

An Integrated Approach To Information Technology Training In Non-Specialised Education

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Abstract: *Modern Information Technology Is A Technology That Based On New Approaches To Youth Studying In Educational Institutions, Can Organize A Learning Process Related To The Knowledge, Qualifications And Skills Formation, Which Will Bring Education To A New Quality Level. Information And Communication Technologies - Technologies That Perform The Functions Of Routing Switching (Characterization) Of Communication Between Network Computers For Information Transfer.*

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1. INTRODUCTION

In Today's Globalized Society, In Order To Achieve Positive Results In Any Sphere, It Is Necessary To Pay Particular Attention To The Use Of Highly Efficient Technologies And The Intellectual Potential Of Society.

The Purpose Of The Resarc Is To Develop Integrated Technologies In The Education System And The Basics, Content And Methodological System Of Their Use.

The Research Describes The Integrated Technologies Development And The Basics Of Their Use, Essence And Methodological System In The Education System. The Study Used Methods Of Observation, Generalization.

In Our Country, A Number Of Practical Studies Are Being Carried Out To Develop The Education System And Increase Its Effectiveness. The Main Content Of Such Research Is:

- To Bring The Education Content To A New Level On The Basis Of Foreign Experience And Create A New Generation Of Educational Literature Based On Them;
- Improving The Teaching Process Of Subjects Using Computer Technology;
- Introduction Of New Generation Information And Communication Technologies In The Educational Process;
- Introduction Of Modern Pedagogical, Innovative And Integrated Technologies In The Educational Process, Etc.

Methods And Approaches Of Education Are Of Special Importance In Providing Quality And Guaranteed Education In The Learning Process. It Is Important To Use Integrated Technologies In The Educational Process Organization At The Modern Requirements Level.

The Word "Integration" Corresponds To The Latin Word "Integratio" And Means To Restore, Restart, And Recruit In Uzbek. It Is A Concept That Represents The Connection State Of Individual Parts, Elements, Their Combination (Annotated Dictionary Of Uzbek Language, 2006).

The Word Integration Is Also Used To Reflect The Approximation Of Disciplines And Interaction Process.

The Concept Of Integration Is One Of The Important Scientific Terms, Which Is A Methodological Approach For Summarizing, Drawing Conclusions. In Science And Technology, This Methodological Tool Will Create Models And Algorithms For The General Combination Between The Content Of A Process Or Events.

The Importance Of Integration Is Also Particularly Essential In Addressing The Harmonizing Problems Of The Education Content Provided In The Continuing Education System. The Basic Concepts Of Subjects Taught Through Integration Are Generalized. The Integration Concept Is Also Used To Establish The Relationship Between The Study Subject And Data Related To Its Methodology. So, Integrated Education In Education Is A Learning Model In Which Students Of All Abilities Participate In Learning As A Team.

An Integrated Technology Is A Technology That Is Formed By Combining, Generalizing And Linking Two Or More Technologies.

The Use Of Integrated Technologies In The Educational Process Refers To The State Of Activity By Combining, Consolidating And Establishing The Relationship Between Pedagogical, Information And Communication Technologies.

Among The Current Trends In Education, A Special Place Is Occupied By Methods That Allow Inclusive People To Feel Full-Fledged Members Of Society. One Such Solution Is A Holistic Study. Integrated Or Inclusive Education Is An Opportunity For People With Disabilities Not Only Feel Part Of Society, But Also To Develop Tolerance, Empathy And Caring For Others From The Earliest Years Of Life. In 1994, Spain Hosted The World Conference On The Education Of People With Special Needs, Which Adopted The Salamanca Declaration, Which Formed The Basis Of The Concept Of Integrated Education. Its Basic Rules:

- Every Child Has The Right To Basic Education;
- Each Child Is Unique And Has Different Degrees Of Interest And Ability;
- Large-Scale Educational Programs Should Be Created That Take These Features Into Account In The Educational Process;
- Secondary Schools Should Create The Conditions For Convenient Learning For All Children, Including Inclusive .

In This Way, Basic Models Of Integrated(Complex) Education Began To Emerge, Enabling Children With Developmental Disabilities To Enter A Full-Fledged School.

The Widespread Use Of Integrated Educational Technologies Is Also Being Introduced In Higher Education Institutions. But Here The Term Is Understood As Methods

That Imply A Complex Approach To Vocational Education. . This Is Achieved Through The Interdisciplinary Connections Development, The Use Of Project Methods, Agile And Scrum Methodologies, And Other Similar Tools.

