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An Integrated Approach to Impact Evaluation and Recognition of Learning

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An Integrated Approach to Impact Evaluation and Recognition of Learning

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Abstract

MEiRA is a novel method for evaluating learning effectiveness, emphasizing practical knowledge application and learner achievement. It transcends traditional metrics by valuing the learning journey and its outcomes equally. Applicable in organizational training and broader learning contexts, it's designed for scenarios where learners may not be part of a known organization. MEiRA follows the learning journey through five pillars: 1) Engagement; 2) Perception and Appreciation; 3) Cognition and Knowledge Acquisition; 4) Intention and Commitment; and 5) Transfer and Impact Stories. It uses open badges as an intrinsic part of the impact evaluation process, making the impact of applied learning visible. MEiRA overcomes conventional evaluation model limitations by measuring acquired knowledge and recognizing its real-world application and impact. It provides a flexible, inclusive, and comprehensive approach to learning evaluation, championing the recognition of formal, non-formal and informal learning achievements, and advocating for diverse learning pathways and their professional impact.

Key words: Impact evaluation; open badges; recognition; framework

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Glossary of Terms and Abbreviations

Abbreviations

COM-B	Capability, Opportunity, Motivation – Behavior Model.
ILO	International Labour Organization
LMS	Learning Management System.
LTEM	Learning Transfer Evaluation Model.
MEiRA	“Marco de Evaluación de Impacto y Reconocimiento del Aprendizaje Aplicado” (in english “Impact Evaluation and Recognition Framework for Applied Learning”).

Glossary of terms

Assessment: Frequently is used similarly to the term evaluation, but in our document, we differentiate them. For assessment, we adopt the definition used by Colorado College (2022). Assessment involves evaluating learning based on specific learning outcomes. These are measurements collected during the formal learning situation.

Badge: See Digital Credential. Used interchangeably with Open Badge, Digital Credential or Digital Badge.

Badge application process: A badge application is a structured process that learners undergo to earn recognition. In the process, they provide evidence specific to the achievements recognized by an open badge. The pieces of evidence are evaluated to determine if they meet the criteria for awarding the open badge.

Capacity-building: Capacity-building in the context of learning refers to the systematic process of enhancing and expanding skills, knowledge, and overall abilities of individuals and organizations. Involves acquiring new competencies, improving existing skills, and cultivating a mindset that embraces continuous learning and improvement.

Digital Badge: See Digital Credential. Used interchangeably with Open Badge, Digital Credential or Badge.

Digital Credential: Verifiable online recognition of the skills or knowledge you have acquired. This digital representation includes detailed information such as the recipient, the issuing organization,

the achievements attained, and the criteria for issuance. It is assumed that they follow the open badge specification and therefore can be shared openly over the internet.

Effectiveness: Refers to the degree to which the intended learning outcomes have been achieved as a result of an educational intervention. It encompasses not only the achievement of specific knowledge and skills but also the application of these in real-world settings. Effectiveness measures the success of the learning process by evaluating whether the desired changes in behavior, skills, and performance have occurred, both during and after the learning journey.

Evaluation: Frequently is used similarly to the term assessment, but in our document, we differentiate them. In this document, evaluation refers to all the measurements that assess the effectiveness of learning throughout the entire learning journey, both during and after the learning has taken place.

Formal Learning: Formal learning is structured, intentional, and typically occurs within organized educational settings. It involves direct teaching behaviors and is often guided by a curriculum that is written down and follows a top-down approach focusing on developing specific knowledge and skills. Formal learning is recognized by both educators and learners and often leads to qualifications or certifications. The motivation for this type of learning may be extrinsic, such as grades or qualifications.

Impact (impact of learning): In our context, impact refers to the changes in behavior, skills, performance and/or ways of work of learners after the learning/training is complete, reflecting the effective transfer of learning to real-world applications. It refers to how well learning is being applied (transferred) in practice and the effects this transfer has on-the-job (Work-Learning Research, n.d.).

Impact Evaluation: Refers to the process and measurements of effectiveness of learning after the learning has taken place. It includes measurements of change in behavior, skills, performance and/or ways of work of learners.

Indicator: A comparison between two or more types of data or metrics, used to develop a quantitative measure or a qualitative observation. In the framework described in this document, each indicator represents a magnitude or criterion that holds significance in the evaluation

process, providing objectivity and comparability, as well as standardization of measures. They represent the degree of achievement of the objectives set in each learning intervention.

Informal Learning: Informal learning is not structured and can take place anywhere, often as a by-product of other activities. It is unintentional from the learner's perspective and may not be recognized as learning by the learner themselves. Informal learning is motivated intrinsically and involves a variety of cognitive, emotional, social, and behavioral elements. It is not typically documented in a formal curriculum and emphasizes practical knowledge gained through experience rather than theoretical knowledge.

Learning activity: A learning activity is any activity that is part of a learning process. It could be watching a video, answering a quiz, working on an essay. They can be a standalone activity or be part of a larger sequence of activities.

Learner-centric approach: A learner-centric (or learner-centered) approach is an educational method that prioritizes the learner's needs, abilities, and interests. It places the learner at the center of the learning process, empowering them to take charge of their own learning journey. This approach actively engages learners, recognizing their uniqueness and tailoring learning experiences accordingly.

Learning context: The learning context is where learning occurs. It encompasses learners, activities, educational content, learning strategies, and the environment in which they operate.

Learning intervention: A learning intervention refers to one or more purposeful learning activities designed to address an identified learning gap or reinforce prior learning. These interventions aim to achieve specific outcomes, often related to job performance or skill development.

Learning journey: In the context of the MEiRA framework, the "learning journey" refers to the continuous process that spans from the beginning of a course to after its completion, when the participant applies what they have learned in their real work context. This learning journey is structured across different learning interventions.

Learning outcome: A learning outcome is a concise description of what students will learn and how that learning will be assessed. Articulated learning outcomes guide the design of a course,

the assessment of learning progress, and the development of learning activities, in an easier and more effective way. They describe and help understand what learners should know, be able to do, and value as a result of integrating knowledge, skills, and attitudes learned throughout the course, and they are stated in measurable terms (Stanford Teaching Commons, n.d.).

