**Work Package 2; Deliverable D.2.3**

**Report on the evaluation of the Network for Innovation and Learning**

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**Abstract (for dissemination)**
This document describes the design of the formative (midterm) evaluation assessing the first prototypical implementation NIL-MRT’s webspace. This evaluation as described in the DOW assesses the 1.0 version of NILMR. It precedes the NIL-MRT2.0 designed and launched at the end of the project period.

**Keywords List**
Evaluation, survey, NIL Communities of development.
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1. Introduction

1.1. Introduction NIL-MRT’s platform ambitions

The EU- LLP-project ‘Network for Innovation and Learning on Micro Reactor Technology’ (NIL-MRT) wants “to implement a European learning network for the innovation of chemistry education in the field of micro reactor technology”.

Therefore the NIL-MRT project aimed at realizing a networked environment for collaborative work-learning and innovation across professional communities of interest, using their NIL dedicated communities and web space for project work, professional practices, expertise sharing and innovation. The interconnections between communities in the NIL-MRT network enable information sharing and knowledge building amongst the heterogeneous population of the network. Thus the NIL-MRT new network can become a “motor for innovation and learning” for all involved in micro reactor technology research, development and practical implementations Europe wide.

Essential to the NIL-MRT ambition is the design of a learning and innovation network that organically fits into the real life practices of the MRT communities in the various settings and organizations enabling new ways of learning and collaborating.

This deliverable focusses on the way in which the network structure and functionalities of the first prototype were evaluated and how the evaluation results influenced the final implementation of the second implementation NIL-MRT2.0 for the project’s afterlife.

1.2. Towards the NIL-MRT 1.0 evaluation

During the NIL-MRT past project period we developed and implemented a dedicated web environment for the NIL (the network for innovation and learning) hosting Communities for Development (CfD’s), based on the theoretical foundations described in D.2.1, using the outcomes of the collaborative requirement elicitation as described in D.2.2. The 1st prototypical implementation had to be evaluated to assess by the first users. This first evaluation aimed at assessing real life experiences and perceptions aimed at surfacing ideas for further improvements and customization of the second NIL-MRT implementation. NIL-MRT2.0 providing a robust and sustainable online environment, attractive and valuable to current and new participants after the project period,

It should be noticed that to substantiate the NIL activities the development of MRT content was key. This implied that during the whole of the project WP2 apart from realizing functional structures and enabling instrumentation of NIL-MRT web environment we in parallel had to focus on facilitation of the integration of learning materials, MRT content and case studies of WP3, WP4 whenever needed to attract people and raise awareness of the new MRT network and its possibilities.

As such during the project period new materials developed like the case study of Provadis (PSIMT), the...
e-module materials of the University of Hull and the topic based learning (path) structures developed by Zuyd Hogeschool as well as other new functionalities requested by the partners were already tested internally.

By the end of 2014 and early 2015 (November 2014-February 2015) when we had a complete implementation of the NIL-MRT, including a set of communities and a body of relevant educational material we were ready to organize the first evaluation of the NIL-MRT 1.0.

This evaluation was a formative evaluation to test the existing environment taking the comments into account to improve the environment and develop it to the operational environment for further growth and use during and after the project life. A NIL-MRT 2.0 environment capable to scale from the small, current pioneering audience to larger audiences.

In this deliverable we will, after this introduction, (1) shortly summarize the design and implementation towards the NIL-MRT 1.0 prototype (2) Second paragraph describes translation into the first NIL-MRT network of innovation, its learning structure and functionalities (3) the goals and method of evaluating the NIL-MRT 1.0 prototype (2) A third paragraph describes the analysis of both quantitative and qualitative results (3) characterization of the first implementation (2) and next we sketch how the remarks and evolving vision led to e real redesign learning to NIL-MRT2.0. Providing for each of the aspects.

2. The first NIL-MRT1.0 prototype implementation.

2.1. NIL-MRT from design requirements to implementation

To realize the NIL-MRT online network, tailored to the needs of the MRT community across Europe, to learn, innovate, share knowledge and collaborate, we started a web presence connecting to the prime needs of the project partners representing also the future target population. This implicated a priority to enabling knowledge sharing and collaboration on already available learning materials by the project followed by those developed by the partners in the project during the project period.

