

# Open Virtual Mobility

## Output O7.A1.3: Design of evaluation instruments and periodical progress reports to guide project implementation

- Final draft -

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	Affiliation of the author	University of the Balearic Islands
	Name of the reviewer	George Ubachs
	Affiliation of the reviewer	EADTU

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## Imprint

**Imprint:** This publication is the final draft by the Open Virtual Mobility, URL: <https://www.openvirtualmobility.eu/> Erasmus+ strategic partnership founded by the European Commission 2017 - 2020 under **2017-1-DE01-KA203-003494**. This paper is the final document produced as part of Outcome O7 “Quality Assurance, Dissemination and Sustainability” and aims at the design of evaluation instruments and periodical progress reports to guide project implementation by means of an internal review of a survey including questions related to qualitative and quantitative criteria.

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## Corresponding author

Gemma Tur

[gemma.tur@uib.es](mailto:gemma.tur@uib.es)

University of the Balearic Islands

Calvari, 1, 07800 Ibiza

Balearic Islands, Spain

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## A. Executive summary

The first section briefly introduces teamwork in the context of distributed leadership, and enumerates the qualitative and quantitative indicators that need to be addressed in a survey aimed at monitoring the work process in a European project. The background offers a brief reference to literature on teamwork. The following sections present the internal process of validation and in the final appendix section the diverse drafts, result of the various iterations, are presented.

## B. What are the objectives covered in this paper?

There is a sole aim in this draft: to document and present a survey addressed at monitoring the work carried out in an international project from the partners' point of view.

## C. Who is this paper for?

This paper is for anyone involved in E+ projects, MOOCs and in general, online learning in HE institutions and open education. Although the project mood might seem to be a responsibility for leaders, the distributed approach, presented in the second milestone work of this output, allows the involvement of all participants at all levels. Therefore, this paper may answer to the interest of a wide variety of target agents:

- A. Higher Education Educators
- B. Primary, Secondary and Tertiary student teachers
- C. Higher Education Students (BA and MA)
- D. International Offices, Teacher training units/centres
- E. HE leaders
- F. Career Service Units
- G. Researchers and Research Units
- H. Internship providers
- I. Open Education Communities
- J. Policy makers
- K. e-learning designers
- L. and, other practitioners involved in Open Education, online learning and HE.

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## D. What topics are addressed in this paper?

The literature review briefly presents teamwork from the perspective of distributed leadership, addressed in previous stages of this Output such as O7.A1.1 and O7.A1.2.

## E. Contributors

Gemma Tur holds a PhD of Educational Technology from the University of the Balearic Islands (UIB), Spain. She works as a Lecturer in the Department of Applied Pedagogy and Educational Psychology of the UIB and collaborates in research in the Educational Technology Group of the same university (GITED- GTE). She is the coordinator of diverse programs in the Ibiza off-campus centre such as Early Childhood, Primary and Secondary Teacher Education courses and the Open Senior University. She has participated in many international conferences such as the PLE Conference, EDEN, EDUTEC, EDMEDIA and EDULEARN. Her research interests include eportfolios and Personal Learning Environments, social media for learning and reflexive aims, and in general, technology enhanced learning in Teacher Education.

Santos Urbina holds a PhD on Education Sciences from the University of the Balearic Islands (UIB), Spain. He works as a Professor in the Department of Applied Pedagogy and Educational Psychology of UIB and he is a member of the Educational Technology Research Group at the same university. During the last 10 years he has been director of the Virtual Campus of the UIB. His preferred fields of research are focused on the design, production and use of didactic media, virtual campuses, technology-enhanced learning environments and the curricular integration of ICT.

George Ubachs is the Managing Director of EADTU, the European Association of Distance Teaching Universities. He is responsible for the development and support of the EADTU network, policies and execution of its goals in online, open and flexible higher education. He is coordinator of international academic cooperation networks on networked curricula, virtual mobility, QA in online education and on business models for lifelong learning. George Ubachs is the coordinator of the E-xcellence movement on quality assurance in online, open and flexible education and leading the ICDE-UNESCO focal point for QA in online education in Europe. He also coordinates the EMPOWERing universities network of a 100 experts that represent 12 specific fields of expertise related to online, open and flexible education. As coordinator of these two dedicated networks he works closely with the EUA, ENQA, ESU, ICDE and Unesco.

