DEVELOPING A DIGITAL LEARNING PROGRAM PROMOTING DUAL VET IN RENEWABLE ENERGY AND SUSTAINABILITY WITH INTERACTIVE TOOLS
DIGI-ENERGY +

INTELLECTUAL OUTPUT 1

METHODOLOGICAL GUIDE

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TABLE OF CONTENTS

INTRODUCTION

The renewable energy sector is growing fast: about half of the new electricity- generating capacity added globally in 2008 and 2009 came from renewable energy additions. Different employment scenarios show that employment in renewable energy is expected to continue growing.

This is contributing to an expected overall positive net employment growth in the energy sector as a whole while employment in fossil fuels is expected to drop in the coming years. successful transition to a low-carbon economy, therefore, depends, among other things, on the accessibility of efficient training programmes: first, for current workers in fossil fuels to smooth transitions to the growing renewable energy sector, and second, for young people entering the labour market in the energy sector.

A commitment to training is particularly important because the renewable energy sector is already experiencing shortages not only in technical occupations such as solar installers and geothermal engineers, but also in more general occupations, such as sales and finance specialists, inspectors, auditors and lawyers.

To make the most of investments in renewable energies, governments and social partners need to make sure that the workforce is adequately trained. One of the more challenging issues is the pace of change: the experience in some countries of surges in demand for skilled workforce during installation of new renewable energy capacities followed by drops in demand during its operation and maintenance is anathema to smooth transitions; it sends contradictory signals to workers and investors, as well as training institutions.

Skills development systems need time to respond to the new needs and confidence that policies will sustain the transition and continue to create demand for new skills. An efficient training system for renewable energy must be integrated within overall policies to support the growth of the sector, involve social partners in the design and delivery of training, and include a good combination of practical and theoretical knowledge.

Continuing education and training has an important role in renewable energy. Providers are diverse, including renewable energy businesses themselves, industry associations, trade unions, suppliers of renewable energy technologies, universities, colleges and private training providers among others. Continuing education and training is important at all levels, and both in technical and non-technical occupations.

In technical occupations, it is required to keep skills and knowledge up to date as technologies change, to prepare people with relevant skills from other sectors to work in renewable energy, to develop cross-disciplinary skills and knowledge, and to improve core skills in areas including problem solving, communication and team working.

In non-technical areas, there is a particular need to develop industry knowledge, and keep it up to date. A wide array of industry, regulatory and business organization issues that are specific to the sector can be important. In addition, renewable energy is a technology sector; there is a need for non-technologists to have at least a basic understanding of technology issues, and a very good understanding of their business, regulatory and legal implications.[1]

This Methodological Guide, therefore, serves the purpose of:

- Identifying the target audience of the project,
- Outlining the structure of the course,
- Indicating the Learning Outcomes,
- Referring to the means and media that will be used to implement the courses, and
- Introducing the templates to be used in compiling the modules.

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[1] Study of occupational and skill needs in renewable energy: final report / International labour office, Ilo skills and employability Department (emp/sKIlls). – Geneva: Ilo, 2011

TARGET AUDIENCE AND CONCLUSIONS FROM THE COMPARATIVE REPORT

The project proposes actions aimed at supporting partnerships between VET centres for the formation of competencies, training, and empowerment of lifelong learning for all, providing special support to young students with obstacles economic, geographical and cultural differences.

Special attention will also be given to young female students who in the field of VET sometimes do not have the same possibilities of development as their peers. The goal is to enhance the employability and personal development of young learners and people of working age in VET, to contribute to the competitiveness of companies, as well as sustainable growth and social cohesion. DIGI-Energy+ shall strive therefore, to involve the following four groups in both implementation and dissemination activities:

Teachers of VET institutes
Staff of VET institutes
Consortium members
Trainers in Renewable Energy
Students in Renewable Energy

The courses will validate and implement the learning module developed within the project. The courses for VET students in the area of renewable energy will be organized digitally by the VET centres participating in the project but also raised the use of a Blended Learning system in the module on renewable energy, which will have eight sessions of one hour and the support of the tools of a virtual classroom under the Moodle platform.