The project partner’s attention in this period primarily focussed on (1) information dissemination (2) sharing of educational material on microreactor technology (3) followed by attraction of interested people to subscribe and become member of the NIL-MRT network.

We developed the first NIL-MRT prototype 1.0 version based on the theoretical groundwork of the state of art (D.2.1) and the design propositions retrieved from the elicitation activities with the project partners (D.2.2).

The objective was to develop a consists expandable web environment to support information and knowledge sharing, enabling (learning) interaction according to the participants’ needs in function of collaborative project work, learning and innovation activities concurrently supporting community building.
**Requirements elicitation** provided us with rich, detailed information. The expressed needs were embedded in a set of representative “personas” i.e. characteristic different users. These “personas” comprise ideas on what users wish to do, and what they need to be engaged in the NIL-MRT network and achieve their goals. In D.2.1 and d.2.2.. we describe the NIL-MRT functional infrastructure based on the expressed needs. We specified the network’s nature and composition. And we designed enabling functions to support the participant’s (inter)activities¹.

The NIL-MRT project management team and steering committee decided on the **actual implementation** of the prototype on an already existing platform. This for a rapid first implementation, enabling the project team to find out the best way forward to match the MRT community of learners, experts and professionals

After a thorough investigation of other **possible platform options** like. ELGG, Moodle, Drupal, Plone at the start of the project (in 2012), a choice was made for the OpenU (http://portal.ou.nl) the OUNL’s learning environment, using Liferay software (http:// www.liferay.com). Discussions with experts Harry Vaessen, Rienke Schutte and Jack Theunisz of Zuyd Hogeschool and other project stakeholders (requirements session Autumn 2012 + January 2013 @ Frankfurt project meeting led to an unanimous decision in November 2012 to realize the first prototypical implementation (as referred to in the DOW and D.2.2.) in the Liferay based OpenU platform. A platform already available and the OUNL offered its expertise to realize this prototype.

NIL MRT (NIL-MRT 1.0 as it would be called later) was implemented, embedded into this **OpenU** university wide ecosystem. The assumption was that using an available platform and having access to technical development expertise on that platform nearby would be helpful to rapidly a work and learning environment available to test ideas and assumptions in practice. For NIL-MRT additional functionalities had to be developed like dedicated search options and differentiated functionalities for specific communities as well as creation of restricted and closed project communities, which didn’t exist in the as principally “open” conceived OpenU.

Immediately after completion of the requirement studies OUNL developers translated original user-requirements into OpenU functionalities, accommodating user needs when the prototype went online. Finally our NIL-MRT project could rely on a complete and operational NIL-MRT 1.0 prototypical platform (with a minimum of downtime) from March 2013 onwards.

It was decided that OUNL would take care to provide a centrally hosted system for the project period the first year afterwards until the HZ would have decided on where and how to host it for its future.

¹ Based on requirement survey, JRD session, personas and interviews with partners and students.
3. NIL-MRT 1.0 a network of innovation and learning: structure and functionalities

3.1. The NIL-MRT 1.0 prototype’s characteristics.

To support the heterogeneous ambitions of the project the NIL-MRT network offers, (based on heuristics from research (Berlanga, et al, 2009, Fischer et al, 2006) supportive features like open and restricted communities according as needed, self-organization of community activities, profiling services, enablers for expert knowledge exchange within and across communities, information document sharing, recommendations, etcetera.

The NIL-MRT 1.0 network consisted of 7 communities. Designed according to the project aims as specified in D.2.1 and D.2.2. three types of CfD’s, communities for development were developed (1) “open communities”, communities open to the public (2) restricted communities i.e. communities open for registered users who applied to join and (3) private (closed) communities. For these private project communities a registered user had to be invited.

The picture below visualizes this 3 level structure of the network of NIL-MRT communities, the network in relation to its users, other networks and various sources of information on MRT.

