

Children Challenging Industry Humber Region Report, 2000-2003

Executive Summary

Classroom based training, consisting of three 2½-hour sessions, was delivered to primary school teachers and their year 5 and 6 pupils. The children completed one of four topics on offer, chosen by the teacher. These were, Water for Industry, A Pinch of Salt, Plastics Playtime and Exploring Colour and Industry.



The advisory teachers demonstrated how industry could be used as a resource, by providing a real and motivating context in which to teach science. The classroom activities were set within an industrial context, and 65% of children also visited one of fifteen possible industrial sites. The advisory teacher conducted a 1½-hour training session on science - industry links for the whole staff in each school.

The Children Challenging Industry (CCI) Project aims were as follows:

- Provide classroom-based training for teachers in aspects of the National Curriculum for science
- Improve primary school children's perception of the chemical industry and its relationship with science
- Increase children's enjoyment of science
- Improve teachers' knowledge and confidence of teaching science
- Improve teachers' perception of the chemical industry and its relationship with science.

Children's data

323 children returned questionnaires from the year 2000 to 2003, before and after the CCI project.

The children were asked about the environment of industrial sites. Before the project the predominant view of industry was that it was noisy, smelly, dirty and hot with many people working on production lines.

After the CCI project the children who had visited an industrial site portrayed a significantly more accurate view of industry. They were more likely to say that an industrial site was quiet, pleasant smelling, cool and light. This group of children was also more likely to say there were fewer people but many machines on industrial sites.

By the end of the CCI project, all the children, whether they had been on a site visit or not, were significantly more likely to say that industrial sites were safe.

The children drew pictures of their perceptions of industry, both before and after the project. They were scored, with a positive score indicating a more informed image as a

result of the project. The children's drawings of the inside and outside of an industrial site were significantly more detailed and accurate after the project. The children who had been on a site visit were particularly more likely to attain a higher positive score than the children who had classroom lessons only.

The children were asked to draw someone in industry and give this person a job title. After the project, the two jobs that children were significantly more likely to mention were scientist and engineer. The children were seven times more likely to draw a scientist or an engineer while the number of children drawing a 'materials handler' dramatically decreased. When asked to list other jobs carried out on industrial sites children were also far more likely to list scientist or engineer.

When asked which job they would choose to do in industry, the children were eight times more likely to choose scientist and five times more likely to choose engineer, after the CCI project. They chose scientist or engineer predominantly because they thought it would be enjoyable or fun. By the end of the project the children were significantly less likely to say that they did not want any job in industry or that they did not know which job they wanted to do.

Many of the children learnt new things about science, as shown by the number of children who said that the ingredients, or the process of making materials, were not as they expected. Virtually all the children learnt about the importance of science in industry shown by the fact that nearly all the children said scientific testing was important.

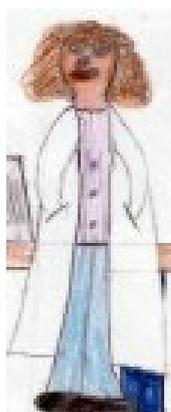
The children enjoyed the project, as shown by the number who indicated activities that interested them. The most popular activities were those that were practical based and contained new information.

These results demonstrate how much the children learnt about industry and the types of jobs in industry during the CCI project. By the end of the project the image of scientists and engineers was immensely positive. More than half of all the children mentioned that scientists and engineers worked in industry. They felt that these professional jobs were far more attractive than before the project. If these views were sustained it would be expected that the number of children who wanted to work in industry would rise.

Teachers' data

78 teachers returned questionnaires from the year 2000 to 2003, before and after the CCI project.

Many of the teachers had not had recent training in delivering the science curriculum and had no science qualifications. Training related to industry was even less common. Very few teachers had links with industry. Many teachers had not used any resources developed by industry and were not aware of any school policy of links with industry.



Teachers were more likely to teach industry in the context of geography and pollution than science.

The feedback from the training was overwhelmingly positive. The sessions were of an extremely high standard and were highly rated by all the teachers. The weakness most likely to be mentioned was that there was too much to cover.

Prior to involvement in the CCI project, when prompted, nearly all teachers thought there were positive and negative things about the chemical industry. Many teachers had not seen or received any information about the chemical industry either through resources

developed by industry or through links with the chemical industry. By the end of the project, 88% of teachers said they had learnt something about science or industry.

Those that had used resources, prior to involvement in the CCI project, were most likely to say they did so because they were free and of good educational standard.

The change in attitudes towards industrial resources that occurred during the project was impressive. All the teachers thought that industrial visits would be useful in future and 87% of teachers wanted to use resources developed by the industry after the training, compared with only half of teachers who wanted links with industry and had used industrial resources before the training.

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