

Supporting Student Mobility – Expected and unexpected results from the EMREX Field Trial

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Keywords

Learning mobility, student information systems, digital result exchange, European policy experimentation, automatic recognition

1. ABSTRACT

The EMREX network, co-funded by Erasmus+, addresses the EU 2020 target that 20% of higher education students should be mobile during their studies. EMREX focuses on the electronic exchange of student achievement records between higher education institutions. EMREX together with e.g. Erasmus Without Paper, FAIR, OLA, and other similar initiatives is part of a wider set of activities on student mobility by EU. Academic recognition in higher education is seen as a challenge in learner mobility and also as a potential area for the improvement of a more efficient education system in general.

In 2016-2017 the EMREX project ran a Field Trial aiming at testing new ways to make the administration of student mobility easier between Finland, Norway, Sweden, Denmark and Italy. Over 100 students from 30+ HEIs in these countries have already logged into their student portals at their home universities and collected their study achievements electronically from the host universities, without the need to send paper copies.

This session aims at presenting the findings from the EMREX Field Trial; what did the students think of EMREX, how can EMREX help the university administration, and what expected and unexpected results came out of the field trial?

2. THE EMREX FIELD TRIAL

The EMREX Field Trial has been in operation for one year and to test the tool even further the project decided to extend the trial period until the middle of 2017. The decision makes it possible to also include students who come home from their exchange period during spring semester 2017. Norway, Finland, and Sweden have been in production since early 2016, with Italy joining late 2016 and Denmark early 2017. Over 100 students have already used EMREX, with more to come in 2017, from 30+ HEIs. In Norway and Sweden all HEIs are involved, in Finland all HEIs for incoming students and 4 for outgoing students. In Denmark 4 universities deliver results to EMREX to start with and in Italy Siena and Verona are the first to join EMREX.

Table 1 contains the number of students up until January 2017.

Country	HEIs (imported or delivered results)	Number of students that imported results	Short surveys
Finland	9	ca 30	26
Italy	1	3	1
Norway	9	>60	32
Sweden	4	5 (+40 internal)	10

Table 1. Number of students using EMREX up until January 2017.

In parallel to the Field Trial Poland has developed the tool for internal national mobility and is already connected to EMREX. DUO in the Netherlands is also developing EMREX, with many more partners knocking on the door.

A short survey included directly in the EMREX-tool asks about the student's experience of the transfer (table 1). The feedback in these surveys, in addition to evaluation purposes, has also provided good help for further development during the Field Trial.

3. THE EMREX SOLUTION AND STANDARDS

EMREX is a decentralised network consisting of several components. For consumers of the result data the network is open and the student herself is in control of the data exchange. The decentralised model also makes it easier to add new providers of student result data to the network.

Each SIS or institution that wishes to retrieve results from the EMREX network can connect using a standard Student Mobility plug-in (SMP). This then becomes an EMREX client, and enables the student to retrieve her result data from the EMREX network.

Each country that seeks to provide results to the EMREX network must implement one or more National Contact Points (NCP). The NCP provides the student with a secure login, and enables her to select the results she wants to share with the EMREX client.

The EMREX network uses the standard-based ELMO format to exchange the results. The only common component for the EMREX network is a registry (EMREG) of NCPs.

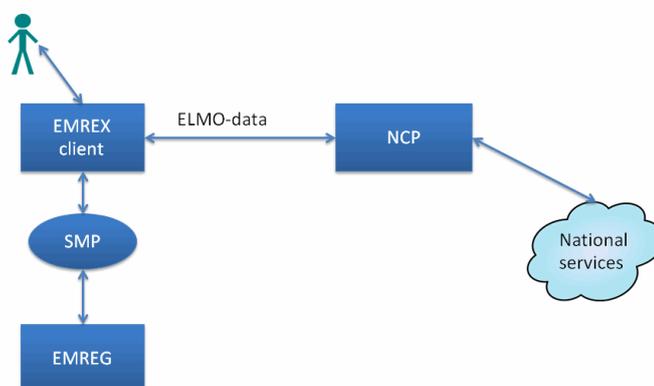


Figure 1. Components of EMREX

The process is initiated by the student, by logging into the EMREX-client (see Figure 1). It contacts the EMREG registry to check which NCPs are available. The student chooses the country and HEI from where the result data are to be retrieved, and the data is verified by the NCP. An electronic transfer of student achievements via the NCP and SMP is performed as soon as the student has approved the list of results to be transferred.

