Hands-on **M**ethods **A**nd **P**ractice-based **P**rinciples for implementing **I**ndividualized learni**NG** in VET

EVALUATION OF PROCESS & PRODUCTS

INTRODUCTION

This document summarizes methods and results from MAPPING´s evaluations. For detailed documentation, please contact the project management.

The MAPPING project team undertook a final evaluation of MAPPING´s core products and the work process during the project (8-9/6 /2015, Breda, Holland). The evaluation used a triangulation of several methods. The transnational evaluation was supplemented with qualitative and quantitative results from local test runs.

As MAPPING had been designed as an agile project, findings on interim products and processes were taken into account when making adjustments en route.

MAPPING´s two (three) core products have been realized as targeted in the application:

1) MAP: A guideline containing models, methodical-didactical instruments and crucial principles for implementation and improvement of an individualized learning approach. MAP is launched as the Web App Quality MAP www.quality-map.eu
2) A range of VET teacher training units, based on MAP. Besides several national versions, a transnationally co-created MOOC (massive open online course) has been trial-run successfully and will be further developed.
3) A multimedia documentation of best practice cases from trial runs in the 5 partner countries during the project period. The documentation visualizes methodologies for supporting individualized learning.

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A few reasonable adjustments had been approved by the National Agency, as needs and possibilities for this emerged during the work process. It was therefore decided that the multimedia documentation be integrated into the other two core products.

The pedagogical approaches of MAP and MOOC are to a high degree representative of MAPPING´s accumulated results. Furthermore, the two (three) core products have a transnational generic character and are written in English. Therefore they were chosen as main objects for the final joint evaluation.

The work process described pertains to transnational cooperation and co-creation in the MAPPING project. Local work processes are mentioned when relevant.

METHODS

EVALUATION OF MAP AND MOOC

Evaluation of the two core products was undertaken from six perspectives, inspired by Bono´s Thinking Hats[1].

6 experts were chosen for each core product. The experts were appointed by the MAPPING project team members, with representatives from the 5 countries and supplemented by external professionals. MAP and the MOOC were assessed by these experts, each with a Bono Thinking Hat, while the other team members observed and took notes.

COLOURED HAT	THINK OF	DETAILED DESCRIPTION
	White paper	The white hat is about data and information. It is used to record information that is currently available and to identify further information that may be needed.
	Fire and warmth	The red hat is associated with feelings, intuition, and emotion. The red hat allows people to put forward feelings without justification or prejudice.
	Sunshine	The yellow hat is for a positive view of things. It looks for benefits in a situation. This hat encourages a positive view even in people who are always critical.
	A stern judge	The black hat relates to caution. It is used for critical judgement. Sometimes it is easy to overuse the black hat.
	Vegetation and rich growth	The green hat is for creative thinking and generating new ideas. This is your creative thinking cap.
	The sky and overview	The blue hat is about process control. It is used for thinking about thinking. The blue hat asks for summaries, conclusions and decisions.

THE WORK PROCESS

The joint work process was evaluated by all partners, scoring the process supporting tools on a scale of 1-5. Qualitative comments were added.

LOCAL EVALUATIONS

Local evaluations were undertaken according to local activities. As for local sense-making, MAPPING´s Quality Grid was translated into local languages, and used as an evaluation form[2] (questionnaire). These forms were supplemented with targeted personal interviews.

Results from the local evaluations were summarized by the respective local project managers and were reported in average every month during joint virtual meetings, regarding:

- *New teacher training modules in UK/Wales and Holland*
- *Change management model for individualized learning in practice at two vocational colleges in Slovenia*
- *Integration of MAPPING principles into local change management process in UK/Wales*
- *Development and implementation of MAPPING sub-products Glossary (DK, UK/Wales, NL, SI), Quality Grid (all partners) and annual wheel (DK)*
- *Development and implementation of the MOOC by Finland and UK/Wales*
- *Influence of MAPPING´s products on new products in nationwide Danish innovation projects*
- *Local and national valorization activities in all countries*

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This final evaluation does *not* refer to each local evaluation in detail, but summarizes and concludes on all of the results over time.

