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## University Teacher Professional Development and Assessment on the Basis of E-portfolio Method

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*In conditions of Russian higher education system modernization it is very important to use new objective technologies in university teaching staff assessment scheme. It is connected with the direct higher education quality dependence on the education resources. Teacher e-portfolio will allow to make an electronic folder of scientific and teaching professorships achievements, to include not only university administration but also professional community in assessment scheme, to make teacher assessment procedure open and objective. We consider approaches to modern university teacher activity assessment scheme directed to professional development and career planning. The base of assessment scheme perfection is a personal teacher electronic portfolio which shows his achievements to wide professional community and it is a professional development and career planning tool, also it gives an opportunity to university administration to assess activity and success evolution of a certain worker on the basis of various objective data. By means of electronic portfolio data it can provide development monitoring of teachers and departments, and make activity correction. University administration can use teacher e-portfolio monitoring results for objectification and assessment of artifacts in stimulating bonuses and motivation system. The results stated in the paper have been presented and discussed at projective seminar by grant IREX UASP № FY09-UASP-Smolyaninova-09 in July 2009, which was passed under Institute of Education, Psychology and Sociology of SFU in Krasnoyarsk.*

*Keywords: professional development, reflection, electronic portfolio, assessment, competence.*

### **Introduction**

The quality of modern university staff security is a determinative condition of specialists training quality. The quality of student's education, university effectiveness and prestige directly depends on university teaching staff qualification, scientific and educational competence, work environment, moral and culture.

Modern social and economic conditions allow to introduce new mechanisms of teachers

labor wages and stimulation, that requires realization of new assessment mechanisms. The teacher work is difficult and many sided, highly intellectual and multifarious. How to make teacher work quality assessment scheme motivating him to further development? How to involve a teacher in continuous system of self-rating and new achievements planning, their effective presentation and professional development? How to create effective transparent labor wages and stimulation mechanisms at the

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expense of differential approach to teacher salary on the basis of assessment scheme?

The authors suggest new mechanisms of teacher prolonged assessment on the basis of e-portfolio method. This technology is directed to progress and perspective, it is based on electronic scientific and educational space using and information-oriented society general strategy development and during the whole life education.

Development of Siberian Federal University doesn't require momentary operations but it requires teacher-university staff stimulation which is orientated to long perspective and long-term work motivation of teacher staff. Therefore it is rational to use prolonged developing forms of teacher objective individual data collecting, their changing and developing. Teacher electronic portfolio could be able to function on long-term motivation of qualitative performance and objective assessment and self-rating of activity which is aimed to high personal achievements and general objects of University as a corporation.

During two last years at Institute of Education, Psychology and Sociology of SFU electronic portfolio method is actively used in education process. On the website of Institute one can look through e-portfolio of pedagogy masters and bachelors ([www.ipps.institute.sfu-kras.ru](http://www.ipps.institute.sfu-kras.ru)). Student electronic portfolio is used in education process for information-communicative competences assessment first of all in the sphere of ICT disciplines, for individual achievements presentation and leadership qualities demonstration, and for organization of reflexive processes of difficulties, educational resource and personal deficiency rating for obtaining professional and individual objectives by pedagogy masters and bachelors (Smolyaninova, 2008). At 2008-2009 at Institute of Education, Psychology and Sociology of SFU young teachers started to

create electronic portfolios within professional training program "Teacher of higher school" and additional qualification "Teacher". The idea of e-portfolio method using in teacher assessment scheme appeared while researching resources and facilities of e-portfolio as a personal development method which is connected with career planning and reflection, as the method which is motivated to personal achievements presentation, collecting different artifacts in electronic form, which could be catalogued and sorted for analysis.

The idea has been widely discussed by academic community of Institute at methodological seminars, Academic Senate, and projective seminar under IREX project.

For analysis e-portfolio technology potential at SFU teachers assessment scheme the public opinion poll was carried out among educational experiment participants at Institute of Education, Psychology and Sociology of SFU. The poll has shown readiness of Institute teaching staff to step-by-step introduction of e-portfolio technology in assessment scheme and professional achievements presentation system of IPPS SFU teaching staff.

