

ACA Chefs Adopt a School

An evaluation

Executive summary

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Introduction

This document summarises an evaluation of a cooking in schools initiative called Chefs Adopt a School (CAAS) which is delivered by the Academy of Culinary Arts.¹ This initiative can be delivered anywhere in the country subject to demand and resources. At present, sessions are provided in North West and South West England, the Midlands and East and West London. Delivered by professional chefs, the programme aim is to teach children about food, food provenance, health, nutrition and cookery. Research was informed by a rapid systematic review of the existing literature on cooking in schools.

The evaluation has been carried out at a time when cooking in schools is being put forward as a solution to improving diets and reducing obesity. This evaluation is currently the only evaluation of school cooking in the UK that measures outcomes that impact on health, such as: eating behaviours, cooking confidence and confidence asking for fruit, vegetable and ingredients at home. As such, it can inform future UK school cooking initiative evaluations and interventions. It also highlights the need to incorporate evaluation into school cooking initiatives as the findings can provide valuable information necessary to fine tune an intervention.

In the core programme, chefs link with local schools, usually primary, where they deliver 2-3 sessions to one year group within a school. This process is then repeated each year. Key issues covered include hygiene, healthy eating, an appreciation of food through the senses (particularly taste) and practical cooking/food preparation. The second and third sessions are always practical.

Methodology

The evaluation sample comprised two similar groups of children in years 4 and 5 at primary school in England (with an age range of 9-11 years). There were 4 schools in each group, one in each of the following areas: North West England, Midlands, West London and East London. For each school in the intervention group a similar school (matched for geographical region and Free School Meal Entitlement) was included in the control group. Schools in the control group were expecting a Chefs Adopt a School session in the following academic year, and were therefore delayed intervention.

The key outcome measured was cooking confidence score. A power calculation was undertaken to determine the minimum sample size needed in the intervention group to measure a real change in cooking confidence (for any changes to be measured with confidence this meant there needed to be a minimum of 63 in each group). The final sample comprised 86 pupils in the intervention group and 83 pupils in the delayed intervention group. Having more than this minimum number of children in each group indicates that any changes in cooking confidence were not likely to be due to chance.

¹ Academy of Culinary Arts website: www.academyofculinaryarts.org.uk

A questionnaire was designed in consultation with chefs, teachers, children, and an expert reference group. It was piloted and tested for reliability and there was found to be a relatively high correlation between the answers given each time. Questions were included to collect data on attitude to the CAAS session and cooking, cooking confidence, vegetable consumption, confidence asking for foods and ingredients at home and hand washing habits during food preparation. Data was collected before the chef went into the school and 2-4 weeks after the cooking session.

The pilot provided an opportunity to consult with prospective participants and an opportunity to test the reliability of the questionnaire. Amendments were made to the questionnaire as a result of this consultation with pupils. The questionnaire was administered on two occasions in a two week period to assess reliability (i.e. consistency of a measure from one time to another) and was found to be sufficiently reliable.²

Key findings

Cooking attitude

To assess the children's attitude to their session with the chef and cooking generally they were asked if they would like another session with the chef, the aspects of the session they enjoyed and what other activities they would like to do:

- Overwhelmingly children reported enjoying the session: 89% stating that they would like another session with the chef. Reasons given included: to make more dishes, cook more, to use the oven, to have the opportunity to taste new foods and flavours, because they enjoyed the first session and they wanted to learn more about food.
- The key components the children enjoyed were: tasting new foods (76%), making the dish (66%), learning about new foods (55%) learning new cutting skills (48%) and meeting the chef (48%).
- The session with the chef made most children want to cook a lot or a bit more (78%).
- While 9% either answered that they did not like cooking or the session did not make them want to cook more, all but 1 of these children would have liked another session with the chef.
- Children were asked what other things they would have liked to have done in the sessions; there were four key areas of focus. These were: more opportunity and time too cook and prepare food (33%), more opportunity to taste new foods (20%), more autonomy and involvement in practical activities and opportunity to learn new skills (10%). Twenty two percent were happy with the sessions and would not have changed anything.

²When using an instrument for evaluation with groups of children the instrument is considered sufficiently sensitive and reliable at the 0.6 level: Townsend ref Carmines EG, Zeller RA. Reliability and Validity Assessment. Newbury Park, CA: Sage Publications, 1979, in Townsend et al (2006)

Cooking confidence

Children were asked how confident they were in four key cooking tasks: cutting fruit and vegetables, measuring ingredients, following recipe instructions and making a pasta salad.