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## F. Acknowledgements

The draft has been reviewed by internal partners and the object of interesting debates about its aims. Special thanks to Ilona Buchem, who as project leader, inspired the initial steps of this milestone work. The authors would like to thank all partners and in particular, to Roma3 colleagues (Antonella Poce, Francesco Agrusti, Francesca Amendoni and Maria Rosaria Re) and Cineca (Chiara Carlino) for their important contribution.

## 1. Aims and Scope

The aim of this draft is to present the survey which monitors the progress of the work done in the partnership. The survey is aimed at exploring participants' perceptions on the quality of work and personal relationship from a qualitative approach and on work rhythm and number of aims achieved from a quantitative perspective. As a fit-for-purpose instrument it is developed following the DBR cycle as stated in O7.A1.1 and its construction answers to the mandate of the QAF strategy for the OpenVM E+ project.

## 2. Background and rationale (State of the Art)

### 2.1. Teamwork

The literature on teamwork has a lot in common with the theoretical framework on distributed leadership, and at the present time, the former is part of the related-concepts most commonly studied in the research on the latter. As distributed leadership is characterised as individuals in interaction, teamwork skills are particularly important for a successful distributed leadership approach (Bennet, Wise, Woods & Harvey, 2003, p. 11). Team work involves the understanding of the new concept "followership" whose focus is on their fluency, interaction and the two-way direction of leadership.

Two kinds of teams can be distinguished, according to Bennet, Wise, Woods and Harvey (2003): the teams with a formal structure and the ones that are created *ad hoc* for concrete tasks. Both kinds of groups will work well in open climates, based on trust, mutual help and support, which altogether will help ad hoc groups to achieve an *agreed modus operandi* (Bennet, Wise, Woods & Harvey, 2003, p. 9).

Based on Bennet et al. (2009), teamwork dynamics in the context of distributed leadership can be described with the following characteristics:

- collaboration and multiple and diverse expertise from all partners who at the same time share common aims
- conflict negotiation, through a collegial and constructivist process
- relationships based on trust, protection and mutual support
- common aims, values and beliefs prioritising group goals than those individuals

Agile development software has been an approach to the current needs presented by complex and variable software development. This successful approach has been widely extended to other fields that requiring both high productivity and quality at even a higher speed of work (Melo et al., 2013).

In agile development, the size of the team seems a key element, and although it has been said that a small size would be preferable, it has also been stated that teams can be scaled up to 150 members (Lalsing, Kishnah & Pudaruth, 2012). In spite of this, two basic principles have been considered: each member of a team only reports to one person and a person can only receive reports from a maximum and of seven people. To sum up, the ideal number of people in a team is between three and seven and research has shown that if there are 9 or more, productivity decreases (Abilla, 2006; Lalsing, Kishnah & Pudaruth, 2012).

Along with the size of the team, other human factors are paramount for successful agile management as stated by Lalsing, Kishnah and Pudaruth (2012). One of these elements is the cognitive engagement or flow which has been defined by authors (ibid, p. 120) as “the rational state in which a person in an activity is totally absorbed, totally focused, has full engrossment, and eventually acquires success in the process”. Flow has been related to higher productivity and innovation although it is difficult to measure and requires a psychological approach.

Another relevant element is the communication factor, which is also a complex element. In large teams its becomes more difficult to manage communication as it grows geometrically and not lineally which means that proportionally there are many more lines of communication between six people than between three. The following figure graphically represents this fact:

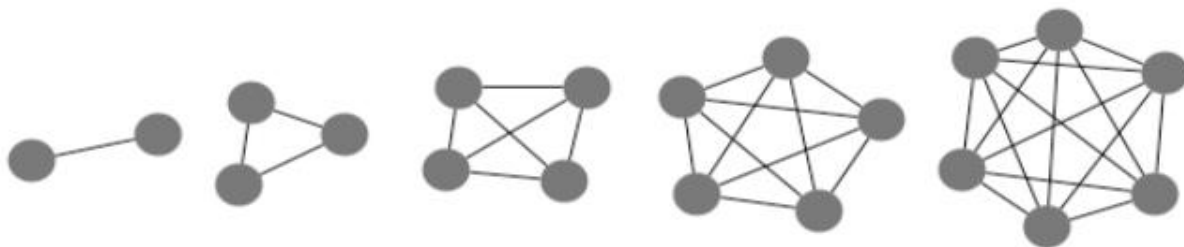


Figure 1. Overview of communication channel complexity ( $N \times (N - 1) / 2$ ) (Lalsing, Kishnah & Pudaruth, 2012, p. 120).