The communities differ qua content focus and nature. Communities range from project communities to a variety of dedicated communities concentrating on specific MRT topic like kiloflow. The communities differ with respect to their population sometimes with only internal (project partner) participants sometimes including one or more external partners. Communities also differ in nature: from specific topic communities to communities primarily focused on learning and yet others focus on valorization of new MRT possibilities in collaboration with external experts or SME’s.
We present the current structural components as implemented in the first prototype. In this way we will be able in the following paragraphs to assess and decide on the transformation to the implementation of the operational network for the next phase during and after the current project period.

1.1.1. Homepage:
The current homepage is the launching place from where further actions are taken news is available an login starts

All users go through a login procedure and are provided with ID -password to enter the NIL-MRT network. Their request are send to the project manager Jack Theunisz who accords the request to let the user enter. Access to specific restricted and private communities is granted via the project manager of the community

**Homepage-experiences and requirement suggestions**
- The system uses menu based logic. Some users find it difficult to immediately know their position in the system via the menu logic .
- The idea is that a dynamic/clickable visualization would be helpful to support these users to know where they are and where they can go.
1.1.2. Entrance, Login

Current login is embedded into the OUNL university’s overall OpenU ecosystem. Which implies that users become a member of the OpenU university community before entering NIL-MRT space to become a registered NIL-MRT member.

1.1.3. Subscription procedure & form

The current login/subscription form is experienced as complicated hindering the attraction of new users, and frequent use of the platform.

Login experiences and requirement suggestions:
Easier entrance that enables a quick, few clicks type of entering the NIL-MRT web, method which is. “NIL-MRT user” proof. Eventually considering a login options via LinkedIn/Facebook.

1.1.4. Personal presence & profiles

The OpenU profile format limits integration of flow chemistry specific NIL-MRT profile information needs. Hence it is experienced as not that helpful.

Personal presence & profiling: experiences and requirement suggestions:


- Member profiles are critical for allowing members to connect to other individuals. Profiles help members find people they need, based on their expertise, shared content, projects, current responsibilities and reputation.

- Opportunity to tweak ones presence in the platform sharing personal specifics regarding ones MRT needs. Regarding profiles inclusion of MRT specific information and roles’ expertise level of the participant (a la Biebkracht)
1.1.5. Community level structure: open restricted and private.

Every user has depending on his participations’ and entrance to private and restricted communities a different view needs. Most users are not aware of this difference and some have difficulty in positioning where they are.

Experience requirement suggestions

Visual aid, having an overview map, to give users a conceptual map of the coherence of the “system”


Feeds are not very lively, neither the internal nor the external have high frequencies
Experience & requirement suggestions

- No specific usability comments
- News & articles as a means to keep engagement and stimulate action.
- Automated feeds or manual news articles authored by the community leader(s).
- Curators of communities
- Feeds are not very lively, neither the internal nor the external have high frequencies

1.1.7. Search

No specific usability comments made.

Experience & requirement suggestions

- Bitter-Rijpekma et al (2011) search engine should allow for searches across the entire community platform for content or experts and support dedicated searches only in that one restricted or private community.
- Implementation of searches at different levels and with different search scopes
- Activate uses to systematically tag to support searches and finding peers

1.1.8. Faq

FAQ is experienced as helpful as far as we know. This also is true for the procedure. Hence the advice is to continue in line with the current implementation.
1.1.9. Calendar
Calendar functions to alert people on events currently in list view. Textual list view is not really motivating and doesn't highlight the current forthcoming events.
Experience & requirement suggestions

- Suggestion to create an agenda view that’s attractive to top highlights of events in order for users to quickly get a good overview and see what’s new or rapidly forthcoming.

1.1.10. Forum as discussion environment for NIL-MRT.

Experience & requirement suggestions:

- Above is the discussion environment we use. Wiki/wall function not (yet) perceived as better
- Appreciation tends more in the direction of regular forum mechanisms
- Multiple views and threading are additional wishes.
1.1.11. **NIL-MRT as authoring environment for its users**

1.1.11.1. **NIL-MRT Content sharing, document repositories and handling.**
Experience and requirements suggestions

- Up- and downloading and sharing various types of content are crucial for community members. Tool should allow for version control and viewing downloads, comments and ratings, etc.
- Information sharing both for project management, project work and learning, as well as for knowledge sharing are important functionalities from the start onwards.
- Multiple formats need to be easily uploaded or downloaded. Initial complex methods and drawbacks have been countered by the improvements realized by OUNL (Wim Slot).
- Extra tooling to quickly find, upload, retrieve and manage documents in addition to finding information, it is crucial for long term sustainability to generate and maintain the knowledge base of the community in the network.

