Informal education and awareness of the public in the field of waste management

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Abstract

The modern way of life means that our basic needs are becoming greater day by day. An increasing desire for material goods and a pleasant lifestyle brings with it negative consequences such as an increasing amount of waste. Waste policy in the European Union has been envisioned through the waste management hierarchy. This system gives the greatest emphasis to waste prevention, followed by preparation for reuse, recycling, energy use and the final step, which is disposal. The main problem of excessive amounts of disposing waste in landfill is obscured in the social awareness of waste management. In Slovenia, the educational concept is built to point out and resolve the problem which we have with waste management. The educational concept is based on the raising of people’s awareness. This awareness would be achieved in two phases. The first phase of raising awareness would be achieved through the media and through the web. The target group for this phase is adults. Awareness is going to be focused on proper waste management and on the rationale of the waste hierarchy. This concept is based on content such as demonstrating the main mistakes which were made, misconceptions related to treatment and on the benefits obtained by correct handling for achieving a higher rate of waste intended for energy utilization. The second phase of awareness is defined for a target group of all kinds of educators, which could be a school teacher, waste management experts, company directors through non-formal educational mechanisms such as microtraining. In this paper we would like to point out necessity to transfer knowledge about waste management from experts to the general publics, with increasing the awareness of whole populations.

1. Introduction

The aim of presenting this paper is to develop an educational concept for solving practical problems that will help and benefit the widest possible set of people. The considered problem is environmental and comprises the area of waste management. The modern way of life in which basic needs are greater day by day because of the increasing desire for material goods and a pleasant lifestyle, is seen through a negative consequence, which is an increasing amount of waste. Basically, we asked a hypothetical question: Is the problem of waste management well enough represented in the eyes of the general public and how is it seen by experts in the field of waste management? Indeed, for most people the problem of waste is solved when the municipal services for waste take that waste away from...
their yard. Proper waste management means following the waste hierarchy, which provides the primary prevention of waste, followed by its preparation for reuse, recycling, energy use and finally disposal. People should be alert to improper conduct. They should know that waste becomes a heavy burden on the environment on the one hand and a large economic cost on the other. With proper management we can produce substantial new materials, recycled materials, energy from waste and consequently we can significantly reduce pollution. In the future it will be necessary to ensure that people change their conduct and adopt waste management as a material and energy-rich matter. For this purpose it is necessary to educate people and create awareness on proper handling and, in particular, to emphasize the importance of such thinking.

2. Definition of the Problem: How to create awareness or educate people about proper waste management?

To begin with, it is important that experts in the field of waste management give unanimous directions and a strategy for the proper management of waste. A further objective is to make people more aware of proper waste management. A major role in raising awareness about proper handling must be taken by experts who deal with the forms and methods of education in close cooperation with experts in waste management. So a connection between these two is essential. In the beginning we established the relations, views and opinions of experts in the field of waste management, on the grounds that their professional outlook on the issues would help to put together an educational plan for the wider population of Slovenia. Education should be designed to provide quick information obtained in order to provide distance learning, flexibility, individualization, lasting knowledge etc. For this purpose, this article focuses on the methods of microtraining for educators and e-learning for the general public which, jointly or individually, consist of all the properties that we have pointed out, assuming, of course, that quality is implemented.

2.1 Microtraining

The concept of microtraining was developed during European projects of the Leonardo da Vinci Programme (Perez-Moya, 2010). The aim of microtraining methodology is to improve the efficiency of learning and knowledge transfer. The microtraining method helps us to understand and apply knowledge. It is a training methodology characterized by brevity and flexibility, which focuses on promoting active learning and evaluating its long-term impact (Perez-Moya, 2010:1). The purpose of microtraining is to educate people in a short period of time, in a clear manner which is target orientated and to present certain content in an interesting and attractive way.

Microtraining seems a useful method also in our case because it is an active process of knowledge creation and training. It is implemented in social interactions outside the formal learning environments which are, for many, a repulsive form of education. Microtraining can be done in any organized institution, face to face, online or as a combination of both. The time period of particular lessons is designed for about 15 minutes of learning. The microtraining workflow (see figure 1) shows that each lesson starts actively, followed by an exercise and a short discussion, and ends with directions to further information and a brief preview of the next lesson (Perez-Moya, 2010).