Learning path: A learning path is a structured route that learners follow through a training program or educational content. It consists of sequenced learning activities designed to guide learners from their current knowledge level (point A) to their desired learning goals (point B). It differentiates from learning journey, a broader concept that includes a continuous and holistic learning experience. Learning paths are more prescriptive and step-by-step, whereas learning journeys are not always strictly sequenced, allowing for greater flexibility and a broader range of learning experiences.

Learning transfer (transferred learning): Learning transfer refers to the process of applying knowledge or skills gained through a learning intervention, to address specific problems in a real context or at work.

Open badge: See Digital Credential. Used interchangeably with Badge, Digital Credential or Digital Badge (Porto, 2018).

Non-Formal Learning: Non-formal learning may be structured but is less rigid than formal learning. It can occur inside or outside educational institutions and does not necessarily lead to formal qualifications. Non-formal learning is intended by the learner and is often driven by intrinsic motivation. It is recognized by the learner and can complement the formal curriculum, focusing on both propositional and procedural knowledge.

Self-directed learning experience: Self-directed learning is an approach to education where learners take responsibility for controlling their learning objectives and methods. It empowers learners to lead their own educational journey, fostering autonomy and growth.

An integrated approach to impact evaluation and recognition of learning

Introduction

MEiRA (from the Spanish acronym for “Framework for Impact Assessment and Recognition of Applied Learning”^{iv}) represents a forward-thinking framework designed to evaluate learning effectiveness and impact with a clear focus on the practical application of knowledge and the recognition of learner acquired competencies.

The IDB Group Institutional Strategy highlights the essential role of knowledge in development, emphasizing that "knowledge generation, dissemination, and use for policy is a central value-add for the IDB Group's clients." Consistent with this focus, the MEiRA framework is a strategic initiative that aligns with the IDB's commitment to enhancing development impact through knowledge. By accurately assessing and recognizing the effectiveness of learning interventions, MEiRA supports the strategic directive to use knowledge as a tool to "identify and support the enactment of effective policies and programs," as articulated in the strategy. This framework enriches the IDB's broader objectives by ensuring that capacity-building initiatives are both effective and aligned with the evolving educational and professional needs of the region.

The learning journey spans from course participation through the intention of applying learned concepts to their impacts on performance and work. This learning journey is represented in MEiRA through 5 pillars: 1) Engagement, 2) Perception and Appreciation, 3) Cognition and Knowledge Acquisition, 4) Intention and Commitment, and 5) Transfer and Impact Stories.

Open badges are used as a recognition mechanism that is an intrinsic component of the evaluation process. Badges are used to recognize, and to make visible the impact of applied learning.

Every pillar in MEiRA has been influenced to some degree by other evaluation models (Kirkpatrick-Katsell, Learning Transfer Evaluation Model, Capability-Opportunity-Motivation/Behavior Model, and Birckenhoff Success Case Methods), with adaptations according to the

^{iv} In Spanish: *Marco de Evaluación de Impacto y Reconocimiento del Aprendizaje Aplicado.*

goals and focus of MEiRA. A brief description of these models and how they have influenced MEiRA is presented in [Appendix - Background and supporting literature overview](#).

Conversely, each pillar establishes specific evaluation instruments designed for data collection. This data is essential for calculating indicators and analyzing course impact and effectiveness.

MEiRA's goals and focus

MEiRA aims to overcome the limitations of conventional evaluation models by incorporating a system that not only measures acquired knowledge but also recognizes and values the application and impact of this learning in the real world through learners' personal reflections and experiences. It champions the recognition of both formal and informal learning achievements, advocating for a broader acceptance of diverse learning pathways and their impacts in professional settings.

MEiRA is predicated on the understanding that effective learning evaluation should encapsulate more than just the acquisition of knowledge—it should also consider how that knowledge is sustained over time and applied in real-world settings and the impact it creates. By doing so, MEiRA addresses some of the intrinsic limitations, observed in traditional training evaluation methodologies, such as:

1. Over-reliance on quantitative metrics: Many existing models prioritize numerical data, often overlooking the nuanced understanding of learning's qualitative aspects and its subsequent application.
2. Narrow focus on immediate outcomes: There's a tendency to evaluate the success of training programs based on short-term results, disregarding long-term learning retention and application in diverse professional scenarios.
3. Lack of individual learner context: Traditional methodologies may not fully account for the individual learner's context, including their unique backgrounds, learning paths, and the specific challenges they face in applying learned concepts.
4. Insufficient recognition of non-traditional learning outcomes: There is often a gap in acknowledging and validating informal

or self-directed learning experiences, which are increasingly relevant in today's rapidly changing professional landscapes.

5. Many of these models have been conceived for corporate environments, and focus the evaluation process on measuring how much a course influences aspects such as productivity, profit margins, sales goals, customer satisfaction, number of complaints, etc. These aspects do not apply in scenarios where learners may not necessarily be part of a known organization or where detailed insights into their workplace roles and responsibilities are unavailable.

MEiRA's holistic framework attempts to bridge these gaps by providing a more flexible, inclusive, and comprehensive approach to learning evaluation.

Nonetheless, any evaluation model or framework inherits an intrinsic common limitation related to attribution. There is no method able to assert that any impact derives exclusively from training. Attribution becomes harder when participants are not within a controlled group, and even harder when the focus goes outside of organizational training, which is the context of MEiRA discussed in this document.

MEiRA's champions the recognition of both formal and informal learning achievements, advocating for a broader acceptance of diverse learning pathways and their impacts in professional settings.

Key Components of the MEiRA framework

Principles supporting the framework

MEiRA is supported on principles (Figure 1 - MEiRA's Supporting Principles) that represent basic ideas or rules that explain and guide the evaluation process.

