

Capacity Development in Systems - Practice Brief # 2

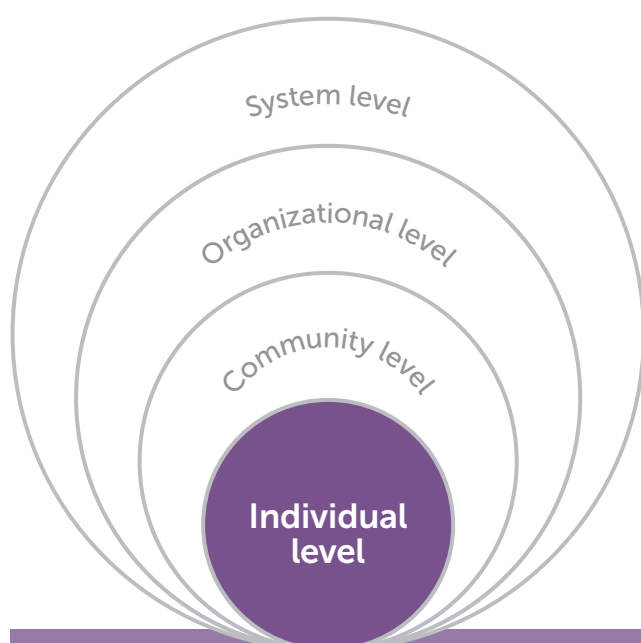
Can Our Research Benefit From 'Tech, Fun and Games'?

Leveraging
Alternative Learning
Approaches and
Technologies to
Enhance R4D
Outcomes

Rationale

In recent years, capacity development (CapDev) in agricultural research for development (AR4D) has seen a mix of traditional approaches along with experimentation and innovation that has been recognized as good practice. However, taking a 'business-as-usual' approach still seems to prevail when it comes to CapDev, with MSc/PhD training and 'one-off' workshops continuing to dominate activities and investments.

Cross-cutting CapDev piloted in the CGIAR Research Program (CRP) on Integrated Systems for the Humid Tropics (Humidtropics) included elements such as blended



Contributing to the achievement of the following sub-Intermediate Development Outcome (IDO)

Enhanced individual capacity in partner research organizations through training and exchange

learning and learning technologies, e.g. Learning Management Systems (LMS), online proctoring, and mobile learning. Other CRPs have piloted gamification and 'serious games' as methods to increase the effectiveness of learning and retention.

The benefits of using games and leveraging learning technologies is well documented. There are examples showing that play improves memory and triggers the secretion of Brain-Derived Neurotrophic Factor (a substance essential for the growth of brain cells), promotes creative problem solving



and increases engagement. Similarly, blended instruction is reportedly more effective than purely face-to-face or online classes, and mobile learning is showing very promising initial results in applications in CGIAR's context. Against this background, we propose to help CRPs incorporate these elements into their work to better deliver on their impact pathways.

Description

Blended learning is a formal education approach in which a participant learns (at least in part) through delivery of content and instruction via digital and online media. This is combined with some element of participant control over time, place, path, or pace.

By using a combination of digital instruction and face-to-face learning, participants can work on their own with new concepts. This frees instructors up to circulate and support individual participants who may need individual attention, and help all participants reach their full potential as opposed to the lowest common denominator – as they would in a traditional classroom.

Such blended courses are powered by **LMS**, which offer many functionalities for learners and learning administrators:

- Allows instructors to grant or restrict access to lessons during a classroom training session, sequence modules, and give scores for attendance and participation;
- Integration of social learning – can require that users post to discussion forums in order to proceed with a course, then notify them of responses;
- Branding and sub-portals – providing options to share or separate content for different audiences and set different preferences for each;
- Ability to scale with the growth of CGIAR programs – allows for more advanced course design including multicourse sequences, awarding credits for classes etc.;
- A unique approach to assessments – includes support for conducting and analyzing preassessment and post-assessment tests and assigning weightings to different assessments;

- Advanced reporting features – including generation of HTML5 graphs and dashboards.