Additionally, in Denmark and in Slovenia, MAP was assessed by external pedagogical experts, who are also experienced in the use of ICT-platforms for supporting learning processes.

RESULTS

Comments from Bono´s six perspectives gave rise to new facts, passionate statements, positive as well as critical views, new ideas and conclusions. MAP[3] and the MOOC[4] were shortly presented, as they were in operation at that date.

MAP

MAP is summarized as being a *"universal tool"* with contributions from all partner countries and adaptable to all countries. No matter whether a rational (index) or a creative (graphic entrance) approach is used, everything about individualized learning can be accessed from one page - a unique initiative and possibly the first one in Europe.

The content targets beginners and advanced users, but not necessarily experts. There was also a proposal for *"showing MAP to students for dialogue with their teachers"* in order to promote the students´ responsibility for own learning. This proposal could be considered.

Critical voices considered the possible *added value* for teachers: It should be made more clear *"why teachers should use this tool"*, as well as ensuring that the user *"does not get lost"* in the app.

The national (Slovenian and Dutch) versions represent local best practice for all indicators. They will bring results from other national projects and innovative findings into their MAPs. In Slovenia, MAP has already been adapted broadly, and best practice from the partner countries has been transferred to new Slovenian practice.

The integrated Quality Grid is seen as a highly usable tool for quality assurance and dialogue between managers and teachers on local continuing development. On the other hand, there can be resistance against *"being ranked and controlled"* (quality grid). Experiences show that first movers can be enthusiastic, but teams may refuse the use of the grid. Managers should give their teachers / teams a framework for using MAP in an appropriate and ethical way.

All in all, MAP cannot stand alone and should be seen as a product that is *"part of a bigger picture"*. The test runs so far *"are only the beginning".* MAP and its use should be further developed and adapted to different systems. MAP can be simplified more to ease access for newcomers.

The project partners are encouraged to keep working with MAP and to use the inspiring examples seen across countries. The Quality grid in particular is a suitable tool for qualifying and focusing transnational peer reviews.

THE MOOC

The MAPPING MOOC is outstanding in the context of MOOCs, as it facilitates transnational study groups (each of them consisting of 6 participants, according to students´ level of study in a collaborative learning module). There is great interest in the MOOC, and MAPPING´s MOOC experts have been invited for several presentations, also on international scenes. The Finnish provider HAMK will re-provide the MOOC, while one of HAMK´s MOOC developers will intensify her studies on supportive virtual learning environments in a doctoral study.

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The MOOC was created and implemented by HAMK Professional Teacher Education and Coleg Cambria. The course is based on dialogic and collaborative learning. It is entitled "Making Learning Personal: How to develop individualized approaches in Vocational Education and Training", giving 2 ECTS. The course is a combination of a mOOC and cMOOC, designed for VET/FE educators to deepen their knowledge about individualization and individual study plans. The topics of the course are 1) Basics of individualization, 2) Dialogical guidance and scaffolding, 3) Synthesis of practices with individual study plans and 4) Sharing new ideas and ways to embed them into practice. The pedagogical script is structured into modules based on learning objectives and guidelines from the pedagogical DIANA[5] model. The first week was used for social bonding in study groups, each of which had 3-10 participants.

The MOOC´s evaluations showed new and excellent possibilities for exchange for those who conducted the course. The students enjoyed and benefited from the MOOC.

Critical voices ask whether MOOCs are *"just a one day wonder",* are they *"invented for the elite"* and how can there possibly be a *"reasonable outcome compared to the effort invested"*? The overshadowing problem is the low accomplishment rate compared to the enrollment rate, which is a typical gap for MOOCs in general.