These principles serve as a foundation for understanding and measuring various aspects of learning and sustained behavior change, evidenced through the transference or application of acquired knowledge beyond the course and in real situations. The principles also guide decision-making both in the context of the evaluation and in the improvement of the learning design and process.

Figure 1: MEiRA´s Principles

This figure illustrates the seven core principles of MEiRA, which underpin the understanding and measurement of learning and behavior change, and guide evaluation and improvement processes. The principles are: Continuous Learning Journey; Transference and Impact Focus; Learner Empowerment; Transparent and Credible Metrics; Alignment Intrinsic in Design; Iterative Feedback Loop; and Recognition.



MEiRA's structure

MEiRA is structured around five fundamental pillars (Figure 2 - MEiRA´s Five Fundamental Pillars), that are the essence of evaluation and recognition. They represent a progression in the learning journey and support the overall structure of the evaluation process, upon

which the recollection and analysis of achievements are designed, planned, and recognized.

The learning journey is a continuous process that spans from the beginning of a course to after its completion, once the participant confronts what they have learned with their real work context.

A distinctive characteristic of MEiRA is the importance and value of learner's empowerment in their own development and professionalization process.

The five pillars are:

1. **Engagement:** Engagement refers to the degree of involvement, participation, and interaction exhibited by learners with the resources and learning activities of the course. It encompasses measuring learners' attitudes towards the course content and tasks.

Engagement is measured in a variety of ways, including time allocated to each activity, tracking participation in discussion forums, and examining interaction with multimedia content, among others.

2. **Perception and Appreciation:** Assessing perception and appreciation involves measuring how learners perceive and value the quality, utility, and relevance of the course. It focuses on participants' perception and appraisal of the learning experience.

Examples of measurements to consider include satisfaction surveys that evaluate the course's quality, allowing for comparisons such as initial expectations versus final perceptions, or collecting qualitative feedback on overall experience.

3. **Cognition and Knowledge Acquisition:** The measurement of cognition and knowledge acquisition focuses on evaluating the cognitive process and information retention. The goal is to understand how students assimilate, comprehend, and retain the information and skills provided during the course.

Observable components within this aspect include pre- and post-course test results to gauge the extent of knowledge acquisition. Completion rates of graded course activities offer

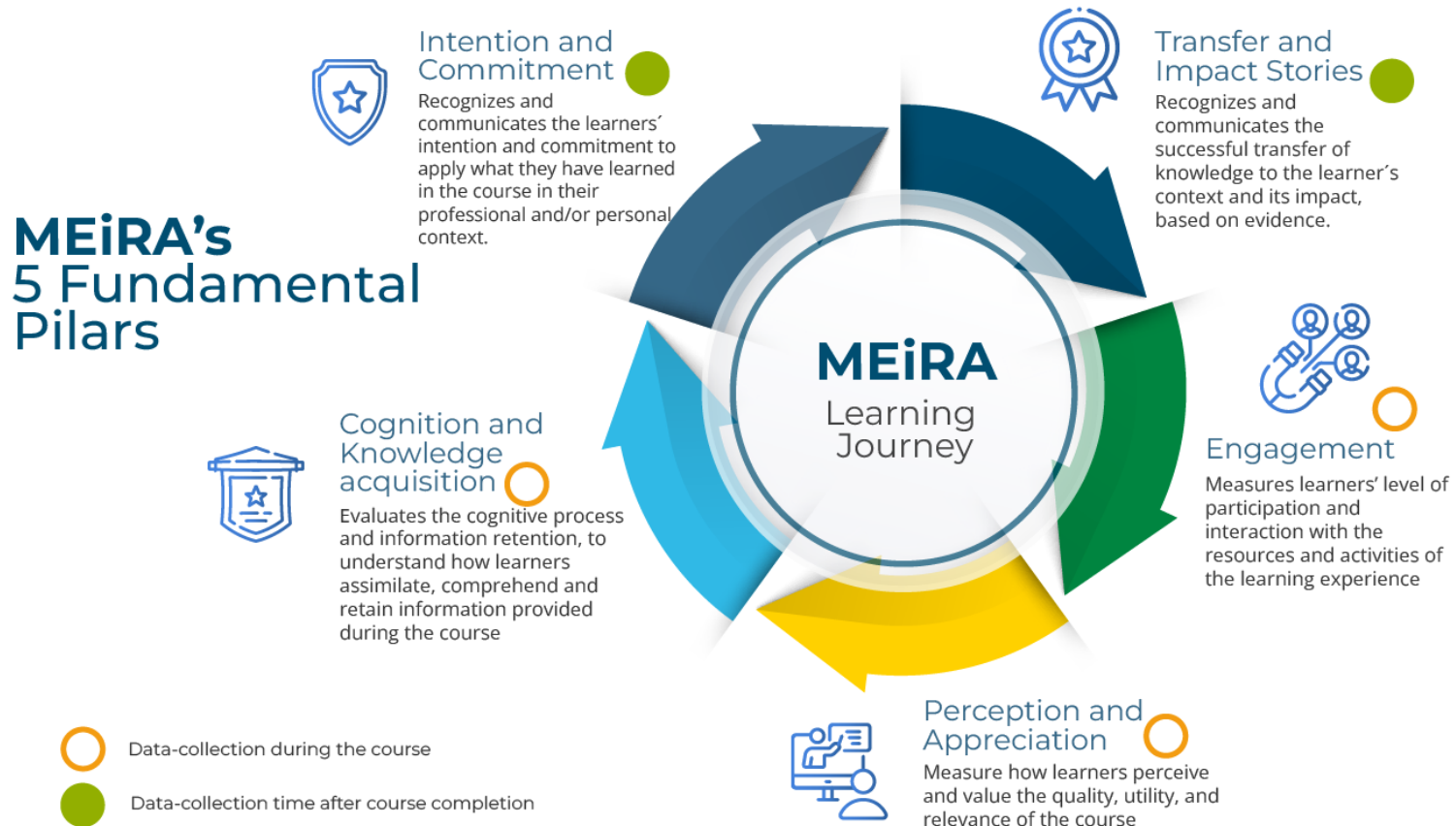
insights into the practical application of acquired knowledge. Moreover, analyzing participation in discussions aids in evaluating comprehension and the ability to apply learned concepts.

