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D3.3

Evaluation and Feedback Report

Educational Resources

Energy Agency Livorno Province and Severn Wye Energy Agency

Rachel Close (YEP! Coordinator)
Head of Education and Training

Severn Wye Energy Agency
Unit 15 Highnam Business Park
Highnam
Gloucestershire
GL2 8DN
rachel@swea.co.uk
00 44 1594 545 369



SevernWye
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Introduction

'YEP!' evaluation processes sought to understand the contribution the partnership work had made to a number of areas¹ including the support available to students and their teachers through educational resources. The baseline evaluation identified a number of areas that YEP! should seek to address in the provision of educational resources and the following report assesses the impact of the project in this area.

1. The Added Value of the Resources Developed

1.1 Resources Directed at Teachers Pre - YEP!

A summary of the pre-project resources available for incorporation and adaptation to the project was produced (Ref D3.1). This showed that the number of accessible materials in the partner countries varies from 3 to 17 with a mean of 8.75. The resources focus primarily on informing pupils in two areas:

- Informing pupils about energy related issues and potential solutions.
- Providing a method for surveying the energy situation in the school or workplace.

However, far fewer resources provided students with a framework for follow up actions to improve the energy efficiency of the school or workplace. This is fundamental to having a long term impact on reducing energy use or using RES.

Although guidance and support for teachers was available, there were fewer resources available compared to those directed at pupils. These resources focus on providing a framework for planning project related activities and developing teachers' skills for providing energy education. There is more limited support for teachers regarding the delivery of project activities or guidance on the aims of the resource and the links to the curriculum or business. Furthermore, analysis of the resources used in the project's early phases showed that teachers struggle to use resources that are not directly relevant to their school or are too ambitious for the students. Teachers do not have the time to tailor resources to their needs hence, 'YEP!' would need to account for this.

1.2 Resources Directed at Teachers Post - YEP!

The 'YEP!' approach to supporting the schools was to build a complete educational programme that covered a whole academic year in collaboration with the participant students and teachers. This is a different approach to many other projects that focus on providing a teaching resource in the form of an online tool or other resource pack that becomes generally available to any school. As such, the project has realized complete manuals of implementation for school energy projects that include all materials a teacher would need to undertake the project work (D2.4/4.2a). These are comprehensive, from student session plans, to power point presentations and templates, all organised to give the teacher a progression and structure to their energy education work and designed to help them use their school building as the core resource for student learning.

In addition, some partner countries managed to use existing tools that were designed for teacher support and these are detailed in D3.2;