1.1.11.2. NIL-MRT Network of communities
4. Evaluation study of the NIL-MRT 1.0 prototype

4.1. Introduction

In the NIL-MRT project we use PD (participatory design) method of work. Collaboration with the project group, prospective users and stakeholders to sensitize what images each of those involved hold of the future NIL-MRT network and elicit platform requirements from there is crucial. A formative midterm review is essential in this participatory design process to assess the perception of the outcomes at an early stage.

The NIL-MRT evaluation investigated the perception and experience of the project partners and designer group and first subscribers and users of NIL-MRT’s web presence.

The current evaluation end 2014/begin 2015 assesses the prototypical implementation of the NIL-MRT 1.0 network designed according to DOW D2.1. and D.2.2 plus the stakeholders requirements and regular informal feedback request aimed at evaluation of the first implemented design, based on the existing chosen OpenU platform in 2013.


The first (2014/2015) evaluation concentrated on the first experiences with the environment, the user’s experiences and needs and especially the experiences and needs regarding the available and needed MRT content & case study. At that time we had implemented a fully functioning complete platform. Which however due to the project work in progress was in its infancy. The project partners proto-testing the platform before each new iteration. First external users registering to the network while at the same time content specialist were busy to bring existing and new educational material (case studies and e-modules) to the NIL-MRT environment. So we need to take into account that we were testing an environment under construction…..

We aimed for the (2014/2015) formative evaluation at gathering insight into:

- **Background and expectations.**
- **Usability dimension** to answer questions regarding the usability of NIL-MRT 1.0 “environment” as perceived by its users.

Usability evaluation assumes that highly usable products enables users to achieve their objectives quickly, with a minimum of fuss or frustration or error. To assess this quality of the system we used the System Usability Scale (SUS) which is often seen as a quick, method for benchmarking user perception. We have used the variant with the positive
wording suggested by Sauro & Lewis (2011). Questions in this evaluation concern findability, accessibility, usefulness, credibility, value of NIL-MRT

- **Educational dimension** to investigate how the environment facilitates learning
- **The social/community dimension:** answering how the web stimulates and facilitates social processes community formation and social collaborative knowledge exchange information sharing.
- **The NIL/COP dimension.** For this we build on evaluation suggestions from Kietzman et al. (2011) & McCarthy (20..) on the social media ecology and questions of Bitter-Rijpkema, Berlanga, Brouns et al and Goes et al.

We purposely didn’t yet include specific questions on the social learning dimensions (Kietzman, 2011, identity, conversations, sharing, presence, relationships, reputation.

Since the prototype is still under construction with respect to these dimensions and the development focus has been on creation and integration of crucial content for the aspirations of NIL networked learning.

As target groups we addressed at this stage

- **The project partner/team members**
  - Even though they are developers, we want to elicit feedback from them since they are also prospective target users in their respective roles of experts, teachers etc.
  - Since they have pre-knowledge and experience we assess their feedback separately

- **Target audiences for NIL-MRT** those mentioned in the DOW (WP2/ WP3/ WP6) i.e. students, entrepreneurs, lectors and professors, interested laypeople (public part).

### 4.3. **Method: a NIL-MRT 1.0 survey evaluation study**

In interviews with project partners and students we were already evaluating first perceptions and experiences of current users with the actual NIL-MRT web environment during its evolution. This midterm review sought to complement the qualitative feedback gathered with a short systematic survey to investigate multiple aspects at one moment in time and gather also quantitative feedback.

It should thereby be noticed that the overall project has focussed on parallel development content material for the network and case studies awareness generation to people both experts, teachers, students at the partner institutions to test the environment before scaling to larger audience. Priority has been the prototypical implementation of the platform and the development of new materials like the case studies.

