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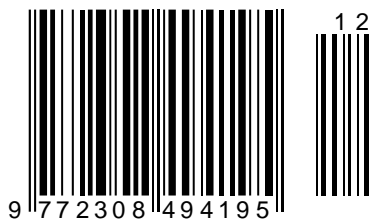
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## DEVELOPMENT OF MUSIC CULTURE FOR ELEMENTARY SCHOOL PUPILS WITH USING INTERACTIVE SOFTWARE

**Abstract:** This article discusses the development of music culture through the use of interactive software for elementary school pupils. A variety of literature and internet sources are used to write the topic. According to our conclusions, this topic should be studied continuously. Because there are still many new aspects to this issue.

**Key words:** music, elementary school pupils, interactive software, music culture.

**Language:** English

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### Introduction

The teacher of music is not only a teacher of music and singing to students, but also a talented teacher and mentor who leads the young hearts to the music world, enriches the emotional world, enhances their aesthetic taste, and enriches their spirituality.

In the process of teaching elementary school music culture, the teacher has a number of tasks in place to help shape the students' ethical culture. The most important issue of our time is the formation of the moral qualities of high school students, and the development and upbringing of a young generation's spiritual outlook. At the same time, the importance of the music is to nurture courage and dedication to achieve the noble and noble goal of building a free and prosperous homeland [1].

The current goal of the “Music Education Technique” is to expand students' knowledge, to learn how to apply their knowledge and skills in all subjects, to engage students in a creative approach to music, and skills in the use of technical means and visual aids, as well as the use of music teaching methods and in the learning process [2].

### The main findings and results

In order to form the students' ethical behavior during high school music culture lessons, teachers should use the following optimal methods;

- Teaching elementary school students to deeply examine each music teacher in order to build their moral character;
- Ensuring the precise purpose of each music culture lesson;
- The combination of teaching and learning tools in music culture classes;
- Using the consistency of each educational purpose and task;
- Using Proper selection of teaching materials related to this piece of music for each section of the music lessons;
- Selecting the most effective methods for developing students' ethical culture in music lessons;
- Taking into account the individual features of each student's musical emotional reaction;
- Organizing accuracy of music lessons;
- Encouraging students to work individually and in teamwork in primary school music classes;
- Knowing good knowledge of the individual condition of each student;
- Using different methods of moral education work to determine the depth, content, emotionality and depth;
- Paying special attention to the organization of music lessons (room entrance, exit, sitting)

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• Using music lessons equipment; (musical instruments, visual aids, textbooks, technical equipment, audio, video tapes, DVDs, VCDs, CDs, Mp 3 CDs, etc.) [3].

Spiritual values are created and popularized by political and legal ideologies, philosophies, morals, artists, artists, composers, poets and writers, theorists.

Spiritual values are from generation to generation, from one system to another. It inherits the system and has a significant impact on the development of society. As V.A. Sukhamlinsky said, the heritage of folk music will not end. It is an inexhaustible treasure and is an artistic and aesthetic source of spiritual enlightenment for young people. Music has been used as a powerful educational tool since ancient times and has been widely used in all educational systems. Outstanding statesmen, scholars, educators have been deeply influenced by all kinds of arts, including music, as a means of shaping and developing a high spiritual culture. Given by each genre of music contains a set of themes that reflect the spiritual and cultural culture of a particular nation or nation. Musical arts have a positive effect on enriching the spiritual world of citizens of our independent republic and enjoying everything that is beautiful. Highly spiritual, compelling music is characterized by the ability to reach hearts, exert a strong aesthetic appeal, and call for deep reflection on real-life events. For this reason, it is important to use as much as possible the feature of his works as artistic influences on educating people in a high spiritual and cultural spirit. The strength of the music is in its expressiveness and understanding, and the emotional impact it has on people. When nurturing a spiritually mature generation, it is important to consider this feature of music. Widespread use of the rich spiritual heritage of the Uzbek people in the upbringing can play a major role in increasing its effectiveness [4].

Music plays an important role in the formation of the culture of our society in our daily life, in the education and upbringing of harmoniously developed artistic and healthy young people.

