

External Evaluation Final Report

iBrain Project: Integrated Track in Brain and Cognitive Sciences

Prepared by Prof. Jubin Abutalebi | 10 January 2024

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1. Introduction

The External Evaluation Final Report (EEFR) was prepared by Prof Jubin Abutalebi, University San Raffaele, Milan, as a member of the Advisory Council charged to provide the external evaluation of the iBrain ERASMUS+ CBHE project. The EEFR is a document that reflects the outcomes of the external evaluation and it was elaborated as part of the *Quality control and monitoring* Package (WP3), fulfilling D3.3. The activities of building the EEFR were conducted from October 2023 and January 2024. The EEFR evaluates the different aspects (courses, activities, among others) of the iBrain project that were undertaken from 15 January 2020 to 14 January 2024.

The consortium consisted of the following partners:

EU HEI partners

ECOLE NORMALE SUPERIEURE, France (coordinating Institution) ; ENS
NORTHUMBRIA UNIVERSITY, UK ; NU
AARHUS UNIVERSITY, Denmark ; AU

Russian Federation HEI Partners (excluded after 04/2022)

HIGHER SCHOOL OF ECONOMICS, MOSCOW; HSE
SAINT PETERSBURG STATE UNIVERSITY, Saint Petersburg, SPBU
INSTITUTE OF HIGHER NERVOUS ACTIVITY, Moscow, INHA

Russian Federation Industrial Partners (excluded after 04/2022)

LLC AF COMMUNICATION – AGENCY FUSION, Moscow; AF
JSC NEUROTREND, Moscow; JSCN
MITSAR CO LTD, Moscow; MITSAR

India HEI Partners

UNIVERSITY OF HYDERABAD, Hyderabad; UoH
IRLA INSTITUTE OF TECHNOLOGY AND SCIENCE SOCIETY, Goa; BITS
INDIA INSTITUTE OF TECHNOLOGY GUWAHATI, Guwahati; IITG

We note that until 04/22 iBrain was considered as an inter-regional project (EU-Russia-Asia) and after 04/22 it transitioned to a national project (EU-India).

EEIR includes the following additional chapters:

- Chapter 2. Methodology: this chapter provides an explanation about the methodology used for conducting the external evaluation process.
- Chapter 3. Analysis: this chapter presents the analysis of the information gathered through the data collection process as part of the external evaluation, using a set of criteria.
- Chapter 4. Lessons Learned: this chapter provides findings from both ongoing evaluations and final evaluation. The lessons learned aim to provide important considerations for the ALIEN partners and contribute to the improvement of partners' operational performance, accountability and transparency.

2. Methodology

The EEFR was developed by analysing information gathered from desk research and a phone interview process based on the 4 criteria.

Table 1. Key external evaluation criteria

Key external Evaluation Criteria	Focus of evaluation
Relevance	The consistency and validity of the project activities and outputs against the initially proposed objectives.
Efficiency	Measuring the resource used both from economic and time perspectives in the project activities to achieve the project objectives
Effectiveness	Measuring the success rate of project results and outputs against the initially proposed objectives.
Impact	Examination of the changes produced by the project. The changes could be positive or negative, direct or indirect, intended or unintended.

Desk research

One of the methods used to gather the data/information for the external evaluation process was desk research. This method was based on the review of the project documentation and other accessible project outputs.

The desk research process was mainly focused on assessing documentation accessible on the Google Drive platform used by the iBrain partnership and other iBrain resources (i.e. iBrain website, social media). The documentation assessed includes:

- Project Plan
- Contracts and Agreements
- Internal Document and Materials Platform
- Course Descriptions

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- Dissemination Plan
- Project Website, Social Networking Presence
- Flyers and Brochures
- Articles in Media, Conferences and Seminars
- iBrain Sustainability
- Meeting Minutes
- Reporting documents
- Interim External Expert Survey
- Interim Student Accessments

Particular attention was paid to three aspects laid out in the original proposal WP3: 1. Quality of the courses; 2. Quality of the programme management; 3. Level of Programme implementation.

Meeting discussions.

Another data gathering method used in the evaluation was interviews with the representatives of the iBrain partner organisations in order to gather important information and feedback complementing the data/information captured from the research desk method.

