

Pilot Training on the Responsible Use of Research Metrics
WP2: Co-Design Workshops Report

Analysis by Colleen Thomas and Patrick Phillips

UCD DUBLIN

DCU Ollscoil Chathair Bhaile Átha Cliath Dublin City University

TUS Ollscoil Teicneolaíochta na Sionainne: Lár Tíre, An tIarthar Láir
Technological University of the Shannon: Midlands Midwest

UCC Coláiste na hOllscoile Corcaigh
University College Cork, Ireland

Project Team

Colleen Thomas, Research Culture & Engagement Manager, UCD
Patrick Phillips, Research Educational Technologist, UCD
Emma Dorris, Engaged Research Manager, UCD
Liam Cleere, Senior Manager, Research Analytics & Impact, UCD
Fiona Brenna, Director of Research Support, DCU
Patrick Murry, Head of Research and Technology Transfer, TUS
David O'Connell, Director of Research Support & Policy, UCC
William Fitzmaurice, Institute Manager, UCD Earth Institute Manager
Michelle Norris, Director of the Geary Institute for Public Policy and Professor of Social Policy, UCD
Grace Mulcahy, Research Integrity Officer; Chair of the Research Culture Initiative, Project Lead, UCD

Contents

Executive Summary 1

Introduction 1

Participants 1

Data Collection 2

Methodology 3

Themes and Sub-themes 4

Conclusion 9

Executive Summary

Co-Design workshops were held April and May of 2024 for each of the research communities partnering on this project to determine the learning priorities in the development of an open educational resource on the responsible use of research metrics (RURM). The format for each workshop was divided into three sections in which participants were given the opportunity to provide feedback about which topics are most important to include as well as preferred content types and delivery. Participant comments were compiled into a comprehensive dataset and thematically coded. The workshops revealed that while there is variable knowledge about RURM topics across different communities, consistently across all communities there is only a moderate level of understanding about research metrics and it is a priority to include further foundational knowledge in the module. Recognising the value and limits of all types of research assessment is considered vital for making fair evaluations. Tools and guidance to apply research metrics appropriately in consideration of discipline, career stage, and diversity of output / contribution was a high priority for all workshop groups. Workshop participants identified videos, text-based content and case studies that provide guidance and practical applications for responsible use of research metrics as their preferred content types.

Introduction

This project aims to improve awareness within the Irish research ecosystem of responsible use of research metrics (RURM) principles through the development of an online open educational resource about RURM for everyone involved in research including researchers at all career stages, technical officers, and research managers / administrators. The work is funded by the National Open Research Forum (NORF) through an Open Stimulus award made in 2023 to University College Dublin and partners at University College Cork, Dublin City University and the Technological University of the Shannon.

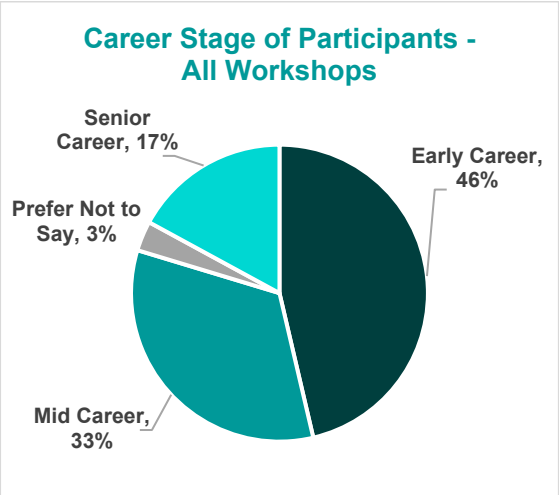
This project used a co-design process to identify the needs and priorities of the intended audiences. The team aimed to gather comprehensive feedback from participants across project partner research institutions. We sought to understand 1) the baseline of familiarity with RURM in the community; 2) how the community prioritises RURM topics; and 3) what content delivery methods the community prefers. Co-design workshops were conducted in April and May 2024 at:

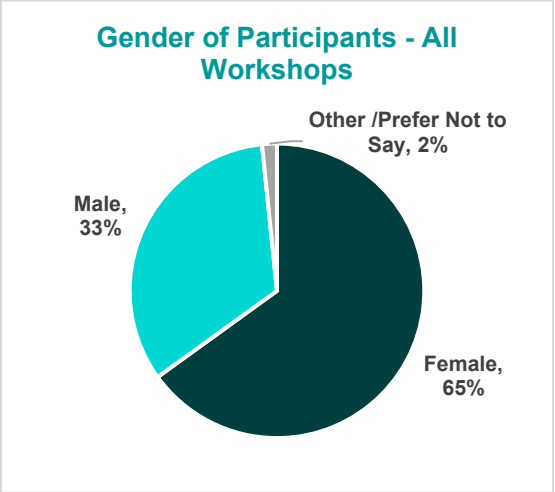
- University College Dublin Geary Institute for Public Policy
- University College Dublin Earth Institute
- Technological University of the Shannon, Athlone
- Technological University of the Shannon, Limerick
- Dublin City University

Participants

Each partner planned a focus group and invited members of their research communities who represented diverse disciplines and career stages to co-design the resource by reviewing content and delivery mechanisms of the module. Five workshops took place with a total of **124 registered participants**. The majority of those who registered identified as **early-career researchers (46%)** followed by **mid-career researchers (33%)**. There were far fewer

participants who identified as **senior-career researchers (17%)**. There were nearly twice as many female registered participants as male.





Data Collection

The data collected consisted of participants' comments recorded as part of large and small group discussions during the co-design workshop at each partner institution. These comments were documented in a structured format, specifying the institution and the topic of discussion. Each co-design workshop had three parts.

Part 1	Part 2	Part 3
What do you know about research metrics?	**Prioritising Topics**	**Content Delivery**
Free response exercise with large group to gauge general understanding of research metrics.	Small group discussion to gauge understanding of specific topics and prioritise including them in the module.	Individual responses were collected to identify how the module would best engage intended audiences.

Part 1 of the workshop opened with the question, ‘What do you know about research metrics? Participants were invited to write anonymously whatever they knew about or felt about metrics on post-it notes. The project team grouped the comments according to theme by, visible to all participants. Discussion of the main topics raised followed.

Part 2 of these workshops involved small group discussions, where participants provided their perceptions and knowledge of the research metrics **topics** listed below.

- Altmetrics

- Narrative CVs
- Bibliometrics
- Open Research
- Recognition of Diverse Outputs/Contributions

Each group was given a definition of the topics and a set of **discussion points** as indicated below.

1. Have you ever used this?
2. Why did you use it?
3. What did you like about it?
4. What did you dislike about it?
5. What training would you find useful if you were going to learn more about this?
6. When would you want to receive training on this topic? (Recruitment, Career Progression, Research Evaluation)

Part 3 invited participants to indicate their preferences for content delivery across areas of progress and assessment, time commitment, and content type.

Methodology

This section outlines the systematic methodology used to code the comments from discussions at all co-design workshops, ensuring a structured analysis that supports the development of targeted training modules. The coding system employed a qualitative analysis approach, focusing on thematic coding to categorise the comments. Comments were aggregated for coding. The process involved several steps to ensure accuracy and comprehensiveness.

Primary Objectives of the coding process were:

1. To categorise participant feedback into thematic areas.
2. To identify critical insights and recurring themes.
3. To ensure the coding process is rigorous, transparent, and reproducible.
4. To provide a foundation for developing educational content that addresses the identified needs and priorities.