As input for the D.2.3 deliverable “Evaluation of the Network for Innovation and Learning” we investigate in October 2014 and February 2015 the usage of the first NIL-MRT platform. However in the

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2 Social media are defined as "those interactive web platforms via which individuals and communities share, co-create, discuss, and modify user-generated content" Kietzmann et al. (2011, p. 241)
light of the future sustainability and growth of what has been developed during the project’s lifecycle it has been decided at the Hull meeting (July 2014) to investigate the NIL MRT network and MRT communities’ sustainability not only for the time period of the project life but in the wider perspectives of the project’s afterlife (of at least 2-4 years). Therefore WP2 has proposed to plan a second evaluation (survey) study once the improved NIL-MRT 2.0 resulting from this evaluation has been in function for about ½ -1 year. (end 2015/ begin 2016)

**Rationale and objective of a NIL-MRT platform evaluation.**

At the Hull project meeting 2nd July 2014 it was decided to evaluate the current prototypical platform that has been decided upon at the start of the project in Heerlen by the project partners in 2012. Important at that moment in time was to build upon an already existing platform ready to use fit for the envisaged purposes and availability of expertise with one of the partner institutions to develop the NIL prototype(s) with an institution and professionals. As stated at the Hull meeting of 2014, the current OpenU platform fulfills the expectations the partners had at that time to realize a first prototypical implementation quickly after the start of the project.

Now the project partners feel they have to decide on the next phase of the NIL-MRT network development. It therefore will investigate how to realize a sustainable NIL-MRT network platform for (the remaining project period) and the projects afterlife, enabling the just started network for years to grow and function well in years to come.

**4.4. Report on survey and interview results**

The respective answers on the questions in the appendix (appendix 1) provide us with the following.

Of the ca 55 registered users end 2014, 9 respondent to the survey. (N=9) to the 1st survey questions which can be found in Appendix 1. Of these respondents, 8 persons typified their background as staff (teacher, lecturer, professor, project staff member). One indicated explicitly his/her academic background and another member emphasized his/her management background in industry.

All participants were involved in one or more communities in the network and wanted to be kept informed on future developments. However the frequency of online NIL-MRT activities amongst the participants did differ. People were already active between 1-40 times per month most, however (45%) paying ca 5 visits per month. While the 5 respondents indicated they had almost no experience with online environments or collaboration two participants saw themselves as experienced, frequent users of this type of online collaboration.

Web activities vary prime use of the users at the time were reading information (66%) Sharing information telling to others (33%) down and uploading Interactive options like posting comments or questions and sharing information with others came behind (9%)
We investigated with 5 point Likert scale questions what triggered people to participate, how useable they found the web environment, the content and the cases.

One respondent refers to other uses as: “exploration of the web for content enrichment, structuring of educational material, web lectures, video & audio use for knowledge exchange”.

Triggers for people to get involved spread across the spectrum of new ways of learning, (5x) innovation (4x) and others (3x i.e virtual knowledge exchange). Respondents want to find information on MRT, find MRT knowledge-able teachers, teaching resources. And experts on MRT to share knowledge and /or MRT experts for collaboration.

Aspects most liked were the availability of online closed (and even very closed/private) communities for sharing project work and information (1) Agenda with MRT activities (2) Explorative pioneering orientation of partners to develop a NIL (3) a networked way of collaborating, learning and innovation (3) developed structure to accommodate different purposes, type of communities materials and interactivity (4) Especially mentioned was the multilevel structure of NIL-MRT accommodating private closed communities as well as open topic communities, customization to knowledge work of experts, teachers as well as young professionals entering industry lab practices.

The answers given on questions regarding- content, structure, etc. received neutral to positive scores. Problems were reported especially on the aspect like access, the extra step to get in MRT via the OU OpenU click was perceived as “hard to get access”, the construction was perceived as not that easy to navigate. And finally there was not as much information as wanted. Poor structure in the presentation of the material. Chaotic way of presenting the information. Content of learning modules to general! Content from the perspective of the possible user is not very clear. Level differences in the material are high. Environments seen as very textual where more interactivity (e-learning) and more visual content (pictures/video...) would have been appreciated

5. Design of NIL-MRT 2.0

5.1. Coming to terms with the evaluation results

Having realized a working prototypical platform including functions decided upon in DOW and defined in the requirement studies in the beginning of the project, the project team now had to decide how to integrate the evaluation outcomes in a new environment for a sustainable future of the NIL-MRT network.