In particular, songs created by the hardworking people in the foundations of the Uzbek music culture have inspired the hearts of the people and the works have been an inspiration for them. The human heart is able to nourish from the beauty environment while at the same time feeling thirst for beauty. Music is a system of expressive art. Music is also an event - a phenomenon. However, it is not measured by space and material, as in architecture. It is perceived by the ear, not by the sight of music. Since the theme of music is unique in its nature and cannot cover all aspects of man and reality, it primarily reflects the inner spiritual world of the person, his feelings and moods, and music is not a concept of the world as opposed to artistic or sculptural. It creates emotions and moods. Music creates a sense of reality. In music, emotions are not the same as life experiences, they are

selected, purified from random moments, and understood from the point of view of certain dreams. Music is capable of reflecting all the colors and vibrations of your human emotions. It can express the most difficult emotions, subtle feelings and moods [5].

Music is a moral (love, hate, pride, fear), aesthetic (art or nature's fervor, grandeur, tragic, comic), reflecting complex social emotions, first of all, the tone of speech or action in life. Music has great potential for expressing mood. The mood of the person is complex and it is not related to anything. The mood is generalized, the secondary sides are excluded, and the most important aspects of a person's attitude to reality are highlighted.

The power of music is its ability to display joy, sorrow, imagination, strength, depression and so on, in a personal and general way, with each other.

Music, together with the emotional aspects of the inner world, represents the spiritual world as a whole, creating the mental and willpower, the whole image. It also has the capacity to express the characteristics of the spiritual system and to create the state of the national spirit [6].

The new content of music culture envisages the education of the younger generation at the level of a cultured person who can inherit our national musical heritage and perceive the wealth of universal music. The main purpose of this is to ensure that students learn the art of music with enthusiasm. The main task of music education is to create the necessary conditions for the development of musical abilities of students, to increase their love and passion for music, to meet the needs of students interested in music [10].

State education standards are the main criteria for the development of music education. The lessons of music culture serve to foster the spiritual culture of students, to foster national pride and patriotism, to develop creative skills, elegance and artistic taste, to broaden ideas, to foster independence and initiative. As with all academic disciplines, the introduction of state educational standards in music education will allow the full use of national musical heritage. They are reflected in the popular folk songs, the performances of singers and musicians, the status, the shashmaqam, the poems and today's contemporary music.

This kind of artistic potential is a unique and unique resource for nurturing a new generation.

Musical art reflects the beauty of human relationships through the artistic expression of such concepts as selflessness, generosity, kindness, goodness, justice, courage, and patriotism.

Combining the unique and enduring traditions of music art with their modern development, they are unique and well-meaning people. Studying their creations, performances and interpretations, learning about the endless mysteries of music, and appreciating our cultural wealth opens up great opportunities for

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educating the younger generation in the spirit of love and devotion to the motherland. One of the most important aspects of musical art is that it instills good feelings and encourages people to love and cherish life. For this reason, musicians and singers have long been respected as spiritual forces. At the same time, art influences and nurtures human perceptions through social evils, such as shame and hypocrisy, greed and hypocrisy, insensibility and deception. In art, beauty is often achieved through tragedy and laughter. Concepts of tragedy, grandeur and laughter are of special value in art. As we know, to play a particular piece of music requires the skill and mastery of artists and musicians [9].

The role of the younger generation in selecting music repertoire is very important in the lessons of music culture. The songs to be taught must be ideally high artistic, interesting and diverse. Teaching the younger generation how to create a culture of musical ethical and aesthetic upbringing in the lessons of music culture, and how versatile our songs are. Life events, including the flourishing native country, are meant to give a glimpse into the beauty of the environment by describing our country, the significance of our songs and the beauty of our songs.

Choosing repertoire. This event is one of the most common forms of artistic and educational work. It helps students to understand the artistic and artistic content of the work and to learn its style. It provides the basic information about the content of the work, the period of its creation and its author. Also related to the repertoire. some of the issues related to ethics, art, music and performance history can also be covered [13].

Established in 1996, Uzbekistan is my homeland, the song festival of “O’zbekiston Vatanim manim”, “O’zbekiston qo’shiq bayrami”, “Alla”, “Folklor” and several musical contests have been organized to promote the cultural, educational, and plays an important role in developing musical qualities. As the Prophet Muhammad (PHUB) said, "Loving one's motherland is an act of faith" (from the hadith). Everyone should strive to love and protect the Motherland, to make this place even more beautiful.

