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The continuity in the evaluation of educational results in the school-university system

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Abstract

Kazakhstan scholars developed a scored transformation scale on the basis of scientific principles in the multidirectional analysis and the search of most suitable implementation form of control and evaluation. The scientific-research work on projecting and implementation of rating system in study-educational process is being done in Kazakhstan. Thus, the aim of the experiment is the implementation of score-rating evaluation system on the basis of person-oriented study. At the beginning of the experiment a questionnaire of organization-methodical character was conducted after explanation of the experiment essence to the students and their parents. The horizontal comparison with school system allowed us to represent results of the experimental research on the implementation of score-rating evaluation technology's elements for schools. The experiment results show the changes in the cognitive sphere of the students, as well as in the personal conversions. The rating system allows taking into account most factors of the study process. It is designed for the perfection of the study process and put high demands to the student and the teacher. The experiment results showed multi-score system positively influence to the students' progress. This system has strong motivating factor.

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Keywords: Evaluation system, Credit technology, Block-module evaluation system, Comparative analysis of knowledge quality, Educational module, Pedagogue-experimenter.

1. Introduction

In compliance with the contemporary rates of society's development the education is also modernized; it provides formation and development of educated, creative, competent and competitive personality. The student has to be ready to live in a dynamically developing medium, for self-actualization as on his own account, as well as in the society's account.

In this article we aimed to initiate a more systematic dialogue between what is currently termed post foundationalism and the mainstream of comparative education. The comparative education, which is not only interdisciplinary by definition but also the one sub-discipline of education focusing most rigorously on relations, is the privileged locus for this debate. The reflections on the issues in that decontextualization, characteristic of positivistic research, lacks the perspective of contextualization, and thus it is a deficiency by itself. The secularization of education, which forms the basis of empiricism, is self-contradictory when it conflates the founded with the foundation. The focus on the individual allows for possibilities but the social order of education shuts off individual possibilities, thus it might be viewed as self-contradictory in itself. I suggest that we ought to question the validity and the self-contradiction of empiricism and secularization in comparative education research, as its focus is on individuals, yet it claims universal and transnational terminologies (Amos, 2014).

Free education in the condition of innovative paradigm is based on the independence principle and leading role of a personality. Therefore, educational system in Kazakhstan has to react adequately to the accelerating globalization and informatization processes.

2. Problem Statement

After signing Bologna Declaration in 2010 Republic of Kazakhstan, our country started to realize main aims of integration process, where priority is given to the implementation of credit system on ECTS type – European Credit Transfer and Accumulation System as an instrument for the support of large-scale student mobility. Note, Bucharest communiqué supports educational reforms in Kazakhstan higher educational system: "...Today students gain from a wider sphere of educational opportunities and become more mobile. The concept of integrated space of higher education is in visible future... we will seek to more consistency of educational policy, especially in the sphere of graduation, transfer to three grade system, ECTS credit use, Diploma Appendix issue, quality guarantees increase and qualification frames' implementation, which includes determination and study results' estimation".

The concept of educational system development of the Republic of Kazakhstan defined contemporary model of school, college, graduate and postgraduate education. As practice shows the credit tuition system, widely used in the USA and majority of European universities, is the most flexible and effective. Mostly it is provided for the account of flexible planning of academic programs oriented to the labor market demands, electivity of 50% disciplines, teaching quality increase as competition takes place, intensification of tuition process, implementation of informational systems, and increase of students self-work. The credit tuition technology is directed to the increase of self-education level and creative learning on the basis of individualization of students' preparation. An important purpose of student evaluation of teaching is to inform an educator's reflection about the strengths and weaknesses of their teaching approaches. Quantitative instruments are one way of obtaining student responses (Huybers, 2014).

