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Effectiveness of Teachers Professional Development through Distance Learning Courses

Key words: *Distance Learning Professional Development for Teachers, Course content on the subject of Physics, implementation technologies, achievements and results.*

Annotation: *Ongoing Professional Development is a key point in the system of Teachers training. It is known, that two kinds of professional training – face-to-face and Distance Learning exist in the system of Professional development. And, it is implemented by the countries differently taking into consideration the policy of the government. In this article depicted the achievements of Secondary school teachers Professional Development system based on modern Information communication technologies as well as traditional teacher training in Uzbekistan. Here is given review of gained experience achieved in the process of delivering Distance Learning courses for secondary school Physics teachers of Uzbekistan basing on the approved curricula, syllabus and learning materials on the subject of Physics.*

Introduction

Since the early days of independence of our country the reforms undertaken in the education system and now it is yielding results.

Basing on the "Law on Education of the Republic of Uzbekistan", considered the main component in the field of public education has developed the National Programmer of Personal Training gradually introduced to life and acquired many significant achievements.

Implementation of reforms in the secondary education system aimed at improving the quality of school education process. One of the key factors for success in this direction is the activities of the In-service and Pre-service teachers' training institutions.

At present time in Uzbekistan existed traditional Teachers' Training System of the secondary school teachers, which have been functioned in 14 Regional Teacher Training Institutes located in the centers of each region of our republic. Basically in this system the teaching and learning process organized according to the "face-to-face" form and curriculum, syllabi, course manuals also created taking into consideration of this form. According to the established policy, teachers should take a monthly Professional Development course once in 3 or 5 years.

Today, due to the rapidly developing information communication technologies and its application in the society demands teachers' ongoing professional development aiming at keeping their competency in a high level. That's why without denying "face-to-face" professional development that is based on constantly "one class" with strict time-table, it's

time to create for teachers new conditions based on modern information communication technologies regarding to their needs and targeting at the use of the opportunities of modern technologies.

Review of the literature

Stating unchangeable direct conducting practical lesson in the process of teaching, pros and cons of the “face-to-face” (traditional) form of teaching and learning, one can observe its lack of advantages.

Reviewing the articles of some scholars, we define the consequence of Distance Learning and its benefits. For instance, in our country through the established policy teachers should take a monthly training once in 3-5 years. But during this time, due to some objective causes like inconveniences on involvement all the teachers who need to upgrade their professional skills or poor equipped classes with modern Information technologies and subjective reasons as family conditions, disability, difficulties related with travel expenses teachers' needs for professional development can't be completely and widely accomplished (4). It is true that today we live in the age of rapidly developing Information technology that caused to changes. It's said that it will be influenced negatively to the learning process, if we send the teachers off their main job for whole month and send them to the Teacher Training Institutes. Besides there are another reasons as following:

- at first teachers have to go to the Teacher Training for developing their professional skills during the process of school year period;

- secondly, the teacher who temporarily replaced to work instead of him/her need to be extra paid and also maintenance allowance (travel and leaving expenses for the teachers) to be needed. It is said that absence of teachers have been affected negatively to the students outcomes (students progress can be lower than usual activity completely as demanded, knowing that their teacher has been away from school for some time) and as it mentioned above spending considerable extra amount of money (3).

Heretofore the main form of Teacher Training based on the form of Mass- reproductive and teaching methods directed to develop only scientific level of teachers not to develop their professional skills. In the traditional model of Teacher Training, it is impossible to set conditions for developing professional competence of teachers and provide their individual professional needs and interests. One of the feasible way of finding solutions for this issue is to change traditional Teacher Training system basing on student-centered approach and organize the activities using new information technologies.

Methodology

At present day, by introducing the new form of professional development of secondary school teachers with the help of modern information communication technologies the activities have implemented and integrated into existing in-service and pre-service trainings. In our country there are 85 Distance Learning Resources Centers and all are equipped with modern computers and laboratory equipments.

