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- EU Forum
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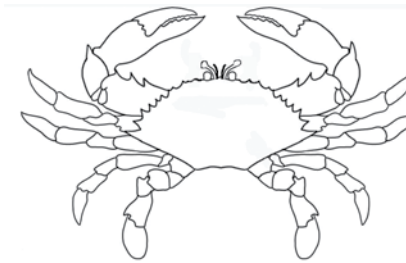


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Study Examines Preschoolers' Responses To Seafood Safety, Sustainability Concepts

Safety



- The fish has no bugs.
- The fish has no garbage.
- Eating this fish will not cause disease.

Sustainability



- The fishermen do not kill baby fish.
- The fishermen do not kill all fish.
- The fishermen do not pollute.

Figure 1. Most popular ideas associated with study logos.

Summary:

The authors recently conducted a study in which 3- to 5-year-old pupils were introduced to seafood safety and sustainability. The study used cartoon logos to identify the two concepts and ideas associated with them. While both cartoons were identically important before the instruction on seafood began, the logo for safety grew in importance to older pupils after the study program. Results also suggested that children are more likely to prefer processed seafood over fresh forms.

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Results from a recent Food Consumption Panel of the Spanish Ministry of Fisheries that indicated seafood consumption rates at half the national average in families with young children made authorities focus on this market segment with actions intended to increase seafood consumption among children.

Educational activities at schools have shown positive effects in children's behaviors toward foods in different countries with different scopes. They can

focus on sensorial aspects of food, like the taste of seafood, as well as other behavioral components like attitudes, perceptions and the development of responsible purchasing habits. Various research has shown evidence of the influence of information about seafood safety and the use of sustainable fishing practices on purchasers' decisions on seafood.

Case Study

The authors recently conducted a case

study in which 3- to 5-year-old pupils in the first stages of their education at Colegio Kostka in Santander, Spain, were introduced to the concepts of food safety and sustainability related to seafood consumption. Animal cartoons were used as logos to communicate conditions of safety and sustainability in a program as part of a wider school activity. When the concepts were understood, the influence of these ideas on children's choices for hake dishes was tested.

The goals of the study were to test how the school-based activities on seafood safety and fisheries sustainability would affect children's preferences for seafood during the early stages of development of their cognitive skills, as well as differences in the ability to understand the concepts. The study also tested children's preferences in levels of seafood processing and how they were affected by claims about seafood safety and sustainability.

Methods, Materials

A discrete choice experiment design was chosen as a feasible way to obtain reliable information on the preferences of children at this young age. The experiment was conducted in two waves: before and after a three-month school activity related to "man and the sea." The sample of 75 children was divided by age into three equal groups.

Two cartoons were used as logos to reflect program ideas. In contrast to the concept of food safety, the meaning of the term fisheries sustainability still remains unclear for many adult consumers. In order to help the children build a comprehensive concept of the issue, a workable definition based on contributions from the literature on fisheries sustainability was used to teach the children.

The most popular ideas associated by children with the animal logos are presented in Figure 1. Teachers introduced these concepts to the children in weekly half-hour sessions, extended with two outdoor visits and a discussion to reinforce the material.

Both logos were used, along with four presentations of hake – steak with skin

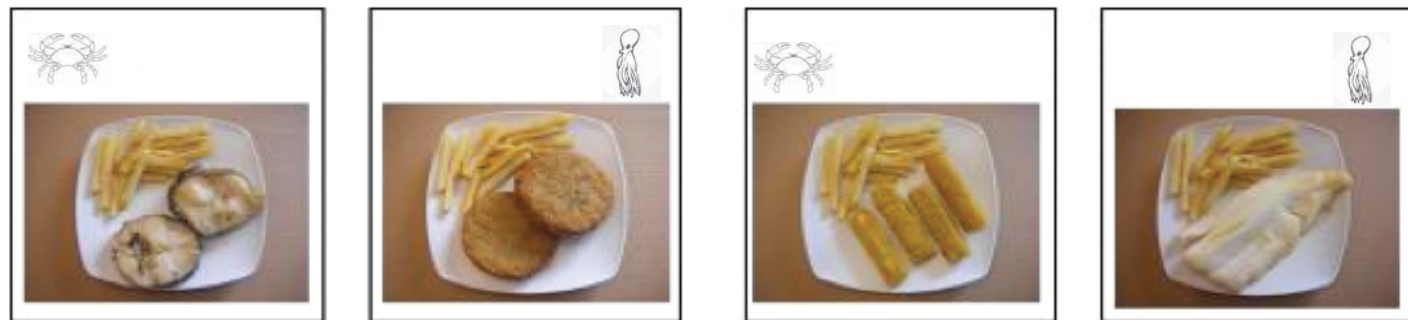


Figure 2. Example of a choice set.

and bones, a boneless fillet, “fish fingers” and a “fishburger” – in a design of eight sets with four choices per set (Figure 2). On each of the eight sets, the children were to indicate the “fish they would like to eat” and make a single choice from each four.