Aktobe Regional State University named after K. Zhubanov among first higher educational institutions introduced credit tuition technology based on module principle of the teaching

disciplines' content. It is important the educational process was provided with all necessary informational sources fully: tutorials and workbooks, electronic textbooks, access to net educational sources, active manipulative material, use of base textbook meeting the requirements of European standards, for the students' self-work - language laboratories, computer classes with interactive boards, video-classes, etc. The primary task of the university is to teach a student to study and learn to orientate in the diversity of scientific material, to use innovative technologies for increasing level of their creative activity and stimulation in the studying process. The efficiency of this work is provided for the account of regular coordination between a student and a teacher in the framework of SSWT (students' self-work under guidance of the teacher) (Musin & Saktaganova, 2008).

The transfer to the credit tuition technology assumed the change of evaluation system of student's educational achievements.

3. Research Questions

Kazakhstan scholars developed a scored transformation scale on the basis of scientific synergy principles in the multidirectional analysis and the search of most suitable implementation form of control and evaluation. The horizontal comparison with school system allowed us to represent results of the experimental research on the implementation of score-rating evaluation technology's elements for schools. The experiment results show the changes in the cognitive sphere of the students, as well as in the personal conversions.

4. Purpose of the Study

The scientific-research article represents a transformation chronology of the evaluation system in the framework of credit tuition technology in Kazakhstan universities, and in Aktobe Regional State University named after K. Zhubanov, in particularly.

5. Research Methods

Methodological basis of the research of the chosen problem became existing in the pedagogical and psychological science theories and concepts.

- comparative historical analysis of literature;
- general theoretical and heuristic methods of research;
- study and analysis of product documentation activities.

6. Findings

Aktobe Regional State University named after K. Zhubanov among first higher educational institutions introduced credit tuition technology based on module principle of the teaching disciplines' content. It is important the educational process was provided with all necessary informational sources fully: tutorials and workbooks, electronic textbooks, access to net educational sources, active manipulative material, use of base textbook meeting the requirements of European standards, for the students' self-work - language laboratories, computer classes with interactive boards, video-classes, etc. The primary task of the university is to teach a student to study and learn to orientate in the diversity of scientific material, to use innovative technologies for increasing level of their creative activity and stimulation in the studying process. The efficiency of this work is provided for the account of regular coordination between a student and a teacher in the framework of SSWT (students' self-work under guidance of the teacher) (Musin & Saktaganova, 2008).

The transfer to the credit tuition technology assumed the change of evaluation system of student's educational achievements.

Taking into account the researches of Kazakhstan scholars we should note in the end of 90s in Kazakhstan universities the score-rating system on evaluation of student's knowledge was used at linear educational technology. According to linear educational technology the examination mark was put on five score system taking into account score received during the semester. Therefore, the first question aroused: how adequate is the transformational scale from score-rating system into five-score one?

For the first time in the Republic of Kazakhstan the score transformational scale was developed by Zhanabayev on the basis of scientific synergy principles (Zhanabayev, 1996, 2000). From the conditions of self-organized systems the following numbers were found: $I_1=0.567$, $I_2=0.806$, $I_3=0.618$. The number $I_1=0.567$ is the criterion for the system transfer from zero to the first (dynamic) level. $I_2=0.806$ is the highest level of self-organization where any open system strives for. $I_3=0.618$ is called Fibonacci number defining the "golden ratio" between structure and chaos. Taking into account the statistical character the values of I_k ($k=1,2,3$) can be linked to traditional five-score system. The maximum score on the discipline is marked as N , the score gained by a student – n .

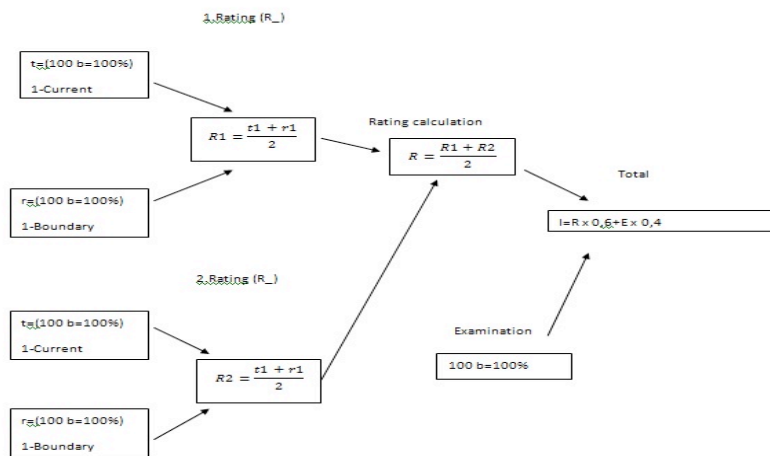
Therefore $0.567 < \frac{n}{N} \leq 0.618$, then the student score is evaluated as "satisfactory"; if $0.618 < \frac{n}{N} \leq 0.806$, then – "good"; if $\frac{n}{N} > 0.806$, the – "excellent". In the case $\frac{n}{N} < 0.567$, the student's answer is evaluated as "unsatisfactory". Zhanabayev's score transformational scale for the traditional (linear) tuition system is in accordance with 11-score system used currently in the credit tuition technology (see comparison in Table 1).