Under this pillar, we encounter the first opportunity for recognition through badges [\(see Glossary of Terms\)](#) for those who according to specific criteria have demonstrated the achievement of the learning objectives.

4. **Intention and Commitment:** This pillar recognizes and communicates the learners' intention and commitment to apply what they have learned in the course in their professional and/or personal context. A badge application process [\(see Glossary of Terms\)](#) documents the learner's concrete plan for learning transference. This is the second opportunity of recognition in MEiRA.
5. **Transfer and Impact Stories:** This pillar recognizes and communicates the successful transfer of knowledge to the learner's context documented evidence, providing a tangible representation of the real impact of applied or transferred learning. To achieve this a badge application process is employed. This is the third opportunity of recognition in MEiRA

Figure 2: MEiRA's Five Fundamental Pillars

Figure 2 depicts MEiRA's five fundamental pillars: (1) Engagement; (2) Perception and Appreciation; (3) Cognition and Knowledge Acquisition; (4) Intention and Commitment; and (5) Transfer and Impact Stories. These pillars structure the evaluation process, tracking learners' progression from course involvement to real-world application.



Recognition of the learning journey in MEiRA

MEiRA introduces two evaluative interventions after learners have completed the formal capacity-building activities. These interventions serve as additional learning opportunities for participants as learners are invited to continue their learning journey. To do so, they must reflect on their learning experiences, explicitly showcasing the impact of applied learning.

Early on, it is crucial to communicate with learners that their journey extends beyond the mere completion of formal activities. Close support and follow-up actions after these activities ensure momentum, allowing applied learning to thrive. Being aware of external factors that influence this process is essential for analyzing impact results.

MEiRA uniquely integrates open recognition, aligning it with three key milestones throughout the learning journey. These milestones represent significant moments in learners' history of achievements. Recognition for these pivotal points is granted through open badges, supported by evidence collected along the process:

- **Cognition and Knowledge acquisition:** This badge recognizes the learning acquired during the course. It is awarded based on the results of learning activities and assessments completed throughout the course. The open badge granted is specific to the course and describes the achieved learning objectives and the evaluation criteria used for its issuance.
- **Intention and Commitment:** This badge recognizes learners who demonstrate motivation and a clear intention to apply what they've learned, after completing the course. It is awarded based on evidence provided by the learner, showcasing a deliberate plan and commitment to applying their knowledge. The open badge is granted based on evidence collected through a badge application process.
- **Transfer and Impact Stories:** This badge acknowledges learners' acquired competencies effectively applied to their context, showcasing the tangible impact of their learning. It is awarded based on evidence provided by the learner, demonstrating the practical application and transfer of acquired knowledge. The open badge is granted based on evidence collected through a badge application process.

MEiRA ´s Implementation cycle

Implementing MEiRA involves a detailed strategic cycle that spans from aligning the learning program with organizational priorities, to evaluating and recognizing achievements and their impact. This comprehensive cycle continuously informs and improves capacity building practice.

MEiRA ´s Implementation Cycle consists of **3 processes** namely 1) Alignment and Design; 2) Planning and Communication Strategy; and 3) Deployment, Data-collection, and Analysis. These processes are aligned with the 5 pillars (discussed previously). Both are informed and improved by the evaluation results. (Figure 3 - MEiRA ´s Implementation Cycle).

The three processes are interrelated, creating a continuous improvement cycle.



1. **Alignment and Design** process ensures the alignment between business or project goals, learning objectives and activities, assessments, and the evaluation instruments required in each pillar.
2. **Planning and Communication Strategy** process involves the design of evaluation instruments, communication strategies and incentives to promote learner participation. During this process, the deployment of post course activities is scheduled accordingly.
3. **Deployment, Data-collection, and Analysis** process includes the deployment of evaluation instruments (in the virtual classroom and/or other mechanisms), the implementation of communication strategies and incentives, as well as the information gathering and its further analysis.

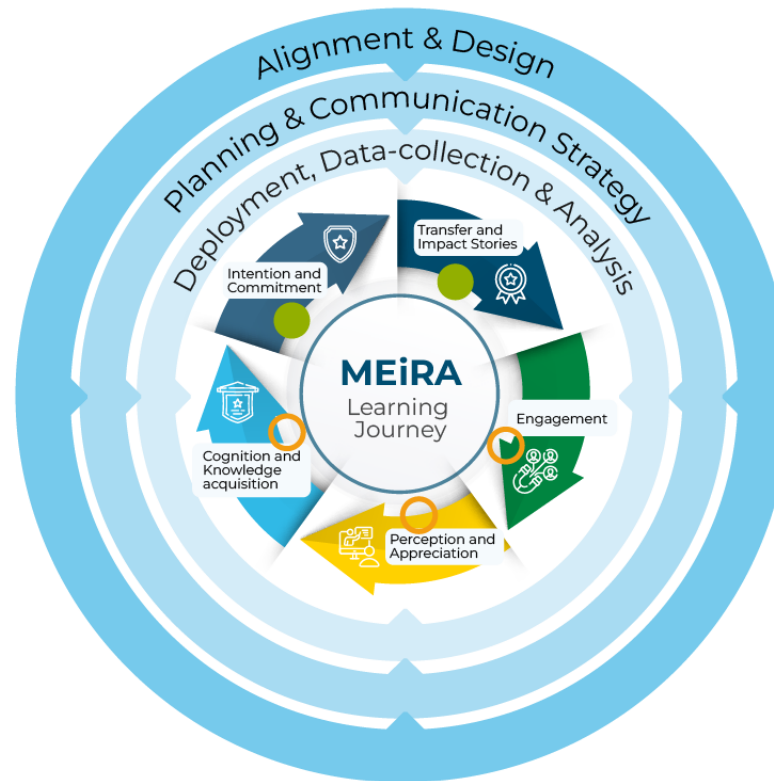
Figure 3: MEiRA's Implementation Cycle

This figure depicts the three phases of MEiRA's Implementation Cycle: Alignment and Design, Planning and Communication Strategy, and Deployment, Data-collection, and Analysis. The processes are interconnected and enhance each other through continuous evaluation.

