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RAZVITAK PODUZETNIČKIH VJEŠTINA U NIZOZEMSKOJ POLJOPRIVREDNOJ IZOBRAZBI

DEVELOPMENT OF ENTREPRENEURIAL SKILLS IN DUTCH AGRICULTURAL EDUCATION

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SAŽETAK

U Nizozemskoj su stvarani profili zvanja koji daju opis znanja, vještina i stavova potrebnih u različitim poslovima poljoprivrednog sektora.

Unutar toga sustava profila i odgovarajućih kvalifikacija koje treba postići u izobrazbi, posebno su navedene poduzetničke vještine.

Neke važne vještine za poduzetnike su opći ciljevi srednjoškolske izobrazbe kao što su fleksibilnost, rješavanje problema i komunikacijske vještine.

Ostale vještine su specifičnije za pripremu gospodarskih poduzetnika, kao što su planiranje, proizvodnja i strateško planiranje na razini poduzeća. Poljoprivredna izobrazba strukturirana je u modulima od kojih svaki odgovara određenoj skupini zadataka koju obavljaju poljoprivrednici u praktičnim situacijama. Normalno, za takve module odgovorna je jedna interdisciplinarna grupa nastavnika.

Moduli se predaju u dualnom sustavu: dio nastavnog procesa odvija se tijekom praktičnog rada na gospodarstvima i dopunjava učenjem u školi.

Također je važna komplementarnost početne pripreme za rad tijekom školovanja s izobrazbom poljoprivrednika koji već vode vlastito poduzeće.

Uloga nastavnika u tom novom sustavu poljoprivredne izobrazbe je različita od one u prošlosti. Institucije za izobrazbu nastavnika sada se suočavaju s izazovom da ih pripreme za tu novu ulogu.

ABSTRACT

In The Netherlands, change in vocational education has come about from one source principally: employers' dissatisfaction with the output of the educational system. They say: We don't mind what pupils know, we are interested

in *what they are able to do*! In the beginning of the 80s government installed an advisory committee on this subject, which proposed a series of changes. Government acted upon the advice and so began a period of development of proposals and experimentation to reorient vocational education.

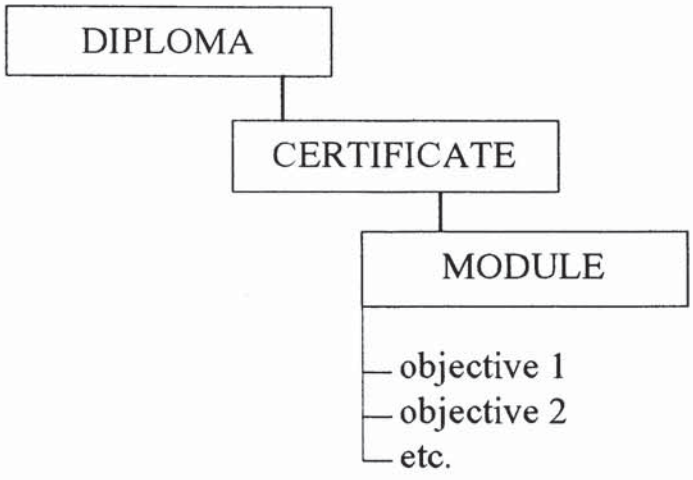
(Note: this refers to secondary vocational education; higher vocational education has already had a more practice-oriented curriculum for quite a long time with educational objectives derived from exigencies from the workplace, and it is in a process of restructuring its curriculum in modules too.)

Agricultural education has been one of the first sectors to thoroughly reorient its curriculum. The logic of the process is as follows:

- in every subsector (for example: tree growing, pig breeding, flower retailing) existing jobs are analyzed, describing the main tasks performed by the job holders.
- *vocational profiles* are derived from this analysis
- educational objectives are derived from these profiles;
- they are formulated per area of work (that can be shared by different jobs, for example feeding animals is an important for a dairy producer as for a calf breeder) and this is called a *certificate.*
- certificates are subdivided in 2 or more *modules*, groups of practically related tasks, which are the basic units for the curriculum (for teaching materials, student's time and work of teachers).

For example:

Scheme 1 Structure of qualifications in the netherlands agricultural education



certificate: managing the growing of vegetables
module A: planing the production process
module B: determining rentability

All the objectives, of certificates as well as of modules, are formulated as an ability the pupil should have after having participated in the module, or a competence he/she should be able to demonstrate. The proof of this competence is what is asked for at the moment of examination of the module.

In family farm enterprises, abilities of different types are needed:

- **technical**, for example: be able to milk a cow, to prune a fruit tree, to operate a harvesting machine
- **economic**, for example to be able to calculate the costs of a production cycle, to calculate a price for selling products with a certain percentage of profit, to calculate the rentability of investing in a machine to substitute manual labour
- **social**, for example be able to instruct an employee how to perform her/his task, to negotiate with a buying company, to reach a joint decision with a co-director of the enterprise
- **managerial**, implying skills to reach the best possible combination of technical, social and economical inputs, for example to be able to define priorities, to react to changing circumstances, to plan strategically for the future.

In types of jobs and, consequently, in certificates, we distinguish 4 levels:

1. assistant to craftsmen
2. starting craftsman
3. independent / skilled craftsman
4. entrepreneur / specialized craftsman.

Depending on the sort and level of occupation, managerial skills are part of the certificate and of the educational objectives, as they are part of what is asked for in a job.