Table 1. Score transformational scale for the traditional (linear) tuition system

According to Zhanabayev		The US system	
Shares	Traditional mark	Percents	Percents
$\frac{n}{N} < 0.567$	«2»	$\frac{n}{N} < 56.7\%$	$\frac{n}{N} < 0.49\%$
$0.567 < \frac{n}{N} \leq 0.618$	«3»	$5.67 < \frac{n}{N} \leq 6.18$	$50 < \frac{n}{N} \leq 74\%$
$0.618 < \frac{n}{N} \leq 0.806$	«4»	$6.18 < \frac{n}{N} \leq 8.06$	$75 < \frac{n}{N} \leq 89\%$
$\frac{n}{N} > 0.806$	«5»	$\frac{n}{N} > 80.6$	$90 < \frac{n}{N} \leq 100$

As follows from the Table the maximal score should be 100, so that the evaluation inaccuracy was not more than 1 percent. Thus, a scale on transforming score from five-score system and vice versa was developed.

According to credit technology the students' knowledge during the semester are evaluated in 5 stages: two current, two boundary controls and an exam (Scheme 1).



Scheme 1. Evaluation system in 5 stages

Taking into account the offered calculations we should actualize on mechanical transfer from score rating system into credit evaluation technology. In this case the form of previous scheme retains but the content is distorted leading to rough mathematical mistakes on the one hand, and to the infringement of students’ rights on the mark choice from 11 score system and the limitations of students’ mobility on the other hand. Thus 100 points, which is equal to 60% are distributed between two rating controls, and remaining 40 points, which is equal to 40% - to the examination. Further, 60 points are divided between two ratings on 30 points each. Each rating, in turn, consist of current and boundary controls. Therefore 30 points are divided into two (table 2).

Table 2. The evaluation policy at score-rating system (applicable to separate discipline)

Components	Mark share, %	Number of tasks	Maximum score
SSWT	19%	19	19 x 1 = 19 points
Interview (labor.)	7%	7	7 x 1 = 7 points
SSW	24%	12	12 x 2 = 24 points
Boundary control	10%	2	2x5 = 10 points
Resultant control:	40%		40 points
Examination			
Total:	100%		100 points

Calculating we can make a conclusion artificial score decrease at the each control stage wittingly score choice from 11 score scale and increases a probability of decreased mark; this leads to basis distortion of credit tuition technology at score-rating system. That is why for correct and convenient point calculation, and percent calculation, correspondingly; it is recommended to use 100 points (corresponding to 100 percents) for each control type. In this case a calculation process of the score and its percent equivalent is simplified because the gained score and its percent

equivalent corresponds to the number of right answers. For example, a student gives 79 right answers out of 100, therefore he takes 79 points or 79% (Shunkeyev, 2008).

Thus, the developed technology on students' knowledge evaluation on the basis of score-rating system is the most objective and effectively meets the requirements of credit tuition system adopted by Kazakhstan universities.

The modernization processes of whole educational system in Kazakhstan predetermined necessity of the reforms in secondary education as well. The basis for the reformation was the insufficiency of stimulating, diagnosing, and forecasting functions of the five-score (three-score, in fact) system understood by educational system workers, students and their parents. The five-score system does not take into account individual characteristics of a personality. There are not obvious criteria for evaluation as a whole, and in each discipline. This leads to non-objectivity of marks depending on the teacher's position.