Let's have a look how music is taught in foreign countries. According to “solfeg.io” [3], there are ten interactive ways to teach music for kids:

1. Let your positive attitude shine through.
2. Incorporate practical engagement.
3. Keep boredom at bay by using a variety of tasks.
4. Teach music your students like and can relate to.
5. Technology is the twenty-first-century teacher's best friend.
6. Encourage your pupils to interact with each other.
7. Be aware of your students' differing skill levels.

8. Creativity is a powerful teaching tool.

9. Perform to an online audience.

10. Teaching music through games is more fun.

Solfeg.io describes how to teach music in detail as following:

Let your positive attitude shine through. Every music class is different and the constant planning can be overwhelming. Many teachers complain that they feel like they spend as much time planning as they do actually teaching. But this planning pays off and can make your teaching far more effective. Having a good strategy for planning – planning your planning, if you like – means that your time isn't wasted. Treat your planning time as time for your own inspiration to come through. You will feel proud of your plans and putting them into action in the classroom will give you pleasure [14].

If you've spent time on your lesson plan and feel well-prepared then I'm sure you are excited about teaching the class. As teachers, we feel happy when we can see our carefully thought-out plans coming into fruition. Let your positive attitude and excited feeling show. Your students will pick up on your mood and learn even more than usual.

Teach Hub suggests taking this a step further and going beyond individual lesson plans. The website explains that “teachers who had a plan, not just for their classrooms but for their personal life and profession, often had greater success with their students”.

Having your own plan means you can connect with students. You can meet them on the learning journey, spreading the positivity of having direction and goals. Careful planning means you can develop a positive attitude towards your teaching career. This will be automatically passed on to students in class [3].

Incorporate practical engagement. Music is best learnt by doing, not by reading and writing. Make your lessons active and add to some energy to them! Even if you are teaching music theory there are ways to include practical activities. For younger children, games such as Magic Feet Follow the Beat present important elements of music theory in a fun way. This makes new words easy to learn.

If you think back to your own time as a school pupil, I'm sure some of your most memorable classes were where you were not just sitting there. You weren't staring at the pages of a textbook or copying notes down from the board. The classes where you had to move around and do something are more likely to stick in your head [15].

This is great for music teachers because it's so easy for us to incorporate physical movements and activities into our lessons.

Clapping out rhythms and singing are simple ways to get moving without any specialist equipment needed.



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Combining listening with making music is a great way to make the connection between aural and kinaesthetic learning processes.

Using one's body to play an instrument can make learning so much easier as the physical act of doing helps your students to commit the lesson to memory. Remember that even in school, to learn music you must play music, not just talk about it.

Keep boredom at bay by using a variety of tasks. There isn't much shorter than the attention span of a child today. New technologies are making it easier for us to read and learn in short bursts. It is getting harder for young people to focus on one topic or task for a long period of time. Fit your lessons to your students' concentration levels [7].

Mindchamps explains that kids can become overwhelmed when presented with a string of tasks. This makes them get bored and give up. Luckily, it is easy to avoid this scenario in your classroom.

Don't build each lesson around a single lengthy task. Break it down into short activities each lasting 5 to 15 minutes depending on the age group of your students. Teaching kids music can be done through singing, playing instruments, and listening to music. Writing lyrics or composing pieces, and learning about musicians and composers are other great ways to learn. You should mix up activities including

- listening,
- playing instruments,
- reading,
- writing,
- composing.

Each brings a different feel to your classroom, meaning students are less likely to get bored. Within each larger topic, plan to include a variety of short tasks and activities. Keep an active atmosphere in the classroom. Match the speed of each task to the age group of your students, or to each individual student where possible [3].

Teach music your students like and can relate to. Engage your students instantly by teaching them their favorite songs or genres. All kinds of music can be valuable resources for teaching and learning. There is no need to stick to the genres that have traditionally been associated with music lessons, such as classical and baroque music.

Our music teaching app Solfeg.io has a massive song library where you can find music that will appeal to your students. Use Solfeg.io to break the music down and choose specific musical elements to teach to your students. Perhaps the chord progressions, rhythm, or melodic patterns would make a good lesson, and one the students are sure to remember.

Teaching teenagers? How about a rap song by one of their favorite artists? Ask them about the music they enjoy to find out what is current and popular in their community. For younger children, you could use nursery rhymes or even theme tunes for their favourite TV programmes. Imagine the look of recognition and

surprise on their faces when you suddenly play them their favourite song.