Efficiency and productivity have also been related to a sense of belonging, social events and well-being as well as other aspects such as recognition and appreciation. Based on another study by Sudhakar et al. (2011), Lalsing, Kishnah and Pudaruth (2012, p. 121) summarise the following soft factors that may impact a team’s productivity:

- Team climate: common perceptions to achieve project aims
- Team diversity: the variety of skills, expertise, background and gender or race
- Team innovation: new perspective to problem solving
- Team member competencies and characteristics: Technical and personal skills of partners that may influence familiarity and collaboration.
- Team leader behaviour: people management needed.
- Top management support: Commitment to the project



The twelve principles of the Manifesto for Agile Software Development are the following (Beck et al, 2001):

1. “Satisfy the customer through early and continuous delivery of valuable software
2. Welcome changing requirements, even in late development
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Business people and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of progress
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design
10. Simplicity—the art of maximizing the amount of work not done—is essential
11. Best architectures, requirements, and designs emerge from self-organizing teams
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.”

Experts have observed some metrics (Stackify, 2017), among which the following may help to monitor both project and software development and efficiency and productivity of work done:

- Meeting times. Stick to scheduled times, and if they are too long it may mean topics were not sufficiently prepared.
- Time spent on a subtask. Subtasks have to be carefully planned and there should exist a way to communicate to others that a subtask has been completed and the subsequent ones can then be developed.
- Burndowns. Burndowns measure tasks completed in scheduled periods
- Customer satisfaction, which can be understood here as partners’ satisfaction through the project development.

## 2.2. Measuring qualitative and quantitative indicators in the OpenVM project

In OpenVM project, as an internal consortium which each distinct expertise, we strive to work closely together according to distributed leadership. To monitor the progress of the work carried out in the partnership the survey will include qualitative and quantitative indicators based on the brief literature

review presented above: the former are about the team's attitude towards their own work; the latter is about the criteria to measure efficacy and efficiency of team's work. The criteria included in the survey are the following:

Qualitative indicators:

- Mood in the team (positive, negative)
- Activity/output quality rating
- Value for end-user/target groups
- Agility of work/development
- Congruence with the work plan

Quantitative indicators:

- Ratio of the hit deadlines versus missed deadlines
- Ratio of solved problems to open issues
- Velocity as the average amount of work per output/activity completed in a time frame
- Utilization as total effort spent by activity vs. total budgeted effort for the activity
- Number of requests to change the scope and/or process of work per output

### 3. Methodology

Since it is an internal instrument for the partnership, the survey will be tested in three iterations reviewed by internal partners as concluded after the assessment of the QAF strategy in O7.A1.1 (Buchem, Tur & Urbina, 2018; Tur, Urbina & Ubachs, 2018). The first draft included the criteria mentioned in the previous section and is commented on in an online meeting with partners. After its first implementation in February 2018, it is commented on by partners and includes new additions, which are tested in a second round in April 2018. Then, the Project Management Team suggests that it could include a new section that would make partners document their dissemination activities. The third iteration is implemented and with no other comments by partners is considered in its final edition and consequently the survey is conducted every two months from June 2018 until the end of the project.