The Learning Level By Subject Is One Of The Main Factors Determining The Quality And Effectiveness Of Classes. In Improving The Education Quality, It Is Important To Plan Classes Directly And Clearly Define The Goal. When Defining A Goal, It Is Particularly Important To Determine The Time For Achieving The Result, The Student Needs And Capabilities, The Methods Aimed At Striving The Student To Achieve The Goal, And The Types Of Control That Determine The Result. In Order To Achieve This Goal, It Is Necessary To Introduce Modern Pedagogical Technologies In The Educational Process.

Pedagogical Technology Is A Product Of Pedagogical And Technological Approaches Integration Used In The Educational Process. Various Pedagogical Scientists Treated The Pedagogical Technology Concept Differently And Described It. UNESCO Described Pedagogical Technology As Follows: “Pedagogical Technology Is The Optimal Process Of Learning Knowledge Using All The Capabilities Of Human Potential And Technical Means By Creating, Applying, Bringing Educational Methods And Mastering In A Single System.” (Tolipov, Usmanbaeva, 2006).

Information Technology – Common Methods, Devices, Methods And Processes Used To Collect, Store, Search, Process And Disseminate Information. Information Technology – Ways, Methods And Techniques Of Using A Computer In The Process Of Collecting, Processing, Storing, Transmitting And Using Data. Information Technology Represents A Process Involving The Use Of A Modern Computer To Reduce The Labor Intensity Of This Information And Increase Their Reliability And Speed For Information Processing. (Amirov And Etc., 2010).

Modern Information Technology Is A Technology That Allows Youth Studying In Educational Institutions To Raise Education To A New Quality Level By Organizing The Learning Process Related To The Knowledge, Skills And Abilities Formation On The Basis Of New Approaches.

Communication Technologies Are Technologies That Perform The Function Of Routing (Characterization) And Switching Connections To Transfer Information Between Computers In A Network.

Information And Communication Technologies Of The Education System Perform The Following Main Functions And Requirements:

- Recording Of Trainees Activities And Their Employees On Using The Information Environment;
- Taking Into Account The Support Of Educators Activities And Learners Through Counseling;
- Encouraging Students To Learn The Necessary Training Materials Themselves;
- Controlling Of Knowledge, Skills And Abilities Learned By Students In The Learning Process Through Tests As Well As Oral And Written Methods;
- Providing Remote Access To Information Resources Of The Educational Institution For Students To Use Recommended Training Materials, Additional Literature And Other Tools In The Database;
- Organizing Of Distance Learning Counseling And Other Assistance Of Educational Institution Staff In The Performance Of Virtual Laboratory Classes And Practical Assignments, Etc.

In The Training Process Created On The Basis Of Integrated Technologies, The Main Content Of The Training Subjects Will Consist Of The Following Teaching Materials:

- Electronic Textbooks, Manuals, Study Guides And Other Additional Materials;
- Electronic Educational And Methodological Complexes;
- Set Of Test Programs And Questions For Self-Monitoring;
- Virtual Labs And Their Description;
- Independent Works And Control Works;
- Computing Software, Electronic Help, Electronic Applications;
- Additional Software.

As A Consequence Use Of Integrated Technologies, Training Leads To The Organization Of Distance Learning Using The Capabilities Of Network Technologies. This Is The Basis Of Distance Learning Organization. The Main Objective Of Industry Technologies Of Distance Learning Is To Ensure Dialogue Between The Teacher And Student In The Educational Process. An Organized Learning Process Without Constant Dialogue Between Teacher And Students Does Not Have An Expected Effect. In The Daytime Form Of The Education System, The Communication Between Teacher And Student Takes Place In The Classroom At The Same Time, In The Same Place. In Distance Learning, This Process Is Carried Out Through Computer Network Technologies Based On Telecommunications.

Now We Are Talking About The Use Of The Above-Mentioned Integration Methods, Agile Methodology And Scrum Technology In The Educational Process, Including In Information Technology Training.

Before We Talk About Agile Methodology And The Application Of Scrum Technologies In Education, Let's Understand What They Mean.

Agile And Scrum Are Concepts That Come From The IT Industry. The Production Of Innovative Products Is Completely Different From The Standard Production Process, Where There Is A Clear Plan, Timing And Budget. This Is Where You Will Often Have To Deal With High Levels Of Uncertainty And Find New Ways. Therefore, Agile-Methodology Was Developed.