MEiRA's Implementation Cycle

A holistic 3-process cycle, aligned with the 5 pillars, that spans from aligning the learning program with organizational priorities, to evaluating and recognizing achievements and their impact.

-  Data-collection during the course
-  Data-collection time after course completion



MEiRA´s Indicators and Metrics

Throughout the MEiRA's implementation cycle, a variety of quantitative metrics are utilized. These metrics are derived from data collected through diverse evaluation instruments.

For each course, metrics are selected considering four crucial aspects:

1. **Representativeness:** Metrics should provide information that accurately reflects the effectiveness and impact of the course. This involves conducting a detailed analysis of the characteristics and context of the course to identify the most suitable metrics and therefore the data to be collected.
2. **Information Value:** Prioritize the metrics that provide the most valuable information for measuring the effectiveness and impact of the course, according to its specific characteristics, such as its modality (e.g. self-paced, ILT, hybrid) and the types of learning activities it includes.
3. **Effort vs. Value:** the effort required to collect data and compute metrics should be balanced against its value and representativeness.
4. **User Experience:** The quality of the learning experience should always be a priority. The integration of evaluation instruments into the course should be seamless to preserve a positive learning experience. This implies that, in some instances, either the evaluation instruments or the course itself will need to be adapted.

Combining these metrics with qualitative data gathered in the process, MEiRA offers a set of impact indicators that can be used to guide improvement and provide wider insight of the learning impact.

MEiRA defines four categories of indicators (Table 1 - MEiRA´s categories of indicators and associated pillars), aligned with the 5 pillars (adapted from ILO, 2021).

Table 1: MEiRA ´s categories of indicators and associated pillars

INDICATOR CATEGORIES	DEFINITION	ASSOCIATED PILLARS	EXAMPLES
Learning Process	Measures how well the course design and activities support the learning process.	<ul style="list-style-type: none"> • Engagement • Perception and Appreciation 	<ul style="list-style-type: none"> • Approval rate • Learning activities completion rate • Learning objectives achievement • Course satisfaction
Learning Outcomes	Measures the learning gain and achievements attained from the course.	<ul style="list-style-type: none"> • Perception and Appreciation • Cognition and Knowledge Acquisition 	<ul style="list-style-type: none"> • Learning gain • Course final grade • Cognition and knowledge acquisition recognition rate
Learning Motivation and Commitment	Measures how well the course boosts participants' motivation, and their intention and commitment to applying and transferring learning to real-world situations.	<ul style="list-style-type: none"> • Perception and Appreciation • Intention and Commitment 	<ul style="list-style-type: none"> • Commitment-to-Apply Recognition Ratio • Intention-to Apply-Learning
Learning Impact	Measures the actual changes of participants' behavior resulting from course experience, capturing specific actions of applying or transferring learning in their contexts.	<ul style="list-style-type: none"> • Intention and Commitment • Transfer and Stories 	<ul style="list-style-type: none"> • Applied-Learning-Impact Recognition Ratio • Intention-vs-Applied-Learning Ratio • Learning-Application Impact Perception

Indicators are gathered using both quantitative and qualitative methods within a non-experimental design. This approach evaluates the course's impact based on a voluntary sample of participants, without employing control groups. Measurements are taken during and after the course delivery.

While a non-experimental design cannot isolate the effects of external factors (attribution), it can still affirm that the course has contributed to the results, alongside other influencing factors.

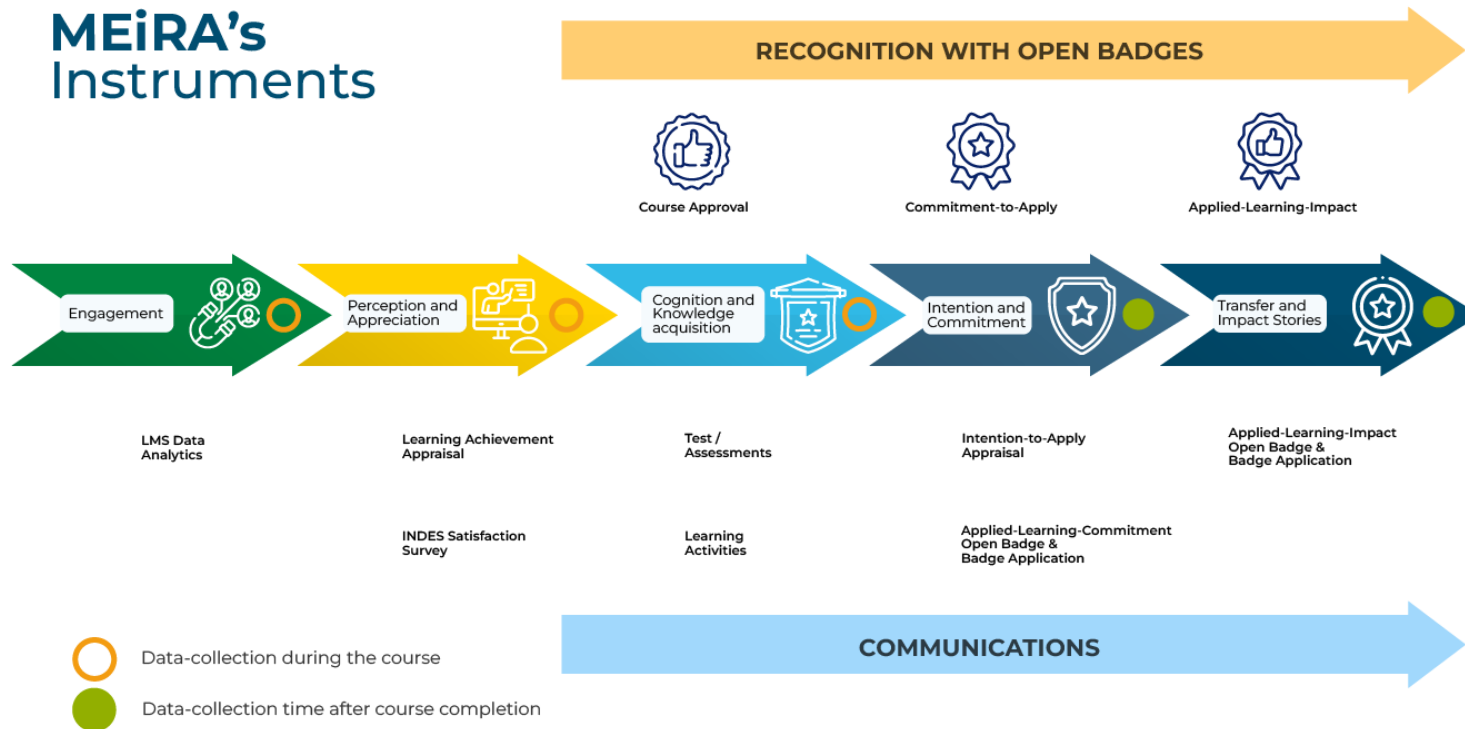
To calculate metrics and indicators, various evaluation instruments must be designed and deployed. These instruments focus on collecting data and/or evidence, as well as the open badges used for recognition. Every pillar requires specific evaluation instruments (Figure 4 – MEiRA's Instruments):