The EMREX solution will be demonstrated live in the session.

EMREX is based on open source code and freely available to all. The solution is available for all HEIs in Europe from 2017. New countries can join the EMREX network by creating their own EMREX clients and contribute to the network by providing their own NCPs.

4. EXPECTED AND UNEXPECTED FINDINGS FROM THE FIELD TRIAL

The EMREX Field Trial was conducted with 100+ students from 30+ HEIs in 2016 and will continue until summer of 2017. From a technical point of view EMREX uses well proven technology and it was not surprising that the network is stable and works well across countries with different local systems. Students found EMREX to be fast and easy to use, and in many cases the students were surprised that such a system for electronic transfer did not yet exist. In the google-era students are used to doing everything online. As part of the Field Trial a survey was conducted with the students. For nearly every statement (see Figure 2 below), the share of the participants who have favourable views on EMREX is higher than 70%. Out of all statements' rating the one concerning the ability to import all data was the most correlated with the overall satisfaction with EMREX.

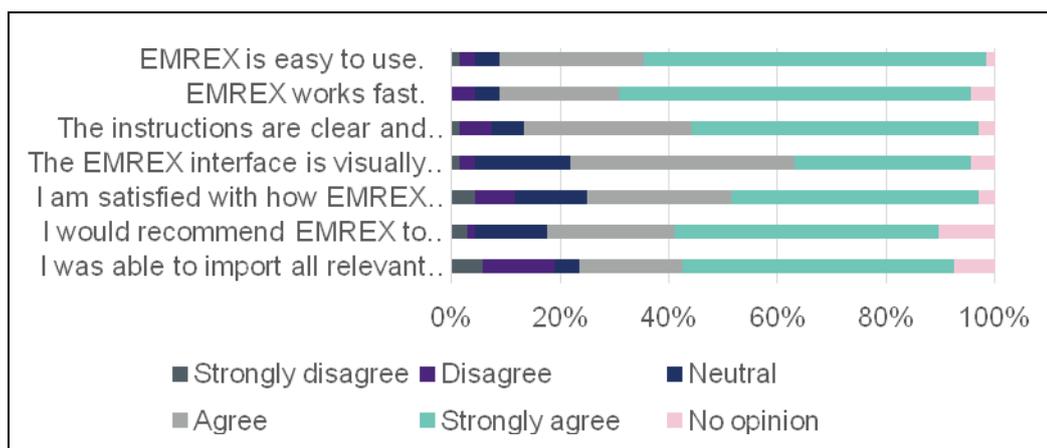


Figure 2. Evaluation of user experience (frequencies)

From the HEI SIS perspective the Field Trial revealed a couple of issues that need to be addressed in the future. Although HEIs talk about lifelong learning, in some countries they are very quick at deleting student accounts as soon as the student leaves. Also, despite the Bologna process and ECTS guidelines, it was evident that not all HEIs have yet changed their own processes and a key area, when moving towards automatic recognition, will be to define the minimum content to be shared and common standards for data formats. What data should be included? How should a European automatic recognition process work? EMREX proved that this is not a technical issue, but rather needs a common policy. Perhaps as part of Erasmus 2020 and onwards.

The Field Trial was aimed at exchange students, but perhaps a little surprisingly EMREX soon generated a great interest among admission officers and for internal mobility. Also, despite EMREX being a Field Trial and not aiming at expanding yet, Poland and the Netherlands already decided to join the network. The need for digitalized student records is evident.

A common comment from the Field Trial was that EMREX is great, followed by a question, if also course descriptions and grade conversions could be included. A PDF version of the achievement records was included as a temporary copy for the student personal use, but soon the PDFs were being used in the recognition process. There seem to be a demand for digitally signed PDFs.