Technology is the twenty-first-century teacher's best friend. Today's kids are digital natives, and today's tech is a great resource for education, like this article you are probably reading on a screen right now. Music is the perfect subject for using new technology in the classroom, and clever use of tech can make your teaching far more effective.

Use apps and YouTube or other video sites. Sometimes watching a video can make a lesson more memorable than listening to the same piece of music without a video. Showing videos of live performances is a great way to teach your students about how instruments are played. It is also a good way to see famous artists performing [8].

They can learn about what goes into making a concert. Depending on the genre of music this may include elements such as lighting and costume as well as rehearsing the music. MusicEdMagic describes how to use YouTube in the music classroom.

If your school provides tablets, make good use of them. Encourage students to install music apps on their phones. There are good apps for every aspect of music education, from composing and drum machines to theory and playing virtual instruments.

Encourage your pupils to interact with each other. While individual practice can be an important part of learning to play an instrument, the music classroom is a great time for interaction. Academics have described the clear benefits of collaborative learning. ResourceEd explains that collaboration is a significant element of the world of work. It is important to introduce this as part of school-based education. Collaborative learning teaches skills such as decision-making and problem-solving in a group or team context. Employers value these skills, which can be learnt beginning in early childhood.

You can teach children to collaborate with each other while you teach them music. Music is inherently sociable, whether among performers or listeners. Learning together can be far more powerful than studying on one's own. The material learnt can stay with them when they leave the classroom, and become a topic of conversation with their friends. Meanwhile the children are acquiring useful skills for their adult lives, even if they don't enter a career in music.

Putting the students into groups can also be a good way to introduce longer, more involving tasks than would be possible individually. Group projects can achieve more impressive outcomes than working alone. Take students' skill levels into account when forming groups. Change the groups between projects to create a fresh atmosphere [3].

Be aware of your students' differing skill levels. Different students have different skill levels and different needs. Make sure the tasks you set are appropriate for each student. Ideally a task should be understandable to the student, not too difficult but not

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too simple either. Right from the beginning, your students need to feel that they will be able to complete the task. A task that appears too challenging from the outset can make students give up and not try their best. Make a task into a fun experience by giving students the tools for success and encouraging collaboration [9].

Prodigy describes the concept of differentiated instruction. The website explains how to teach students with a range of skills. For example, you can create *learning stations* within your classroom. Students rotate around doing a different activity at each station. This is one way to provide learning opportunities for different skillsets.

In the music classroom, learning stations could include

- watching a video,
- writing about what they saw,
- completing a puzzle, and
- creating a short composition.

Tackling different senses such as auditory, visual, tactile and kinesthetic makes your teaching more effective for the whole class. It's easy to see how to do this with music, which can be learnt through listening, doing, watching and playing instruments.

Creativity is a powerful teaching tool. Once students begin to enjoy completing tasks, it is a good time to introduce creative projects. Give them a task with no wrong answer, such as a composition project. Perhaps they have been learning about a particular piece or style of music. The next stage in learning is to give them the task of composing their own piece in the same style.

Devoting time to creative projects like this is very important when teaching kids music. At its heart, music is not merely theoretical but practical. The best way for your students to learn music is to be immersed in it as much as possible. Learning a foreign language is most effective through visiting the country. So the language of music is best learnt through maximum immersion. Make your music classroom the place for learning this creative language [6].

Teaching children to be creative gives them a skill that goes far beyond the music classroom. This is because creativity is highly valued by employers. Furthermore, giving children a safe space to be creative can also help with behavioural issues. It provides them with a safe outlet for their feelings and emotions. Incorporating creativity into your lessons combines well with collaborative learning methods.

Perform to an online audience. Performing is an important aspect of music education. Your students can take pride in sharing their achievements with an audience. They can show their peers, parents and others what they have been learning in your class. New technology has made performing possible for anyone with an internet connection [3].

As the culmination of a large class project, give a concert together. If a traditional end-of-year school

concert is not possible, why not make a video of your students performing and share it on YouTube. If your school has good video or recording equipment, make use of it to produce a better quality video. If such equipment is unavailable, a smartphone can be used to make a reasonable quality video that can be a record of your students' achievements. If you and your students are feeling confident, you could even stream your performance live. Just don't forget to announce it to your intended audience in advance.