A **serious game** or applied game is a game designed for a primary purpose other than pure entertainment. The use of games in educational circles has been practiced since at least the 1960s. The beginning of the 21st century saw a surge in different types of educational games, especially those designed for the younger learner. Many of these focus on the console and hand-held format, and the high penetration of mobile phones (compared to other hardware) amongst rural farmers makes this mobile approach particularly interesting to the CGIAR. This approach is already being applied in some CRPs, for instance to help train sales agents of insurance companies to support the deployment of index-based livestock insurance in Ethiopia and Kenya.

All of these approaches depend to some extent on **instructional design and adult learning theories**

(see Brief 7 in this series for more information), and involve a co-creation process that involves subject matter experts, such as researchers from CGIAR and partner institutions, working alongside instructional design and learning and technology experts.

Requirements

Precise costings will depend on the scope of the project, and the complexity of the research design for the impact assessment. In general, an instructional designer (full-time equivalent) costs around US\$100k/year, and an indicative list of CapDev products and costs is provided below. Specific proposals for identified needs can be prepared on a case-by-case basis. It is important to note that products will be co-created with subject matter experts (e.g. CGIAR researchers and partners) so it is important to budget for their time to engage with CapDev experts in the development of these products.

SAMPLE ACTIVITIES	INDICATIVE COST (US\$)
Design and deliver training: three day course for 20 participants (based on existing materials)	\$ 15,600
Design and deliver training: three day course for 20 participants (including creation of new materials)	\$ 22,800
Prepare online training course (basic, short course)	\$ 8,000
Prepare online training course (advanced course, with more functionality)	\$ 30,000
Prepare m-learning intervention (basic)	\$ 6,800
Prepare m-learning intervention (advanced, with more functionality)	\$ 18,000
Design and implement online testing and proctoring of training	\$ 2,300
Gamifying an e-learning course or training delivery	\$ 8,000
Creating a 'serious game' to deliver project objectives	\$ 17,500
Review and inputs to a training manual (basic)	\$ 3,500
Review and input into a training manual (advanced, i.e. add custom exercises, PPTs , lesson plans)	\$ 15,000

Acknowledgments:

Capacity development (CapDev) has been identified in CGIAR's Strategy and Results Framework (SRF) as a strategic enabler of impact for CGIAR and its partners. It goes far beyond the transfer of knowledge and skills through training, and cuts across multiple levels.

This CapDev brief is part of a series of 'Legacy Products' developed under the CGIAR Research Program on Integrated Systems for the Humid Tropics (Humidtropics – www.humidtropics.org) to help CGIAR Research Programs integrate key 'capacity development in systems' concepts into their work.

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Briefs in this series:

BRIEF #	LEVEL	TITLE OF BRIEF
1	Overview	Capacity Development in Agri-Food Systems: A Series of Briefs about Developing Capacity Across Individual, Community, Organizational and System Levels
2	Individual	Can Our Research Benefit From 'Tech, Fun and Games'? : Leveraging Alternative Learning Approaches and Technologies to Enhance R4D Outcomes
3	Individual	Coaching: Guided Action Learning on Agricultural Innovation Systems, Integrating Gender and Youth and Nutrition in AR4D
4	Community	Community Level Entry Points: Integrated Analysis of Complex Agricultural Problems and Identification of Entry Points for Innovation in Agri-Food Systems
5	Community	Effective Multi-Stakeholder Processes: Measuring the Effectiveness of Multi-Stakeholder Processes and Partnerships for Innovation and Scaling
6	Organizational	Capacity Needs Assessments: Effective Targeting of Interventions Based on Capacity Needs Assessments and Intervention Strategies
7	Organizational	Capacity Development Effectiveness: Leveraging Instructional Design and Experimental Research Design to Increase the Effectiveness of CapDev
8	System	Site Integration and Capacity Development: Developing and Sustaining Capacity in National Systems Through Coordinated, Aligned and Collaborative CapDev Interventions

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References and resources to draw from:

- <http://news.stanford.edu/2013/03/01/games-education-tool-030113/>
- <http://www.parentingscience.com/benefits-of-play.html>
- https://en.wikipedia.org/wiki/Learning_through_play
- https://en.wikipedia.org/wiki/Blended_learning



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