Thus, there was a high focus on this problem, and the external Dutch expert Hannelore Engels contributed with positive experiences from Dutch best practice solutions for MOOCs[6]. Her recommendations:

- *"Focus on learning outcomes and students´ engagement"*
- *"Connect the MOOC to present events, if possible, and design the MOOC to be continued in students´ networks"*
- *"Cooperate with experienced experts on online users and online behavior, such as librarians"*
- *"Limit the duration of the MOOC to a short period"* - example: Design small subjects during one week, with practice of one hour / day
- *"Interactivity can be created by questions and answers from the students. 10% of the students can make the MOOC interesting for all others"*
- *"Start with a user-friendly session zero: How to work with a MOOC"*
- *"Have a high-profile presenter on the last day"*

Other recommendations from the project members referred to the business model of MOOCs. A MOOC should be seen as a part of the provider´s entire business portfolio. A MOOC is not necessarily meant to be a cash cow, but it can be designed to lead to or highlight other performances of the education institution and to create online networks as learning communities.

The logistics for a realistic sign-up should also be considered, such as: in which context could the student take the MOOC? Timing is also important. When would the MOOC need to be advertised in order to ease participation? But take care that organizing logistics doesn't overshadow the students´ involvement.

All in all, it was concluded that it is absolutely worth continuing to work with MAPPING MOOC. Knowledge sharing should stay in focus, and a MOOC is suitable especially for busy people and long distance learning. The learning platform needs to be improved and solutions found before the next run. The content should be revised (even more focused), and the methodology should be sharpened even more (social learning).

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THE MAPPING WORK PROCESS

The data of the assessment were collected anonymously, and the scores were calculated as following:

* 1: Not at all, 2: To a minor degree, 3: To some degree, 4: To a high degree, 5: Full support
**How did the activity support the process?

	Transnational seminars	Virtual seminars	ICT platforms	Co-creation	Bilateral contacts	Focus on local goals
In general: rate 1-5*	5,00	3,43	3,14	3,43	3,86	4,57
**Qualitative remarks	• Useful to see excellent practice • Face-to-face crucial for building relationships to enable work to take place • Nice, short, concentrated • Good organization • Great teambuilding and focused	• All VM not necessary - no important topics or collaboration • Not so productive, but good to keep the process running • Difficult to participate: Language skills, sound • Perfect, effective focused, clear decisions • Good to do for keeping focus	• Chosen tools weren´t so interactive • Dropbox? Needed often vs. Google drive • Dropbox OK, Google should have been organized differently • Confusion about no. of platforms used • LinkedIn not flexible for discussion • A lot of info - problem for new colleagues • Easier to follow with only one platform	• Tension with local focus • Polite • Good cocreation locally + internatio-nally	• Wonderful idea, very well realized • Great working with FI on the MOOC • We have opportunity and we grabbed it • As part of working with FI they mentored UK on DIANA model • MOOC coop. was fruitful - worked well	• Fine, many chances, lots of support • Long process, not too long, though • Nice to concentrate on the topic we needed to • Great
Ideas for improvement	• Too much driving (UK, DK) - x2 • More discussion about cooperation in future	• Not too often, 1x between transnational meetings would be enough • When we really have something to work with together	• Dropbox or Google, not both • Eg Facebook closed group would have worked better with networking and discussion • Keep the material accessible!		A lot of chances for further development	Need to engage all staff and learners in using of the MAP

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All process initiatives were assessed as having been supportive from "to some degree" up to "full support".

Transnational meetings were seen as essential for supporting the work process. In the entire process of common productions, the focus on local interests and local goals had a highly motivating impact. The virtual meetings can be improved in frequency and content, and the project could potentially profit more from the benefits of bilateral cooperation. The portfolio of ICT-platforms and its practice in particular should be revised.

LOCAL EVALUATIONS

MAPPING has clearly supported local development processes in Slovenia, UK/Wales and Holland. Here MAPPING has been a framework for unfolding initiatives on individualized learning, each with their own focus, in the partner countries. Meanwhile, specific products or sub-products of MAPPING have contributed to improvement of new local products in Finland (MOOC) and Denmark (Quality Grid, annual wheel, portfolio work). UK/Wales has also experienced local improvement of one of their tools, Promonitor[7], inspired by Danish practice (Elevplan).

New teacher training modules in UK/Wales and Holland

UK/Wales

The new teacher training modules have enabled trainee teachers to focus on personalization as the primary consideration for the development of pedagogy. The modules were attached to an innovation unit and this meant that all teacher trainees had to engage personally with how they intended to develop personalization in their own vocational context.

