Abstract
The paper presents the results obtained during the development of a tool for mine risk education (MRE) based on entertainment-education principles that uses radio for diffusing the educational messages. The paper particularly focuses on the adaptability system conceived to make the tool suitable to different contexts, characterized by different cultures, environments and MRE related issues (such as conflict stage, type of threat, target audience ...). This methodology, still under development, uses a system of cards, questions and answers to create the script of the educational serial drama that will be radio broadcast and performed live in front of local audience.

Introduction
Billy Goat Radio is a tool aimed at spreading Mine Risk Education messages through the use of a combination of a mass medium, the radio, and a traditional medium, a simplified kind of itinerant theatre. Although the work on Billy Goat Radio is still under development as it takes place within the context of TIRAMISU research and development project started in January 2013 and ending in December 2015, it was already brought to the field for a first test between September and October 2013, when the tool has been evaluated in the Sahrawi refugee camps located in southwest of Algeria. Results achieved by the pilot Billy Goat Radio MRE campaign carried out by Snail Aid – Technology for Development in strict collaboration with Brimatech (in charge of evaluating the effective impact of the tool on the target audience) and the local organization Asociación Saharauí de Víctimas de Minas (ASAVIM) were very promising both form educational and audience’s approval point of view. During this mission, the educational serial drama was recorded and performed live by local actors in front of the public of three different refugee camps, broadcasted by Radio RASD (a local station) and followed by group discussion sessions facilitated by Snail aid, Brimatech and ASAVIM attended the same people who previously were in the audience of the live shows.
The methodology

The tool under development consists of a modular kit aimed at enabling operators to write and produce educational short serial dramas suitable to the local context, broadcast them by radio and bring them to mine affected areas during live shows followed up by group discussions.

The tool has been conceived answering the requirements of cost-efficiency, rapidity in planning and implementation, capacity building for local operators and with the goal of having the greatest possible diffusion.

The modular kit under research embeds three separate elements:

- A set of technical equipment allowing the practical production of the Billy Goat Radio tool, enabling the recording, post-production and playback of the episodes, and
- An adaptability system allowing the writing of the script of the short serial drama
- A set of guidelines for facilitating group discussions taking place after itinerant live shows in which the short serial drama episodes are performed live in front of an audience.

While the research on guidelines for group discussions is aimed at enhancing the reinforcement of messages, the liaising with the communities and the evaluation of the tool on a continuous basis, the research undergoing on the set of technical equipment is aimed at achieving a simpler user interface and a shorter post-processing time, the research undergoing on the adaptability system is aimed at creating a simple system that drives local operators into the creation of an original script for the short serial drama tailored to the local context.

The radio broadcast serial drama consists of a short story divided in six episodes. Plot characters, whose roles have been written following the Sabido’s role models structure ² [Barker et Sabido, 2005], are entrusted with the task of conveying educational messages embedded in the story. This means that the story is built around the happenings of good characters (who portray positive models), bad characters (embodying negative models), and evolving characters (who, during the plot’s development, evolve from their initial negative position to portray a positive role at the end of the story) [Scapolla et Cepolina, 2013]. The drama’s story involves universal dramatic themes such as love, money, dignity, good and evil, which could be observed in popular stories from all over the world.

The tool is therefore based both on the entertainment-education (Edutainment)¹ concept and on the identification of radio as the best communication means in terms of widespread availability and

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¹ Merriam-Webster Dictionary defines edutainment, or educational-entertainment, as any “entertainment content that is designed to educate as well as to entertain”. Descending from socio-psychology and human communication theories, entertainment-education principles aim to modify behaviour by information spreading. The Social Learning theory developed by Bandura in 1977, according to
cost-effectiveness. Serial dramas have been chosen for the purpose thanks to their high entertainment-education value, exploited world wide and in particular in developing countries where they are often used to diffuse health care messages such as family planning and HIV safe messages.

The adaptability system

Focal point of the tool is its adaptability, which should allow the tool to adhere to every different local context, both from the point of view of everyday-life mirroring, to catch the audience attention and from the point of view of MRE messages that should be appropriate to the particular threats and addressing the actual at-risk part of population. In this way, for example, a scene originally set in a café can be re-placed in a tea-room, a character who often drinks beer can become a betel leafs chewer, or a woman worker can become a housewife without having to change the whole plot structure or wasting a long time in re-writing.

Essentially, the system includes:

- two complete plots built around the positive/negative/evolving characters, written in the form of a script and suitable to be extensively but rationally adapted;
- one set of cards for each plot, containing all the different possible solutions in terms of local context’s daily life mirroring, called Dramatic Cards;
- one set of cards containing all the different possible solutions in terms of mine risk education messages, structured according to three variables: conflict stage, type of threat and target audience, called Explosive Cards;
- informational material containing technical and literary instructions and examples of already achieved projects.