Application of technical tools is not at the top in the process of forming Distance Learning Professional Development system, but designing appropriate curriculum, syllabi, learning materials and organizing the learning process according to this is one of the main, complicated and crucial issues. Due to its importance of this complex issue, it should be

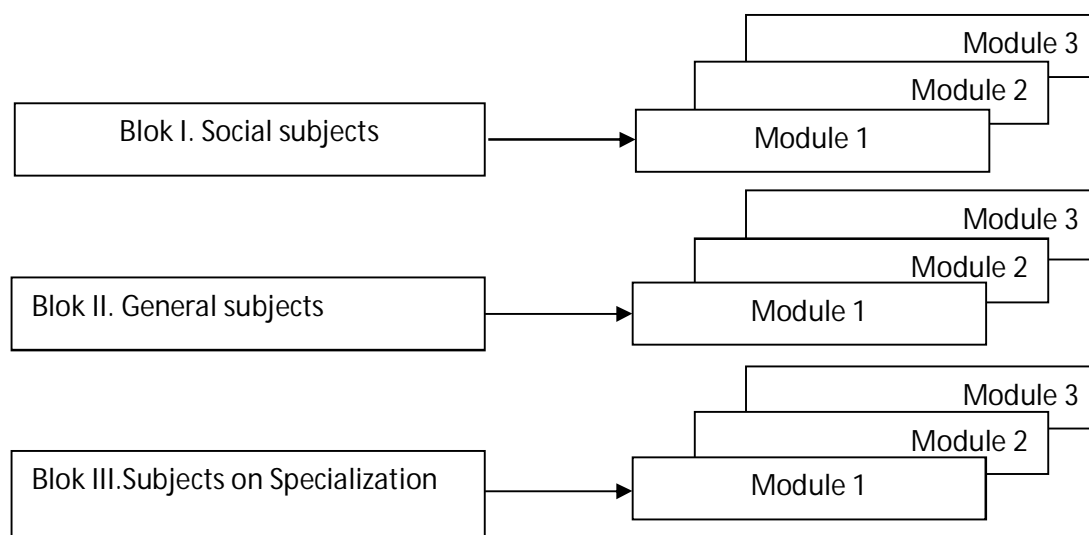
solved joint force of creative staff. Because while designing the learning materials the authors should take into consideration the needs of learners and specific requirements of Distance Learning courses. That is why targeting to the international experience is thoughtful and well intentioned if it needs it is targetfull action with international specialists cooperatively in this field. It is clear, that “none of the national system of distance learning can develop separately from the world’s scientific-educational environment” (2).

Before developing distance learning course contents, taking into consideration the specific features of the subject is very important. As to the idea on of the leading international specialists E.S. Polat, “The specifics of the subject, aim of the learning depends not only on the content and structure of Distance Learning, but it also depends on the chosen model of learning” (5). Because of such ideas and international experience designing the content of distance learning courses basing on the modular principles and modular syllabi.

Owing to international experience concerning to developing Distance Learning course materials and exsisting policy established by “Law on Education” of the Republic of Uzbekistan the new curriculum, syllabi and distance learning course manuals on school subjects as Mathematics, IT, Physics, Chemistry, Biology, Geography, Basics of Economy, English, French, German languages and Primary teaching to be developed basing on modular principals.

Modular based syllabi – it consists of didactic paradigm and modules, each modul has its concrete didactic aim. Outcomes based on the content of specially designed learning materials, acquisition the content of learning materials controlled by concrete assignments (6).

This module based curricula and syllabi consists of 3 bloks included social subjects, general subjects and subjects on specialization. Total course hours-load made up 144 hours. Each block included 3 or 4 modules (Pic.1).



Pic.1. The structure of the distance learning course curricula for secondary school teachers