Personalization was explored by students in terms of individual target setting and skills development, individual task setting with core outcomes, individualized outcome setting and accelerated achievement, and individualized context setting in terms of place of learning. This followed the format of the Quality Grid and the best practice examples benefited from the knowledge transfer in the project.

The trainee teachers chose their innovations and tested them locally with their learners. Their findings were produced as academic posters[8], and these were brought together at an innovation conference, where trainees explained and shared their research together, as part of their final assessment. This approach worked very well, and it will be a part of the teacher training modules in the future.

Holland

The Dutch partner ROC Brabant developed 3 modules for teachers´ support of young people with individual regards, to be chosen freely by the participants: coaching, guidance & lifelong learning, feedback - read more[9]. The modules have been test-run from October 2014 to March 2015, with very positive feedback. Personal engagement and ownership by the teachers has been achieved. The implementation is ensured by the management.

The training was designed and evaluated according to the college´s didactic "IDI-model" (model for instructional design)[10]:

1. *Identification of needs*
2. *Analysis of context*
3. *Framework and action plan*
4. *Definition of interim and final goals*
5. *Methods*
6. *Learning content and documentation*
7. *Test runs and evaluations*
8. *Conclusions*
9. *Upscale / adaptation to major groups*

Change management model for individualized learning in practice at two vocational colleges in Slovenia

The Slovenian MAPPING partner CPI is aware that work on all the levels of a school is necessary (management, teachers and other staff, students, social partners). It is important that the initiatives come from the school and that each school decides what they want to work on.

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The change management model was designed as "learning circles": VET colleges learn from each other and spread their new findings to other colleges, facilitated by pedagogical experts from the national institute CPI. CPI offered inspiration to a best practice college that could choose from the range of methods and approaches in MAPPING. Other colleges became associated and co-created and refined new methods, influencing the pedagogical megatrends in Slovenia. This process will be expanded during autumn 2015 - 2016.

Integration of MAPPING principles into local change management process in UK/Wales

Welsh Coleg Cambria integrated MAPPING´s findings and methods into their local processes, when merging 5 colleges with a pedagogical focus on personalized learning. The processes were monitored systematically each week (Jan. 2014 - May 2015), and the following was observed:

- *More consistent approaches to target setting for every learner*
- *More focus on skills development in target setting, rather than on task completion*
- *Increased levels of learner autonomy evident, where there was improved target setting*
- *More consideration of out of class learning and opportunities for more accelerated learning*
- *Some consideration of varying task, however, this was constricted by the examining body´s requirements, especially in vocational subjects with course work assignments*

Development and implementation of MAPPING sub-products Glossary (DK, UK/Wales, NL, SI), Quality Grid (all partners) and annual wheel (DK)

Glossary

The elaboration of a common glossary was an unavoidable step to take in outlining the MAPPING partners´ mutual understanding of basic terms in MAPPING. The glossary was not meant to be a product for dissemination. In any case, creating a glossary is recommendable for other projects and has also inspired some elements in national Danish practice.

Quality Grid

The Quality Grid was co-created by all partners in the 5 countries.

It found most applicability in Denmark, Holland and Slovenia. Here the tool was translated into the national languages and is now used for local quality assessment, agreements on further development of individualized learning and identification of new methods to apply. Typically, the tool has been put into interaction with other tools, such as local or national action plans.

All three countries and their users see great potential in the Quality grid, emphasizing that it has to be adjusted to local conditions for optimal outcome. The Quality grid has been translated into Danish, and in the transition from administrative to pedagogical leadership within Danish Vocational Schools (due to collective union agreements – "OK13") the Quality grid has become a central tool. Concretely, conversations between leaders and teacher staff are held every 6 weeks, where support and professional development is based on structured classroom observations. In this way, the Quality grid is a generic tool used to steer and supervise teachers, which increases transparency, creates focus and allows for managers to gain direct insight into each teacher´s teaching.

Finland did not find the tool´s quantitative feature usable and preferred to concentrate on the collaborative and the ICT-supportive perspective in individualized learning, while UK/Wales already had comprehensive quality assessment systems in use.