- **Engagement instruments** collect data on learner interaction with course resources and activities, such as learning activities finished and approved, forum participation, and more. Usually, this data is collected by the Learning Management System (LMS).
- **Perception and appreciation instruments** gauge learner perceptions about their learning achievements at various stages throughout the course, and the overall learner satisfaction upon course completion. This data is usually collected through surveys.
- **Cognition and Knowledge acquisition instruments** consist of learning assessments included in the course, such as quizzes and/or other activities. These instruments are developed as part of the course instructional design, aligned to the learning objectives.
- **Intention and Commitment instruments** collect evidence and grant recognition for learners' commitment to applying what they have learned. The evidence is collected through a badge application form, and recognition is granted with an open badge.
- **Transfer and Impact Stories instruments** collect evidence and grant recognition for learners' application of what they learned, in their context.

These instruments not only collect data but also support the learning journey. They provide insights into the course as a whole and its impact, encouraging learners to reflect on their experiences.

Figure 4: MEiRA 's Instruments

This figure illustrates the evaluation instruments used in MEiRA, including the measurement of engagement, perception, cognition, intention and commitment, as well as transfer and impact. Each instrument collects specific data to support and evaluate the learning journey.



The added value of MEiRA

The value of MEiRA lies in its learner-centric approach, that not only recognizes achievements through digital badges but also empowers learners to take control of their own learning journey.

- **Empowerment through Recognition:** MEiRA's use of digital badges is an innovative step towards learner empowerment. These badges not only signify accomplishments but also highlight the real-world impact of their learning. This learner-centered approach positions them as active participants in their educational and professional and personal growth.
- **Data-Driven Insights for Empowerment:** The data captured throughout the process offers a clear view of the learner's journey, providing insights into the practical application of acquired skills. This not only celebrates progress but also empower learners to make informed decisions about their future learning and career paths
- **Transparent Evaluation as a Learning Catalyst:** Evaluations within **MEiRA** is more than a concluding phase; it's an integrated aspect of the learning experience, it's transparent and keeps learners informed, helping them better understand and retain what they've learned. This openness helps learners see assessment as part of their learning, improving their understanding and retention.
- **Feedback Loops for Enhanced Learning:** MEiRA embraces evaluation as an ongoing dialogue, where feedback is a continuous loop that fuels further learning. It supports learners identify strengths and areas for improvement, encouraging active participation in their learning journey.
- **Instructional Design Integration for Real Impact:** By weaving evaluation and recognition instruments into the process of instructional design, MEiRA aligns learning interventions with educational needs and a clear vision of their desired impact. This alignment requires that needs analysis directly incorporated into the learning objectives from the start.
- **Reinforcement through Communication:** The communication strategies in MEiRA's highlight the learning that has occurred and reinforce the acquisition of knowledge, while also serving as a new intervention that bolsters the learning process.
- **Clarity in Attribution to Avoid Misinterpretation:** Transparency in the assessment process under MEiRA is paramount. It ensures that the link

between learning interventions and outcomes is clear, preventing misunderstandings and maintaining the integrity of the evaluation data.

In summary, MEiRA offers a transformative approach where recognizing learning outcomes, through transparent and empowering methods, is key to developing effective and self-directed learners. It promotes continuous improvement and personal development, helping learners confidently manage their own educational and professional journeys.

Specific limitations of MEiRA

Given the characteristics of MEiRA, which emphasizes a holistic and comprehensive approach to evaluate and recognize the impact of applied learning, several challenges and specific limitations might arise. These stem from the framework's ambitious scope, its innovative approach to recognition, and the challenges inherent in evaluating learning impact comprehensively. Here are some potential challenges and limitations:

- 1. Complexity of implementation:** While the comprehensive nature of MEiRA is a strength, it also presents implementation challenges. MEiRA's focus on evaluating various dimensions of learning – from perception and cognition to application and impact – requires robust data collection and analysis mechanisms. Organizations, particularly those with limited evaluation expertise or technological infrastructure, may find full MEiRA's implementation resource intensive.
- 2. Attribution Challenges:** Like any comprehensive evaluation model, MEiRA encounters challenges in directly attributing specific learning outcomes to training interventions. Despite its holistic approach, untangling the effects of training from other variables that impact learners' performance and development remains a complex task. This challenge is further magnified in environments where multiple learning and development initiatives are in progress.
- 3. Balancing quantitative and qualitative data:** MEiRA's holistic approach requires a balance between quantitative and qualitative data to capture the full spectrum of learning impact. However, effectively integrating these data types presents methodological challenges. Organizations may struggle with how to weigh different types of evidence and reconcile potentially conflicting insights from quantitative metrics and qualitative narratives.
- 4. Recognition of learning achievements:** While recognizing learning achievements through digital badges is a key feature of MEiRA,

