Materials of the Conferences

"THE CUPOLA ALGORITHM" DATA AND "THE MODULATION-37" THE NATURAL SCIENCES ASPECT AND THE USING FOR ANALYSIS OF ANCIENT LAYOUTS

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The measure and proportional analysis of the historical monuments is probably the most famous problem in the historical, archeological, metrological and architectural researches from antiquity to nowadays. Such names as Alberti, Choisy, Le Corbusier, Dürer, Gioltovsky, Hambidge, Palladio, Plato, Rybakov, Vioillet-Le-Duc, Vladimirov, Vitruvius, Zeising and many others may be mentioned in this connection. This article is devoted to the same questions. The developed original methodology is based on the specific integer data having sacral origins. These data were discovered by the author as a result of analysis of some well known integer archetypes from European and Asian traditional cultures (they are sacral integers "dalkha" from Tibet mythology; sacral Moon days numbers devoted to Lu-Ban, the China divinity-protector of carpenters and builders; and, especially Orthodox "cupola canon", including the data ***1, 2, 3, 5, 7, 9, 13***). That's why we named the integer process, generating these data, "The Cupola Algorithm". The continuation of the sequence was produced with addition of 2^n to the previous term, thrice without changing this addend, and increasing ***n*** by ***1*** after every third step, and so on. So, the degree of ***2*** was constant for every 3 steps and was increased before every 4-th step. The result is: ***1, 2, 3, 5, 7, 9, 13, 17, 21, 29, 37, 45, 61, 77, 93, …***

Indicated sequence has some noteworthy properties, but the most interesting one is its coming to the data of the Titius-Bode rule, with very simple procedure: it's enough to add ***7*** to every third term: ***3+7=10*** (Earth); ***9+7=16*** (Mars); ***21+7=28*** ("Phaeton"); ***45+7=52*** (Jupiter), etc.. There are some reasons to take note of the 11-th term 37 (look through our previous published works), for instance to compare it with the sacral quality of Burma divinities called "*nats*". These considerations allow us to suppose existence of the integrated ancient module-unit, which was equal to the simple (base) unit multiplied by 37 (this measuring principle named "The Modulation-37"). These regularities were used in some executed researches, concerning the measures and proportional characteristics of the number of ancient layouts (Babylon, Great Pyramids in Gizeh, Athens and others), with the aid of special elaborated program modules. Foot was used as the base unit. Founded, as a result, "chains", "trees" and '"loops" of dimensions have the layouts significance and the logic interconnections in the Cupola Algorithm and Modulation-37 sense, so our analysis methodology may be declared as a quite adequate.

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COMPETENCE - BASED APPROACH IN HIGHER SCHOOL EDUCATION[1]

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The problem of exploration of the structure of inner essence of notion "competence", defining the key and special kinds of modern specialists' competence is an actual, vital and perspective today. Firstly thanks to the fact that nowadays labor market demands not only to knowledge of specialists but to their competence.

If seems to us that joining Russia to Bologna agreement is also an important argument, as it determines necessity of using common language, terminology with help of

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which it'll be possible to describe the educational process, its goal and results in particular.

More over forming competence as an integral personality's foundation needs creating and using new active and personal oriented technologies. The competence approach itself to the goals and results of Higher Professional Education, even on the stage of scientific and practical development and testing takes a decent place as a system of methodological instrument in organizing of educational process.

In our investigations we explore competence itself and competent abilities as mutual and subordinate component of subject activity. We intend to examine the competence as a potential activity, disposition and aspiration to the concrete kind of activity. Competence is an integral quality of a person, which is successfully realized activity. Components of competency in any sphere of life activity, in our mind, can be introduced as those:

- Cognitive component (knowledge)
- Motivation component
- Axiological component (trend and valuable relation of personality)
- Behavior component (skills and experience)
- Abilities
- Emotional and willing components (self regulation).

In this case competence is considered to be as potency of competence that can be realized in the definite sphere of activity and must become valid with the help self-organization self-regulation mechanisms.