### **Materials and methods**

From our point of view there can be singled out the next kinds of activity that can be included in e-portfolio:

1. Educational
2. Scientific
3. Professional
4. Public
5. Personal

*The model of e-portfolio structure* can be introduced by the following parts:

1. Professionally made resume.
2. The part of educational achievements which includes justificative documents and results of education such as diploma, papers and other kinds of independent activities, and also teacher's links.

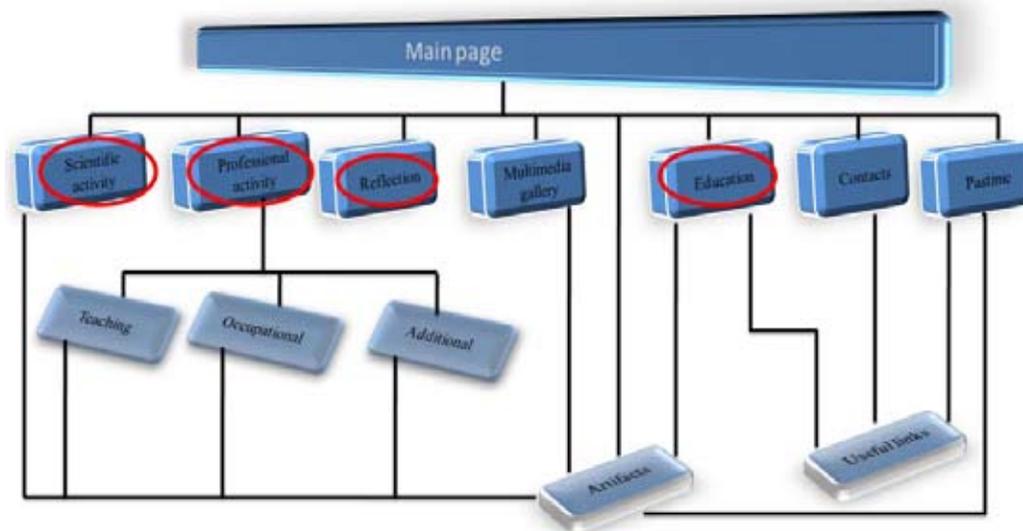


Fig. 1. Teacher electronic portfolio structure and its basic elements

3. The part of scientific achievements which includes information about scientific interests, gained competitions and grants, research papers, monographs and etc.

4. The part of professional achievements which includes information about:

- teaching activity (discipline programmes, educational methodological discipline complexes, textbooks, workbooks, and etc.);
- professional activity (realized projects, contracts copies, and etc.);
- other labor activities.

5. The reflection part which contains description of career potential and readiness, author's concept of teaching activity, assessment of work quality by student's training results.

6. The part of pastime which includes information about interests, personal achievements (sport, hobby, etc.).

7. Multimedia gallery which includes photos and videos of different activities.

8. Useful links for colleagues and students.

9. Feedback presented by contacts or forum.

The electronic portfolio structure is presented in Fig.1.

In Fig.1 we see that any teacher activity can be proved by artifacts. It gives an opportunity to assess quality of different teacher activities.

**E-portfolio basic elements** in preference must be directed to professional assessment of a teacher.

For assessing person it is important to assess scientific, professional and educational activities and teacher readiness for further development.

Other elements of e-portfolio are necessary for teacher general portrait making and also they are auxiliary for assessing persons.

**Teacher scientific activity** can be estimated according to following directions:

- Thesis theme.
- Publications.
- Patents.
- Author's certificate.
- Conference attending.
- Won contests.
- Gained grants.
- Postgraduate students supervision.
- Students supervision.

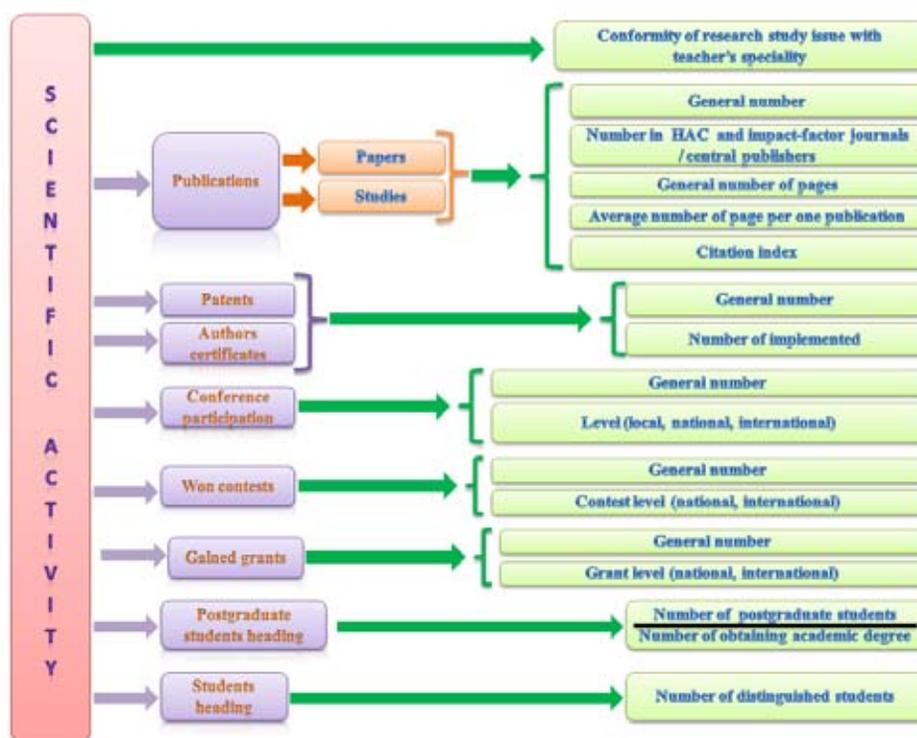


Fig. 2. Structure of teacher scientific activity assessment

In each group it is necessary to single out criteria which we can use to assess teacher.

This way research study issue must be conformed to teacher speciality.

The publications can be assessed by the following criteria:

- general number of papers, monographs, textbooks;
- number of papers in journal recommended by higher assessment committee (HAC);
- number of papers in impact-factor journal;
- number of monographs, textbooks in central publications;
- general number of pages in papers, monographs, textbooks;
- average number of pages per one paper, monograph, textbook;
- citation index.

The result of scientific work also depends on obtained patents and author's certificates. And its

implementation has a great importance and says about invention utility.

Conference participation is an integral part of scientist activity. To assess a person it is important to take into account the number of conferences and their level (local, national, international).

With respect to contests and grants it is important to know teacher participations and number of won contests and gained grants.

In order to trace postgraduate students training quality it is necessary to know proportion of the whole number of students and those who defended their thesis.

By supervising students scientific work we must know the amount of students or students groups, who gained grants, awards, certificates, etc.

The essential requirement is that any criteria must be confirmed by artifacts.

The structure of teacher scientific activity assessment is shown in Fig.2.