Annual wheel[11]

This tool was developed specifically according to local Danish needs for quality improvement of managing individualized learning processes. It was taken into daily use immediately by several departments at the partner college Mercantec. There still are technical problems as far as making it interact with the national Danish platform Elevplan. If further dissemination of the Annual wheel to other Danish colleges is relevant, this obstacle has to be removed.

The Annual wheel increases quality in teacher team-based structures, especially when managers not do participate in the meetings. The Annual wheel improves output of staff meetings, because it requires the teachers to focus on the relevant issues in a timely manner.

Development and implementation of the MOOC by Finland and UK/Wales

The MOOC was evaluated, as mentioned above, by the involved partners, as well as by the participants using an online questionnaire as a Google form. Evaluation data was available as anonymous raw data[12].
A published article explains the choice of the pedagogical DIANA model[13].

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Finnish HAMK will support the further development and providing of the MOOC.
Influence from MAPPING´s products on new products from nationwide Danish innovation projects
MAP´s Quality Grid was demonstrated for consultants from the Danish Ministry of Education. It was decided that a similar tool should be produced for assessing VET colleges´ resources in literacy work[14] (launched in Dec. 2014). MAP´s glossary was demonstrated to consultants from the Danish Ministry of Education. The glossary inspired the creation of a similar glossary for the ministry´s guidelines[15] of the basic subjects in VET. MAPPING´s understanding of the term competency and its relationship to EQF influenced the development process of a major Nordic project on workplace learning[16]. The design of MAP was demonstrated to this Nordic project management for inspiration in the elaboration of the project´s final toolbox, to be launched in Dec. 2015.
Local and national valorization activities in all countries
A wide range of valorization activities have been undertaken, most of them as postings on public websites, presentations in fora of experts and/or decision makers, articles, awards, as well as key notes and workshops at conferences. In general, each of these activities have promoted specific aspects of MAPPING´s results, for example the supportive impact of ICT-learning environments, tools for quality assessment, pedagogical methods for personalized dialogues or how to design teacher training. It must be concluded that the entire range of MAPPING´s findings and products on individualized learning is too wide to communicate in a simplified and compact form. But when the right tool/method/approach was chosen to present to the right target group in the right context, great impacts were seen, influencing the further development of individualized learning.
Danish and Slovenian assessment of MAP
Denmark The Danish assessor[17] elaborated a detailed review of the European version of MAP, with comments on content, design and usability of MAP in Danish practice. Besides a detailed review of each indicator, her main points were: - *"Add more contributions for education managers"* - *"Add entrance through an index"* - *"Adjust use to different mobile platforms and steering systems"* - *"Add a how-to-use guide"* - *"Supplement with a brief offline leaflet"* MAP was adjusted according to her comments, as far as possible within tight budgets. Slovenia The Slovene assessor[18] elaborated a detailed review of the Slovene version of MAP. Her comments were used to improve the usability of MAP in Slovene practice. Her main points were: – *"Adapt the introduction in order to motivate schools to improve individualized learning"* – *"Add clear instructions for navigating through the application"* – *"Use short and clear texts for every indicator, focused on relevant topics"* – *"Add Slovene examples for every indicator"* – *"Supplement with additional literature and sources for further reading"* According to the above-mentioned guidelines, Slovenian MAP was adjusted, all the texts were consolidated, Slovene examples and new resources were added.

ANALYSIS, CONCLUSIONS & RECOMMENDATIONS

The conclusions are drawn based on evaluation results for MAP and the MOOC, merged with the evaluation results of the work process, as the project has tried to practice MAPPING´s pedagogical principles during the developmental process. These pedagogical principles are:

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- *Individualized focus*
- *Inclusive approach*
- *Appreciative and resource-oriented approach*
- *Recognition of prior learning*
- *Holistic organization combining learning goals across different learning arenas / from different subjects / several pathways*

Results from local evaluations of the local initiatives are taken into account, while being aware of limited validity for the *entire* context. Local trial runs had different focuses, dependent on local sense-making goals and initiatives regarding MAPPING´s products in these contexts. These evaluations can only be seen as indicators for the final implementations.