Besides making a video, you can make a YouTube channel for your class. Encourage your students to share the videos with their friends on social networks. You can continue to add to the channel every term and this will give you and your students a place to look back on their progress over the years.

Teaching music through games is more fun. Make a long-term lesson plan that incorporates games. Divide your students into teams and award a few points in each lesson. Depending on the class and their projects you could award a point to the best student in each lesson. You could give points for correct answers and even for a positive attitude. Decide on a monthly and yearly prize for the winning team. This works especially well with younger children. But even teenagers can enjoy a competition if the prize is attractive [12].

Being able to compete in a healthy and cheerful manner is a valuable skill for students to learn. It combines well with collaborative activities. But, it is important to make sure that no student feels left out when using a competition as part of your teaching. Keep track of prize winners and try to award a range of prizes so that every student has a good chance of winning at least once [3].

## Conclusion

Strong research is needed especially in the field of national ideology, ideas of national independence, spiritual formation, cultural heritage and universal values. Developing ethical, spiritual, and moral education is the most important issue for the spiritual development of change and renewal. In the process of reviving the content of public education, music education, the task of the music director is to thoroughly study the history of our national music, our cultural heritage, our rich traditions, and to nurture the spiritual, aesthetic and moral qualities of the younger generation. Thus, the leader must have knowledge and skills in the theoretical and practical areas of music, as well as a thorough knowledge of our national music, culture and spirituality. Nowadays, there are a number of issues that need to be done in the classroom for music classes to develop students' moral values. The work to improve students' moral values will be in this period of time (from the ages of 9–1 to 14–16), where students will be able to live their lives, change their outlook, and shape their relationships with people and the environment. In this period too, music teachers are

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required to be very responsible. Music lessons, in particular, play an important role in improving students' moral values.

In conclusion, it is important to note that the structure of a music lesson is not a sustainable thematic scheme, but for mastering a thematic work, it is important for children to be more interested in music and the content of the lesson, and to achieve pedagogical goals. This will achieve the logical integrity of the lesson both in content and in meaning. Therefore, each type of musical activity used in the lesson should be an integral part of the lesson and should be focused on a specific pedagogical purpose.

Thus, a number of pedagogical objectives are identified in the lesson, each of which is achieved through one or several types of musical activities.

They may be:

- development of musical skills;
- improving music perception skills;
- improving singing skills;
- rhythmic ability to perform music, to enhance the ability to act in accordance with it.

As a result, it is difficult to develop elementary school students without developing their moral and ethical characteristics, without changing their psychology and thinking.

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## TO THE QUESTION OF THE PECULIARITIES OF TRANSIENT PROCESSES IN FRICTION WELDING

**Abstract:** It is proposed that upon receipt of workpieces of complex shape to use the most economical technology - friction welding of workpieces. Performed analysis showed that the smaller the amount of energy required for the formation of the compound, the better its quality and higher efficiency of the process. It is shown that a steady state at the junction is preceded by a transition process, where small friction coefficients are not able to lead to plastic deformations of a relatively weakly heated metal of the butt region. The heat released is spent only on the plastic deformation of superheated metal in a very narrow layer and removed in burr. It is recommended, based on the possibility of technological equipment, to set the linear speed equal to the second critical speed, at which there is minimal burr formation.

**Key words:** friction welding, heating time, transition process, setting bridge, plastic deformation.

**Language:** Russian

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### К ВОПРОСУ ОБ ОСОБЕННОСТИ ПЕРЕХОДНЫХ ПРОЦЕССОВ ПРИ СВАРКЕ ТРЕНИЕМ

**Аннотация:** Предложено при получении заготовок сложной формы использовать наиболее экономичную технологию – сварку заготовок трением. Выполненный анализ показал, что чем меньше количество энергии, необходимой для образования соединения, тем лучше его качество и выше экономичность процесса. Показано, что установившемуся состоянию в стыке предшествует переходный процесс, где малые коэффициенты трения не в состоянии привести к пластическим деформациям сравнительно слабо нагретый металл околостыковой области. Выделяемая теплота расходуется только на пластическую деформацию перегретого металла в очень узком слое и удаляемого в грат. Рекомендуется, исходя из возможности технологического оборудования, линейную скорость назначать равной второй критической скорости, при которой происходит минимальное образование графа.