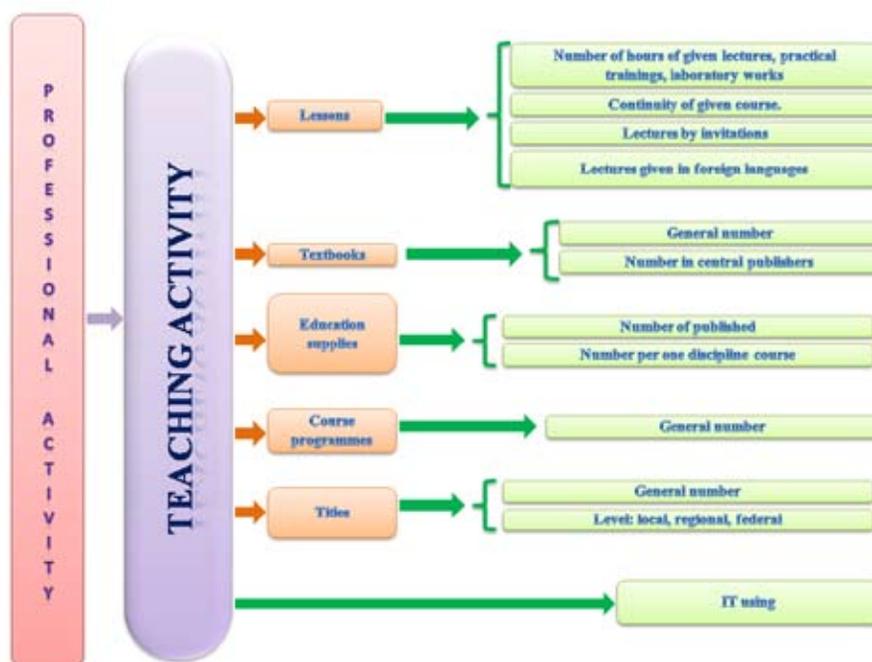


Fig. 3. The structure of teaching activity assessment

*Professional activity* is presented by teaching and occupational activity.

*Teaching activity* can be assessed by the following directions:

- Lessons.
- Textbooks, educational supplies, course programs publishing.
- Information technologies (IT) using.
- Gained titles.

Each group has criteria which we can use to assess teacher.

During the accounting period teacher must give practical studies, laboratory works and lectures on one or several disciplines in depend on his academic loading. The continuity of teaching course is also taken into account.

Thus assessing person must know how many lessons have been given by each discipline and their conformation to the planned loading.

Special place is devoted to lectures which have been given by teacher in other universities of his native country or abroad. It tells about his acceptance in professional community.

The quality of giving discipline depends on course supplies for laboratory works and practical training. It is necessary to know general number of textbooks, educational supplies, and course programmes and so on, which have been published over accounting period, and its number per one discipline, and the level of publications.

Teacher information technologies using in educational processes can be observed by assessing persons lesson attendance. Videos and photos of lessons can be presented in electronic portfolio.

Teacher development can be proved by given titles, for example “Teacher of the year”, at different levels (local, regional, federal).

The structure of teaching activity assessment is shown in Fig.3.

*Teacher occupational activity* can be assessed by the next directions:

- Employment history.
- Participation in temporary work by contract.

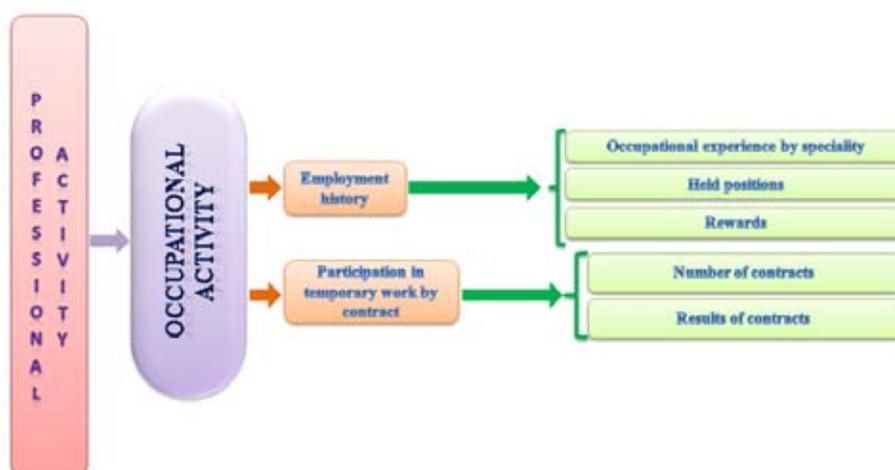


Fig. 4. Structure of teacher occupational activity assessment

Before or during teaching activity teacher as a rule has work experience in the professional sphere on his speciality. Therefore his experience is important not only in theoretical aspect but his practical knowledge is significant as well. So the positions which teacher has held and different rewards such as letter of commendation or appreciation have importance too.