In October 2023 the iBrain partner organisations were invited to participate in a meeting in Dabolim Goa where interviews and discussions were held (1.5 days) with the external evaluator.

In total, 5 out of the 11 partners were interviewed (6 Russian Foundation partners were previously excluded due to sanctions imposed by the EU and 1 was unavailable), accounting for 3 partners from India and 2 partners from Europe. In depth discussion were held with the representatives of the project partner organisations, including the coordinating organisation based on an agenda developed at the initial part of the meeting. The meetings were conducted from 4 to 6 October 2023.

The meeting and the discussions were structured to allow to obtain a comprehensive picture of partner perspectives about the project progress.

3. Analysis

The below analysis is structured along the key evaluation criteria as presented in Table 1 in Chapter 2. Under these criteria, the analysis is based both on desk research and the conducted meeting discussion.

3.1 Relevance

Under relevance, especially the following aspects were analysed within the external evaluation:

- Alignment of the content of the project outputs produced with the initially proposed aims;
- Alignment of the content of the project outputs produced with the needs that the project aims to tackle;
- The right target groups are addressed by the project activities and outputs.

Based on the review of the available documentation and the interviews conducted, it can be concluded that the contribution of the iBrain project to the initially foreseen objectives is significant, with an impressive part of major outputs being achieved and the appropriate target groups addressed. The project outputs are aligned with the initially proposed aims and objectives, and the implementation of the project clearly addressed some of the critical and structural needs of the beneficiaries. All partners participating in the assessment procedure agreed that the project activities and outputs addressed the main target groups of the project, the students, the instructors/teachers and staff of the HEIs of the iBrain partners. We noted that deviations from specific courses to be developed and/or equipment procurement were approved by the Program Officer. It is important to note that some of the goals had to be revised during the project due to two force majeure circumstances: the COVID19 pandemic impacted the mobility due to travel restrictions and some of the calendar for implementation of activities due to the university closures. A further obstacle was the exclusion of the partners from the Russian Federation due to imposed sanctions. This required the project to be restructured as a India-EU national project. The evaluator notes that despite these difficulties, we are impressed with the success of the project implementation.

The overall assessment is that outputs of the iBrain project contribute to the improvement of quality of higher education among all involved partner institutions and consequently, the overall quality of educational system in partners' countries. In particular, the outputs of the project are designed and delivered to support the development of modern and advanced education and academic capacity in neuroscience and behavioural sciences with the particular focus on cognitive, neuroimaging and aeromodelling applications through its aim to build a direct Master's-Doctoral track to increase the effectiveness of three-level education in the partner HEIs. Along with partner HEIs developing Ms-PhD curriculum tracks in Cognitive Sciences (HSE, SPbSU, and UH) they enhanced the doctoral curriculum by cognitive psychology and neuroscience in IHNA and BITS, correspondingly. The effectiveness upgrading the curriculum has been supported and sustained by participating leading EU experts in cognitive neuroscience from ENS, AU, and NU. **The advanced courses developed and/or upgraded in the IBRAIN are clustered around the following core themes uniting brain and cognitive sciences:**

1. Cognitive Psychology and Human Neuroscience
2. Computational models in Cognitive Sciences
3. Neuroscience approaches in Cognitive Sciences

The positive outcomes of the project were assured through implementation of advanced courses, practical placements, summer schools, research seminars, trainings, and guest lectures by world-leading specialists to reflect the best level of training for academic and research staff. These activities brought to the partner HEIs up-to-date knowledge and developed superior professional skills, and allowed for a better understanding of how fundamental and applied research organizational principles. Indian partners, in particular, gained increased international cooperation in social and behavioural Sciences that helped improve competitiveness and attractiveness of their Master's and PhD.

During the IBRAIN implementation, in addition to the advanced courses, other teaching and study activities such as laboratory placements in EU and PC universities, research seminars, summer schools, guest lectures were offered. The strong focus on research methodologies and access to cutting-edge techniques in research laboratories of consortium members, the IBRAIN trained the PC teaching staff on one hand, while helping PCs students to get the highest qualifications and skills. One particularly exciting outcome of the project is the establishment of iBrain learning labs and centers at the UoH and BITS in Goa which the external reviewer has personally visited to his delight.