**Ключевые слова:** сварка трением, время нагрева, переходной процесс, мостик схватывания, пластическая деформация.

#### Введение

УДК 621.791

При получении составных заготовок сложной формы из различных материалов, как это отмечается в работах многих авторов [1,2-6], целесообразно использовать наиболее экономичную технологию – сварку заготовок

трением. Это объясняется, в первую очередь, высокой производительностью процесса, в результате быстрого нагрева поверхностных слоев металла в стыке соединения до требуемых температур. Во вторых обеспечивается высокая стабильность качества сварных соединений, связанная со специфическими условиями пластической деформации материалов,

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обеспечивающими прочные мелкозернистые структуры с равноосным (полиэдрическим) зерном. Для решения этой задачи требуется осмысление переходных процессов в зоне контакта заготовок при сварке трением.

### Материалы и методы исследования

Образование соединения при сварке трением происходит в условиях сложной пластической деформации нагретых материалов. Эти условия определяют энергоёмкость процесса. Поскольку пластическая деформация и тепловыделение в стыке в известной мере взаимосвязаны, то снижение энергоёмкости имеет большое значение. Иными словами, чем меньше количество энергии, необходимой для образования соединения, тем лучше его качество и выше экономичность процесса.

Минимальная энергоёмкость, необходимая для формирования соединения, определяется только экспериментально, поэтому назначение оптимальной технологии сварки заключается в

выборе, соответствующих значений параметров  $\omega$ ,  $P$  и  $t$  по результатам исследований. Во многих случаях минимальной энергоёмкости сопутствует минимальное время сварки.

Для достижения последнего необходимо определенное время  $t^{уст}$ , (уменьшение которого ведет к снижению энергоёмкости процесса. Установившемуся состоянию в стыке предшествует переходный процесс. С точки зрения оценки качества соединения по конечному результату переходный процесс может вообще не приниматься во внимание. Тем не менее физика переходного процесса, динамика изменения его параметров представляет научный интерес как явление, не имеющее до сих пор достаточно достоверного объяснения [7,8,9]. Так, например, при высокой относительной частоте вращения имеет место пиковое значение момента трения, значительно большее, чем при установившемся состоянии процесса (см. рис. 1).

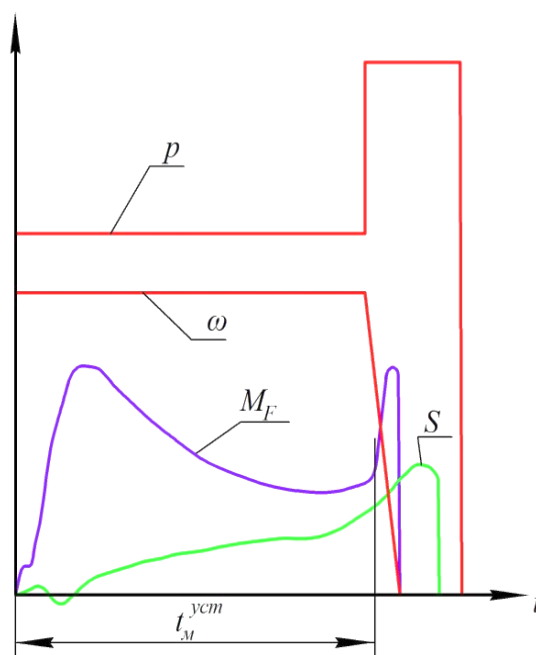


Рисунок 1 – Динамическая характеристика процесса сварки трением ( $\omega$  - частота вращения;  $p$  – давление нагрева и осадки;  $M_F$  – среднее значение момента трения;  $S$  - величина осадки;  $t_n^{уст}$  – время нагрева до достижения моментом трения установившегося значения).

В литературе [7,8,10,11,12] это объясняется увеличением реальной площади контакта поверхности соединения, прогрессирующим возрастанием числа "мостиков схватывания" при одновременном их разрушении. Представить себе это довольно трудно, поскольку уже в первые мгновения, порядка сотых долей секунды, температура контактирующих участков становится близкой к температуре плавления. В

этих условиях увеличение числа "мостиков схватывания" в пределах стыка до бесконечности не должно создавать момент трения больше, чем при установившемся состоянии пластической деформации металла в стыке. Однако не все участки стыка контактируют. Замечено, что вплоть до возникновения пикового момента трения в стыке интенсивной пластической деформации подвергается только часть металла в

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кольцевой зоне, расположенной приблизительно на 2/3 диаметра соединяемых заготовок.