To evaluate the professional and socio-psychological competence of a man we need a complex approach, which suggests taking into consideration inner (subjective criteria of competence):

- Sapid characteristic that is a complex of inner inducements, purposes, motives of behavior and activity, direction of interests, etc
- Level and quality of results that is of those real achievements got as result of man's activity
- Peculiarity of a procedure of activity, such as tempo, speed intensively, volume.

Outer (objective) criteria of disposing man's competence are:

- Degree of expressed inner motives, want to activity, aspirations to overcome undertaken actions and abilities
- Rate characteristics of reactions and operations
- Variation of methods action used in (doing) fulfilling proposed tasks.

Competence of a higher education graduate as a future specialist contains in its kind structure professional competence (readiness, intention to work in definite professional sphere) and socio-psychological one (intention and readiness to live in harmony with oneself and other people, in the harmony with one's individuality and social environment. However, in its turn each of these competences can be divided into general basic, key competences common to all graduates of any higher education establishment. The structure of competence surely consists of 4 blocks of competencies:

1. General professional competence.
2. Special professional competence
3. General socio-psychological competence
4. Special socio-psychological competence.

General professional competence includes competence in the sphere of science and exploration, project and construction, administration, management, production and education activities.

General socio-psychological competency is represented by social, personal, in formative, ecological competence and others.

Special professional competency or qualification is a degree or a kind of professional training of a graduate, his possessing of professional competences (those are his readiness and motives), required for fulfilling definite professional activity. His competence is determined by state qualification characteristics.

Special socio-psychological competence represents readiness and ability to mobilize professionally important qualities ensuring production of direct specialist's activity. In today's scientific, pedagogical and psychological literature there are a huge number of tendencies in the problematic field of realization, the most important of which can be grouped around:

- Active forms of teaching (problematic lecture, seminar-discussion, role-playing and others).
- Creating profession-developing situations when a student must demonstrate personal professional position.
- Dialogical type of communication.
- Professional positioning.
- Contents of specialist's model concerning competent approach to the goals and results of higher professional education
- Taking into account the definition of competence as an integrative quality of a person which represents unity of motive axiological, cognitive, behavior aspects of his abilities and other professionally important qualities of top specialist's educational system should be directed of these components.

While investigating the problem of forming competences in the establishments of higher education we were interested in studying the teachers' notions on this theme as they are subjects of educational process.

According to the results of questioning the teachers use different notions and meaning in definition "competence of the higher education specialist" the majority of high school teachers don't take the notion "competence" clearly, it is not structured in their minds and, accordingly, if can't serve as really imagined goal of their pedagogical activity. It leads to the fact that competence of a future specialist is being formed chaotically, out of definite goal reaching in the logically organized pedagogical process.

We believe that definite measures on the way of perfecting of the educational process can be done through work of cathedral scientific methods seminars, the aims of which is development of professional competence of the teachers of the chair.

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THE MODEL OF ECOLOGICALLY BROUGHT UP PERSON

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Ecology as a concept in recent years has become integral, and was enriched by new information and become a science, which touch on all spheres of economic, social and spiritual of a human and society. As its final aim and functions ecological education nowadays is inevitably connected with social life of people. It will be effective only iff all members of society take part in decision making that concerned with the improvement of relations between people and the environment. That is why, talking about specialist's competence, besides the technological training, usually it is meant by this a number of components, which may include parts of any kind:

1. Psychological (tolerance, openness, optimism, intuition, resistance to stress),
2. Intelectual (creativity, observation, criticism, integrity of thought, reaction time),
3. Behaviour (enterprise, responsibility, riskiness).

Let us deal with a project of a model of a graduate of technical type – a specialist for the social labour market. It is very necessary for the successful realization of such a model to have the effective interaction of two fields – macro-field, which is the State and all groups of educational structures and their correlation and social and industrial field, that forms its demand sometimes incorrectly, especially at the period of revolutionary economic reforms.

There are a certain number of characteristics any specialist must have for different kinds of activities:

Interpersonal characteristics:

– Ability to organize the process of communication;

– Ability to create an affirmative emotional background while socializing with people,

– Ability to motivate decisions,
– Ability to inspire people,
– Ability to resolve a conflict,
– Ability to negotiate.

Organizing skills: