

A New Generation of Agricultural Entrepreneurs: the Challenge of the Project V-3DAS

Maria Della Giovampaola, Gerardo Perrotta, Maura Striano

Serifo srl (Italy)
serifosrl@serifo.it

1. Virtual Farm for experiential learning

1.1 The reconstruction of a farm in V-environment

V-3DAS addresses the challenges put by the European Commission to support the generational turnover of the agricultural entrepreneurship, through the updating of the professional competences available in EU. This demands the development and formalisation of approaches of Lifelong Learning suitable to promote the acquisition and improvement of technical-professional competences and transversal skills characterising the entrepreneurial profile. **V-3DAS** explores and exploits the potentialities of the interactive virtual worlds for the construction of guided apprenticeships in entrepreneurial roles, within a training pathway structured for the acquisition of managerial competences and entrepreneurial skills.

Therefore, the main aim of **V-3DAS** is the **reconstruction of a virtual farm and its scenarios of enterprise management** to use as moment of stage within the training pathway specifically designed for a **new entrepreneurial class**.

Two kinds of virtual learning activities are animated:

- **Video machinimas**: stories of professional practice presenting multidimensional and complex problems requiring professional competences and strategies of risk prevision, risk taking and management, referred to different areas of enterprise management and development;
- **Simulations in Virtual Farm**: free simulations of professional practice of farm management.

The Video-machinimas allow to acquire and develop abilities, competences and skills of problem finding (*identify a problem within a complex situation of professional practice*), problem posing (*define circumstances, factors and elements which compose the problem*), problem solving (*find possible hypotheses of solution and operationalize them*) as well as of negotiating (*negotiate conditions, goals, rules, procedures within different situations which imply an interaction with other actors such as farmers, buyers, workers*), prevision making (*make previsions regarding specific situations taking into account local, national and international scenarios*), and risk taking (*take risks regarding specific choices concerning enterprise development and management calculating costs and benefits*) with reference to situations connected with agricultural enterprise management and development.

The simulations in Virtual Farm allow to acquire and develop abilities, competences and skills of enterprise management and development with reference to activities and tasks to be performed in a virtual model farm.

The goal is to implement either **key competencies and skills** (e.g. *communication...*) or **transversal abilities and skills** (*problem finding, positioning, solving*) as well as **professional competences** (e.g. *knowing how to manage the enterprise in all its areas and activities as well as to plan and manage enterprise development in different areas balancing financial, human and territorial resources...*).



Fig. 1. Farmacyard animals

This 3D environment reproduces the entire complex of: **Virtual Farm** property, surrounding environment, annexed buildings, machineries and characters, including a set of tools for the business and cooperation, in a

collaborative framework which allows synchronous interactions among users connected by different devices, through their own Avatars.



Fig. 2. Main building



Fig. 3. Interiors

1.2 Skills Needs of future entrepreneurs

The project has identified the needs of skills necessary for young farmers to interact with new agricultural scenarios.

This forecasting analysis has been based on two surveys. The first one has concerned with the study of the post-2013 CAP in order to analyse its impact on agricultural scenarios. The study has been supported by a reasoned consultation of political documents and scientific literature and has allowed to point out the areas of enterprise development involved by these changes.

The second survey has been an empirical research focused on the identification of the learning needs of future agricultural entrepreneurs taking into account the opinion of selected stakeholders and the perceptions and representations of young farmers regarding the development areas for European agricultural enterprises and the knowledge, understanding, competences and skills required to set up and manage an agri-enterprise.



A qualitative research framework has been set up identifying two selected groups of people (*60 stakeholders and 120 young farmers*) considered to be privileged witnesses.

Due to the aims of the research and the characteristics of the samples, the researchers have adopted qualitative research methodologies, procedures and tools such as semi-structured and one-to-one interviews with open questions.

The interviews to *stakeholders* have been focused on enterprise development areas and on the dimensions functional to this development in order to identify knowledge, abilities, competences and understanding which an agricultural entrepreneur should be equipped with to manage efficiently and effectively the above mentioned dimensions and support an integrated development of the areas selected.

The interviews to young farmers/entrepreneurs have been constructed to identify skills needs and gaps experienced during farms setting up, with reference to specific professional development areas.

They have been focused on technical and transversal skills and competences needed by the entrepreneur to sustain new farming processes, and have allowed to identify specific learning needs, addressing learning experiences in order to achieve learning outcomes.

The answers have been analysed and compared to define a general framework of learning needs and objectives for young entrepreneurs, together with more specific learning needs and objectives for each country, identifying similarities and differences in the profiles according to the different contextual and territorial configurations as well as to the expectations, motivations, sensitiveness characterizing farmers in the different countries.

1.3 Model Farm

The second survey on the field has been aimed at identifying and formalizing a model farm with reference to the elements of excellence in the following development areas:

- Interaction with the local context;
- Traceability;
- Quality (Process and Product);
- Multi-functionality;
- Environmental Management and Sustainability;
- Marketing;
- ICT;
- Farm Management and Planning

The elements of excellence have been identified starting from a territorial recognition which has allowed to identify a wide potential of farms. After, 10 farms have been selected as representative of best practices, whose farmers have been interviewed through proper tools of detection.

On the basis of the data collected, the Farms have been evaluated for an analysis of strengths and weaknesses of the enterprise strategies with reference to specific criteria.

The Best Practices have been described formalizing the organizational and managerial processes, which have determined and consolidated their excellence through an evaluation on the basis of specific indicators of performance:

- **Efficacy** (*capacity to pursue the fixed objectives in the light of the interim outcomes and/or the final ones (services and/or products) achieved*);
- **Efficiency** (*optimization of the ratio between resources used and outcomes achieved*);
- **Quality** (*the management systems implemented by the farm*);
- **Productivity** (*ratio between input and output*);
- **Well-being** of people working in the farm;
- **Innovation**;
- **Profitability**;
- **Adaptability** (*farm's capacity to face the changes*).

The Best Practices have inspired the drawing up of the Model Farm through the collection of excerpts referred to the enterprise areas of excellence and to strategies of planning, actions of implementation and tools used. The excerpts have been organized in items in order to allow a comparison among different situations and stories.

Then, some cues have been extracted and used as starting for the construction of elements and situations of our creation for the articulation of the "**Model Farm**". Such cues have been completed through the reference to:

- Community legislative sources;
- Scientific Documents concerning: Organic Farming, Integrated Farming, Quality, Traceability, , Multi-functionality, Marketing;
- Analysis of the associationism in rural-agricultural context;
- Examples of agricultural and agri-tourism chains.

1.4 The narrative approach

The Model Farm has been drawn up as a script for stories of professional practice through which the learners can confront with an enterprise of medium-high level in order to activate the modeling and transfer processes also to different contexts.



The idea is to give an input to young entrepreneurs for the reflection on problems of enterprise management and for putting into practice strategies of problem finding and solving, starting from a comparison with a story of professional practice and with a community of peers.

The participants will be helped to acquire not only technical-professional specific competences, but also reflective competences and creative skills to interact with problems coming from the professional practice.

The stories are articulated as a serial in 12 episodes focused on events concerning the **Model Farm**; each episode tackles a problem of enterprise management in one or more areas.

On the specifically narrative plan, the articulation as a serial is a narrative modality widely used by all the media and, then, it is very close to the habitual styles of young person when they get fruition of (real or fictional) stories. Moreover, it contributes to endear the characters and the company situations so to foster the identification with the situations and a more participative attitude towards the resolution of problems. The situatedness of the learning in a well-defined context (represented by **Virtual Farm**) facilitates the focusing on problems of enterprise management, which are presented by limiting the interferences of other elements which could call the attention of the learners.

On the specifically formative plan, the use of a serial format allows to develop and analyse problems of enterprise development in sequence according to an increasing level of complexity so to calibrate them also on the basis of the levels of learning achieved in progress.

The choice to organise learning materials for the virtual stage sessions as a narrative sequence in serial form has been based on some considerations concerning pedagogical and didactic aspects:

- in so far as the training objectives to be reached are referred to specific competences of enterprise management, such competences can be only verified within a context of practice (real or simulated), in which it is presented a sequence of problematical situations, which are deeply interconnected and imply a variety of planning, actions, reflections which can be only explored within a setting organized in narrative and sequential form;

- in so far as competences of team working are indicated among the training objectives, it is important to offer the possibility to experiment and validate such competences through activities (in contexts of real or simulated life) which require forms of interaction among different actors to whom are entrusted different roles in the course of a sequence of activities which evolve over time, allowing to monitor also the abilities of modulating the competences of social interaction with reference to different contexts and situations taking into account their variation over time;

- in so far as one of the principles of the Andragogy is the continuity of the learning experience[1] [2] [3], it is decisive to guarantee to the learner the possibility to consolidate and transfer learning outcomes among different contexts (formal and non formal learning contexts and contexts of professional practice) and to implement their own competences through a continuity of learning experiences strictly linked and interconnected in a logic of continuity which allows to develop and transfer knowledge and competences from a situation to another one;

- in so far as the new perspectives of the research within the learning area represent the learning processes as situated in a cultural context that feeds on narratives[4], the reference to a narrative format to organize and present learning materials is a really effective strategy to sustain the access to new knowledge that are not de-contextualised, but representing a repertory of tools validated within the field of cultural and social context;

- in so far as the processes of apprenticeship in the professional training represent a path of legitimated admission within a «community of practices» evolving and developing through «stories of shared learning»[5], the use of a narrative format allows to accompany the «trainees» within a process of construction and development of stories representing the patrimony of knowledge and best practices shared by a professional community working in a productive sector, considered as a wider reference «community».

References

[1] Knowles M.S., Holton E.F., Swanson E.A., (2005), *The Adult Learner*, Elsevier.

[2] Schuller T., Brassett-Grundy A., Green A., Hammond C., Preston J.(2002), *Learning, Continuity and Change in Adult Life*, Centre for Research on the Wider Benefits of Learning, London, Institute of Education, University of London.

[3] Mezirow J., (1991), *Transformative dimensions of adult learning*, Jossey Bass, San Francisco.

[4] Bruner, (1996), *The culture of education*, Harvard Univ. Press.

[5] Etienne Wenger, (1998), *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.