- AER: no. 10
- ESS: no. 3
- AEA: no. 5
- REAC: no. 1
- EAP: no. 1

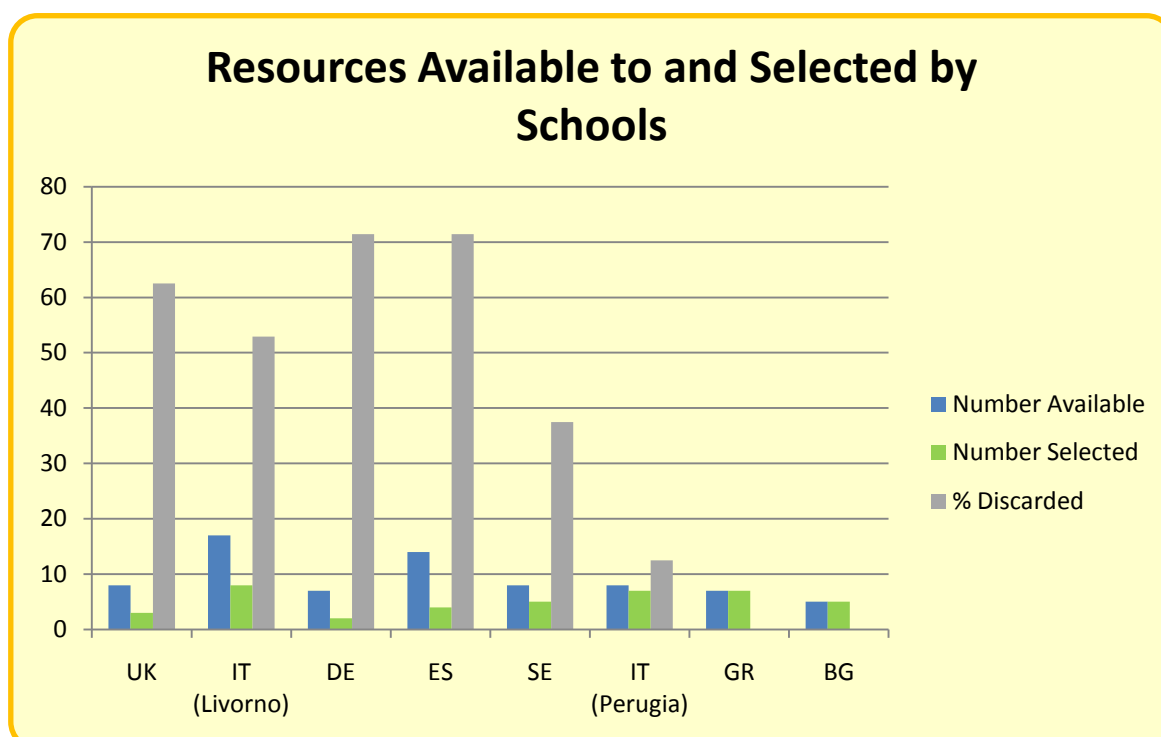
¹ More comprehensive evaluation evidence covering other project aspects can be viewed in the Final Evaluation Report (D5.1)

1.3 The Resources Selected For Use in YEP! Schools

The analysis of tools finally used by partners (D3.2) shows a lower number of tools was used with respect to those that were inventoried, collected and introduced to teachers (D3.1). The majority of resources available across partner countries were in text or PDF format. Website resources were also fairly popular with far fewer resources in other formats such as CD, DVD or PowerPoint. Furthermore, over 75% of resources were readily available in only one language. Although YEP! did not translate existing tools into new languages it has ensured that the YEP! methodology as a fully resourced approach is available in the 7 partner languages, thus refining and consolidating widely available selections of tools into one package and a tried and tested approach.

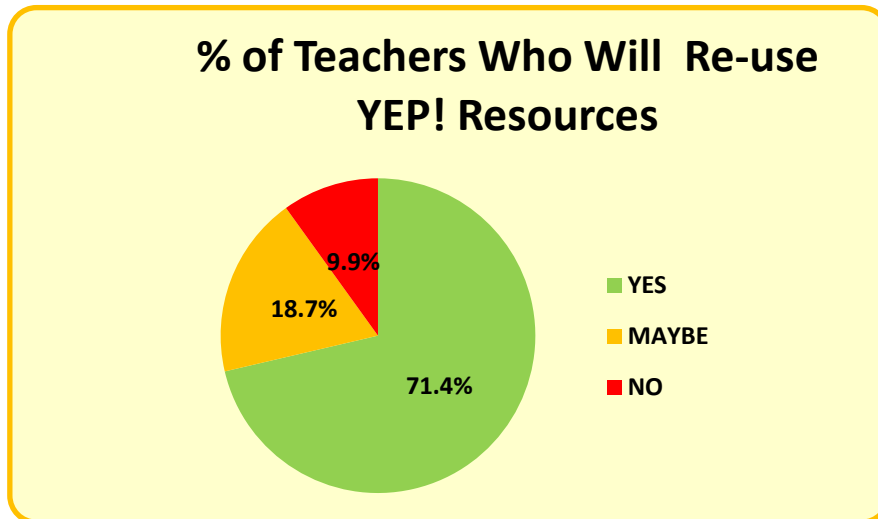
On average nearly 40% of the resources in existence pre - YEP! were discarded due to lack of interest from the participant schools. This raises questions about the quality and suitability of tools widely available in the partner countries but it is not within the scope of this research to analyse this. Anecdotally it is interesting to note that a common complaint amongst teachers is that when they undertake independently to teach about energy they find overwhelming numbers of resources to select from with no assurance of their quality. This is time consuming and often leads to abandonment of their project and indicates a recognized quality mark for teaching materials could be an area of future development.