The activity will serve as a mediator of the teaching-learning process in relation to virtual actions carried out. The students with few opportunities will be facilitated the displacement to the centres and if it is not possible it will be replaced with the online but interactive formation so that they can interact with other students of their centres of formation VET.

LEARNING OUTCOMES

Learning outcomes are defined as 'statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence' (Cedefop, 2014, p. 74).

So, at the beginning of each module, the author needs to state the Learning Outcomes in a form that states "By the end of this course the learner should be able to:" Make sure to include attainable goals as these will later form the basis of our assessment.

Good learning outcomes:[2]

- represent the learning goals by starting with an action verb
- are expressed clearly and easily understood
- can be understood within the context of the module
- indicate the kind of performance expected
- should be authentic to the level of learning
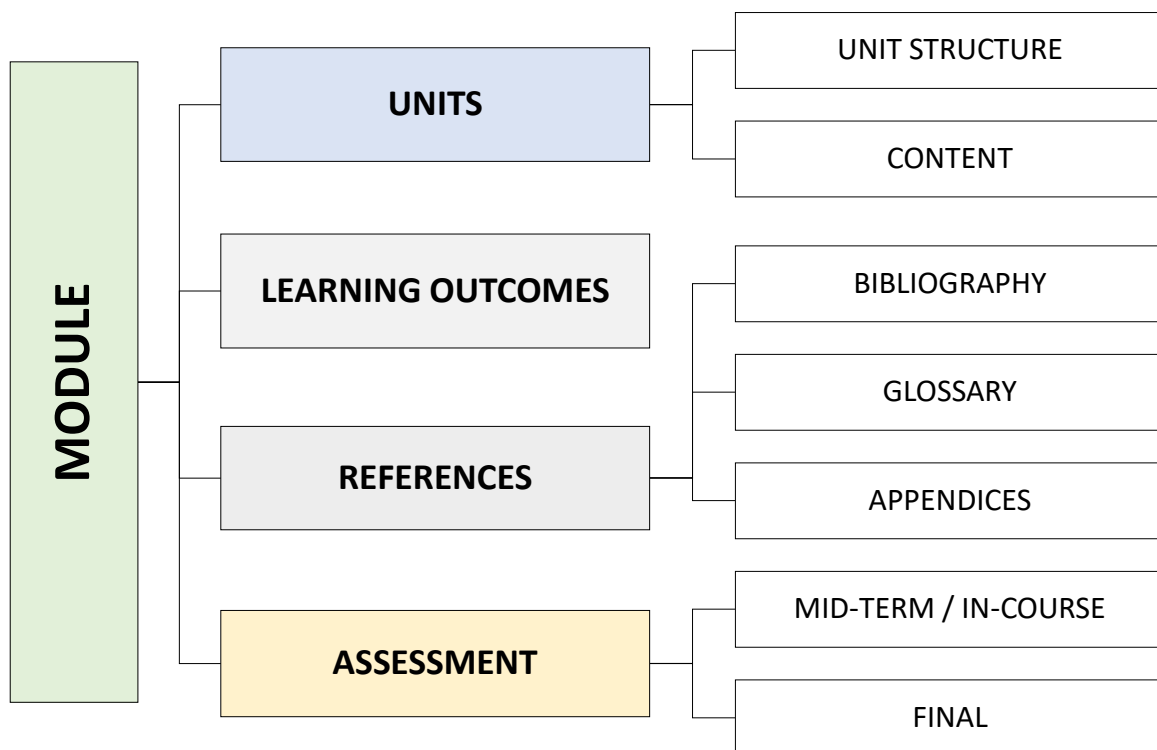- be limited in number (ideally 4 to 6)

[3]

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[2] https://www.futurelearn.com/courses/educational-design/0/steps/26427
[3] https://www.erasmusnet.org/single-post/2018/01/22/7-EXAMPLES-OF-LEARNING-OUTCOMES-HOW-TO-WRITE-THEM

COURSE MANUAL

MODULE STRUCTURE

The Modules will all follow the same structure, all having the same elements and supporting material in order to ensure homogeneity in the output. In particular, every module must have the following structure:

UNITS

UNIT STRUCTURE

Each unit will be followed by a short unit description along with the unit structure, before the content, so that each learner will familiarise himself/ herself with the content. The unit structure will include information on the duration and the tools that will be used.