The participation in temporary work contracts can be confirmed by its copies and results of realization.

The structure of teacher occupational activity assessment is shown in Fig.4.

**Teacher educational activity** can be assessed by the next directions:

- Education.
- Professional training.

In each group it is necessary to single out criteria which we can use to assess teacher.

The education of teacher must be confirmed to specialization of given disciplines.

The level of teacher education is to be assessed in accordance with his higher education. Also it is necessary to present:

- education results (papers, course projects, diploma projects, etc.);
- education achievements (awards, prizes, certificates, etc.);

- teacher's links.

Professional training must be confirmed by diplomas or certificates. The periodicity and level (home University, home city, region city or abroad) of courses have great importance. The results of training and teachers links are necessary to be presented.

The structure of teacher educational activity assessment is shown in Fig.5.

Reflection, perhaps, is the most difficult element for assessment. It doesn't have any artifacts and express inner attitude of teacher to himself, his achievements, failures, perspectives.

On the base of reflection assessing person can determine teacher adequacy by comparison of achieved objects with his self-rating. So if after assessment the person hasn't reached even average stage during the accounting period, but considers himself an outstanding and promising specialist this can tell us about his wrong self-appraisal.

**Electronic portfolio artifacts** are produced separately for each activity and confirm its presence and quality. Nevertheless we can divide artifacts into three groups:

1. Confirming teacher achievements (resume, certificates, contracts, etc.)

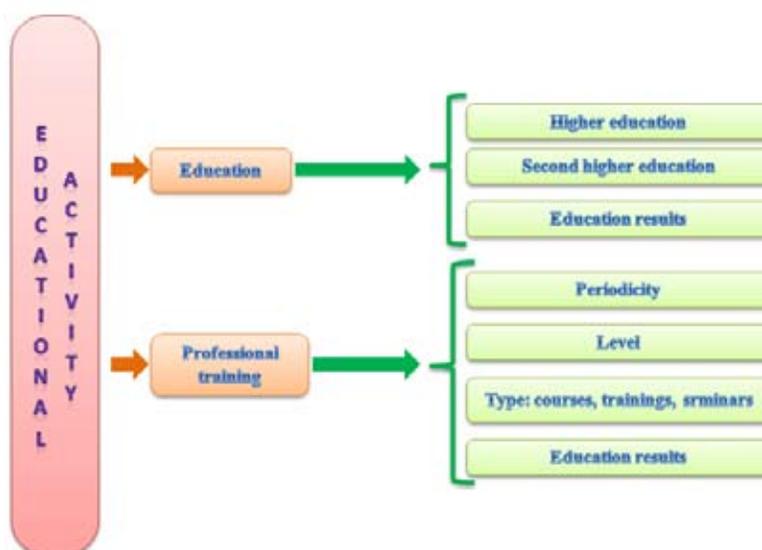


Fig. 5. Structure of teacher educational activity assessment



Fig. 6. Types of artifacts in e-portfolio

2. Confirming achievements quality (course and diploma projects, education results, scientific papers);
3. Multimedia materials (lectures, seminars, conferences, cultural events, academic missions, laboratory, etc. photography and video recordings).

There we can notice that multimedia materials confirm teacher achievements and their quality but absolutely in another format. Artifacts from the first and the second paragraph make it only in documentary (text) form.

The types of artifacts are shown in Fig.6.

If there are basic elements of e-portfolio so the question of their assessment appears. This question is sufficiently difficult and requires discussion within another paper, but we can make some remarks.

**Teacher activity assessment criteria** on the base of e-portfolio method are sufficiently various. The rating of his importance, influence and other characteristics must be different. We suggest three assessment ways:

- by quantitative measure;
- by qualitative measure;
- by expert opinion.

Besides there must be defined different levels, achieved by teacher under assessment, what make it possible to assess him positively or negatively and realize his current level status. There must be established the concrete values for each position. The influence of different teacher achievements and activities among others must be determined and established by experts according to the professional sphere of a teacher.