CONCLUSIONS & RECOMMENDATIONS

Both MAP with its sub-products and the MOOC were considered valuable products, each of them with specific problems and challenges. Both have a high potential for being further developed and disseminated even more locally, in the partners´ own countries and internationally. The products interact, and this interaction could be explored more.

According to local evaluation results, re-designed teacher training has influenced the teachers´ competencies and empowered them in their new practice of facilitating individualized learning. Both present and online teacher training should follow the principle of *practicing*-how-to-do, beyond *telling*-how-to-do. Welsh measurements of impact on learners indicate that the personalized approach increases the students´ learning capability and motivation. A reservation for working with learning goals was made concerning requirements from examination boards, which still might focus on and assess course work assignments.

Adding authentic local best practice cases has benefited the products as well as the process, providing realistic solutions, and should be taken as a guideline for further development. Local development has been supported by transfer of best practice from MAPPING´s partners.

Focus on collaboration and mutual reviews had a positive impact. These principles have benefited the work process during the MAPPPING project, as well as studies in the MOOC. Strengths in this context were consideration of and mutual respect for local goals[19], as well as the MOOC students´ individual work focuses.

Platforms for supporting learning processes, interactive communication, knowledge sharing and storage of major data are still not optimal, and the platforms selected have not been applied optimally for full outcome. MAPPING´s cumulative portfolio of project platforms did not satisfy all needs and meant a certain barrier for new project members. The MOOC platform Canvas could not serve all countries and was not flexible enough. Advantages, disadvantages, timing, steering and criteria for choice of platforms should be identified for future recommendations. In addition, the interaction of MAP and the MOOC, as well as learning activities with personal presence, could be explored more.

In all cases of further development, the MAPPING partners would be relevant experts and stakeholders to involve in their specific top interests and expertise. The MAPPING products, as well as the huge amount of data behind them, would be valuable and sustainable materials for new initiatives.

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[1] Bono´s Thinking Hats http://www.debonogroup.com/six_thinking_hats.php Graphics johnkapeleris.com

[2] http://www.teaching-map.eu/outcomes/mapping-quality-grid/ Scroll to the buttom, click "Questions"

[3] www.quality-map.eu

[4] http://www.teaching-map.eu/category/top-outcomes/teacher-training-unit/

[5] Dialogical Authentic Netlearning Activity, model developed in Finland

[6] https://www.mediawijsheid.nl/mooc/

[7] Video about Promonitor in practice https://drive.google.com/file/d/0B8WsiIloQTirYXhLbXQ3OTBEdU0/view

[8] http://www.teaching-map.eu/2015/09/23/teacher-training-innovation-posters/

[9] http://www.teaching-map.eu/2015/01/17/the-netherlands-supporting-exposed-youngsters-individually/

[10] Available in Dutch http://www.teaching-map.eu/2015/01/17/the-netherlands-supporting-exposed-youngsters-individually/ ; the detailed content of the teacher training can be required from the Dutch MAPPING partner ROC West-Brabant

[11] Also accessible as a link from MAP http://www.teaching-map.eu/denmark/arshjul-for-hotel-og-restaurantskolen/

[12] As raw data, June 2015 https://www.dropbox.com/s/py31l7mkb0it7um/MOOC%20anonymous%20evaluation.pdf?dl=0

[13] "Wanted: MOOC pedagogy", http://library.iated.org/view/RUHALAHTI2015WAN, Sanna Ruhalati & Anna Maria Korhonen, HAMK

[14] LV-scanner http://www.euddansk.dk/category/screening-cat/lv-scanner/

[15] http://www.uvm.dk/~/media/UVM/Filer/Udd/Erhverv/PDF14/Nov/141124_Definition_af_paedagogiske_begreber.pdf

[16] www.arbejdspladslaering.dk

[17] Charlotte Kølle Jørgensen, Head of educations, Social and Health College Zealand, Denmark

[18] Sonja Sentočnik, PhD, independant researcher, Hiša znanja Sentočnik, Ljubljana, Slovenija

[19] As identified for all partners during MAPPING´s kick-off meeting (Nov. 2013) and referred to during the project process. Meaningful adjustments had to be undertaken, as local necessities emerged.

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