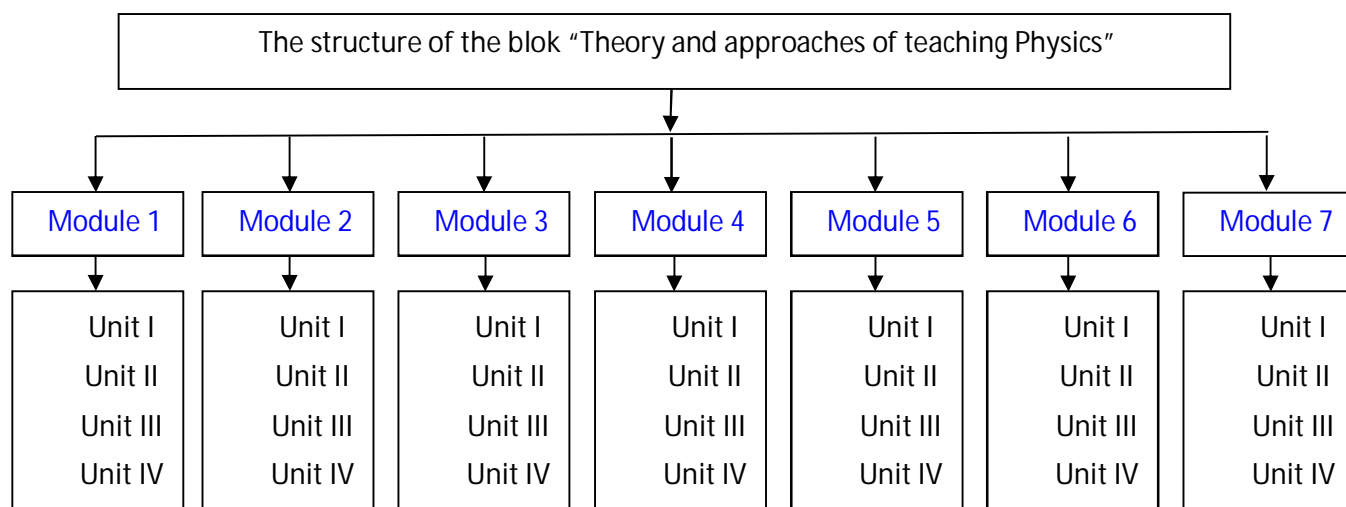
Research

In our research work we aimed at creating and analyzing the content of the course materials on the subject “Physics and methods of its teaching”, that is a part of the distance

learning course for physics teachers called Blok III – “Blok on specialization”. It includes logically completed modules consist of didactic aim, methodological instructions and tasks concerning to the content of the module.

Each module of the Physics teachers Distance learning professional development course is the process of learning and gaining comprehension which is included the technology of acquisition demanded unique action of educational process demanded scope of completed professional activities. Physics teachers fulfilled the tasks according to the definite steps targeting to gain the comprehension and skills and it helps them to formulate and develop their own competence and develop their knowledge. In terns, the content of the modules covers target topics accordingly to the requirements and each topic fits to the functional professional activities of the physics teachers.

The blok on the subjects of specialization called “Theory and approaches of teaching Physics” covers totally 82 hours and includes. It consists of Modules and Units (Pic.2).



Pic.2. The structure of the blok “Theory and approaches of teaching Physics”

Basing on this and appropriately to the didactic requirements on Professional Development of Physics teachers of the secondary schools, developed the Distance Learning Course syllabus and materials for Distance Teacher Training under the title “Modern Methods of Teaching Physics” by the author (7) and course content consists of the following units:

- Requirements for the Teachers Professional development, including Physics teachers;
- Requirements of State Education Standards for the Secondary schools on Physics, provision of learning materials and equipments the teaching process of Physics;
- Views of the scientists of Central Asia on Physics and Astronomy as a subject, their contribution to the development of Physics. Contribution made by the scientists of Uzbekistan to the development of Physics and its teaching methods. Using the resources developed by them in the field of Physics and Astronomy at the secondary schools;
- Development of Physics as a world science, including Uzbekistan, its perspectives, researches of scholars in the field of Physics and advanced experience;
- The ways of using new pedagogical and Information-communication technology in teaching Physics;
- Methodology of using electronic textbooks, learning complexes, educational films, special modeled boards for the physical process on Physics;
- Doing laboratory tasks on physics based on the on line regime in the virtual conditions, methods of using special computer programs for doing sums on Physics.
- Using Internet resources on physics posted to global and local Internet sets.
- Concepts of teaching Physics at the specialized secondary schools and classes in Physics, organization out of class and out of school activities on Physics;

Undoubtedly, implementing developed learning materials required to choose special technology. Regarding to this the types of Distance Learning forms are widely used in the developed foreign countries like the USA, Great Britain, Germany, Russia and etc. as Case-technology, Net and TV based technologies as well as mobile technology.

Due to its particular features regarding maturity, flexibility, scalability, multilingualism, usability and adaptability the widely spread and freely available open source software

MOODLE was chosen as most powerful tool to support the development and delivery of DL courses in the in-service teacher training system of Uzbekistan. (web-address: <http://www.avloniymtk.uz>). Relevant learning materials and tutor guidelines have introduced to the teachers during particular contact sessions and workshops delivered at the regional teacher training institutes. They accomplished the tasks, appropriate activities, tests and etc online and provided recommendations through online consultations.

Through such kind of activities learners can exchange experience with the tutors of their region and the specialists of the DL centers as well as the teachers and tutors from other regions directly or on-line based on the issues concerning to the course materials, assignments, tests or etc. It considered very important in the “Distance learning” courses organizing the connection between “Learner-tutor-learner”. For this the activities of the learners should organized basing on cooperative learning or project based learning” (1).