The following figure represents the DBR cycle for the construction of the instrument:

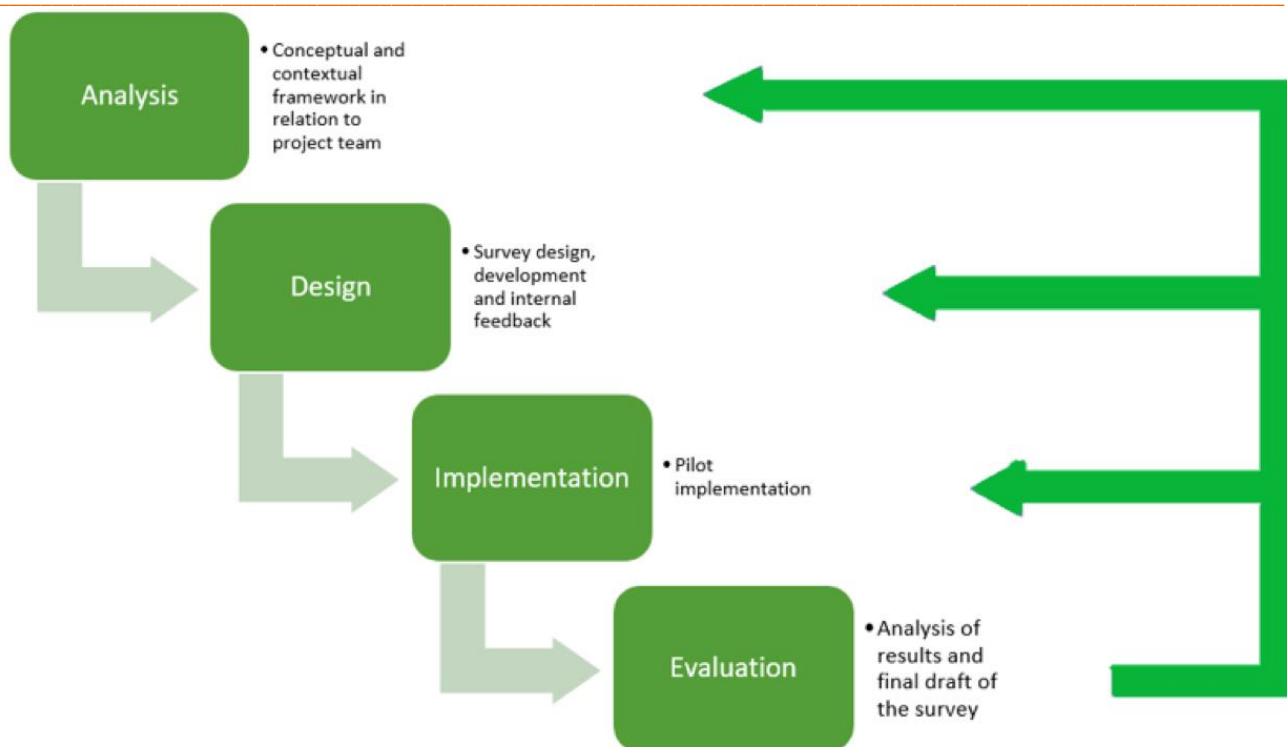


Figure 1. DBR cycle for the survey construction on qualitative and quantitative aspects on teamwork

## 4. Results

The results of the iterative process of design, review and new iteration is the definitive survey that is developed in this output and presented as attachments at the end of this document. The final draft is the joint presentation of questions in Attachment 2 and 3, whereas Attachment 1 presents the first design which is reviewed in the following cycles.

As for the results of its implementation (which are not presented in this document), data reveal a progressive construction of the team as well as an increasing understanding of the project and its overall quality of work. In the first steps of partnership, results reveal some levels of uncertainty whereas in the following survey implementations it can be observed that the progressive team feeling, relying on each others' work increases productivity and makes for a more agile work rhythm. Also, a positive impact of partner meetings hosted by partners can be observed and answers show a notable increase of positive feelings towards the team and the work carried out by the whole partnership.

## 5. Conclusions

The survey presented answers to the need for monitoring projects which involve complex tasks and multiple agents. The iterative construction guarantees its validity and transferability to other projects other than the OpenVM and its bi-monthly implementation will demonstrate the successful fitness

for purpose of the instrument as well as the evolution of work production and other human factors along a three-year long international project, from which some lessons can eventually be learned.