The two plots have one main story and two sub-plots each: among them it’s necessary to choose the story with the highest adherence to the local context in terms of social habits and explosive threat. Each plot is supplied with a detailed description of characters and scenes in a draft version, written in English, where the parts which are susceptible of local adaptation are pointed out to the attention of the operators.

The core of the adaptability system are the two kinds of card of cards: the first one, the Dramatic Cards, about the dramatic aspects and the adherence to the social context, report questions and which individuals change behaviour by observing role models, particularly in the mass media, is the fundamental of entertainment-education projects, which, therefore, have imitation and influence as expected outcomes
possible answers related to the particular plot they refer to and to the different possible local contexts.

The other set of cards, the Explosive Cards, are relative to the diverse threats (mines, cluster bombs, UXO ...) and to the categories of people targeted by the MRE messages (unaware, uninformed, reckless, intentional at-risk people).

Dramatic cards have been developed thanks to a tree system, in which the answers to the questions included in one card lead to other questions and then to the final result.

Since the system foresees two different plots, each of them has its particular Set of Dramatic Cards (see Fig.1). Each card of both sets is associated to one character, indicated by an icon of his/her face, and contains short information about the character, a green box reporting a fact related to the character or to the dramatic situation and/or one or more questions whose answers drive the user to choose a further card. As a further step of adaptation, the green boxes can contain a suggestion dedicated to the writer, which advises her or him it is the moment to make a choice about a specific topic of the plot. The colours of each element on the card have a meaning: there is a different colour for each character, a particular colour for each role model (positive, negative or evolving role models) and a colour representing the belonging of each character to one or another family. This way the cards result immediately comprehensible and can be quickly grouped following different themes: for example it is possible to easily group all the evolving characters, or all the members of a family, or to put together all the cards relative to one character.

By choosing the cards and putting them in order on a table, the user builds a visual image of the story and its adapted features.

Figure 1– Two cards of the Dramatic Set and their contents
Not all Dramatic cards will be on the table at the end of the writing process, since many of them are only transitional elements between the start of the procedure (a not-adapted plot) and its final stage (the ready and adapted plot). The cards which report information and details useful for the final version of the plot and which will compare on the table are marked by a dotted coloured frame, as the cards on the right in the Figures 1 and 2.

Figure 2 – An example of a card selection (Dramatic Set)

The tree diagram portrayed in figure 3 was used for developing the cards of the Dramatic set for the character called Mariam and shows how the choices referred to one character have direct effect and reliance on the features of the others. The yellow frames on the right connect in fact Mariam’s literacy or illiteracy to the same features of her fiancé Yahdi, the protagonist.

The choice of cards is less complicated for the Explosive Cards set concerning the educational messages. The educational messages to choose from are included in a table developed by Snail Aid in 2013 in the attempt to merge all available data found in literature differentiating the messages used according to three variables: conflict stage, type of threat and target audience. The scheme is divided in eight sub-tables, each one dedicated to messages addressing a different type of risk-taking category. Moreover, for each type of risk taking category there are two tables: one relative to messages generally used in the case of a threat characterized by UXO/Cluster Munitions (CM) and one relative to messages generally used in the case of a threat characterized by landmines/ IEDs. Figure 4 shows as an example one of the sub-tables.
IN THE LOCAL CONTEXT ARE THERE GIRLS STUDYING ABROAD OR IN A CITY? IF YES WHERE? IF NOT WHICH OF THE FOLLOWING IS THE MOST LIKELY POSSIBILITY FOR A 23 YEARS OLD GIRL WHO IS NOT LIVING WITH HER FAMILY?

- MARIAM studies abroad
- takes care of a relative in another village / city
- works in another city /
- comes back when the son of the relative gets married
- comes back once graduated
- comes back when she
- IS IT COMMON IN THE LOCAL CONTEXT FOR A 23 YEARS OLD GIRL TO BE ABLE TO READ AND WRITE?
- can read
- can't read
- sends messages to Yahdi through Sidahmed, whose brother lives in the place where Mariam lives
- calls Yahdi with mobile / phone
- ARE MOBILE PHONES COMMONLY AVAILABLE IN THE LOCAL CONTEXT?
- NO
- YES