A known issue beforehand was how to identify the student and how to provide privacy for the student' data. This, however, was not seen as an issue by the students. They were happy to download their results, check them and share them with the home HEI.

5. FUTURE STEPS FOR EMREX

The successful Field Trial has shown a need for EMREX. The current partners are all committed to continue using and enhancing EMREX to support student mobility and as EMREX in most cases is already integrated into the existing SIS system it will automatically be continued to be supported. The partners have also decided to apply for EU funding to spread EMREX to more EU countries and to prototype innovative ways of using achievement records.

During the Field Trial it was discovered that electronic achievement records would be a valuable addition to admission processes and in credential evaluation and this work is already ongoing. Course descriptions, course catalogues, grade conversions, and support for diploma supplements also all offer interesting possibilities that could be further explored. Expanding EMREX to countries outside EU and to expand cooperation with projects like Erasmus Without Paper is also on the future roadmap.

EMREX has proven itself to be a valuable building block for student mobility. The technology is there and the next step is to extend the EMREX network and at the same time start working on aligning the processes and data standards to pave the way for smoother student mobility and automatic recognition.

6. BIOGRAPHIES



Mats Lindstedt has a Master of Science in Business Strategy and International Marketing and a Licentiate in Applied Mathematics from the Helsinki University of Technology. He has over 15 years of experience from the ICT industry including program management and R&D development. Since 2012 he works for CSC-IT Services for Science Ltd in Finland developing support for student services. Previously he was the project manager for Tiptop, developing web based support for university students' personal study plans. Currently he is the project manager for the EMREX project.



Anders Bøgebjerg Hansen holds a master's degree in political science from the University of Copenhagen. He has worked with different student information systems at two universities and has 15 years of experience coordinating systems development on the customer side within higher education in Denmark. He is a special adviser at the IT Department of the Ministry of Higher Education and Science (UFM-IT) where he works with contract and project management with relation to the student information system STADS and the application system DANS. These systems are used at all 8 universities and several institutions of architecture and art in Denmark. Anders Bøgebjerg Hansen has been the project manager of many large EU tenders and has for several years been involved in Nordic forums in the area of student information systems.



Stefano Russo has more than 15 years experience in developing nationwide software systems. He spent most of them at Kion, the company which is the leader in developing Students Information Systems for the Italian Universities, where he works as part of the group that manages the mobility module for the student information system "ESSE3" used by over 60 universities in Italy.



Geir Vangen has more than 20 years' experience in developing nationwide systems within higher education in Norway. At CERES, he works as manager of the Department of development. CERES develops systems for student information (FS), research information (CRIStin), national admission (SO) and data warehouse, in addition to a number of services like the Diploma Registry. He participates in national and international standardisation work, and has been a member of the groups developing the MLO and ELM-standards. He has been member of national committees appointed by the Ministry of Education and Research, and has led projects on behalf of the Ministry. He leads work packages in EMREX and EWP projects. Geir Vangen graduated from University of Oslo, Institute of Informatics in 1989.



Janina Mincer-Daszkiewicz graduated in computer science in the University of Warsaw, Poland, and obtained a Ph.D. degree in math from the same university. She is an associate professor in Computer Science at the Faculty of Mathematics, Informatics and Mechanics at the University of Warsaw specializing in operating systems, distributed systems, performance evaluation and software engineering. Since 1999, she leads a project for the development of a student management information system USOS, which is used in 53 Polish Higher Education Institutions, gathered in the MUCI consortium. Janina takes active part in many nation-wide projects in Poland. She has been involved in Egracons, EMREX and Erasmus Without Paper European projects.



Pamela Engström obtained a Degree of Master of Science in Biology from Mälardalen University College in 2007. After graduation she worked as a municipality biologist, where her focuses included production and distribution of scientific information to the public. Since 2009 she works at the University of Gothenburg as a degree officer and project leader at the Section of Degrees with educational and degree related issues and analysis and evaluation. In the EMREX project she is the representative of the national consortium Ladok, as the project leader of the field trial work package. The consortium owns the Ladok system, which is the higher education industry standard in Sweden; the system is used at 37 of the universities and university colleges.