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## Appendix

### Attachment 1

The first iteration of the survey included 11 questions in two sections for the qualitative and quantitative indicators. It was as follows:

Partners' representative: Short space for name

Partner: menu from which choose ones' own partner name

#### 1. Qualitative indicators:

a) I feel the mood in my team is very positive

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

c) I consider the quality of the activity of my team very high

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

e) I perceive that the work of my team is very valuable for end-user/target groups

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree i

h) I think the development of the work in my team is very agile

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree l

k) I think the work done in my team is very congruent with the work plan

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree i

m) Give us three adjectives that define the work in your team:

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_

#### 2. Quantitative indicators:

a) I think we have a high ratio of hit deadlines against missed deadlines

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

b) I think we have a high ratio of solved problems to open issues

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

c) I think we are working efficiently and we have completed a lot of work in the time scheduled

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

d) We are devoting more effort than we budgeted for the activity in my team

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

e) We have had a low number of requests to change the scope and/or process of work per output ?)

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

## Attachment 2

In the second iteration, some new criteria were added: firstly, there are new criteria in relation to the project; and secondly, there are some new items for qualitative assessment. The quantitative sections remain the same. The text in blue are the new additions to the draft, and it is as follows:

Partners' representative: Short space for name

Partner: menu from which choose ones' own partner name

1. Qualitative indicators:

a) I feel the mood in my team is very positive

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

b) I feel the mood **in the project** is very positive

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

c) I consider the quality of the activity of my team very high

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

d) I consider the quality of the activity **in the project** very high

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

e) I perceive that the work in my team is very valuable for end-user/target groups

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

f) I perceive the work **in the project** is very valuable for end-user/target groups

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

g) I feel guidance provided is in line with the needs of the team and time scheduled

1 totally disagree 2 disagree 3 neither agree or disagree 4 agree 5 totally agree

h) I think the development of the work in my team is very agile

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

i) I think the development of the work in the project is very agile

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

j) I feel my personal contributions are noticed and well considered

1 totally disagree 2 disagree 3 neither agree or disagree 4 agree 5 totally agree

k) I think the work done in my team is very congruent with the work plan

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

l) I feel the team is strengthening one another, leading to more than the outcome of individuals

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

m) Give us three adjectives that define the work in your team:

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_

2. Quantitative indicators:

a) I think we have a high ratio of hit deadlines versus missed deadlines

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

b) I think we have a high ratio of solved problems to open issues

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

c) I think we are working efficiently and we have completed a lot of work in the time scheduled

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

d) We are devoting more effort than we budgeted for the activity in my team

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

e) We have had a low number of requests to change the scope and/or process of work per output  
?)

1 totally disagree 2 3 4 5 6 7 8 9 10 totally agree

YOUR COMMENTS

SPACE FOR A SHORT TEXT IN THE GOOGLE FORMS...

## Attachment 3

Due to the successful accomplishment of first survey implementations, in an online project meeting it was observed that it could be also useful as follow-up for the dissemination activities by partners too. Thus, a new section is introduced on dissemination activities. It is short, and the only aim is to remind and lead partners to use the suitable files to document their dissemination activities. So, the last draft of the online surveys includes the following section:

### DISSEMINATION ACTIVITIES

Follow-up of partners dissemination events and publications

Have you had any dissemination activities for the current bi-monthly period? (APRIL-MAY 2018)

YES/NO options

If yes, what were the target groups? (based on the dissemination strategy:

[https://docs.google.com/spreadsheets/d/1-BfzTS1bHUzFbST40Ew49Zt1q55YBOA7\\_kikL5UXkb0/edit#gid=984544628](https://docs.google.com/spreadsheets/d/1-BfzTS1bHUzFbST40Ew49Zt1q55YBOA7_kikL5UXkb0/edit#gid=984544628)

Educators HE

Students HE

International Offices HE

Teacher Training Units / Centres (inside HE organisations and regional HE centres)

HE Leaders (rectors, pro-rectors, presidents, vice-presidents, deans

HE Leaders (rectors, pro-rectors, presidents, vice-presidents, deans

Open Education Communities (OE Global, OER Communities, MOOC communities)

Researchers and Research Units HE

Policy-makers (EU, national)

General public

Have you added your dissemination activity in our sheet: YES/NO options

If not, please, can you do so now? This is the link: [https://docs.google.com/spreadsheets/d/1wM14E-cezVfx8A\\_PaadDRsytV2FcLO-D9DJ\\_eFicMLI/edit#gid=0](https://docs.google.com/spreadsheets/d/1wM14E-cezVfx8A_PaadDRsytV2FcLO-D9DJ_eFicMLI/edit#gid=0)