Исследование переходного процесса, помимо познавательного значения, важно для уточнения некоторых параметров технологии и оборудования. В частности, пиковый момент трения в стыке требует увеличения момента инерции рабочего шпинделя; увеличенный пиковый момент трения был использован при сварке разнородных материалов (медь с алюминием) и др [13].

При проектировании новых технологий возможны варианты применения различных параметров переходного процесса ( $\omega$ ,  $P$ ), но факторами, определяющими качество соединения при сварке трением, являются параметры установившегося процесса и то, что при этих параметрах время переходного процесса минимальное.

В дальнейшем все рассуждения, касающиеся параметров технологии, относятся к установившемуся пластическому состоянию металла в стыке во время сварки.

Для удобства на практике используют не частоту вращения, а относительную линейную скорость  $v$ , измеренную по наружному диаметру свариваемых заготовок. При возрастании  $v$  от 0,38 до 5,2 м/с (конструкционная сталь) температура увеличивается от 550°C до 1240°C [7,9,14,15].

Хотя сварка заготовок получается во всем указанном диапазоне температур (при одинаковом усилии сжатия), качество соединений и время сварки не одинаковы ввиду особенностей пластической деформации. Последнее не вполне очевидно. Так, например, при минимальных температурах в стыке количество теплоты, необходимое для сварки, меньше, чем при более низких температурах. Максимальное тепловыделение соответствует температуре порядка 780°C, а при снижении либо при увеличении температуры в стыке оно уменьшается. Количество теплоты определяет количество выделяемого грата [16,17-20].

Линейная скорость, при которой имеет место наибольшее графовыделение, называется первой критической  $v_{кр1}$ . Линейная скорость  $v > v_{кр1}$ , при которой имеет место стабилизированное минимальное графообразование, называется второй критической скоростью  $v_{кр2}$ . При  $v > v_{кр2}$  изменения графообразования практически не происходит (рис. 2). Наилучшее качество дает сварка, выполненная в условиях  $v_{кр2}$ .

Рассмотрим особенности пластической деформации при  $v > v_{кр1}$ . В диапазоне линейных скоростей от  $v > v_{кр1}$  до  $v_{кр1}$  номинальное значение температуры остается еще достаточно низким, благодаря чему сохраняется высокий момент трения в стыке.

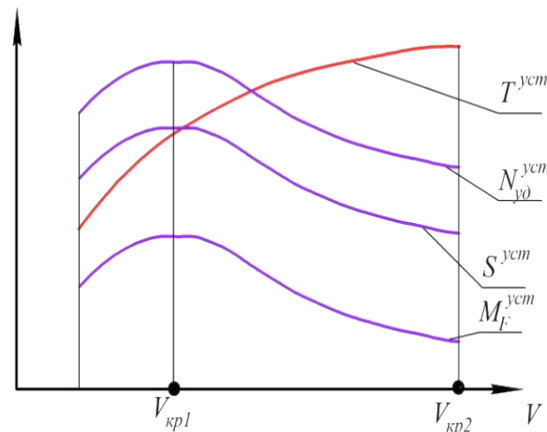


Рисунок 2 - Статическая характеристика параметров сварки в зависимости от окружной скорости вращения:  $T^{уст}$  - установившаяся температура;  $N_{уд}^{уст}$  - удельная мощность трения;  $M_F^{уст}$  - момент сварки в стыке;  $S^{уст}$  - осадка заготовок.

Повышение температуры при возрастании скорости до  $v_{кр1}$  приводит к увеличению прогрева и вовлечению в зону пластических деформаций все большего количества металла. В условиях относительно низких температур пластическая деформация сама служит источником теплоты, что еще более расширяет пластически деформируемую зону, которая становится наибольшей при  $v_{кр1}$ . Следовательно, в рассмотренном диапазоне скоростей источником

тепловыделения и графообразования является взаимодействие слоев пластичного металла при относительно низкой температуре. Это подтверждается максимальным моментом трения в стыке при  $v_{кр1}$  (рис.2). Расширение зоны пластической деформации вследствие теплопроводности имеет второстепенное значение.