Results

In the first part of the study, performed one week before the educational activity started, the children were not aware of the meaning of the two logos. Choices were driven by the visual attraction of the items presented, which also reflected the children’s previous preferences. The second experiment was performed one week after the activity ended, and a previous test verified that the chil-

dren were able to identify and explain the meanings of the logos.

In the verification test, children were asked to tell the names of the logos and some ideas related to them in a spontaneous way. Results from this test varied according to the children’s ages (Table 1). More than half of the children over 4 years old succeeded when asked about the duties of the animals in the logos, while only 13% of those in the 3 year-old group could recall any of them.

A similar result, with higher rates of success, was obtained when the children were asked to assign duties to logos from a list of six, three per logo. Finally, the children were asked which of the logo “pets” they preferred, revealing a strong preference for the crab in the older

groups and a 50% split among the 3-year-olds.

Sustainability To Safety

Results from the second experiment showed significant differences in the importance of the logos in choice decisions. While both cartoons were identically important in the first experiment, the logo for sustainability receded, and the one for safety grew in importance. This result was consistent with the pre-operational stage in Piaget’s theory of cognitive development, which says that the children at this stage are egocentric in their decisions, having a limited understanding of the consequences on their environment.

Results for both experiments also sug-

Table 1. Results from the verification test for meaning of logos.

Age	Crab		Octopus		Preference	
	Name	Duties	Name	Duties	Crab	Octopus
3	39.1%	13.0%	4.3%	13.0%	47.8%	52.2%
4	61.5%	57.7%	26.9%	61.5%	73.1%	26.9%
5	88.5%	65.4%	73.1%	69.2%	80.8%	19.2%

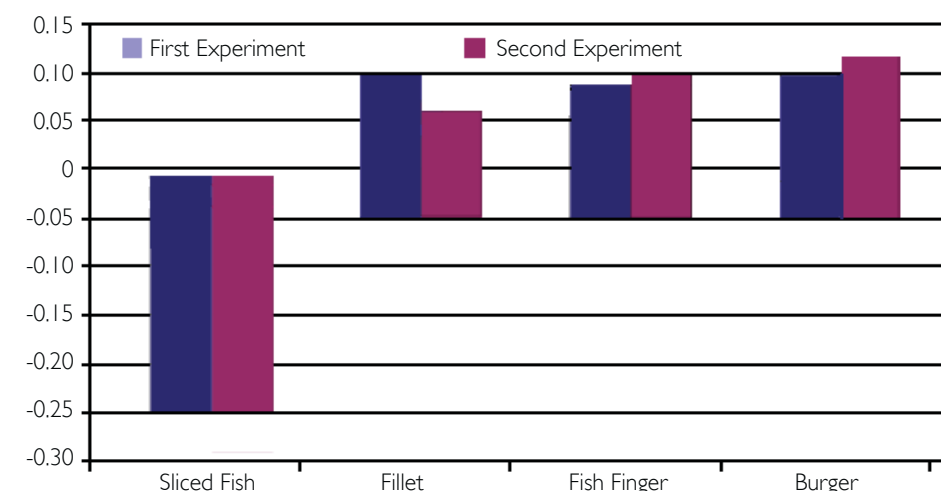


Figure 3. Preferences for processing levels of fish.

gested that children are more likely to prefer a dish of seafood when it is processed (Figure 3). Increased preference for the hake burger, a product not present

in the market, in the second experiment may be associated with decreasing levels of novelty.

Observations

The main conclusion that can be derived from the results is that educational programs focused on promoting responsible seafood consumption can be effective in children even in the preoperational stage. Well-conducted programs can influence children’s choices with respect to what seafood should be eaten and which should be rejected. The effectiveness of these programs varies across ages, and they seem to work better with older age groups.

In the preoperational stage of cognitive development, children are egocentric in their decisions. This feature in the behavior of the children studied could have made them more receptive to the ideas related with safety, indicating direct and personal avoidance of risk, than to those about sustainability, from which consequences for the individual are indirect and less understood.

Finally, as expected, children preferred processed seafood to unprocessed. This factor may be stronger in countries and cultures with low levels of seafood consumption. Processed products tend to be preferred by children, as they remove some of the perceived barriers.

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