The school evaluation system oriented to effective learning and teaching a child, allows to give informative and regulated (dosed) feedback, informs a student on the fulfilling the program. The mentioned functions pay attention to how well he promoted, and at some stage – the overall level of his performance, weak sides (so that he could pay attention to that). The feedback to the teacher should yield information whether he achieved put aims or not, the teacher should use it as appraisal form not punishment; stimulate studying; concentrate on what students know, rather than what they do not know; to mark even insignificant students' promotion, allowing students to proceed in their own speed (because speed is almost never linked to the training quality); to orient the students to the success and not labeling, including from the non-real expectations of inspecting persons; to base on a wide foundation, not only achievements of a limited group of students (class); to assist for making up and growing of self-appraisal (Scott et al., 2014).

How well do school marks meet these requirements? Widely used evaluation form is the sum of indicators of fullness and depth of school program mastering expressed in points by five-score scale.

Low information capability of marks working in Kazakhstan educational system is linked to the fact they are used for evaluating mainly knowledge of academic character, and in first place, its fullness and systemic. Activity type learning, success in any sphere beyond the educational plan rarely becomes an evaluation object. Ambiguity, and often, arbitrariness of norms and criteria of marks, non obvious for students, make the evaluation system closed for students. This has low effect on making up and growing of their self-appraisal, make them depend on external evaluation, reaction of surroundings to it. The mark shows only what place a student takes among the other students of the class. However this knowledge has relative value – it is important for him to compare his achievements not only with his classmates, but also with his potential competitors (for example, with those who enroll to specialized class, school or university). For a teacher it is important to see the achievements of his students in comparison with the students of other schools of the region or a country.

Thus, the traditional evaluation system with four-five indicators hardly contributes the effective learning and training. The necessary condition for effective implementation of new evaluation system is a technology development of creation of objective indicators of planned results' achievement. Kazakhstan schools were offered standardized resultant testing works and subject works made for mostly widely used sets in schools, and unified norms for their valuation; this will lead to further "smoothing" and objectification of the marks. Undoubtedly, standardization should cover prevalingly compulsory part of the work; evaluation norms should have reference, voluntary character. If a teacher decides it is reasonable to use standardized indicators in everyday practice, then he should employ recommendations on evaluation norms flexibly – they have to be single for a whole class, at the same time, especially at the first stage, they should reflect its specifics (strong, hard-working, or vice versa, weak, etc). The important factor at transferring to such system is a

possibility for the majority of the students successfully to go through this stage. After the implementation of the new evaluation system the norms gradually may be approached to recommended ones.

When using standardized forms with the result accumulation a teacher and students receive an opportunity to compare their own individual results and class's results with average indicators throughout a region or a country. The distribution of standardized forms of subject and intermediate controls allows to simplify attestation processes. For example, to evaluate students' achievements (especially, at learning base level) on the basis of data received by the schools.

The evaluation system should harmonize the student's school mark with the real evaluation of this student's by the society, where there is a gap. Thus, if the school mainly evaluates academic knowledge, the real professional activity judge people not only for the knowledge they have but also for an ability to gain new knowledge, for what tasks and projects they accomplish, for ability to work with other people, for working in stressed situations. The reflection of real social and educational values in the evaluation school system will demand the development of new content and form of testing tasks, in particularly, technology of such types of evaluation as "achievement portfolio" and projects. In this context, particular attention is to be paid to person-oriented education directivity. It assumes unconditional priority of interests and demands of a growing personality, account of its diversity and possibilities, maximum realization and self-realization, reflexion development, the creation of conditions for uncovering the inclinations of a growing person. The authors of choice criteria of transformation strategy versions Amonashvilli and Zagvyazainkiy offer a term "social-personal" or "person-social" orientation of contemporary teaching (Amonashvilli, 1980; Zagvyazainkiy, 2008). On the one hand, person-oriented education is the teaching process where purposeful personal development takes place. On the other hand, the main problem of person-oriented teaching, as well as formation of comprehensively developed person is what "personality" means. Vygotsky noted a man behaves personally where he feels he is a source of behavior and activity (Vygotsky, 2005). Regarding to our topic it means person-oriented teaching is teaching when a student feels he is a source and a subject. The student is judged on the success he achieves expressed in his marks. It is difficult for a teacher to fix and positively evaluate real achievements of every child in comparison with his previous results. The evaluation system in traditional teaching has traumatic character, which favors the psychological discomfort; this leads to anxiety, and maybe, even to health distortions.

