Interdisciplinarity has been at the core to ESPA’s ethos from the outset. Today, almost a decade after ESPA was launched, an interdisciplinary approach is seen by most research funders as essential to meaningfully tackle complex real world challenges. If the potential benefits of interdisciplinarity are well known, however, so are its conceptual and practical challenges: interdisciplinary research is often more difficult to do (or do well), fund, and publish.

The workshop, organised as a satellite event of the ESPA 2017 Annual Science Conference, aimed at providing ESPA researchers with an opportunity to reflect on their own experience of interdisciplinary research, share the challenges and opportunities that they have encountered, and, crucially, elaborate concrete recommendations for funders of current and future ESPA-like programmes. In the context of ESPA’s legacy on programmatic learning, the workshop represented a key input towards the formulation of a Policy and Practice Note on Interdisciplinarity, to be published in early 2018.

The workshop was structured around three components:

1. An icebreaking ‘Rorschach Test’ – using pictures to think of opportunities and challenges related to interdisciplinary research;
2. A ‘carousel’ exercise to elaborate recommendations for funders;
3. Experience-sharing, to help illustrate and ‘bring home’ the above recommendations for funders.

For the purposes of this workshop, interdisciplinarity was defined in the broadest possible sense as ‘working across disciplinary boundaries’. We felt that there was limited value in addressing the question of definitions (‘interdisciplinary’ as opposed to cross- or trans-disciplinary) as there is generally little consistency in the use of these terms across different actors.

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Key messages

**Interdisciplinarity is important – and difficult**

There was general consensus in the room that interdisciplinarity ‘makes sense’ and it is the ‘right thing’ to do. Funders’ emphasis on interdisciplinarity is well placed: the complex problems of our times defy the boundaries of any one discipline. Working across disciplinary boundaries helps to pursue stimulating research avenues; it can forge new directions and ‘open doors’ that would otherwise remain shut, particularly when dealing with policy-makers. But interdisciplinarity is certainly not easy: different disciplines bring their own barriers to interdisciplinarity, and contrasting interests of different academic communities make it difficult to overcome these obstacles. Funders should gain a better awareness of the challenges embedded in interdisciplinarity projects, and avoid treating their interdisciplinarity requirement as merely an ‘add on’.

**Interdisciplinarity takes time**

There is a considerable time penalty to interdisciplinary work, at all stages: from formulating research questions, to agreeing on methodologies, sample size and data collection techniques, to deciding on which journals to publish and actually co-authoring papers – everything takes longer. It is important to have sufficient thinking time at all stages. ‘Running out of time’ just when things were starting to get exciting is a frequently reported complaint by researchers involved in interdisciplinary efforts.

Interdisciplinary work is also more likely to get delayed: the more a project is genuinely interdisciplinary, the more its various Work Packages (WPs) are closely related, and dependent from, each other – rather than just progressing in parallel. Therefore, if one WP is delayed for whatever reason (e.g. because the lead researcher is off on parental leave, to use an example given during the workshop) the ‘domino effects’ on the other WPs are much more significant compared to a traditional project. In other words, an interdisciplinary research project progresses at the pace of the slowest group.
“Blue sky research in one year? You must be joking! We ran out of time just when the innovative interdisciplinary approach was starting to bear fruit.”

Interdisciplinarity requires a shift of mindsets

Genuine interdisciplinarity cannot be reduced to merely a question of technical coordination of WPs, or methodological compromises: it requires a change in the way researchers think about problems, and calls for calls for a willingness to be pushed out of one’s comfort zone. Participants talked of an ‘a-ha’ moment, when things finally ‘click’ and one starts seeing the problem from different perspectives. This ‘eureka moment’ is essential for genuine interdisciplinarity - and it cannot be rushed. However, once you are over the hump, interdisciplinarity becomes extremely rewarding, and can also be a lot of fun.

Interdisciplinarity is unpredictable

Interdisciplinarity certainly ‘takes us places’ – but not necessarily the same place where we had planned to arrive! The process itself can open new opportunities and unearth new, more cogent research questions. In this unpredictability lays the great richness of interdisciplinarity, and its impact potential. But this can also pose very real challenges, particularly if the research project is expected to comply with the more linear pathways of traditional research projects. It is thus essential that research funders and managers have the flexibility to treat the emergence of new pathways as an opportunity, not a problem.

Interdisciplinarity is about people (not just disciplines) coming together

It is important for researchers to come together physically as a group - to talk to each other, discuss, and overcome misunderstandings and frustrations to get to the ‘a-ha moment’. The most successful interdisciplinary processes seem to be those where researchers could get to know each other. Unfortunately, the incentives (and the funds!) to meet in person are not always available. PIs often find themselves without the necessary leverage to demand that different groups actually come together in person at scheduled times.

Interaction between researchers from different disciplines and background is not always smooth, and can involve clashes of different cultures and different personalities. The process needs to be facilitated; however, facilitation skills are not generally present, encouraged or supported in research teams.
How to walk the talk of interdisciplinarity: recommendations for funders

Based on the above key messages, participants worked to identify concrete and implementable recommendations for funders to match their discursive emphasis on interdisciplinarity with practical actions that recognise the complex challenges and potential of working across disciplinary boundaries.

