

equipped pedestrians the means in improving their safety during icy weather conditions.

637 ROAD SAFETY EDUCATIONAL MATERIAL BASED ON OCCUPATIONAL HEALTH AND SAFETY EDUCATION METHODS

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Background Learning from accidents is an important method for improving safety. In Finland, fatal occupational accidents are investigated. The data from the investigations is used for statistical purposes, but also to create occupational accident cases that are used for accident prevention.

Fatal road accidents are also investigated. Due to legislation, the method used for analysis is different than in occupational accidents. The data is published as statistics, but the case information is not published, although road accident cases would also be important for improving road safety.

Objective The aim of this project was to produce case-based educational material on road accidents for heavy traffic professionals. The material was produced in the same format as the accident investigation cases created for occupational accidents.

The data was gathered by the Finnish Motor Insurers' Centre. The first set of data included 10 selected fatal accidents from 1993 to 2009. The second set included 32 accidents that led to the death of the driver in a heavy vehicle from 2011 to 2013.

Results The 10 cases were edited into safety case materials and published as slide shows in 2013. The materials included short introductions to each case, background information on the accident, risk factors, and tools or ideas for avoiding similar accidents. The material was available for four teachers who used it in vocational education. The feedback was positive.

The second set of materials included three theme studies, each including several accident cases. Reports can be used by teachers or vocational education providers.

Conclusions Both materials are usable as learning material. The theme studies are available on an open access web page (<http://totti.tvl.fi>). Currently the material is only in Finnish. Case investigations about fatal occupational road accidents have not yet been published in this series, but procedures will be developed in order to conduct case investigations in the future.

638 EFFECTIVENESS OF THE HSEQ TRAINING PARKS

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Background The HSEQ Training Park concept is a unique safety innovation by which different actors of the construction industry and other branches can be trained on practical level to perform different work phases safely at construction sites. There are currently two training parks in Finland (in Espoo, founded 2009 and in Oulu (Northern Finland), 2014). The hypothesis is that the participating construction companies (and other stakeholders) in Finland benefit on this kind of participatory training approach and that the improvement can also be verified by using

quantitative indicators. The main goal for this study is to survey the effectiveness of the training park trainings in Oulu and in Espoo. The study time is from February 2015 to February 2017. Three work packages have been formed: 1) Effectiveness in Oulu training park (note that only 1–2 years of activity) 2) Effectiveness in Espoo training park (somewhat 6 years of activity) 3) A design science approach to formulating a common safety measurement criteria for member stakeholders of Turvapuisto Northern Finland (appr. 70 different stakeholders).

Methods This study is based on design science premises, i.e. the aim is to provide up-to date and valid information that can be used for improving current training parks and reasoning (or unreasoning) new training park initiatives. In order to study such a complex issues we have needed to have a multidimensional approach with both qualitative and quantitative measures. A realistic evaluation was chosen as the methodological framework for this study, as it allows such multidimensional approaches and as it has been utilised earlier in different OSH studies. We have used the Nordic Safety Climate Questionnaire (NOSACQ-50) and the focus group discussion method when studying the effectiveness of training parks in six companies.

Results The preliminary results of the NOSACQ study shows that before the visit/training in the HSEQ Training Park the seven dimensions were on average at following level (min 1, max 4): 1) management safety priority, commitment and competence: 3.43 (min 3.14, max 3.73), 2) management of safety empowerment: 3.32 (min 3.08, max 3.69), 3) management safety justice: 3.39 (min 2.90, max 3.77), 4) workers' safety commitment: 3.45 (min 3.18 max 3.73), 5) workers' safety priority and risk non-acceptance: 3.34 (min 2.99, max 3.73), 6) safety communication, learning, and trust in co-workers' safety competence: 3.38 (min 3.22, max 3.72), 7) workers' trust in the efficacy of safety systems: 3.53 (min 3.22, max 3.81). The focus group discussions pointed out the different matters in safety training which should be taken into consideration and how the HSEQ Training Parks should be developed.

Conclusions If occupational safety in the construction industry is to be improved, new innovative concepts for safety management and training are needed. Construction work is done in work environments in which employees cannot be continuously supervised. Thus in many cases, employers must place their trust in their employees' ability to perform work safely in all circumstances. Holistic, systemic safety training is one way in which to enhance employees' abilities and knowledge regarding this topic. The concept of the HSEQ Training Park as a new novel safety training innovation has been introduced in Finland. The construction process of the Training Park in Oulu shows how rival companies can jointly develop new kinds of practices when all stakeholders have a common interest in accident-free construction sites. Several educational institutions and organisations in Northern Finland have adopted Training Park training into their curriculums. Numerous new idea regarding future needs for training practices and development activities have been raised, for example, during the Training Park construction phase and in the trainer training sessions, and in organisations' and communities' own training sessions. These thoughts include a willingness to ensure that the construction industry's SMEs also apply Training Park training in their safety management practices. New practices for these purposes are planned for execution in the next few years.

This study presents the preliminary results from the NOSACQ distributed in the representatives of the six companies participating in the study. The seven dimensions which were studied were at quite high level already before the training in the Training Park. The paper will present the results in more details, e.g. the