



TAILORED TRAINING STRATEGIES IN OSH FOR YOUNG PEOPLE WITH DISABILITIES

1. Organisations involved

Bugenhagen Berufsbildungswerk

2. Description of the case

2.1. Introduction

In this pilot project, educational methods and instruments were developed to promote awareness of danger and develop decision-making skills in trainees, to counter the particularly high rate of industrial accidents among trainees and workers with disabilities.

After analysing the causes of accidents, a safety workbook *Safety – there is no mystery* ('Sicherheit ist keine Hexerei') was developed tailored to the needs of the trainees in the kitchen of the Bugenhagen Berufsbildungswerk vocational workshops.

A training CD-ROM was developed by the European project partners for trainees in the following areas: general, kitchen and craft. The particular learning, physical and mental disabilities of the target group were taken into account. The training aimed not only to raise awareness of possibly dangerous situations, but to change the actual behaviour of the trainees.

The project was coordinated by Bugenhagen Berufsbildungswerk, an institution which offers vocational training and education for young people with learning and other disabilities. The work was carried out with European partners up until 2005 under the framework of the Leonardo da Vinci Programme. The partners were: Universität für Humanwissenschaften (Liechtenstein), Amadip (Spain), Astangu (Estonia), Norrängsskolan (Sweden) and Grimsby College (United Kingdom).

The Directive 2000/78/EC establishes a general framework for equal treatment in employment and occupation. It prohibits any direct or indirect discrimination based on religion or belief, disability, age or sexual orientation. The European occupational health and safety legislation gives clear responsibilities to the employer to ensure healthy and safe conditions at work. Certain groups, e.g. disabled workers, must be protected from the dangers which specifically affect them.

Workers with learning disabilities may not learn as quickly as other people and may need more support with regard to safety and health. Young people in particular lack occupational experience, training and awareness. They need good advice, OSH training and supervision. Their specific needs have to be taken into consideration in order to carry out a thorough and effective risk assessment.

Germany has a population of roughly 80 million people, of whom more than 500,000 live with a learning disability. In school this applies to about 2.5 to 3.5% of all pupils of any single grade. Only very few complete an apprenticeship in a recognised vocation. They may, however, undergo special practical training or work towards other qualifications.⁵²

The experiences of the occupational rehabilitation centres and reports of the statutory accident insurance institutions concerned (UK-Bund-Unfallkasse des Bundes, former BAfU Ausführungsbehörde für Unfallversicherung) showed that workers with disabilities have a particularly high rate of occupational accidents.⁵³ Most of these accidents can be attributed to human or organisational error.

The training of disadvantaged and disabled young people demands a high level of responsibility and heavy emphasis on preventive measures. Measures, methods and instruments have to take into account the particular intellectual, physical and mental abilities of the trainees. Employers and supervisors should adapt their training and qualification methods carefully to workers with developmental disabilities in order to meet their needs. Assessment of the



effectiveness of learning should be a continuous process, and methods should be adjusted accordingly.

2.2. Aims

The overall aim of this European pilot project was to develop standardised educational instruments and methods to raise the awareness of danger and to support sustainable decision-making skills among vocational trainees with disabilities, in order to increase the awareness about occupational health and safety based on long-term considerations. The guiding idea of the project is that, according to current knowledge, there is often a gap between information, cognition and action. So actual behaviour at the workplace cannot be changed by rules, regulations and instructions. The aims and objectives of the project are tailored to the target group, particularly with regard to vocational trainees with learning disabilities.

The goals of the project are:

- To develop educational methods and instruments for vocational training appropriate to the capabilities of trainees and workers with disabilities.
- To raise the individual's awareness of danger and heighten decision-making skills in the area of occupational health and safety.
- To reduce the number of accidents in this target group.
- To support integration of workers with disabilities in the labour market after vocational training.

2.3. What was done, and how?

Bugenhagen Berufsbildungswerk is responsible for the initial vocational training of approximately 350 young people with disabilities – particularly learning disabilities. It provides training in horticulture, metalwork and woodwork, home economics, catering, interior design, textile cleaning, environmental protection, vehicle maintenance, the retail trade, computer studies and the clerical field.

Bugenhagen Berufsbildungswerk has developed a pilot project exploring how accident prevention can be improved for disadvantaged and disabled people in particular. A European project team with partners from the UK, Spain, Sweden, Estonia and Liechtenstein researched, developed, tested and evaluated educational instruments and methods to support danger awareness and sustainable decision-making skills of trainees. The project was sponsored by the European Leonardo da Vinci programme and lasted for three years (2002-2005).

Status quo analysis

During the first project phase an analysis was carried out of the status quo in various countries concerning industrial accidents. The national legal requirements in the field of health and safety were compiled. In Germany there was a particularly high rate of occupational accidents among workers and trainees with disabilities, but there was a lack of detailed information about accident statistics for occupational rehabilitation centres. So in 2003 a survey was carried out into the accident statistics of all German occupational rehabilitation centres, in cooperation with the 'Bundesarbeitsgemeinschaft der Berufsbildungswerke'.⁵⁴ Topics of the survey were: procedures for recording accident statistics, differentiation of accidents, database of statistics, statistics and working areas, prevention measures in general, medical indication and tailored prevention measures, and individual risk assessments.

Cause of accident analysis

During the second project phase an intensive analysis of accident causes in the relevant training areas of the project partners was carried out. Bugenhagen Berufsbildungswerk worked on the kitchen training area. A risk analysis was carried out and checklists were developed.