- achieving broader acceptance and understanding of these recognition mechanisms can pose a limitation. In some professional contexts, digital badges and similar credentials may not yet be fully valued, potentially diminishing the perceived impact of learning achievements.
5. **Ensuring equity and accessibility:** While MEiRA emphasizes applied learning and recognition, ensuring equity and accessibility demands thoughtful consideration. Providing equal opportunities for all learners to demonstrate their achievements and receive recognition can be challenging, particularly in diverse and dispersed learning environments. Additionally, barriers related to technology access, language, and cultural relevance may limit MEiRA's inclusivity.
 6. **Long-term impact measurement:** While MEiRA's focus on recognizing the long-term impact of learning, it also introduces challenges in longitudinal tracking and evaluation. Organizations may struggle to monitor and measure the sustained application of learning over time, especially considering changes in learners' roles, organizational contexts, and external factors.
 7. **Adaptability to diverse contexts:** While MEiRA is intentionally designed to be adaptable across diverse learning contexts, customizing it to meet specific organizational, cultural, or sectorial needs can be a complex endeavor. Tailoring evaluation and recognition mechanisms to fit different settings while preserving the integrity of MEiRA's core principles demand thoughtful adaptation and ongoing refinement. To address these limitations, it is essential to engage in continuous dialogue among stakeholders, iteratively refine the framework, and leverage advancements in evaluation methodologies and technologies. Openly and constructively engaging with these challenges is crucial for enhancing MEiRA's effectiveness and relevance in diverse learning environments.

Final remarks

As MEiRA continues to unfold in its early phases of implementation, we are committed to evolving our methodologies through rigorous data analysis and ongoing real-world application. The framework, designed to enhance professional development through a structured yet flexible approach, is currently being tested across a variety of courses covering many topics, including children's literacy, regulatory impact analysis, generative AI, criminal analysis, social and environmental compliance and inspections, environment risk management and digital accessibility.

MEiRA's holistic design aims to foster a deeper understanding of both the impact and the practical applications of professional learning. By integrating direct assessments with reflective practices, it not only gauges immediate learning outcomes but also tracks their long-term implications in professional settings. This approach underscores our commitment to not just evaluate but to genuinely enhance the learning journey for adults across diverse sectors.

Recognizing the inherent challenges and limitations of any evaluative model, particularly in attributing specific outcomes directly to learning interventions, MEiRA is designed to adapt and respond. Through continual refinement based on empirical evidence and stakeholder feedback, our framework aspires to set a benchmark for learning evaluation that respects and uplifts the learner's experience and achievements.

We advocate for further studies to explore the nuanced impacts of MEiRA and to validate its effectiveness across different contexts. By doing so, we aim to contribute to a more comprehensive understanding of how adult learning can be effectively supported and recognized, fostering an environment where continuous professional growth is not only encouraged but also celebrated.

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Appendix

Background and supporting literature overview

In this section, we delve into other significant evaluation models found in the literature, which have variously influenced the development of our framework. We also seize this opportunity to incorporate background insights from our experience that have informed the proposal of our framework. Throughout, we describe these alternative models, emphasize their limitations, and illuminate the factors that have contributed to shaping the final version of our framework.

Kirkpatrick-Katzell model

The Kirkpatrick-Katzell Model is widely used for evaluating training and learning programs. This model has gained popularity due to its systematic approach and alignment with business goals. It empowers trainers to communicate results in business terms, making them valuable contributors to organizational success. It consists of four levels:

1. **Reaction:** Measures participants' favorable perception of the training's relevance and engagement.
2. **Learning:** Assesses the acquisition of knowledge, skills, attitude, confidence, and commitment resulting from training.
3. **Behavior:** Evaluates participants' application of what they learned on the job.
4. **Results:** Determines the extent to which targeted outcomes occur due to the training and its support.

Other authors have mentioned that, while the Kirkpatrick Model provides a useful structure for evaluating training, it has several limitations.

1. It lacks emphasis on learning transfer to the workplace, potentially resulting in neglect of practical skill application.
2. Measuring higher levels such as Behavior and Results proves challenging due to extended data collection periods and external influencing factors.
3. It primarily focuses on individual learners, disregarding broader organizational contexts and support systems crucial for learning transfer.
4. The model assumes direct causal relationships between its levels, yet evidence suggests otherwise, highlighting gaps in its applicability.

5. The model oversimplifies training effectiveness, overlooking various contextual factors.
6. Lastly, its assumption of incremental information importance lacks robust conceptual linkages, questioning its utility in assessing training program effectiveness.

Despite its initial utility, these limitations demand careful consideration when utilizing the Kirkpatrick model in practice.

Brinkerhoff Success Case Method

Brinkerhoff's Success Case Method focuses on qualitative analysis—crafting stories from discussions with a small number (i.e. about two to six) of affected parties.

It's based on the assumption that any initiative, no matter how successful or unsuccessful, will always include some success and some failure. It seeks to uncover the most impactful successes and failures of an initiative and then tell the stories behind them, backed by evidence.

It has two stages:

1. **Cases identification:** This step involves gathering quantitative data and conducting surveys, similar to a Kirkpatrick-style evaluation model. The data collected helps determine how well an initiative's business goals have been achieved across the organization. Additionally, it identifies cases where the initiative has been notably successful or unsuccessful, allowing for more in-depth study.
2. **Investigation:** In this phase, interviews are conducted with individuals involved in both the most successful and least successful cases. The purpose is to verify each story and gather additional details, creating comprehensive, evidence-based narratives. These narratives cover all four levels of Kirkpatrick's evaluation model, illustrating the progression from the learning experience to its impact on the business.

The identified and investigated stories are shared within the organization to celebrate successes and apply lessons learned to future initiatives.

