable weight (g)</th>
<th>Post-fruit/vegetable weight (g)</th>
<th>Consumption: Total Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children were given a *pre-weighed sample of the fruit or vegetable (4.0 g sample per fruit or vegetable)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 0= not willing; 1=examined 2=licked only; 3= spit out 4=swallowed 1 or more bites 5= finished serving 6= asked for more 0-5 used for willingness 3-6 used for preferences

CONCLUSIONS

To our knowledge, this is the first study where young children’s classroom video data will be evaluated for sensory exploration using state learning standards, and validated with willingness and preferences for each fruit and vegetable at baseline, during intervention and at follow-up.

7 point scale, ranging from 0 to 6

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