- From the answers given a cooking confidence scale was devised from 1-4 where 1 was low confidence and 4 was high confidence. Following the session with the chef, the average cooking confidence score increased from 3.09 to 3.35 (by 0.26 points) in the intervention group - a statistically significant improvement.
- The biggest confidence change in a specific skill was observed in the percentage of children who reported being able to make pasta salad by themselves (from 26% to 54% post intervention).
- Children who attended schools in deprived areas (measured by the percentage free school meal entitlement) were likely to have a lower confidence gain compared to children attending schools in less deprived areas.
- Thirteen pupils from schools in deprived areas reported reduced cooking confidence after the session with the chef. While 2% pupils from schools in less deprived areas reported a fall in cooking confidence following the session with the chef.
- Across schools in all areas 25% pupils reported no change in cooking confidence.

Vegetable consumption

Children were asked how often they had eaten 5 vegetables in the previous week (cucumber, tomato, peas, celery and red pepper). These vegetables were included in the pasta salad made during the CAAS session and their responses were translated to a scale of 1-4 (where 1 indicated low consumption and 4 was high).

- Children's average reported vegetable consumption increased after the session with the chef, with the consumption score increasing from 2.24 to 2.46 points (0.22 points) again, a statistically significant increase.
- No significant changes were observed in the control group and, in fact average consumption of the 5 vegetables decreased slightly by 0.03 points from 2.58 to 2.55 points.
- While average consumption of all vegetables increased after the session with the chef in the intervention group, the only statistically significant increase was in individual vegetable consumption and related to cucumber consumption (from 37% to 52% post intervention).
- When controlling for variables that might have affected consumption (gender, geographical area, Free School Meal Entitlement) intervention group was found to have a significant impact on average reported vegetable consumption.

Asking confidence

Questions were asked to measure whether the intervention impacted on children's confidence to ask for vegetables and other foods and ingredients at home. Although the intervention was small, this data was collected to assess the *potential* to affect attitude, confidence and eating behaviour in the home environment:

- Compared to the control group children in the intervention group reported a significant increased confidence in asking a parent to buy ingredients for a pasta salad from 50% to 73% post intervention. While in the same group there was no increased confidence in asking for favourite sweets.
- Compared to the control group, children in the intervention group reported increased confidence in picking out the ingredients for a pasta salad whilst shopping (from 59% to 82% - approaching statistical significance). In the control group there was also an increase in confidence (from 66% to 74%). Despite there being no significant difference between the groups it is worth noting that the percentage of children who reported lack of confidence (either answering “*I am not sure about doing*” this or “*I can’t do this*”) in the intervention group fell from 42% to 18% post intervention and in the control group from 34% to 27%.
- Compared to the control group, children in the intervention group reported a significant increased confidence in asking for their favourite vegetable for dinner (from 60% to 74% post intervention).
- There was a slight increase in the percentage of children who claimed to feel able to ask for their favourite fruit for dinner (64% to 72% in the intervention group and 81% to 89% in the control group). The change in both groups indicates there was no difference between the two groups.

Discussion and conclusions

Pupils were enthusiastic and engaged by the Chefs session. They were eager to learn how to cook, practice food preparation skills and taste new foods. This attitude represents a great opportunity to teach children healthier eating habits through practical cooking. The positive attitude towards the sessions may well be in part due to them being delivered by a chef, an adult outside of their school environment. With so many chefs’ presenting cookery programmes on television they have a certain status in society that children may respond well to.

The findings regarding asking confidence in the home indicate that eating behaviour and cooking confidence changes could be transferred to the home environment.

While changes in cooking confidence, vegetable consumption and asking confidence were small and distinct, that a small scale intervention has an impact is encouraging. The findings suggest that if more practical sessions were undertaken with pupils, a greater long-term impact could be achieved.

The trend for pupils from deprived areas achieving a lower cooking confidence was only observed in the intervention group and indicated a significant association between free school meal entitlement of school and intervention. It may be that children’s confidence was reduced when during the practical session they realised the skill level needed to prepare and cook dishes and recognised they were yet to achieve this. Similarly the session may have caused them to draw comparisons with cooking at home, where it is possible that due to poor food access, low income and/or a lack of cooking skills, meals are not prepared from fresh ingredients. Without measuring free school meal entitlement on an individual basis and relating to the individual outcomes it is impossible to reach conclusions regarding this association.

To mediate specific outcomes, sessions need to be standardised without stifling individual chef's creativity. This would ensure chefs were working to a common agenda. It may result in greater, measureable impact, particularly if combined with a higher dose (more practical sessions).

Overall the classes encouraged young people to learn more about food, practice food preparation skills and increase vegetable consumption. Significant among these was the reported increase in cooking confidence.