**Figure 4 – UXO – Cluster Munition - Reckless**

<table>
<thead>
<tr>
<th>target audience</th>
<th>conflict phase</th>
<th>different messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>women</td>
<td>young male</td>
<td>men</td>
</tr>
<tr>
<td>children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conflict past time ended</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- "make your family aware about threat and explain how people admire positive examples, not negative ones; refer to xxxxx (ONG or national call line)"
- "follow deminers recommendations, don't touch unknown objects you find outside and don't believe who says they're safe, don't be silly: your future is too important to loose your time by risking life"
- "UXO and CM are instable, may still explode even if someone already touched or moved them. It's not worth risking your life: if you want a better future, start now by avoiding touching suspicious items; refer to xxxxxxx (ONG or national call line)"
- "UXO and CM are instable and may still explode even if someone already touched or moved them. It's not worth risking your life: if you want a better future, start now by avoiding touching suspicious items; refer to xxxxxxx (ONG or national call line)"
- "be a positive example: if you want to show your bravery, report to deminers if you notice something suspicious: you can save someone's life; refer to xxxxxxx (ONG or national call line)"
- "be a positive example: as UXO and CM are instable and may still explode even if someone already touched or moved them, you can save lives by avoiding touching suspicious items; refer to xxxxxxx (ONG or national call line)"
- "be a positive example: if you want a better future for your family, start now by avoiding touching suspicious items: you can save lives, because as UXO and CM are instable, they may still explode even if someone already touched or moved them. It's not worth risking your life: if you want a better future, start now by avoiding touching suspicious items; refer to xxxxxxx (ONG or national call line)"
- "make your family aware about threat and explain how people admire positive examples, not negative ones; refer to xxxxx (ONG or national call line)"
- "don't touch unknown objects you find outside and don't believe who says they're safe, everything could be dangerous"
- "if you want to show your bravery, report to deminers if you notice something suspicious: you can save someone's life; refer to xxxxxxx (ONG or national call line)"
- don't touch unknown objects you find outside and don't believe who says they're safe, everything could be dangerous
- "be a positive example: if you want a better future for your family, start now by avoiding touching suspicious items: you can save lives, because as UXO and CM are instable, they may still explode even if someone already touched or moved them. It's not worth risking your life: if you want a better future, start now by avoiding touching suspicious items; refer to xxxxxxx (ONG or national call line)"
- "be a positive example: as UXO and CM are instable and may still explode even if someone already touched or moved them, you can save lives by avoiding touching suspicious items; refer to xxxxxxx (ONG or national call line)"
- "make your family aware about threat and explain how people admire positive examples, not negative ones; refer to xxxxx (ONG or national call line)"
- "follow deminers recommendations, don't touch unknown objects you find outside and don't believe who says they're safe, don't be silly: your future is too important to loose your time by risking life"
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Each Explosive card (see Fig. 5) reports one educational message and the contact details of one or more organizations to whom the audience can refer for a specific need related to explosive threats. Moreover, on each card there are several brown boxes giving suggestions about where and in which occasions to insert the message inside the plot, while other boxes explain which target audience the educational message is addressed to, and the notices on the card frame indicate which type of threat the message is dedicated to and which should be the conflict stage at the moment of the MRE campaign.

![Figure 5 – A card of the Explosive Set and its contents](image)

The operator chooses which card and therefore which educational message to use by selecting those cards which contain in the coloured boxes data appropriate to the specific local context they are operating in. On each card there are boxes containing information about gender and age of the people who should receive the message, and every different possibility has been connected to a particular colour: in Figure 5, for example, it is portrayed how adult MAN receivers are marked in blue. Other colours represent women, children and young males. In the same way, the red colour of the box in the Figure 5 has been connected with RECKLESS receivers (while other colours represent unaware, uninformed and intentional people). The frame of the card changes its colour depending on the threat: orange for UXO and cluster munitions, red for AP-AT mines and IEDs.

In this set there are no transitional cards, and each card can be chosen for the final stage of the writing process without limiting the number of messages.

The combination of the chosen cards of sets of Dramatic and Explosive Cards with the chosen plot gives the operators the possibility to create an entertainment-educational serial drama which is suitable to the threatened reality.
In order to provide end-users with a “ready to use” package, Billy Goat Radio includes also a complete set of sound effects in digital format, which can be integrated by operators with new sound effects made on purpose and recorded with the technical equipment provided or downloaded from the internet.

Between September and October 2013, when Billy Goat Radio was tested in field, the adaptability system was still at an initial researching stage, and the story chosen had to be adapted to the context of the Sahrawi refugee camps after a deep investigation of local reality conducted from Italy by Snail Aid staff. Although not yet at an advanced stage, the tool’s adaptability system had good results: both translators and ASAVIM staff agreed in saying that the story and the characters in the script were “very Sahrawi”. Such a successful adherence to the context was a consequence of the accurate investigation of the local daily life carried out before the mission and of several questions for the translator, which were disseminated in the plot in every point where adaptation was required.

In its final stage, the adaptability system won’t need to be manipulated by external hands, but will be ready to be used during the writing process, following the steps suggested by the tool itself. The costs of the MRE campaign in terms of money and time will therefore be drastically reduced.

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**References**