These recommendations are clustered around three main dimensions: (1) calls for proposals; (2) review of applications; and (3) project implementation.

**Calls for proposals**

- Ensure that there is sufficient time between the call and the deadline – preparing an interdisciplinary proposal takes a lot of time and effort.

Participants supported the idea of a stepwise application process – e.g. Expressions of Interest to gauge interest, outline proposal, full proposal... They also suggested a final phase where the proposal can be adapted on the basis of feedback received: the case of the German Research Foundation (DFG) was offered as a positive example where internal reviewers offer continuous feedback and guidance throughout the process. The idea was floated of making the first phase anonymous, to avoid disciplinary and other (e.g. gender) bias.

- Ensure that the projects themselves last long enough to enable meaningful interdisciplinary research.

- It is not enough to simply state the projects have to be interdisciplinary: funders should make sure that the call specifies what this means in practice, whether interdisciplinarity is an ‘essential’ or ‘desirable’ requirement, and how this requirement will be assessed at the review stage.

- Consider providing ‘seed funding’ to explore the feasibility of an interdisciplinary research question or the viability of an interdisciplinary team.

- Ensure that calls are advertised to a wide audience.

**Review of proposals**

Participants urged that the review process should be consistent with the interdisciplinary focus of the call. Reviewers should check that the requirements for interdisciplinarity are actually met (thus avoiding to fund proposals that merely pay lip service to interdisciplinarity). In particular, the review process should:

- Assess whether there is a truly interdisciplinary research question in the proposal;

- Prioritise questions that do not merely state an intention to be interdisciplinary, but also describe how the interdisciplinarity will happen;
Carefully assess the proposed research team, to ensure that the mix of disciplinary expertise matches the interdisciplinary ambition of the project. It is also important that the team includes members with previous experience of interdisciplinarity. Finally, it is recommended that the team includes members with a policy and practice background, as well as members with much-needed facilitation skills. Capacity-building support could be offered to ensure that the right mix of skills are represented.

Several recommendations related to review panels, to ensure that they are fully equipped to assess interdisciplinary proposals. In particular:

- Panels should include a mix of reviewers from different disciplines, but also reviewers that have direct experience of carrying out and assessing interdisciplinary projects, who are able to ‘leave their discipline behind’. It was also suggested that participation in review panels should be compensated better with a view to increasing motivation.

- Clear guidance should be provided to reviewers, in terms of what they are expected to look for, so that proposals can be assessed consistently.

- The review process should be transparent, and clear feedback should be given to all applicants.

- Reviewers could play a role throughout the life of the project, coming back as mentors or ‘critical friends’ at set points in time to provide feedback and advice.

Project implementation

Most recommendation centred around the two key issues of ‘time penalty’ and ‘unpredictability’ of interdisciplinary research projects, and the need for funders to explicitly recognise the extended and non-linear trajectory of interdisciplinary work, and the complexities and uncertainties that go with it. In short, there should be more ‘interdisciplinarity champions’ in funding bodies.

There was a strong call for flexibility and adaptive management: funders should provide strategic and operational advice on how to explore unintended outcomes of the projects, and these should be treated as opportunities, not problems.

Specific recommendations included:

- Be open to no-cost extensions, beyond regular single disciplinary grant limits, to deal with the (almost inevitable) delays that result from closer integration among WPs;

- Envisage the possibility of top-up funding to capitalise on promising opportunities emerging from interdisciplinary work;

- Encourage feedback between WPs and allow the possibility of restructuring projects ‘en route’ and changing the balance between WPs;

- Encourage (but also demand) that different disciplinary groups do come together regularly in person.
Track interdisciplinarity as part of Monitoring & Evaluation processes, and ensure that processes are in place to capture learning from the outset.

How to walk the talk of interdisciplinarity: beyond project funding

While the workshop focused, by design, on recommendations for funders, the point was also repeatedly made that a funded project is only part of the story. Support to interdisciplinarity needs to go beyond funders: it calls for a more radical shift in academic culture and practice. Journal rankings are biased against interdisciplinary research, and decisions regarding hiring and career advancement tend to stay within the domain of individual departments (and disciplines). Academic institutions should value interdisciplinary research even though it may not contribute to significant disciplinary advancements. This includes, crucially, incentives and requirements for hiring of interdisciplinary early career researchers.

About the facilitator

Dr. Laura Meagher is an independent consultant specialising in the evaluation of complex processes of change related to research and higher education. Interdisciplinarity of research projects and/or funding schemes has been a primary focus of her evaluation work, which has included clients such as various UK Research Councils, UK government, Scottish Government and others. She regularly designs and conducts forward-looking interdisciplinary workshops and facilitates the actual development of interdisciplinary initiatives. Laura has published extensively on interdisciplinarity and co-authored the ESPA Learning Review in 2013.
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