In the UK there was a relatively low number of tools presented to the schools initially, due to SWEA only referring tools they knew to be of acceptable standard (there are in fact 100's of resources in the UK), but there was also a high number discarded, mainly due to the fact schools already knew those good resources and wanted something new. As a result SWEA undertook some development work to fill the need for tools that assisted young students in technical energy surveys and follow up actions.

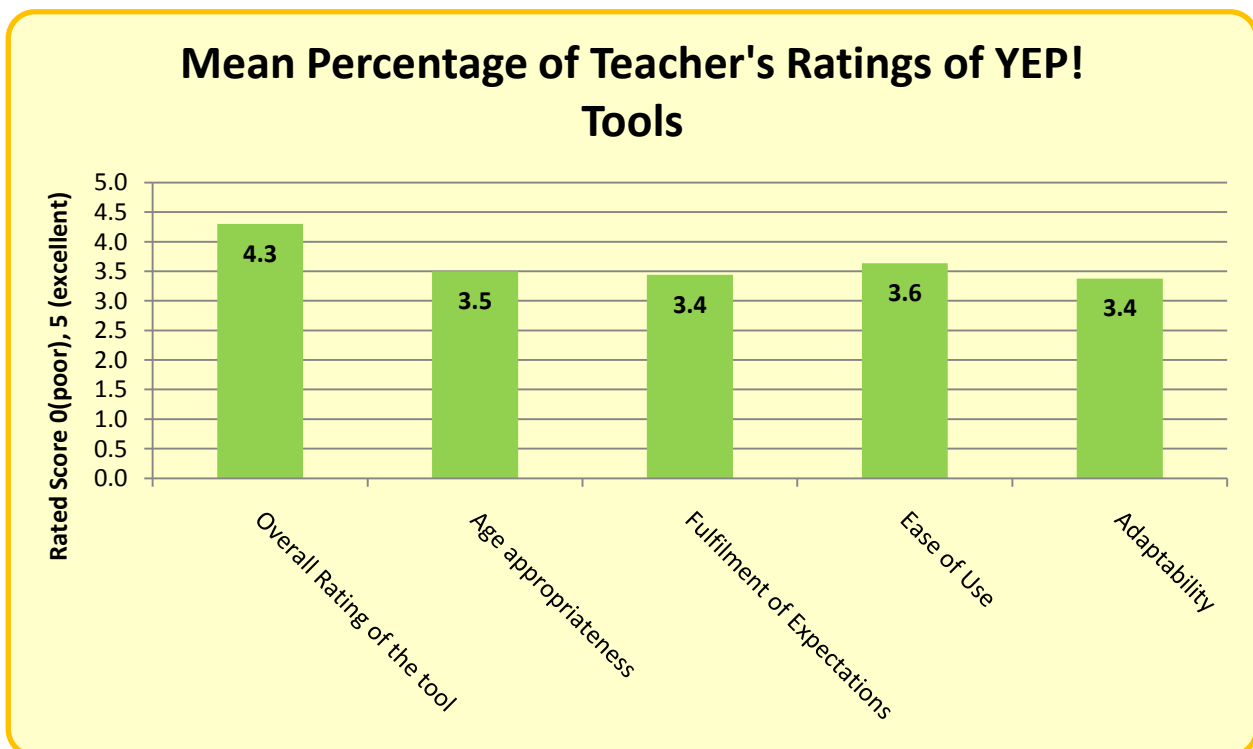


2. Feedback about the Resources

Evaluation questionnaires were used to collect feedback from teachers about their experiences of 'YEP!' resources. The majority of teachers (71%) have stated that they will use the resources again, thus showing that the YEP! resources overall were well selected and developed.



