

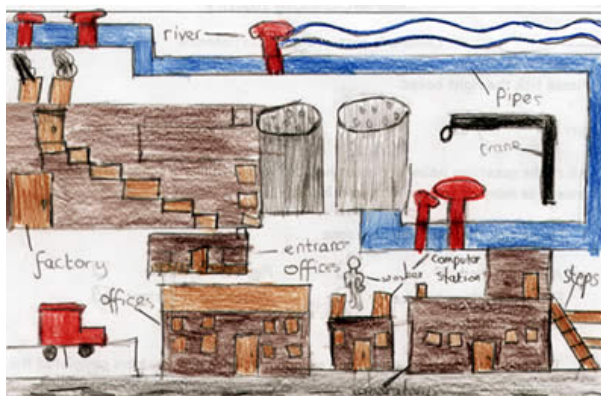
Children Challenging Industry

West Yorkshire 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 teacher demonstrated how industry could be used as a resource, by providing a real and motivating context in which to teach science. 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 are 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

28 children completed questionnaires between January and July 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 dangerous with many people working on production lines. After the CCI project the children were more likely to say that an industrial site was safe and employed fewer people than expected.

The children drew pictures of their perceptions of industry, both before and after the project. Many of the children's drawings of the internal and external views of an industrial site were more detailed after the project.

The children were asked to draw someone in industry, give this person a job title and list other jobs carried out in industry. After the project, the children were more likely to mention scientist and engineer. The children were three times more likely to mention scientist, and nearly twice as likely to mention engineer. The number of children listing or drawing a 'materials handler' (i.e. jobs involving handling materials directly, such as pouring, stirring, etc.), dramatically decreased.

After the project, when asked which job they would choose to do in industry, the children were slightly more likely to choose scientist or engineer as a job they would like to do. They were less likely to choose to be a 'materials handler'.

Nearly all the children thought scientific testing was important.

By the end of the project, the image of scientists was more positive. If these views were sustained it might be expected that the number of children who wanted to work in industry would rise.

Teachers' data

Seven teachers returned questionnaires between January and July 2003, before and after the CCI project. Two of the teachers had not had recent training in delivering the science curriculum and training related to industry was much less common with only one teacher having experienced this.

Few teachers had links with industry and only two of the teachers had used any resources developed by industry. Teachers were slightly more likely to teach industry in the context of history or geography, than science.

The feedback from the training was overwhelmingly positive. The sessions were of a high standard and were highly rated by all the teachers. The weaknesses most likely to be mentioned were that there was too much to cover and there were problems with timing in the school calendar.

Prior to involvement in CCI, when prompted, nearly all the 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, six out of the seven teachers said they had learned something about science or industry.

Those that had used resources, prior to involvement in CCI, were most likely to say they did so because they were of good educational standard, related to the national curriculum, appropriate to the age range and free.

There was a positive change in attitudes towards industrial resources by the end of the project. All the teachers thought that industrial visits would be useful in future and said they would like to use resources with industrial context in the future.

Conclusions

Although only a small sample size of 7 teachers and 28 children, this study indicated, that by the end of the project the children and teachers were more knowledgeable about industry and the role of scientists. Many of the children were able to depict industrial sites more accurately and the processes involved inside industrial sites. The teachers felt they had learned about teaching science and reported that they were more likely to use industrial resources. More children appeared to be aware of the roles of scientists and engineers, and aspired to working in these professions in the future. The teachers and children appeared to have increased their awareness of the link between science and industry. The main recommendation for the future would be to increase the proportion of children who visit an industrial site, to build on the improvements in knowledge and attitudes of children and teachers towards the chemical industry.

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