![Microtraining Workflow](image)
As part of a microtraining lesson, for an active beginning in our case we start with a mental activity, which involves thinking, organizing, comparing and setting goals which have to be achieved in the education period. After that there are six minutes available for exercises, with connected activities for different learning styles. The work is performed in conjunction with texts, sounds and also with pictures. The learning process is performed on the basis of concrete examples. Feedback is given on the basis of discussions in which the experience, views and obtained knowledge are exchanged between the participants of the microtraining lesson. The microtraining leader must keep a full course in terms of verifying the understanding of the questions used in the discussion. Under the next point participants are encouraged to produce their own goals in the topic of education, discuss how the knowledge was gained and maintained in possible continuation educational topics. In the following sequence of the microtraining lesson they must determine the next topic of education (Overschie, 2007). Microtraining is suitable for those whose basic knowledge needs to be refreshed or improved and also for those who need information for immediate use in their daily lives (de Vries, 2008).

The arrangement of the microtraining lesson is basic. In the case of more lessons on one issue, all the lessons are structured in the same way with an introduction and a rounding off (see figure 1) (de Vries, 2008).

2.2 E-learning

Interpretation of the term “e-learning” varies between the professions and is quite patchy (Aberšek, 2012). One of the definitions says: “E-learning is an approach to learning and development: a collection of learning methods using digital technologies, which enable, distribute and enhance learning.” (Fee, 2009:16). According to Bregar, it is necessary to divide e-learning into informal and integrated e-learning. Integrated e-learning will be discussed in this work. We can say that this is a modern version of distance learning, so this is an educational process in which the participant is rarely or never in direct contact with his teacher (Bregar, 2010). Today, according to Ehlers (2009), we can characterize the developmental trends that relate to education:

- Education takes place at different locations in different forms and under different circumstances.
- Participants who act as learners assume the role of the organizer of the education.
- Learning is a lifelong process, not necessarily connected with educational institutions, and takes place in different periods of life.
- Learning communities can be formal or informal.
- Teachers and educational institutions are no longer major players in learning.

E-learning materials play an important role in e-learning (Aberšek, Kordigel Aberšek, 2011). When they are established it is necessary to define: who the participants of e-learning are, what the objectives are, what achievements are expected and what resources we have available to us. Preparation of e-material takes place in four steps (see Table 2): content preparation, design preparation, selection and integration of the media into the program, writing and editing text.

<table>
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<td><strong>1. Content preparation</strong></td>
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<td>1. Detailed definition of the purpose and learning goals</td>
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<td>2. Definition of the fundamental analysis of the content topics</td>
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<tr>
<td>1. Selection of media</td>
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<td>2. Properties of those media</td>
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3. Methodology of Research

Proper waste management is an area in which we want to raise awareness among a wide variety of people. In the first phase, awareness would be limited only to adult participation and (potentially educators) in the second phase would pass on to children in primary schools as well as preschool children. The adults in this case would be chosen because they may contribute to raising awareness of proper waste management in their children with their own good example. Before we deal with the preparation of e-learning materials for this field we need to do an extensive analysis on the state of current practice. We conducted a survey among experts in the waste management field regarding the ways and methods they prefer to use for their own education and also their suggestions about which methods and strategies they recommend for the awareness of the general public or, for something which is even more complex - education (Polanec, Aberšek, Glodež, 2012).

4. Discussion

Methods such as microtraining and e-learning can be used to raise people’s awareness or acquire new knowledge. The survey was made among the experts about their personal choice of educational methods and their choice of educational methods for the general public in the field of waste management. Among the experts, 48% of those surveyed prefer to educate by participation at conferences, 31% using e-materials and 20% using printed materials. For the general public, as the preferred form of education and awareness, the experts chose: 33% by systematic training, 18% of e-learning and 13% with participation at trade fairs. Following those were lectures, courses and participation at conferences, each with 9%, 3% of self-learning and 3% with guided seminars. In the future research will be done with a survey among the general public about the most common methods of education which are used. It is assumed that most of those surveyed will choose the methods associated with distance learning, methods that offer flexibility and an individual approach to learning.

5. Conclusion

This paper presents two possible methodologies to support non-formal education, which focuses primarily on adult education. In today’s rapidly-developing world, especially in the field of technology, lifelong learning is most
important. The methods which will be used depend on the basis of requested contents (needed knowledge and skills) and individual needs. Above all, it is important that in a short space of time we achieve the quality and useful knowledge and skills needed for successful integration into the social and economic environment.

Acknowledgements

Operation part is financed by the European Union, European Social Fund. Operation implemented in the framework of the Operational Programme for Human Resources Development for the Period 2007-2013, Priority axis 1: Promoting entrepreneurship and adaptability, Main type of activity 1.1.: Experts and researchers for competitive enterprises.

References