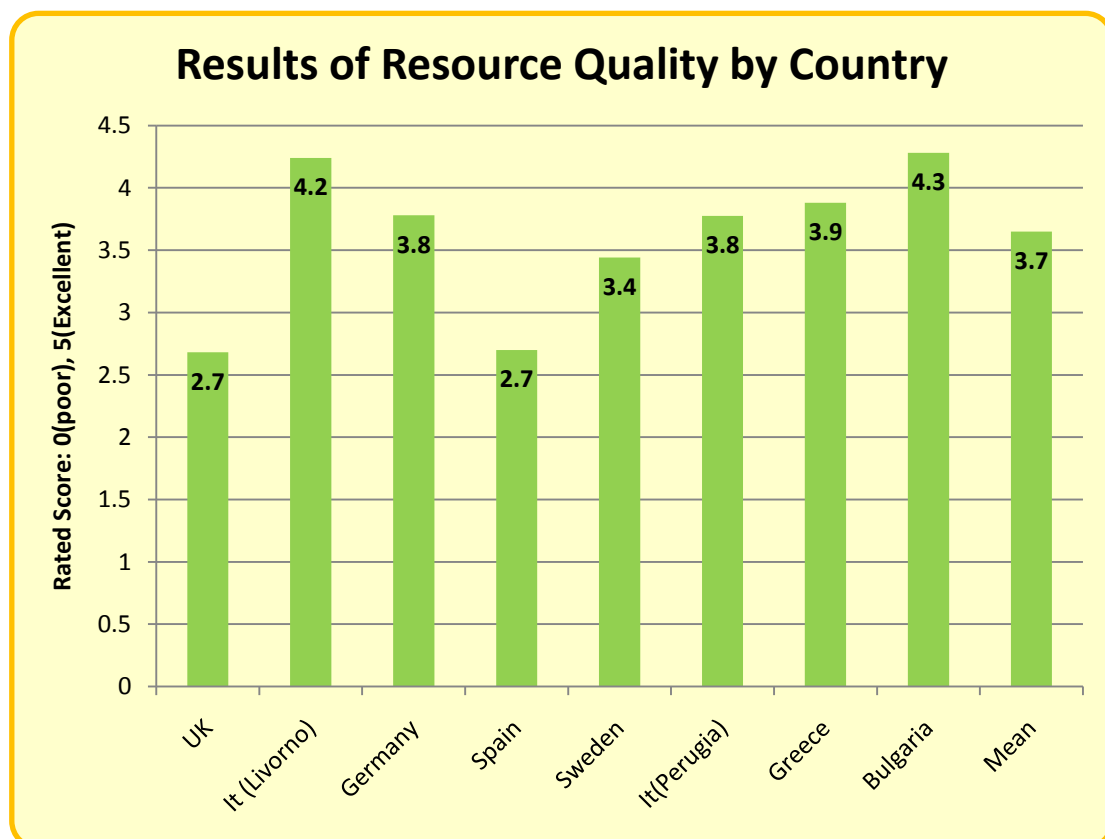
Teachers were also required to feedback on various aspects of the tool quality using a rating scale of 0 (low score)-5 (High Score). The results show that 'YEP!' resources were all above an average score of 2.5 and overall were close to excellent, scoring 4.3; detail of these results is shown below:



In the following graph the overall rating of 'YEP!' resources country by country is displayed but only relates to resources that were catalogued at the start of the project and therefore not to resources developed within the project time. It is also true to say that the evaluation of the tools (good or bad – difficult or easy – etc) depends on a number of factors including:

- The expertise of teachers in energy matters
- The type of school (if technical specialist or not)
- The time teachers could dedicate to some activities
- The nature of the students

The graph shows that on average the higher scores were given by Bulgarian and Italian (Livorno) respondents who were satisfied with the provided tools, while the lowest were given by those in the UK and Spain. The most common reason identified was that in these countries teachers thought the tools were not always easy to adapt for the range of abilities in the group and not so easy to use. In the UK development work on new materials helped to meet their teachers' needs. Almost every country received good evaluation scores on the tools dedicated to the energy analysis of the school and work place, this is excellent feedback as this was one of the pioneering aspects of the project work.