For the implementation, the partners focused their activities on two main target groups: lecturers and students. By focusing on these target groups, with well-identified teachers and students, partners could deliver a quality course and curriculum development and implementation through an agile and iterative process, which could be applied towards a broader stakeholder base in the future. While such an approach reportedly provided a number of benefits and contributed to the successful achievement of project outputs, it should be noted that due to the pandemic, the partners noted that a number of the stakeholders was more limited than wished for due to the COVID19 restrictions and closures. Furthermore, RF partners were excluded from the project that further limited access to the target groups at those partners. This also required a project restructuring, that was well and efficiently carried out. Nevertheless, even in such circumstances the partners have

already assured and already secured support for the implementation of the developed courses and curricula at these departments in the post-project period.

As stated earlier, all partners reported that the project activities and outputs addressed the main target groups of the project and in many cases, the project addressed the needs of stakeholders beyond the project-defined target groups. Further, several partners emphasized that project activities allowed the main target groups to directly collaborate with partners from another continent. The target groups were reached through a different approach from partner to partner, due to the specificities in approach and local considerations for target groups. Partners that entered the project with less experience in the implementation of the course methodologies (e.g. IITG) noted that more experienced partners and coordinators provided important support to the implementation activities. Moreover, some of the partners indicated that if they could restart the project, they would have had even more interactions with other partners.

It can also be concluded that the needs of teachers are well addressed by the project activities and outputs. However, with the diversity of the consortium, the same project activities meant different experiences for each of them. As suggested by the interim evaluation and confirmed by the discussions for the final evaluation, the project introduced some partners late to the project. Partners also have developed collaborations and produced publications as part of the project activities.

Many of the partners also reported a strong stakeholder engagement and positive reception of the iBrain project from the university management level, which represents a critical element for the sustainability of the project and more overall implementation curriculum and courses within the partner HEIs.

As a final point, partners from countries in which cognitive neurosciences and direct MS-PhD tracks are underrepresented in the educational system noted that the knowledge and outputs obtained from the iBrain project were disseminated and introduced to other universities and stakeholders in the country (not directly involved in the project). According to the information from the discussion and informal reports during the meetings and seminars, iBrain activities generated great interest and produced very positive feedback from external stakeholders.

3.2 Efficiency

As referred beforehand, this section aims to analyze whether resources (time and financial) have been spent in the project as proposed initially. This aspect was assessed through the research desk process based on the documentation available in Googledrive platform and other accessible iBrain resources. The meeting also touched upon resource-related aspects. Some of the findings to be highlighted are:

It should be underlined that large part of the planned outputs were delivered, while the overall costs of the project were within the planned budget. This is modulo the impact of the COVID19 and RF partner exclusion. The overall consensus among the partners is that the benefits of the project outweigh the burden related to managing costs and the administration of the project

implementation. In terms of timeliness, the time from the approval of the project to the start of the implementation was slower compared to the initially envisaged timeline, mainly due to administrative difficulties and the impact of the force majeure circumstance. However, remedy measures were deployed as soon as the situation allowed and allowed for a substantial catch-up with the activities. Due to the pandemic and the exclusion of the RF partners, there was an extension to the project duration of 12 months, until 14 January, 2024.

From the accessible documentation, it could be observed that the financial resources spent were without exceeding the budget, with a portion of the costs (predominantly travel and stay) that have not been fully spent. In particular, the pandemic situation and globally imposed travel restrictions resulted in a portion of unspent expenditure. Based on the information from the meeting discussions, the consortium planned that a portion of the unused travel funds would be repurposed for the design and delivery of other deliverables that did not require physical mobility. This a budget reorganization was implemented with the approval of the program officer. Exclusion of the RF partners also had a major impact on the budget, as a new India partner had to be added and budget allocated to it. This was done through an amendment to the project agreement that was duly signed. Further, some of the partners pointed out that returning of the unused funds is undesired predominantly because the funds can be still utilized for the benefit and improvement of overall quality of project outputs. Moreover, the process for the return of funds would be procedurally demanding for some India partners, creating an additional burden on the partners' administration. Despite this, at the time of the conclusion of this evaluation, no procedure was identified by which the the EC could approve use of funds.