Raw material available will be integrated end May/early June based on status of (integration evaluation results in NIL-MRT2.0 and future plans.
Summary of the functional design requirements for NIL-MRT 2015-20..

- Requirements for the new NIL-MRT platform for future years after project life. Taking the decision on the platform
- Transition to the NIL-MRT platform for the next period

6. Concluding remarks

Define based on the status of end of May and actual improvement plan status. In the prior paragraphs we looked at the experiences with the prototype and the requirements for the platform for the next period.
Appendices

Appendix 1: NIL MRT network requirements.

Summary of NIL-MRT ambition, underlying assumptions and elicited design requirements based on the state of art (D.2.1.)

NIL-MRT Ambition:
According to DOW-WP2:
- to improve dissemination on innovative education in/and on micro reactor technology
- to improve accessibility to the website / communities
- Encourage to subscribe to the website

According to requirement elicitation a place in the internet (website/homepage), where one finds:
- Educational material on MRT
- A list of companies interested in/working on the topic and contact information
- Brief summaries of recent advances and innovations in MRT, presented in an clear and intuitive way, similar to educational material
- A forum for discussion of topics related to MRT

Target users
- Teachers, researchers, students, experts, suppliers, (potential) users
- 4th year level/MSc students – we can create an educational program for MRT that the portal can support
- Industry – the portal can be used to upgrade workers knowledge in MRT in the chemical Pharma industry interested companies and educational institutes.
- employers of companies using MRT
- students and lecturers
- Other people

Expectations on NIL-MRT:
One expects to find:
- Actual Information on the Technology, application possibilities, cases, courses, documentation, contacts, important events
- Levels of information. i) educational – theory and application of MRT supplemented with literature examples from our own research programs and others ii) Industrial application – this would be set-up to aid workers using MRT in industry, with the most up to date techniques and ideally perhaps a discussion forum that would aid in problem solving for industry. iii) the basics
Interactivities

- work, contribute, find, discuss, share (share knowledge/expertise & learn)
- study on-line, discuss on-line, provide and find information
- matchmaking

Participants find in NIL-MRT:

A NIL network with has 3 levels of activities/community live (1) open (2) restricted and (3) private communities

- relevant information on the topic – from educational to application,
- discussion fora where problems related to MRT application can be discussed.
- learning platform innovation and learning communities
- a contemporary advertisement of innovations in MRT/ key points of the innovation should be explained in a short and clear manner
Appendix 2: 1st Evaluation Survey NIL-MRT of prototype NIL-MRT 1.0 implementation.

QUESTIONNAIRE
NIL-MRT: Network for Innovation and Learning on MicroReactor Technology web presence and online material evaluation

The aim of this evaluation of the NIL-MRT web presence is to obtain the visitor’s and participant’s view of NIL-MRT’s current web presence and online material in order to gain an accurate appraisal of the effectiveness of the material, its strength and areas for development. Additionally, it is important for visitors to reflect on their own contribution to the learning material for the benefit of the others who might potentially subscribe to the NIL-MRT web.

It should be noted that NIL-MRT is a living community; your views will significantly contribute to the improvement of the NIL-MRT web presence.

All information will be used anonymously!

Please tick as appropriate and use the scale below to answer the following questions:

1 = Poor  2 = Fair  3 = Satisfactory  4 = Very good  5 = Excellent

Section A  Evaluator Information

A. Your background:

1. To tune in with your needs, we ask you to indicate your background:

☐ Academia
  ☐ Student
  ☐ Staff: (teacher, lecturer/professor, project staff)
  ☐ Others namely ………

Industry
  ☐ Research and Development
  ☐ Production
  ☐ Management
  ☐ Others, namely ………

And for those involved in the project as developer/partner:

☐ Tick this box if you are involved in the NIL-MRT as a co-developer/project partner of the NIL-MRT web

2. You are:

☐ Already active in one or more communities
☐ A first time guest
  ☐
3. During the last 30 days, how often have you been on NIL-MRT web?  …………………….Times

4. What did you do on NIL-MRT web?
   - Read information
   - Subscribed to the NIL-MRT web
   - Subscribed to specific communities
   - Posted one/more questions or comments
   - Downloaded or shared information from the NIL-MRT web
   - Uploaded information to the web
   - Shared information with others, peers, students, colleagues, friends
   - Told it further to others, peers, students, colleagues, friends, suggested others to join
   - Other namely,………………………..