Agile Is Defined As A General Term For "Changing" Approaches That Are Commonly Used In Software Product Development As A Way Of Thinking And Style. Complementing This Point, It Can Be Said That Agile Is A Unique Way Of Thinking And Cultural Characteristics That Characterize These Approaches. Therefore, The Agile Method Can Be Applied Not Only In The Development Of Production, But Also In Other Fields. Agile Thinking Is Based On Four Important Values:

- In The First Place Will Be Not The Process, But The Relationship Between Students And Them.
- Attention Will Be Paid Not To Rules And Documents, But To The End Result.
- Not Only Work With Facts, But Also Communicate With The Client.
- It Is Not Obligated To Conduct Constant Experiments And Change The Process, Strictly Adhere To The Plan.

Scrum Is One Of The Known Approaches To The Agile Methodology, Which Is Also Called "Structural Approach".

Scrum Includes Clear Role Allocation And Process Sequence. Each Project Will Have A Small Team Of Specialists (Small Groups, 8-10 People), Their Actions Are Coordinated By The Owner Of Productive Products And Scrum Master (Science Teacher Or Tutor). The First Observes That The Result Corresponds To The Initial Goals, And The Task Of The Second Is To Adjust And Direct Actions Of The Team (Small Groups) In Accordance With The Methodology. All Work Is Done In A Short Period Of Time (One To Two Weeks), First

Goals Are Determined, At The End - The Results Are Compared And Corrections Are Made. Everyone Performs A Specific Segment Of The Task And Has A Direct Impact On The Process. This Approach Allows To Achieve Results Quickly, Maintain High Team Motivation, And Avoid Spending Time, Money On Ineffective Efforts.

Agile Methodology Is Also Very Convenient For Solving Modern Educational Problems. They Do Not Contradict The Various Principles Of Education And Can Be Applied In Part Or In Full To The Technology Values And Principles.

The Eduscrum Approach Is A Type Of Scrum Technology That Is Specifically Designed For Use In Integrated Learning. Scrum Technology Makes The Learning Process More Interesting And Helps Students Acquire Skills That Will Be Useful In Their Later Independent Lives And Work.

The “Flexible” Elements Of Agile And Scrum Technologies Can Be Applied To The Following Elements In The Educational Process:

- Short-Term Reading Instead Of Long-Term;
- Interaction Of The Group;
- A Playful Approach Instead Of Boring Lectures;
- Continuously Discuss And Improve Results;
- Internal Evaluation Instead Of External;
- Change The Role Of The Teacher.

Thus, The Differences Between Traditional Teaching Approaches And Modern Integrated Flexible Methods Can Be Demonstrated In This Table:

	A Traditional Approach To Education	Agile Approach In The Education
Period Of Education	From Three Months To Half A Year	A Short Period Of One To Two Weeks
Form Of Education	According To A Strict Lesson Plan	Education Is Shaped By Play And Interactivity
Form Of Teaching	General Lectures And Seminars	Small Groups Of 6-8 People
Form Of Information Exchange	Passive Acceptance	Active Independent Work In A Group
Evaluation Of Results	External Evaluation	Internal Evaluation
The Role Of The Teacher	Takes Full Control Of The Learning Process	Directs And Adapts

What The Results Of The Integrated Teaching Methodology Look Like?

Agile And Scrum Technologies Are Becoming Increasingly Popular In Education Not Only Because They Increase Student And Student Engagement, But They Really Improve Student Mastery And Personality As A Person. For Example, Integrated Flexible Methodologies Allow The Following:

- ✓ Improving Self-Learning And Self-Development Skills;
- ✓ Improving Motivation For Learning ;
- ✓ Developing The Ability To Make Career Choices Based On;
- ✓ Developing Their Further Educational Directions;

- ✓ Forming A Responsible Attitude To Education;
- ✓ Developing Skills Of Self-Reflection And Prediction Of Results;
- ✓ Fostering A Holistic Worlview;
- ✓ Gaining Experience Of Successful Relationships With Others;
- ✓ Developing Of Communication And Negotiation Skills;
- ✓ Developing Other Skills And Competencies That Will Allow You To Better Adapt To A Modern Lifestyle In The Future (Soft Skills).

The Integrated State Of Technologies Discussed Above Can Be Considered As The Most Optimal Technology For Teaching And Learning. The Main Task Of Integrated Technologies Is The Process Of Delivery To Students On The Basis Of Communication Technologies, Creating An Information-Educational Environment For Students Using The Opportunities Of Pedagogical And Information Technologies.

In Short, The Organization Of The Educational Process At The Level Of Modern Requirements, Integrated Technologies Play A Special Role In The Generalization And Completion Of Educational Content, Helping To Ensure The Goal Achievement Of Teaching Information Technology And Other Disciplines

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