Beyond the external risk factors relating to the wider work environment (room setup, noise, atmosphere), the workstation (mechanical and electrical hazards, hazardous substances and

CASE STUDIES

biological hazards, fire and explosion risk, thermal, physical and psychological loads) and organisational risks, individual aspects relating to increased risk of accident (medical and psychological indications) were integrated into the risk assessment.

Based on the findings of the accident and workplace analyses, training modules were developed and tested for each training area. Changes in behaviour should come about through active handling of problematic situations – training through imagination. The training strategies to be developed focused on the vocational trainees. They are actively involved in developing the process and operate as multipliers.

Two types of training material were developed:

- A safety workbook *Safety – there is no mystery*, with a witch, who doesn't like safety and composes funny poems. It is tailored to the needs of the trainees in the kitchen of the Bugenhagen Berufsbildungswerk.
- A training CD-ROM with an interactive computer-based training programme concerning general risks, risks in the kitchen and crafts: It was developed by the European project partners.

The safety workbook *Safety – there is no mystery*

Each trainee in the Bugenhagen Berufsbildungswerk kitchen gets their own workbook. It consists of laminated pages with security advice, games and other interactive training elements in eight chapters (1. Why is working in the kitchen dangerous?, 2. Recognising the dangers and risk assessment, 3. Fire protection, 4. Accident prevention, 5. Safety measures, 6. Work environment, 7. Emergency management, 8. What if something happens?). Because the users may have reading and other learning disabilities the text is shortened and simplified, and pictorial symbols are used wherever possible. The workbook has been continuously updated and adapted to the changing training requirements. The workbook is individual to the trainee and used for instructions and training during practical work in the kitchen. Because of its accessible language and its 'fun' elements it is well accepted by the trainees and their supervisors.

Figure 1. Example of safety notice



Figure 2. Example of safety notice



CASE STUDIES

The project team consisting of representatives from several European organisations developed special safety training software for trainees and workers with disabilities. The full version can be ordered from Bugenhagen Berufsbildungswerk. The aim of the interactive computer-based training programme is to improve the ability to recognise rapidly where there is a likelihood of accidents occurring. Since experience has shown that formal instruction does not always produce results, this system aims to allow the rapid and active discovery of risk areas in the work environment.

Every answer to a question receives immediate feedback. The computer-based programme works in the following way (Example – training area kitchen with danger through tools): The task is to indicate the respective risk area with the cursor by clicking the mouse. 'Smileys' then indicate whether the answer is correct, and a view is shown of the safe situation. If there are an increased number of errors, then the incorrectly answered situations will be presented again before the training session ends.

Figure 3. The trainee is shown a picture of a dan



Figure 4. The cursor in this example is at the wrong position.



Now the trainee has to click with the cursor, where the danger is and where a safety measure has to be put in place. The cursor in this example is at the wrong position.

Figure 5. The correct position of the cursor is shown



CASE STUDIES

If the cursor is at the wrong position feedback is given: The cursor click was wrong (see smiley) and the correct position of the cursor is shown (see red and white arrow).

Figure 6. Correct handling of the dangerous situation is demonstrated.



If the trainee has clicked in the right position, he immediately gets the feedback as shown in (Figure 6). The trainee examines all potentially dangerous situations in his relevant training area. Situations in which he gives the wrong answer are repeated. Right and wrong answers trigger automatic correction procedures (Tailored training) and the result is shown to the trainee by way of a graphic performance score.

The demo-version of the programme presents examples for the following risk areas:

Training area	Risk			
	Chemistry	Electricity	Tools	Traffic / Transport
General	yes	yes	no	yes
Kitchen	yes	yes	yes	no
Craft	yes	yes	yes	no

2.4. What was achieved?

The European project team developed a multifunctional programme that increases long-term awareness of health and safety prevention at the workplace. It is a flexible tool for accident prevention and safety for vocational trainees and workers with disadvantages and disabilities. The programme with various modules enables quick identification of risks and correct action in situations with high risks of accidents.

The flexible design of the programme allows for individual customising, so that various risk areas and risk situations can be adapted to the needs of the customer / user. For the trainees in the Bugenhagen Berufsbildungswerk kitchen the workbook was more useful than the computer-based programme, because it is easier to integrate in daily work in the kitchen, where there are no computers.

Problems faced

The results of European research projects are compromised by differences in best practice among national project partners. There are no resources for the dissemination of project results because of the lack of financial funding and the demands of day-to-day business.

2.5. Success factors

The main success factors were:

The tailored training strategies were developed to meet the specific needs of the target group (vocational trainees with particular learning disabilities).

CASE STUDIES

- The trainees in different vocational areas were actively involved in developing training modules.
- The computer-based programme is not dependent on language. It mainly works with images and is easily transferable for new target groups (training areas, public health and safety, etc.)
- The project received financial funding.
- The workbook can easily be updated and is now on its tenth revision.
- The workbook and the integration of occupational safety and health are widely accepted in Bugenhagen Berufsbildungswerk and have become part of their certificated Quality management system.

2.6. Further information

Contact information:

Bugenhagen Berufsbildungswerk
Mrs Denise Daude
Timmendorferstrand
GERMANY
Tel: +49 4503 604 252
E-mail: denise.daude@bugenhagen.de
Web: <http://www.bugenhagen.de>

2.7. Transferability

The well-structured process of individual development of risk assessment and tailored training materials is transferable to other vocational training institutions. The participation and support of trainees and training instructors are crucial.

3. References, resources:

- <http://osha.europa.eu/en/publications/reports/TE7809894ENC>