**Electronic portfolio additional resources** for teacher assessment go beyond the scope of the traditional procedure. These resources are presented by the following elements:

- Multimedia gallery.
- Contacts.
- Pastime.

**Multimedia gallery** gives an opportunity to confirm teacher educational, scientific, professional activity and pastime by photography, video and audio recordings.

So the scientific activity can be demonstrated by conference and defense of dissertation photos and videos.

One of the assessment terms is an open lesson, but they haven't been given recently. Owing to the lectures video recording we can see not only one teacher lessons and they will become open for everybody.

**Contacts** part is the only part of e-portfolio which provides feedback with the teacher. It can be presented by list of contacts (telephone number, e-mail, address, and website) and by forum where special sections for students, colleagues, administration can exist.

**Pastime part.** Many teachers are all-round developed personalities. They have interests and hobbies. That can be presented in this part of electronic portfolio.

Pastime part can be useful for assessing persons, colleagues and students. Assessing persons can see that with achievements in education, science and professional activity

teacher is developing and in the cultural side. Colleagues can find common interests and start to communicate more closely. And students can see a teacher as an ordinary person with common hobbies and interests. Owing to this relations between student and teacher can become stronger. And besides on the teacher example students will strive for their own self-development.

**Network interaction norms** must be based on teacher interests and modern informational and computer technologies.

Under wide e-portfolio method development by teachers in corporate network culture there can be applied the following technical feasibilities:

- restricted access to e-portfolio;
- teacher rating automatical calculation;
- on-line e-portfolio data content changing;
- simplified and uniform system data entry.

Restricted access to e-portfolio. It is known that people are different and not everybody is ready to give information about him to open access. Therefore teacher can optionally restrict access to his e-portfolio or its elements for wide users group and choose who can attend his page. It can be realized through the ordinary registration procedure.

Teacher rating automatical calculation. Using e-portfolio in corporate network we can give additional facilities for authorized users. Such facility can be on-line teacher concerning voting or test. Under such voting and tests the rating of a teacher among students or colleagues can be made automatically.

On-line e-portfolio data content changing is necessary for e-portfolio demonstration for different audience (students, colleagues, administration, employers, etc.). The content of e-portfolio must be different for each group of people. Elements which are interesting for one group can be indifferent for another or

lead to negative effect. In any way we can set restriction beforehand and people will see what they want.

Simplified and uniform system data entry. There are no opportunity to make their own electronic portfolio for many teachers because of different reasons. This problem can be solved by unified form simplified system of data entry when a teacher must only write headings, values or choose right alternative.

### Results

High education renovation in Russian Federation is connected with the higher requirements to university teachers by reason of international education space entering. Only on the base of open effective demonstration of personal achievements at teacher scientific activity his professional and personality recognition by students and position forming is available.

To our opinion electronic portfolio in assessment scheme is an effective teacher assessment method and it has advantages for teachers and university too.

We defined the main advantages electronic portfolio in assessment scheme:

- demonstration of educational, professional and personal achievements;
- compactness;
- reflection of teacher pedagogical practice by himself and by other experts;
- presentation of artifacts of any activity;

- teacher informational competence development;
- feedback with students, colleagues, administration;
- teacher personal achievements monitoring;
- potential for qualitative assessment and teachers qualification rating;
- generation of scientific and educational general resource;
- development of corporate network culture;
- teacher-students and teacher-colleagues communication barrier taking down.

### Conclusion

In current conditions of a competitive labour-market it is necessary to normalize such teacher work forms as self-presentation of creative, researching projects in electronic space, self and experts rating of professionalism and readiness to work in a project team. It will allow students to find a person holding the same views in his scientific work, and a teacher to choose the most talented students for cooperation in research.

Demonstration of pedagogical principles at teacher personal e-portfolio makes it possible for students to understand assessment criteria, pedagogical positions, requirements, directives of some teachers. Thus the tendency for harmonization of students and teachers aims and positions will be realized.

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