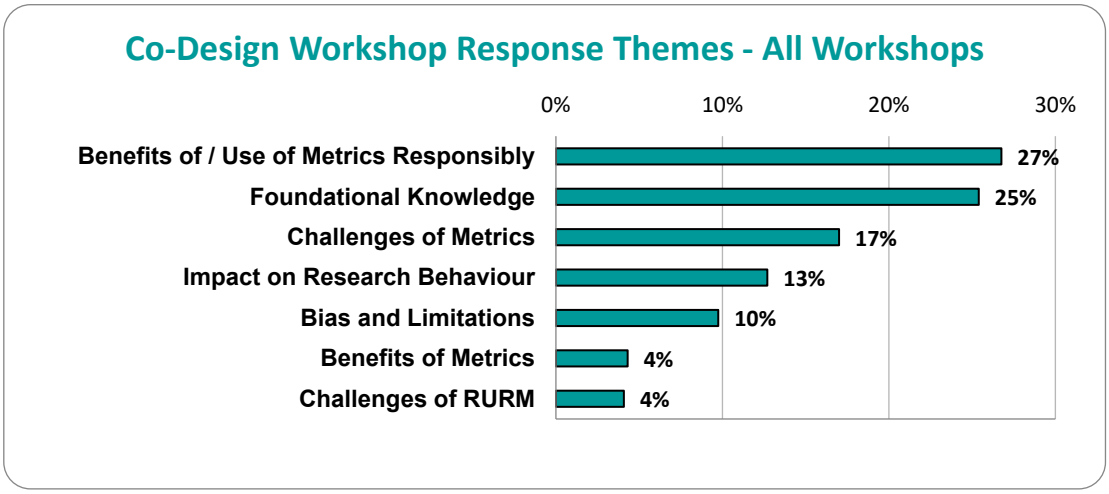
Coding Process

1. Initial Reading: Each comment was read thoroughly to understand its context and content.
2. Theme Assignment: Comments were assigned to relevant themes and sub-themes based on their content.
3. Institutional Attribution: Each comment was tagged with the institution's name to maintain the source's context and traceability.
4. Systematic Categorisation: Comments were systematically categorised under the established themes and sub-themes. This ensured a consistent approach across all data points.
5. Validation: The coded comments were reviewed to ensure accuracy and consistency in the theme assignment.

Themes and Sub-themes

The coding framework was developed inductively based on participant comments.

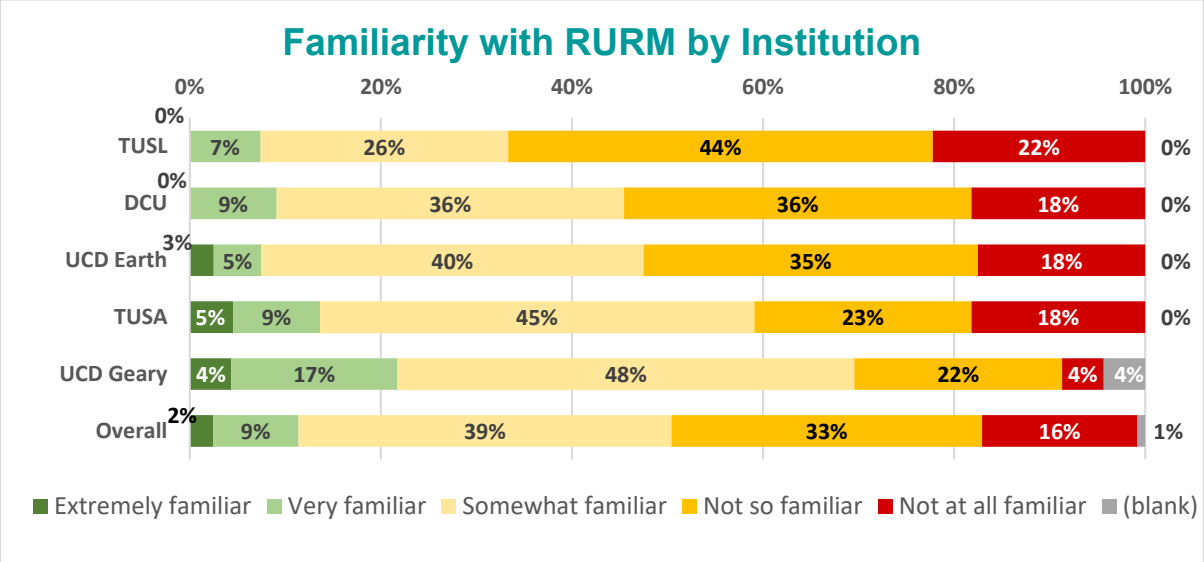
- **Benefits of RURM**: Indicating that metrics have value, however, metrics should be used carefully bearing in mind their limitations and in conjunction with other measures including qualitative assessment methods.
- **Foundational Knowledge**: Signalling an understanding or interest in better understanding of basic information about metrics of any type but especially quantitative metrics.
- **Challenges of Metrics**: Noting the relative costs of using quantitative metrics of any type (bibliometrics, altmetrics, collaboration metrics, field normalised indicators) in terms of time, infrastructure, value to assessment, inequality across fields/gender/global south, etc.
- **Bias and Limitations**: Identification of the limits to the usefulness of quantitative metrics of any type (bibliometrics, altmetrics, collaboration metrics, field normalised indicators) in assessing research.
- **Impact on Research Behaviour**: Recognition of the way research assessment using metrics may change the choices researchers make.
- **Challenges of RURM**: Noting the relative costs of using qualitative research assessment in terms of time, infrastructure, value to assessment, access, etc.
- **Benefits of Metrics**: Noting the positives of using quantitative metrics of any type (bibliometrics, altmetrics, collaboration metrics, field normalised indicators).