Taking into account the technical problems or the issues regarding to the Internet connection it has also delivered by case-technology. In this way teachers have an opportunity combining online activities with traditional means of printed DL course manuals, as well as audio, video or CD, DVD devices as suitable, necessary and beneficial under existing technical conditions. Through this technology, teachers can learn material independently in a convenient way for themselves such as at home, at their school or directly DL centers

So, as we stated above, according to established DL technologies the learners can use the learning materials independently in any place that is convenient themselves like at home, at school or at DL centers for the purpose of developing their professional skills. And they can do the activities, assignments, tests step by step. The results of assignments analyzed, marked by the tutors on the subject Physics and at the end of the course they can get appropriate certificates.

Results

Lessons learned during the process of the course results through Questionnaires, interviews and recommendations helped to define the problems regarding to the content of the learning material and chosen technology and as well as technical. From the early stages of the Piloting the advantage of Distance Teachers Training courses have been realized while comparing with the traditional ones. Especially:

- Doing the tasks with the help of electronic text books, educational films, special programs, working on virtual laboratory enhancing or opening access to education and training provision, freeing teachers and learners from the constraints of time and place, and offering flexible learning opportunities to individuals and groups of learners;

- Increased access and flexibility as well as the combination of work and education for most of the teachers. It may also means a more learner-centred approach, enrichment, higher quality and new ways of interaction;

- for school teachers, especially who live in outskirts of the country located in the mountains areas, who are not able to come and attend the Teachers Training courses according to their health problems or any other social-economic issues have been established equal opportunities of participating organized course as learners;

- school teachers ir-regardless to the place got an opportunity to listen lectures and get consultations from the professors, outstanding methodologists and experienced specialists of the Teachers Training Institutes on developing their professional skills on teaching and educating children in vary fields

- cost, reliability and ease of use of any technologies needed. Quality, accuracy and completeness of the learning materials;

- availability of widely use the achievements of modern Information and Communication Technologies in the Learning process and sharing this information, resources and gained experience actively in the International Level;

- Elimination of the objective (impossibilities of covering all the teachers who need to upgrade their professional skills or poor equipped with modern Information technologies) and subjective (family conditions, disability, difficulties on travel expenses) problems

- solution of the problems regarding to the teachers absence in the process of school year period for the purpose of developing their Professional skill the teacher who temporarily works instead of him/her needed to be extra paid establishing uninterrupted (ongoing) Professional development;

By such kind of positive results of distance professional development which is conducted in the Republic of Uzbekistan for the first time proofed noticeable effectiveness of Distance Teachers training.

Discussion

Through analyzing face-to-face Professional development comparatively with Distance Learning Professional Development we tried to find the answer of some questions.

For instance, Is it possible to solve completely all the problems faced in the process of traditional teacher training through establishing Distance Learning Teacher training and can we deliver teacher training only in Distance?

According to the above-mentioned positive result it is almost possible to eliminate the problems by organizing and delivering Distance Learning teacher training. But some pedagogical-psychological issues it is aimful to solve them in face-to-face contact.

Especially, owing to the specific features of the subject of Physics the following questions need to be clarification and discussed. For example, to whom belonged the laboratory equipments and demonstrative experience, and how many times can teachers do this experience and laboratory work in the process of traditional courses?

It is clear that demonstrative experience and laboratory tools belong to the Educational Institution and to the Physics teacher who works in this institution. In the process of traditional professional training the learner can do one laboratory work once according to the appointed schedule. But in the process of Distance learning courses teacher has an opportunity to do this laboratory work several times at the institution or any convenient place by on-line virtual laboratory mode with the help of their personal computers, mobile phones or other device with Internet connection. By doing repeatedly theachers have an opportunity to raise effectiveness of comprehension and application. Generally, both mode of Professional Development have pros and cons, which can't be rejected.

Conclusions

It is clear by the gained experience during the years the established Distance Learning Professional development showed its effectiveness. For example, Physics teachers develop their Professional skills without withdrawing from their work and without negative affect to the teaching process. They have an opportunity getting acquainted with the new technology and modern teaching and learning approaches as well as gaining knowledge with the help of

the materials concerning to their field. Besides, by establishing Distance Learning Professional Development achieved to eliminate social-economic problems. Establishing DL system created an opportunity to women teachers with young baby, teachers who need to treat elderly or disabled ones and the teachers who need constant medical treatment develop their Professional Development. And it caused to economize spending considerable extra amount of money.

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