Currently a number of schools practice widely use accumulative indicators of success appraisal of study-cognitive activity that makes a foundation for rating control. Rating system of knowledge control – the aggregate of diagnosing activity aimed for total evaluation of student's learning expressed in score. It has to take into account the student's participation, his activity and creative independence during the whole stuffy process. The rating is divided into different types regulating the discipline study order and the evaluation of the learning. The rating system's possibilities are wide: the rating system is the most flexible instrument allowing to build evaluation system for every discipline taking into account its specifics and peculiarities of the students. The rating system of knowledge control allows a student to be more active in the studying activity, decreases the teacher's subjectivism, and stimulates competition in studying process reflecting the existing competition.

The scientific-research work on projecting and implementation of rating system in study-educational process is being done in Kazakhstan. Thus, in Aktobe an experiment "Control-evaluation activity at transfer to 12-year study: score-rating study system" was carried at specialized secondary school No 25 (Kazakhstan, c. Aktobe). The pedagogues – Karpova and Chub experimenters of highest category worked out a concept of research activity, aim, tasks, expected and intermediate results, implementation stages, etc.

Thus, the aim of the experiment is the implementation of score-rating evaluation system on the basis of person-oriented study.

The tasks are:

Analysis of psychological-pedagogical and scientific literature, other sources on determining the core of score-rating system;

Analysis of contemporary evaluation state at schools, discovery of poor progress reasons, determination of its psychological essence;

Special work on implementation of score-rating evaluation system: diagnosis, development of common criteria on evaluation the educational results, criteria, implementation in educational process, correction, result;

Psychological accompaniment of the experimental research;

Development of methodical recommendations and conclusions.

Having researched the theoretical basis of element implementation of the study technology the pedagogues-researchers worked out algorithm of the rating control system: the year study plan on is divided into subject parts according to calendar plan. After each subject total number of points for the whole period and a total mark is put.

The main document of the rating mark is an individual student card on subject “control points” map. The main difficulty at the implementation of the rating control system is the significant time consumptions for lesson preparation. The mark becomes senseless, the score “2” are not given because the students who cannot receive a minimum score has to learn more and pass the material again. The students quickly convince in the uselessness of copying and necessity of subject knowledge.

If the knowledge and competence control then the maximum rating score on the subject is defined on the following formula:

$$R_{\max} = (No / 2) 5,$$

Where No is a number of hours given to the subject, 5 – maximum score for one type of work. The total rating score for the whole period of study is made of maximum rating score on each topic. The “share” of each subject in the study plan is defined by the maximum possible mark in the abovementioned formula.

During the experiment the control points defining the type of study activity were singled out. Performing a task a student earns a definite score depending on type of task and the correctness of the performance. Extra score is given for making the manipulative material, the individual tasks given by the teacher.

Thus, the rating system of knowledge evaluation makes the students study the subject systematically, attentively listen to at the lessons, work independently, use extra literature. The most important is that the system fosters conscious and interested self-development.

The experimental activity promotes the formation of research culture, i.e. pedagogical fact realization. The school No 25 works in experiment mode for three years.

The score-rating evaluation system allowed to mark out main stages of control-evaluation activity of the students, such as current progress control, resultant progress control, encouraging and penalty scores, the indicators of homework evaluation, evaluation indicators of control and independent works.