From the meeting discussion and documentation, it could be noted that purchasing the equipment represented a large proportion of the India partners' budget allocation and that changing regulations and exchange rates negatively impacted this purchase process. Furthermore, lack of flexibility in equipment purchased, requiring detailed redrafting of the equipment lists and PO approval hampered purchasing process. Equipment delays were a significant hindrance to the project. Partners also noted constraints that are mainly due to the ERASMUS+ funding rules for the non-European partners, including the established lower staff rates for these countries, the limited proportion of the budget that can be allocated to human resources costs, as well as the rules of EC costs reimbursements.

The project documentation (timesheets) suggests that the time was used efficiently to attain the intended objectives of iBrain, although the existing documentation does not allow drawing definitive conclusions. However, it should be noted that since none of the partners were previously involved in ERASMUS+ projects, including the coordinator, they did not possess a strong familiarity with the respective administrative procedures. Further, considering that the structure of educational systems in partner countries is different compared to the EU, obtaining the required administrative documentation to start the project and to initiate the equipment procurement, as well as course approval, took a longer time than initially foreseen. This slowed the initial implementation of the project. This situation suggests that for the preparation of future projects, the partners could further reflect on whether more time should be left for partners outside the EU to clarify and deal with administrative procedures.

3.3 Effectiveness

Under effectiveness, the following aspects were analysed within the external evaluation:

- Achievement of the results and outputs expected for this period;
- Existence of risks associated with the project implementation;
- Quality of the project coordination and management;
- Effectiveness and clarity of the communication within the partnership;
- Level of partners' understanding of the project.

Based on desk research information and meeting discussion, it can be concluded that a large proportion of the expected outputs were delivered and the overall implementation of the project contributed to the achievement as defined by the logic of the project proposal. The partners indicated that the quality of the project coordination and management was high. Further, project documents and discussion confirm the level of partners' understanding of the project and their role. In spite of challenges resulting from the pandemic situation and the exclusion of the RF partners requiring it to be refocused on India-EU only, the majority of partners have reported the ability to effectively carry out project activities and to achieve the expected outputs.

Aside from the achievement of major expected outputs, in some instances, it was observed that the results of the project were well above the initially foreseen milestones, such as the the number of participants in the workshops and meetings organized as a part of the project. The foreseen iBrain learning centers have been installed and are in fully operational condition. Courses have been developed to high quality and are implemented in the partner curricula. However, for some RF partners, due to *force majeure*, these courses are required to be taught without the involvement of all the faculty initially previewed.

In regard to the risks and challenges associated with the project implementation, the following issues were raised:

- Inability to conduct physical classes and mobility: For the majority of partners, the restrictions resulting from the pandemic situation negatively affected the implementation of physical mobility and courses. The degree of restrictions varied from country to country, and consequently the degree of overall implementation of physical activities among partners as well. Some partners could carry on some mobility intra-country, while in India all mobility was restricted for an extended period. Nevertheless, as mentioned, courses have been developed to high quality, a large number of them is being implemented and are receiving a very positive evaluation by faculty and students. The learning laboratories have been installed and are in fully operational condition. Physical mobility had restored as the COVID19 restrictions were lifted. Furthermore, the UoH and BITS partners confirmed the use of the learning labs and their post-project sustainability. Therefore, this evaluation suggests that from the perspective of the project implementation, all the major results and outputs in respect have been achieved.

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- Conversion of physical activities (courses, community events, instructor training events) to an online format: Several partners indicated that one of the biggest challenges during the project implementation was converting physical events to an online format, due to the pandemic situation. On the other hand, partners noted that the application on-line learning methodologies learned during the project proved to be significantly important for designing the overall format of courses (outside the project) and that experiences of the iBrain project helped a smoother transition to an online format on an institutional level.
- Another notable concern, which was expressed for the interim evaluation was the changing situation of the educational policy in India. The requirements of this policy, particularly impactful on the public HEIs, has been somewhat clarified by the time of the final evaluation. This allowed for a smoother implementation of the developed courses and their incorporation in the relevant institutional curricula and degree programs. This ensures the sustainability of the project results.
- Exclusion the RF partners was not only a factual hindrance to the project but also lead to significant amount of stress and uncertainty. This was evident for the India partners, who had already committed resources and needed the project to continue, to the excluded RF partners, some of whom already pre-committed human and financial resources with complete uncertainty of getting back financing and for the coordinator, who re-structured the project with success, but had to deal with the RF partners refusing to participate in the final report preparation process.

In regards to the coordination and management of the project, partnership recognized many challenges deriving from the multi-national consortium of 11 partners situated in 2 different continents with different backgrounds and agendas that respond to diverse local needs and concerns. This context entails different challenges to be managed and coordinated on both bureaucratic and cultural dimensions and which situation was further aggravated by the pandemic situation. However, as indicated during the evaluation, all interviewed partners expressed a positive opinion regarding the quality of project management and coordination.

Further, most interviewed partners welcomed the introduction of monthly on-line and in person meetings, emphasizing that the communication quality of the project. Frequent communication between partners in the partnership enabled increased cooperation and collaboration between partners. Several partners highlighted that frequent interactions were very useful in understanding the overall progress of the project, learning about the good practices from other partners, and overall support and knowledge exchange in the implementation of the project. Further, partners indicated that email communication was efficient and that queries were answered promptly.

It was observed that most partners have an excellent understanding of the iBrain project.

3.4 Impact

Under impact, the following aspects were analysed within the external evaluation:

- Project activities' contribution to reaching the expected impacts on the stakeholders;
- Existence of future plans to make the positive impacts of the project durable.

Based on the interview responses from the partners and available documentation, it can be concluded that the planned outcomes were achieved to a large extent and project activities contributed to reaching the expected impacts on the stakeholders. However, it should be noted that at the time of the completion of this evaluation, the results and analysis of the evaluation questionnaires that were completed by students would need to be analysed. In terms of sustainability, both on consortium level and on individual partner level, plans and efforts to make the positive impacts of the project that are durable have been developed. Also, in several cases partners have already secured support for the continuation of activities related to the project (e.g. learning centers in UoH, BITS and the direct track MS-PhD programs at HSE).

By confirming the relevance of the projects' outputs with needs and aims, some partners also identified positive impacts of the performed activities and outputs, by comparing their situation before and after implementing project activities. The overall consensus among the partners is that one of the most important impacts of the project is that the project contributed to an improved cooperation among European and Indian HEIs and that, the project contributed towards the promotion, increased uptake and overall upgrade of advanced curricula in cognitive brain sciences. As highlighted by some, the iBrain project provided a starting point and an initial impetus for an overall improvement of the quality in the curricula of the HEIs involved in the project and their alignment with the demands of the labor market in academic research. Independent of partners' previous experience with curricula in cognitive brain sciences, it was reported that the project enabled valuable knowledge transfer, improved cohesion among lecturers and students, insight into different good practices and for some, valuable technical equipment obtained through the installation of the iBrain learning center laboratories. Further, it should be emphasized that for some of the partners, experiences and knowledge gained during the project enabled for a better design of online courses beyond the iBrain project.

Moreover, from the meeting discussion and reports, it was observed that community events were attended with a number of stakeholders that beyond the primary target groups. In particular, the achievements of the project participants were disseminated and demonstrated to other universities, public institutions, researchers and other relevant stakeholders. One of the partners pointed out that their iBrain Lab hosted study visits from other universities. Further, following the outbreak of the pandemic, partners reported that, although with some difficulties, they successfully converted a lot of the planned physical events to an online format, being able to reach out to target groups. As outlined earlier in the report, the pandemic situation had effectively limited mobility and the exclusion of the RF partners had a negative impact on access to some of the initially planned activities to the target group. On the other hand, inclusion of IITG in the consortium, expanded access to capacity building and expertise to a number of less favored groups in India (e.g. as indicated by the IITG diversity Report).

Based on the review of the project documentation and information from the meeting, there is a strong indication that the outputs will likely last and the outcomes and impacts, which have been achieved, will continue to have their effects in the medium and long term. All partners highlighted the importance of sustaining the outputs of the iBrain project. The meeting discussions confirmed that the online community platform will be hosted and maintained by ENS for at least 5 years upon the conclusion of the project.

Further, partners reported that the project has generated significant interest within the management of institutions and in some cases it was reported that the management of HEIs has already made concrete plans and resource allocations for the management and operation of iBrain Learning Center Labs. In some cases, external support is being obtained by joint applications from multiple iBrain project partners.

The information from the meeting confirmed that partners will continue offering courses developed during the project and that a number of them have been incorporated into the permanent curricula. Additionally, partners believe that the pedagogic training for teachers within the iBrain project and their exposure to the EU partner teaching and research experience will be a positive and lasting impact on the institutions' human resources and suggested applying the methodology beyond HEIs. It should be noted that several partners emphasized the importance of maintaining the website and platform as operational, as well as ensuring the continuation of an active community.

4. Lessons Learned

A set of lessons learnt for the future implementation of similar projects have been devised based on the analysis presented in Chapter 3:

- The iBrain consortium consisted of both partners that were well familiarized with direct track curricula and advanced teaching methods in cognitive brain sciences and partners that did not have experience with the aforementioned methods. Despite considerable the risk that gaps in knowledge within the consortium may negatively affecting the project, it was verified that this factor did not hinder the project implementation. Such experience points to the value of large and geographically diverse consortia that bring together important international perspectives with more opportunities for knowledge sharing and best practice exchange, often beyond initially foreseen expectations.
- For a consortium of 11 geographically dispersed organizations, frequent communication between the partners allows partners to reflect on the overall and individual project progress, mitigate risks and discuss perspectives, experiences, challenges and best practices. For such reason, a standardized stack of tools that are regularly maintained and used can be considered crucial for boosting information exchange and building up communication between partners for the exchange of ideas. The value of good communication for the success of the iBrain project has been highlighted by all partners with many partners particularly emphasizing the importance and benefit of management meetings and faculty meetings that were introduced in the project. Physical meetings that were enabled after the lifting of the travel restrictions, were found to be invaluable for building team cohesion and information exchange, as well as motivating for the target groups.
- From the meeting and documentation, it could be observed that purchasing the equipment represented the a major proportion of the HEI partners' budget allocations. It was noted that formalities associated with equipment procurement produced a significant difficulty and delays, in large part due to inflexible ERASMUS+ policies. There were certain concerns in regards to the availability of human resources for successful implementation, mainly due to the ERASMUS+ funding rules for the non-European partners, particularly the established lower staff rates for these countries, the limited proportion of the budget that can be allocated to human resources costs, as well as the rules of EC costs reimbursements. Although the implementation of the project was not hindered by these concerns, this situation suggests that in future international projects, partners could further reflect on funding requirements and budget planning for organizations outside Europe taking into account ERASMUS+ funding rules.
- Since most of the partners were not previously involved in ERASMUS+ CBHE projects, they did not possess a strong familiarity with the respective administrative procedures. Further, considering that the structure of educational systems in some partner countries is different compared to the EU, obtaining the required administrative documentation to start the project took a longer time than initially foreseen. This slowed the initial implementation of the project. This situation suggests that for the preparation of future projects, the partners could consider reserving more time for partners outside the EU to clarify and deal with administrative procedures.

- The experience from the iBrain project demonstrated the value that international collaboration can have for achieving high quality results with respect to curriculum development in cognitive brain sciences. This can provide ground for further collaboration between partners in the post-project phase (i.e. possible exchange of staff for experience exchange, grant applications, collaboration).
- Several partners expressed their pleasure that the project persevered despite several force majeure circumstances and support of the EACEA agency for the project, yet noted that improved flexibility in extension rules, budgeting procedures as well as improved communication with the EACEA personnel on how to manage force majeure impact, as well as administrative procedures associated with the management of the changes in the project, would be a valuable improvement for future consortia.

January 10th 2024

Prof. Jubin Abutalebi

A handwritten signature in blue ink, consisting of a large, stylized 'J' followed by a series of overlapping loops and a final vertical stroke.