B. Your experience with e-learning and working:

5. I would characterize my experiences with online learning:
   - Almost none
   - Regular user
   - Frequent user: I often use online learning resources or participate in online learning activities
   - Others, namely ……………………

C. NIL-MRT and YOU:

   Multiple answers possible Tick boxes applicable!

6. My interest in NIL-MRT was triggered by:
   - MRT technology
   - Education, new way of learning
   - Innovation possibilities
   - Others, namely …………..

7. Your expectation of online NIL-MRT:

   I would like to be able to

   - Find information on MRT:
   - Find MRT knowledgeable teachers/teaching resources for learning
   - Find experts on MRT to share knowledge and engage in discussions
   - Find experts on MRT to collaborate with
   - Others, namely ………………….
### Session B  Usability of today’s NIL-MRT web environment

<table>
<thead>
<tr>
<th></th>
<th>1 = Poor</th>
<th>2 = Fair</th>
<th>3 = Satisfactory</th>
<th>4 = Very good</th>
<th>5 = Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Structure of the NIL-MRT web is</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(e.g. clearly structured, simple to use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. For me the website content is</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>e.g. has useful information about MRT, e.g. basic knowledge, Up-to-date events and activities on MRT, discussion forums, business cases, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. The NIL-MRT web meets my expectations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I found what I was looking for</td>
<td>0 Yes</td>
<td>0 No</td>
<td>0 Partially</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I found other information on NIL-MRT that raise my interest</td>
<td>0 Yes</td>
<td>0 No</td>
<td>0 Partially</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Session C  NIL-MRT Educational content (e-module, teaching methods, masterclasses)

<table>
<thead>
<tr>
<th></th>
<th>1 = Poor</th>
<th>2 = Fair</th>
<th>3 = Satisfactory</th>
<th>4 = Very good</th>
<th>5 = Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. The learning (course.module) objectives are clear to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I assess the overall quality of the online material as</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(Good quality defined as easy to understand, providing basic knowledge of MRT, multiple examples of MRT applications)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. I find the educational material is easy to read and good to understand</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. The learning materials provides me with basic knowledge of MRT (it helps me to get an impression of what microreactor technology is about)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. The material helps me (at for my MRT expertise level /study ambition) to grasp (new) concepts of MRT.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. The tasks are relevant to the learning outcomes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
**Session D  Case studies**

19. I found the case studies easy to understand and follow

20. I found appropriate reaction choices for first practical experience of microreactors

21. I found the script helpful to understand how the transition from flask reaction into continuous micro flow is done.

22. I found the material helpful to grasp the important points, the method and the mathematics involved in the case

23. I think what I learned in this case study was useful for me

24. This case study will help me to work together with other people in the NIL-MRT network

25. This case study is suitable for use as a practical training resource to familiarise with microreactors

26. My 2 suggestions to improve the case studies are:

**Session E  Overall appreciation of today’s NIL-MRT web environment**

27. The current NIL-MRT web meets my expectations

28. The aspects I liked/disliked most in the current NIL-MRT web

29. My main suggestions to improve NIL-MRT are
Section F Want to stay involved?

Tick this box to indicate that you want to be more directly involved indicating whether we can call you next week for a short phone interview on further ideas for the web indicating whether you want to give us further feedback later in time (beta-testing new features). PM Note that your contact information will only be used to contact you. It will be separated from your answers where we care for anonymity.

Thank you for your participation. Based on your comments we will work on improvements. Hoping that the future NIL-MRT web will provide you with the information you need!
Appendix 3: Results of NIL-MRT 1.0 evaluation.

References


Kawrowski, W., & Orlowski,A. (2014) Drupal as an important part of a knowledge management system.


Moodle, https://moodle.org/