2.1 Overall Effectiveness Of 'YEP!' Resources

There was no specific questionnaire about resources effectiveness because this so strongly linked to the achievements of YEP! in raising teacher confidence and student understanding and therefore no extra data collection is required. As explained in the full evaluation report 'YEP!' achieved outstanding results of improved knowledge, skills and understanding in its participants and therefore we can assume that resources finally used, both those already in existence and those developed in the course of the project, were very effective in their purpose.

2.1 Overall Effectiveness Of 'YEP!' Methodology

Baseline research showed that, the level of provision of energy education varies significantly across the partner countries (See D6.0). However, the majority of energy education is delivered via one of two pathways:

- Aspects of energy education are incorporated in to the curriculum via subjects such as Science and Geography.
- Time is allocated for extra project work related to energy education.

Issues arise from both methods of delivery. Where energy education is delivered within existing subjects it is often compartmentalised, rarely has a relevant and practical application for the pupils and it is a challenge to link activities both between subjects and across year groups.

Project work is more successful in developing practical understanding and embedding positive behaviours. However, much of the project work is delivered by external agencies hence teachers and schools are not taking responsibility or being trained and it is not compulsory for students to take part.

'YEP!' addressed the issues in its schools by using a curriculum linked approach and also by ensuring a 'whole school' ethos for energy saving was established through the student led energy efficiency campaigns. 'YEP!' support for teaching and learning was delivered in partnership with key contact teachers in the style of on-the-job training so that they would be trained to deliver in future without the agency's help.

3. Conclusions

In summary there were some very positive advances in resource provision for energy education through the activity of the 'YEP!' partnership:

- The 'YEP!' approach to build a complete educational programme with the participant students and teachers is different to other projects that focus on providing a teaching resource in the form of an online tool or other resource pack that becomes generally available to any school. As a result a more comprehensive support through all stages of an energy project is available for teachers.
- Over 75% of resources were readily available in only one language prior to 'YEP!' . Although YEP! did not translate existing tools into new languages it has ensured that the 'YEP!' methodology as a fully resourced approach is available in the 7 partner languages, thus refining and the consolidating widely available selections of tools into one package and a tried and tested approach.
- On average nearly 40% of the resources in existence pre-'YEP!' were discarded due to lack of interest from the participant schools. This raises questions about the quality and suitability of tools widely available in the partner countries. Some partners undertook development work to address the gap in provision for quality tools that assisted young students in technical energy surveys and follow up actions.
- The majority of teachers (71%) have stated that they will use the resources again, thus showing that the YEP! resources overall were well selected and developed.

- The results show that 'YEP!' resources were all evaluated by teachers as above average on different quality standards and overall were rated close to excellent, scoring 4.3 on a scale of 0-5.
- As explained in the full evaluation report 'YEP!' achieved outstanding results for improving knowledge, skills and understanding amongst its participants and therefore we can assume that resources finally used, both those already in existence and those developed in the course of the project were very effective in their purpose.
- 'YEP!' addressed the issues of traditional compartmentalized approaches to energy education in its schools by using a curriculum linked approach and also by ensuring a 'whole school' school ethos for energy saving was established through the student led energy efficiency campaigns.
- YEP! support for teaching and learning was delivered in partnership with key contact teachers in the style of on-the-job training so that they would be trained to deliver in future without the agencies help.