CONTENT

This is the core of the training module. It will include all the information we would like to communicate to the learner. When creating the course, please bear in mind the following:

1. Don't make it too complicated for the learner. Remember that this is an online course for adults / working professionals that do not have too much time to dedicate.
2. When this is possible adapt the material to include examples from everyday life; that is make it more appealing to them
3. Break down your units into subunits that are short and easily manageable

TOOLS AND MEDIA

The Modules will all follow the same structure, all having the same elements and supporting material in order to ensure homogeneity in the output. In particular, every module must have the following structure:

POWERPOINT PRESENTATIONS

Learners find it useful to be able to flick through a presentation of the module in comprehensive, mostly bulleted form. Authors should take that perspective into consideration when preparing the educational material and should include a presentation summarising the main points of the module and points that will be covered in the assessment questions.

VIDEOS

Learners might find it beneficial to be given a visual stimulus of what the module will be about. Consider making a brief video (either in person, narrating the main points of the module or a video presentation) to add to your existing material.

CASE STUDIES

Case studies offer a direct approach to problem solving and to better understand the scope of the material. Consider the following when creating a real case scenario:[4]

- Introduction: sets the stage by providing context for the situation.
- Challenge: discusses the key problem that the learner was facing.
- Solution: a basic overview of the service/ solution used.
- Benefit: recaps the solution's top advantages – why it was the right choice.

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[4] https://www.bluleadz.com/blog/15-of-the-very-best-case-study-examples

REFERENCES

BIBLIOGRAPHY

A Bibliography should be compiled into two categories: first with references to **Books and Articles** and second with references to **Internet Resources** that were consulted in creating the respective Modules. However, the Bibliography should not only serve this purpose. It should also guide learners to information that might be of interest to them in their professions.

When compiling the Bibliography, please refer to the **APA Citation Style** (https://pitt.libguides.com/c.php?g=12108&p=64730) in order to ensure homogeneity in our bibliographies. In particular:

Books: Baxter, C. (1997). *Race equality in health care and education.* Philadelphia: Ballière Tindall.

Article: Millbower, L. (2003). *Show biz training: Fun and effective business training techniques from the worlds of stage, screen, and song*. Retrieved from http://www.amacombooks.org/

Website: *The World Famous Hot Dog Site.* (1999, July 7). Retrieved January 5, 2008, from http://www.xroads.com/~tcs/hotdog/hotdog.html

Film: Greene, C. (Producer), del Toro, G.(Director). (2015). *Crimson peak* [Motion picture]. United States: Legendary Pictures.

Number of entries in the Bibliography should be at least 5 for each category.

GLOSSARY

Partners will need to create a glossary for each Module. The glossary will include terms used in the Module as well as important terms related to the Module topic. Bear in mind that this glossary of terms is for both people knowledgeable on the subject and for those who are not. So, best practice is to keep it simple, which means not too complicated nor too short. Number of entries in the Glossary should be at least 5.

APPENDIX / APPENDICES

An appendix or appendices can be created if they serve functionality in the modules. These can include charts, reference documents, multimedia documents, PowerPoint, diagrams, legal texts, articles, etc.

IMPORTANT NOTE ON PLAGIARISM: Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement. All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition. Plagiarism may be intentional or reckless, or unintentional. Under the regulations for examinations, intentional or reckless plagiarism is a disciplinary offence. [5]

Use your own words in creating the Modules. If this is too difficult or to technical ALWAYS provide reference from where the material, words, texts, etc. were taken.

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[5] Plagiarism | University of Oxford. (2020). Retrieved 13 March 2020, from
https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1