Learning Transfer Evaluation Model (LTEM)

The Learning-Transfer Evaluation Model (LTEM) is a novel tool for organizations and learning professionals to assess the effectiveness of their evaluation methods. Developed by PhD. Will Thalheimer with collaborative input, LTEM draws inspiration from learning research. Its specific purpose is to provide

feedback that enables organizations to create more effective learning interventions and validate learning outcomes. LTEM centers on evaluating whether the feedback received accurately reflects how well learning is being applied (transferred) in practice.

LTEM represents a significant improvement over the Kirkpatrick-Katzell Four-Level Model in several ways. Notably, it provides greater specificity regarding learning outcomes. LTEM distinguishes between knowledge, decision-making, and task competence, allowing learning teams to target more meaningful learning outcomes. The LTEM framework consists of eight tiers, beginning with the effects of learning transfer and progressing downward to less effective methods of evaluation. These tiers include:

1. Attendance (Tier 1): Basic attendance tracking.
2. Activity (Tier 2): Assessing learner participation.
3. Learner Perception (Tier 3): Gathering feedback from learners.
4. Knowledge (Tier 4): Evaluating understanding and retention.

Beyond these foundational tiers, LTEM's Tiers 5, 6, 7, and 8 provide a more robust evaluation, allowing us to certify varying degrees of success in learning:

5. Decision Making Competence (Tier 5): Addresses whether learners understand what actions to take based on their learning.
6. Task Competence (Tier 6): Assesses whether learners can effectively perform the tasks they learned.
7. Transfer (Tier 7): Explores whether learners successfully apply their learning in targeted work situations.
8. Transfer Effects (Tier 8): Investigates the broader effects of successful learning transfer on both targeted and untargeted outcomes and stakeholders.

Capability + Opportunity + Motivation - Behavior Model (COM-B)

The COM-B Model conceptualizes behavior as part of a system of interacting elements. It is used to understand, analyze, and identify what needs to change for behavior to occur effectively.

COM-B stands for Capability, Opportunity, Motivation-Behavior. In this model, behavior arises from a person's capability, opportunity, and motivation to enact it. Capability refers to the learner's capacity to perform the behavior; Opportunity pertains to environmental conditions that support behavior; while Motivation involves processes in the brain that energize and direct behavior. These components interact, influencing each other and ultimately shaping Behavior.

While the COM-B model is primarily proposed for designing interventions related to behavior change, it also serves as a reference framework for identifying aspects of formative action. These aspects include changes in learner attitudes and intentions, as well as transfer and learner achievements.

These various models have contributed to the development of MEiRA.

How models have influenced MEiRA ´s Pillars

As discussed previously, we explored multiple models during MEiRA ´s development, as shown in Figure 5 – How models have influenced MEiRA.

Figure 5: How models have influenced MEiRA

This figure shows the key aspects of other evaluation models that have influenced the Pillars of MEiRA.

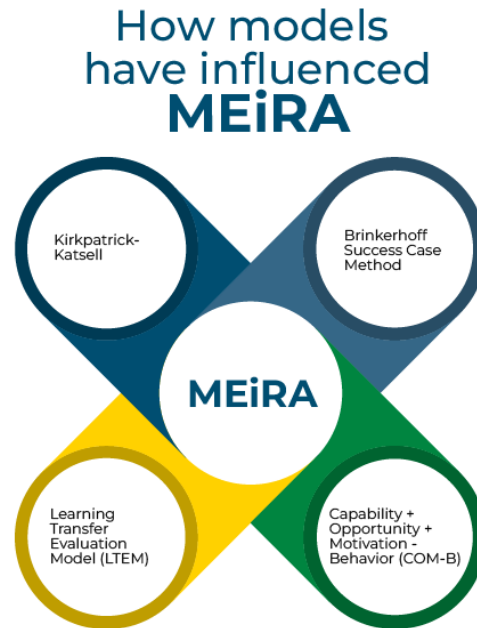
MEiRA's Pillars 2 and 3, which are Perception and Appreciation, and Cognition and Knowledge Acquisition, respectively, are assessed using equivalent instruments to those proposed in the first two levels of the Kirkpatrick model: Reaction and Learning.

Although Pillar 5, called Transfer and Impact Stories, can be related to Kirkpatrick's level 3, Behavior, in MEiRA it is measured using different methods due to the Kirkpatrick limitations described earlier.

LTEM model has served to clarify the meaning of learning effectiveness and identify aspects that better represent the transfer of learning.

Its foundation in research contributes to MEiRA's emphasis on measuring the sustained attitude and intention over time, as well as the practical application of what has been learned.

Consequently, LTEM's Tier 4, Knowledge, informs MEiRA's Pillar 3. Tiers 5, 6 and 7 inform MEiRA's Pillars 5 and 5



MEiRA's Pillars 3, 4, and 5, which are Cognition and Knowledge Acquisition, Intention and Commitment, and Transfer and Impact Stories, respectively, highlight the value of recognition throughout the learning journey.

CredeCialesBID serve as the preeminent mechanism for evidence-based recognition. Similar to Birkenhoff's model, MEiRA recognizes the significance of achievements history, considering it from a wider perspective that goes from the moment of course approval, to the sustained attitude and intention to apply what has been learned, and all the way to transfer and contextual stories within the participants' experience.

COM-B has allowed us to delineate aspects that can be effectively measured by MEiRA, specifically related to Capability, Opportunity, and Motivation.

The Psychological Capability aligns with MEiRA's Pillar 4 of Intention and Commitment, while Cognitive Capability corresponds to MEiRA's Pillar 3 of Cognition and Knowledge Acquisition. Pillar 4 and 5, which are Intention and Commitment, and Transfer and Impact Stories, encompass elements related to both Capability and Motivation.

Assessing Opportunity, as defined by COM-B, is not directly feasible for IDB's courses. Nevertheless, MEiRA evaluates to what extent participants perceive the course's influence on transfer and contextual stories, serving as a means to isolate its effect from other real-world contextual variables.