Due to the transfer to the new evaluation system the teachers of experiment classes reviewed the calendar plans on the subjects according to block-module principle. The detailed study of theoretical foundation on the implementation of rating system allowed the teachers of the experimental classes to work out evaluation forms for the students. The evaluation forms contain types and forms of the work (for example, work at the board, mathematical or lexical dictation, tests, work on didactic cards, and creative types of work). Besides that there are special columns for penalty and extra score in the evaluation forms. The student can independently calculate the score on the subject and forecast his own study achievements. Moreover, a student can independently correct his score during the study of a topic or a part. Undoubtedly, such work trains to analyze the

results of student's own labor, stimulates to the search of new, extra knowledge sources, trains to the reasonableness of the answers, and search of original solutions.

At the beginning of the experiment a questionnaire of organization-methodical character was conducted after explanation of the experiment essence to the students and their parents.

The questionnaire results:

64% of the students would like to receive "5-" mark except of "4+"

76% of the students would like to receive praise when getting "5" mark

80% of the students would like to receive explanation of the reasons for lowering a mark when receiving "4" mark

68% of the students would like to receive no explanation when receiving "2" mark

92% of the students and only 47% of the parents are ready to participate in the experiment on 12-score evaluation system

0.8% of the students are anxious about the introduction of the new system while the same question put to the parents made 23.5%

96% of the students consider 12-score system more objective than 5-score one, for parents – 100% think it is more objective

All students, as well as all parents hold the quality of the subject teaching will increase for the question "will the experiment distort the study process?" 100% students answered "No", 94% of the parents answered, "Yes" (table 3).

Table 3. Knowledge quality of the students, 8a and 8v classes

Topics	% quality, 8a	% quality, 8 v
Participle (210-250 points)	78,6%	30,7%
Adverb (100-110 points)	82,7%	31,3%
Conjunction(55-65 points)	72,4%	31,5%
Preposition (17 points – for different test types)	89,6%	31,5%
Particle(60-70 б.)	89,6%	30,3%

The rating system includes persistent monitoring of study activity, calculation and account of the score received during a semester (table 4).

Table 4.The results of experimental 8th classes on topics

Topics of the lessons	8 a	8 v
1. Word combination	84% qual.	28% qual.
2. Sentence construction and grammatical meaning	89.3% qual.	31.25% qual.
3. Main parts of two-structure sentences	90.4% qual.	31.25% qual.
4. Secondary parts.	90% qual.	31.25% qual.
5. One-structure sentences	85% qual.	31.25% qual.
6. Homogeneous parts of the sentence	91.3% qual.	28% qual.
7. Address. Parenthesis	88.5% qual.	31.25% qual.
8. Sentences with detached parts	83.3% qual.	31.25% qual.
9. Sentences with detached specializing parts	100% qual.	37.5% qual.

7. Conclusions

When finding positive and negative outcomes of the implementation of the rating and test study system we can make the following conclusions after one year of the experiment:

1. The rating system allows taking into account most factors of the study process. It is designed for the perfection of the study process and put high demands to the student and the teacher. The pedagogue has always to search and use innovation methods of teaching and control.
2. The experiment results showed multi score system positively influence to the students' progress. A possibility of extra sets of the points makes the students more confident, especially those who are poor progressing, gives opportunity to uncover oneself and eliminate knowledge gaps in the process of individual work.
3. This system has strong motivating factor: disciplines the students, allows to control the adoption process of the study material, stimulates the students and a teacher to the purposeful everyday work, fosters the students to do the tasks in time.
4. Together with positive results of rating system there are moments that require reconsideration of the implementation of some methods and ways in the study-educational process of secondary school: the students not always responsibly fill in evaluation forms, forget scores, it is not fully convenient to calculate the score and transfer it to the traditional five-score mark.

Thus, the implementation of credit education technology in the universities, the experimental research in secondary schools of Kazakhstan are designed to the knowledge unification on general and fundamental disciplines; to give the students an opportunity independently form the educational trajectory; to eliminate subjectivism at knowledge evaluation; to create competition medium for teachers allowing them to constantly increase their scientific-pedagogical level; permanently to improve the quality of educational services by developing and strengthening the material-technical base of the schools, and the implementation of innovative teaching technologies; to give more time for individual lessons, which allows to develop creative approach in the discipline study and research work.

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