A total of **363 comments** were received across the 5 workshops for **Parts 1 & 2**. Comments were most frequently coded to the **Benefits of RURM** theme (27% of all comments). Many comments underscored the need for metrics tailored to specific disciplines and contexts. For example, *'A holistic view of metrics across different research outputs including non-academic outputs like exhibitions, performances, etc.'* Metrics should reflect the unique characteristics and requirements of different fields. For example, *'Discipline-specific: Each field has its boundaries with RMs [research metrics].'* Research assessment should include qualitative and quantitative measures, focusing on societal benefits and the broader impact of research. For example, *'Help to explain some aspects of research impact but should be used in conjunction with other factors.'*

Foundational Knowledge was the second most frequently cited theme raised by the comments (25%). Participants expressed varying familiarity with research metrics, highlighting the need for primary education on metrics and how they are calculated. Representative comments include 'I was amazed at how many recent research metrics have been used (e.g. H-index (2005),' and 'Didn't know very much about metrics until now.' There was a call for appropriate training on the responsible use of metrics, emphasising the importance of understanding the context and purpose of different metrics. For example, 'Workshops on documenting and quantifying diverse research contributions,' '[It would be useful to have] Guidelines on how to capture diverse outputs and contributions / what to count,' and 'Guidance on how metrics can be used appropriately.'

The need to pitch the information at an introductory level is reinforced by results of the pre-workshop survey conducted with all participants. Attendees were asked about their familiarity with RURM according to a Likert scale of options. As shown in the table below, the majority of respondents were somewhat familiar or not so familiar (72% across all partners) with RURM, indicating a sector-wide need for information about metrics and education on RURM.



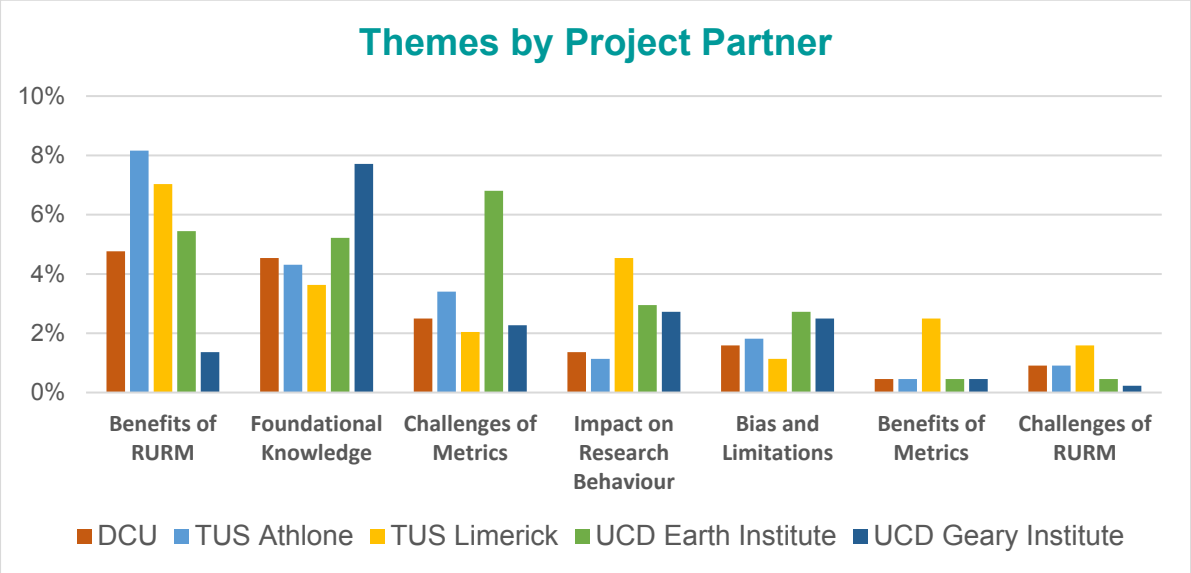
Sixteen percent of workshop responses were coded to the **Challenges of Metrics** theme. Participants identified several challenges associated with using research metrics, including the complexity of data analysis, the need for transparency, and the difficulty of comparing metrics across disciplines. The potential for metrics to cause anxiety and stress among researchers was noted, along with concerns about the transparency and accuracy of metrics. For example, 'Provide examples of gaming [metrics] in training so they can [be] recognize[d],' and 'The over-reliance on certain metrics can create pressure and stress for researchers,' and 'Metrics design a culture.'

Impact on Research Behaviour was raised in 13% of the comments. The influence of metrics on research behaviour was a recurrent theme, with participants noting that metrics often drive researchers to prioritise quantity over quality. For example, 'Metrics can influence the choice of research topics and methods,' and 'The potential for metrics to drive innovation and

collaboration.' The impact of metrics on career progression, funding decisions, and the choice of research topics was also discussed.

Although some of the most animated discussion in the workshops was around **Bias and Limitations**, only 10% of the responses were coded under this theme. Comments highlighted the biases and limitations inherent in many research metrics, particularly concerning gender and disciplinary imbalances. Responses also indicated that ethical considerations were needed to use metrics and address disciplinary differences. Representative comments include: *'It can be a cause of inequity if metrics are used as the only factor in decision-making,' 'Not necessarily a good way to measure effective communication of research,'* and *'I have never had a conversation with an academic colleague where metrics were invoked to denote the quality of someone's work.'*

Challenges of RURM and **Benefits of Metrics** were each raised by 4% of the comments. Effectively, these themes are the flip sides of the same coin highlighting the positives of bibliometrics and the costs of qualitative assessment methods that might be included in a holistic approach to assessment. Comments coded to Challenges of RURM included, *'Metrics are a management tool not a research tool,'* and *'Address disciplinary imbalance in metrics.'* Responses coded to Benefits of Metrics, *'Repeatable and reproducible metrics,'* and *'Altmetrics provide real-time data on research dissemination.'*

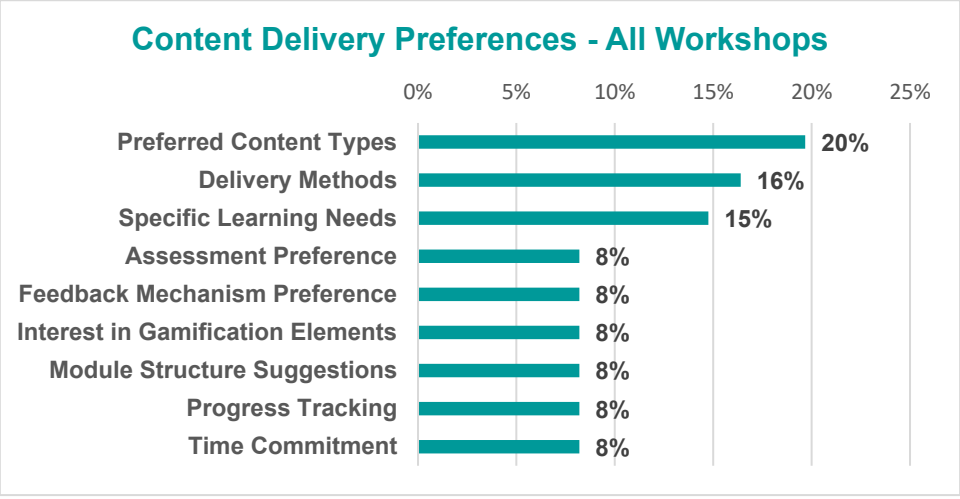


While there was broad agreement across workshops on priorities for the RURM module, there were some differences. Overall, it was deemed important that the module articulate the benefits of RURM but this was more important to participants on both TUS campuses and at DCU than at UCD. Again, all agreed that including foundational knowledge about metrics was important but it was more of a priority for participants as both UCD workshops. The challenges of metrics which included responses like, 'Hard to compare between disciplines: Sciences, Social Sciences, Humanities,' were a priority topic at the UCD Earth Institute workshop, which attracted an interdisciplinary mix of researchers. Impact on research behaviour was called out especially strongly by participants at the TUS Limerick workshop.

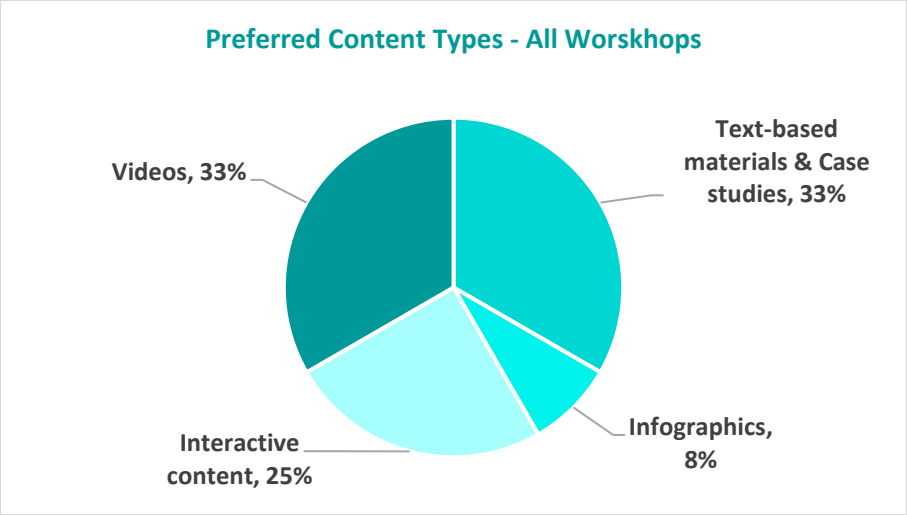
Further analysis allowed for key topics discussed during the workshops to be divided into **sub-themes** capturing specific aspects of the feedback.

Key Topic	Sub-themes		
	Challenges & Limitations	**Usage & Benefits**	**Training Needs**
Altmetrics	• Favours controversy • Limited value • Reflection and management • Effective communication	• Researchers using altmetrics • Policy makers, university management, and funding agencies	• Integration with traditional metrics • Best practices for social media
Narrative CVs		• Familiarity and applications • Panellist training • Storytelling methods and competencies • Guidance and examples	• Writing and inclusion • Understanding use cases
Bibliometrics	• Disciplinary context is essential to interpret • Statistical illiteracy (not everyone understands what the metrics mean)		• Understanding nuances • Policy maker training
Open Research	• Time and cost • Balancing IP and open access	• Encouragement and accessibility • Dissemination and citations	• Lifecycle and examples
Recognition of Diverse Outputs / Contributions	• Guidelines and valuation	• Diverse outputs in CVs • Holistic view and engagement	• Documenting and communicating value

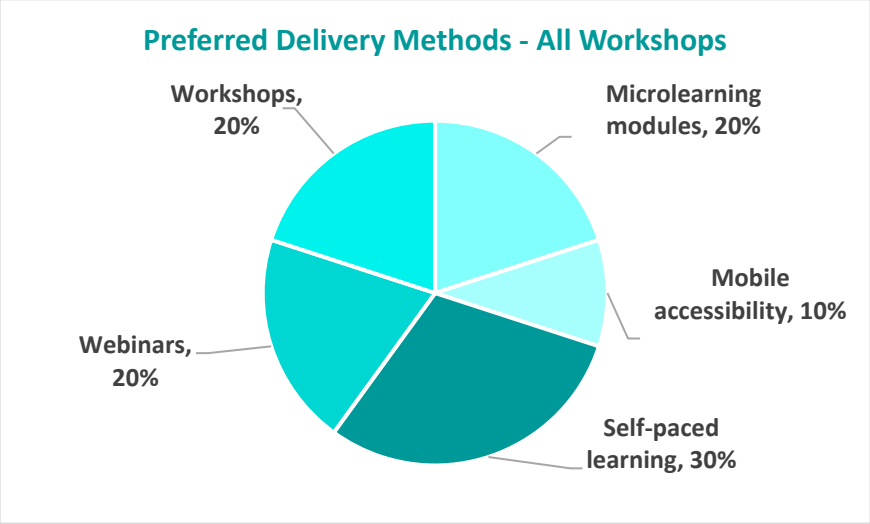
For **Part 3** of the workshops there were **61 comments** across all 5 workshops. The topics which received the greatest number of comments were content type, delivery methods, and specific learning needs.



When asked which **content type** they preferred, the majority of respondents favoured video content or text content and case studies The next most popular type was interactive content.



In terms of **delivery methods**, most respondents preferred self-paced learning by a small margin. Micro-learning modules, webinars, and workshops were equally preferred but less so than self-paced learning.



Preferences for **specific learning needs** were equally distributed across accessibility considerations, interactive exercises, practical applications, and real-life examples (22% each). Slightly fewer respondents preferred application-based learning (11%).

When asked what amount of time they were willing to commit to an RURM module more people preferred 30-minutes-to-an-hour than 1-to-2-hours.

Conclusion

The coding of comments from the Co-design workshop has provided valuable insights into participants' views on the responsible use of research metrics. This systematic approach to categorising feedback has highlighted the key areas to be addressed in developing training modules.

- Primary education on all types of metrics used in research evaluation is an essential foundation for RURM.
- RURM principles include appreciating how the use of research metrics in evaluation for publication, funding, and career progression may impact researcher behaviour.
- Clarity about the value and limitations of assessment methods is vital for all those engaged in research assessment.
- Context in terms of discipline, career stage, and diverse outputs / contributions is vital for selecting appropriate and fair metrics for research assessment.
- Recognising diverse outputs and contributions in research requires clear guidelines and training on documenting and communicating their value.
- Tailored training on altmetrics, including how to integrate them with traditional metrics and best practices for using social media, is needed.
- Participants expressed a need for guidance on writing and using narrative CVs, particularly in storytelling and including diverse outputs.
- Bibliometrics training should focus on understanding nuances and the importance of using multiple measures.
- Open research practices require training that reflects the full research lifecycle and addresses challenges related to IP and costs.
- Participants indicated that the module should cater to different disciplines, career stages, and research outputs.
- The module should ensure that materials are accessible to individuals with learning needs
- Preferred content delivery options were videos and text-based content and case studies.

By understanding the foundational knowledge, contextual uses, challenges, biases, and behavioural impacts associated with research metrics, we can create comprehensive and practical educational resources that promote the responsible use of research metrics in the research community.



Pilot Training on the Responsible Use of Research Metrics
WP2: Co-Design Workshops Report

UCD DUBLIN

DCU Ollscoil Chathair Bhaile Átha Cliath Dublin City University

TUS Ollscoil Teicneolaíochta na Sionainne: Lár Tíre, An tIarthar Láir Technological University of the Shannon: Midlands Midwest

UCC Coláiste na hOllscoile Corcaigh University College Cork, Ireland