Here I want to point out the relation to *general objectives of modern education* (and the Netherlands are going through a reform of general education at the moment as well, referring to the education of 12- to 15-year olds in all types of schools).

In a certain sense, all people in modern world have to be entrepreneurs, to be able to manage their own life and occupational careers. So education should develop in every pupil skills and attitudes like:

- flexibility
- daring to take risks
- ability to solve problems, individually or in cooperation with others
- communication
- seeking and using information
- adapting to other (sub) cultural surroundings

People without these attitudes and skills will function poorly, even at level 1 and 2 jobs.

Secondary agricultural education in the Netherlands has two stages:

the first stage, for pupils from 12 to 16, deals with these goals of general education, partly applied to and practised in agricultural settings,

the second stage is directly preparing pupils for work in the agricultural sector.

This stage of education, vocational, is structured in modules.

Let's examine closer how schools impart these modules, by taking again an example I gave you above:

module: coordinating the execution of production tasks objectives:

- be able to determine in different stages of growth which technical measures should be taken; to recognise relevant plagues and illnesses; to name the specific role of nutrition elements for production;
- be able to interpret an advice on fertilization; to measure and adjust pH and EC of the growth medium; to apply safely and economically liquid fertilizers etc.
- to lead other people in the execution of production tasks, to handle criticism in a constructive way; to accept constructively leadership in the enterprise's interest, etc.

One first remark: an advantage of modules with this type of objectives, directly related to the reality at the farm, is, that pupils are much more motivated for learning this way, instead for a subject that has not such a clear relation to the kind of work they are aspiring for. Because pupils in The Netherlands choose for an agricultural school because of this perspective for their future; mostly they don't like studying and being in school in general.

Now, how can these objectives be reached?

Clearly teachers from a variety of subjects should participate in this part of education. In this case, I'm thinking of an agronomist/specialist in plant production, a teacher of physics and a teacher of communication. In practice, schools form interdisciplinary teams of about three teachers who are responsible for preparing and imparting the module. They discuss the contents together, crossing the boundaries of their subjects and getting to see more clearly how these subjects can contribute to better insight and skill of the future job holder in practice. Whe they have got to know their module very well, they divide work for detailed preparation (for example, writing assignments), and imparting lessons / guiding learning sessions.

Most of the time, there exist handbooks to support the teachers in this work; however, schools are free to write their own handbooks or to use alternative texts, exercises etc. for part of it.

In the process of learning, delineated in the module handbook, learning in practice takes an important place. Mostly, time of the student is divided between school activities and practice on an agricultural enterprise, with at least 25% practice in the overall curriculum. While learning in practice, the pupil is guided by the entrepreneur, or by an experienced craftsman in the case of a bigger enterprise. Again it is the idea that the pupil learns the whole of the job, not only the execution of the technical part, but also the social and financial sides of the matter. In many level 3 or 4 certificates, this means the pupil will have to observe and to analyze what the entrepreneur is doing, and especially why he/she is choosing to do it in that particular way. So the pupil comes to grasp the meaning of entrepreneurship in practice.

In striving to learn by experience in a setting that is as realistic as possible, farm practice is not the only educational tool. Much can be learned by the pupils too, for example, by running a school enterprise by themselves. Because an entrepreneur will never let the pupil practising on his farm make his decisions, a school mini-enterprise offers the much needed opportunity to experience the responsibility of an entrepreneur in reality. Sometimes by simulation, in games executed in a group or using a computer programme, a similar objective can be fulfilled.

As we already became aware in the preceding lectures, entrepreneurship is a complex ability, hard to learn.

In part, one can only learn it in practice, being a entrepreneur, experiencing all the successes and failures in one's own enterprise.

For that reason, a lot of the education and training our agricultural schools are trying to make available for the farmers, is imparted by way of adult courses, continuing education after the period of schooling people went through in their youth. For example, a theme like strategic planning for agricultural enterprises is much more frequent, and much more profoundly treated in adult courses than in classes within the initial curriculum.

To facilitate learning within this new concept of vocational education, much is asked from the teachers in the agricultural schools. They have to change their role, from an imparter of knowledge to a guide of learning.

In retraining courses and in school guidance activities, support is given to teachers who were trained for the old systems to adapt themselves to the new situation. Especially various social and didactical skills are trained, discussions held to make the new concepts something of one's own, exercises to apply the

new concepts and techniques in one's own school, subject, module, etc. So along with the insight in the new concepts and system, and skills for the new ways of being a teacher, a more positive attitude can grow within persons and school teams as a whole.

I as a trainer of didactical and social skills have participated in this work at several schools, and it is a fascinating experience. Much is asked of the teachers, but when they manage to make the innovation something of their own, it is very rewarding.

The institute where I worked, STOAS, is not only active in the field of retraining teachers, but also is responsible for the training of new teachers in agricultural subjects for secondary schools.

The curriculum and the way of teaching these students, youths of 18 to 25 years and half of them graduates from vocational agricultural schools themselves, had to be adapted to the new requirements as well.

Ways we try to prepare them adequately:

- modelling our institute by the same principles (theory - practice, multi disciplinarity, problem oriented, self directed learning)
- gaining experience in entrepreneurship (analyzing an enterprise, by participatory observation, in all 3 areas; making a marketing plan for a real enterprise)
- practical periods in both school and agricultural enterprises
- practical period in institution in the periphery of agriculture (see speech of Mr. Mulleneers)

Very important, and possible at this level ("5") and age:

practice, reflection on their own experience, reflection on their own experience as "learner".

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