В диапазоне линейных скоростей  $v_{кр1} - v_{кр2}$  повышение температуры при возрастании  $v$

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увеличивает пластичность металла стыка, что приводит к уменьшению момента трения (см. рис.2). Хотя температура повышается до 1240°C, зона пластически деформированного металла резко сужается, общее тепловыделение в стыке снижается при резком возрастании осевых градиентов температур.

### Выводы.

При  $v \geq v_{кр1}$  ширина зоны пластической деформации минимальна. Малые коэффициенты трения теперь не в состоянии привести к пластическим деформациям сравнительно слабо нагретый металл околостыковой области. Последнее стабилизирует зону пластических деформаций на минимальном уровне, несмотря на

возросшую теплопередачу от стыка. Выделяемая теплота расходуется только на пластическую деформацию перегретого металла в очень узком слое; и удаляемого в грат.

Достижение предела установившихся пластических деформаций при  $v < v_{кр2}$  происходит за большее время, количество выделившегося графа увеличивается, зона термического влияния расширяется.

Если позволяют возможности технологического оборудования, линейную скорость следует назначать равной второй критической скорости  $v_{кр2}$ , при которой происходит минимальное графообразование.

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## Impact Factor:

ISRA (India) = 4.971  
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GIF (Australia) = 0.564  
JIF = 1.500

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## UNIVERSITIES IS GUARANTEE OF SOCIAL DEVELOPMENT

**Abstract:** This article analyzed about universities as guarantee of community development, and also analyzes measures for the development of the sector and the problems associated with these areas.

**Key words:** development, higher education, institution, studying, students, system, universities.

**Language:** English

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### Introduction

Nowadays, in our country under the direct guidance and initiative of the head of our state reforms are underway in all spheres. The goal is to please our people, to ensure their wellbeing, to make our country one of the most developed countries in the world.

It is no coincidence that President does not systematically work for the education system and the teachers and coaches working in the system to enhance their prestige and prestige in society, because tomorrow's development of the country is directly dependent on our young people studying in the education system.

In recent years, wide-ranging reforms have been implemented in the higher education system of the country, in particular, to create a healthy competitive environment in higher education institutions of the country, to stimulate the level and quality of their scientific and pedagogical activity.

Achievement of high standards in accordance with standards and training of highly qualified personnel required in the real economy, international education o Presidential decrees and decrees on expanding cooperation were adopted.

In particular, in the Decree of the President of the Republic of Uzbekistan dated July 11, 2019 PD-4391 "On measures to introduce new principles of management in the system of higher and secondary special education", the system of higher education is based on the needs of social and economic sectors. improvement of the quality of education, training of

competitive personnel, effective organization of scientific and innovative activity, development of international cooperation on the basis of sustainable integration of production.

### Methods of research

At present, there are 113 higher education institutions in the country, of which 93 are local and 20 are foreign higher education institutions and their branches. In particular, in the last 3 years 6 new higher education institutions, 17 branches and 13 branches of foreign universities were established.

Directions of Higher Education on the basis of suggestions of personnel 329 educational directions and 582 master's specialties are included in the classification of specialties and specialties.

Distance education in 59 higher education institutions in the 2019/2020 academic year 10 higher education institutions have introduced evening education forms.

The number of students studying in higher educational institutions of the Republic has increased by 1.7 times over the last three years, with 410,000 undergraduates and 13,000 undergraduate majors.

54.8% of the students are humanitarian and pedagogical, 25.2% - technical and engineering, 5.2% - social sphere, economics and law, 5.9% - agriculture and water management, 4.4% - health and social welfare, 4 5% of educational areas related to service knowledge and specialties.

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40.8% of the masters are humanitarian and pedagogical, 23.3% - industrial and technical, 13.3% - social sphere, economics and law, 5.9% - agriculture and water management, 13.5% - health and social care, 32% are studying in service related areas of education.

Admission parameters for the 2019/2020 school year were 121,000, up 18 percent from the previous year, and 92 percent compared to 2016.

Starting from the 2018/2019 academic year, 16 higher education institutions of the country are working together with foreign higher education institutions on the basis of joint training programs.

Currently, the number of academic councils in higher education is 84 (48 in 2017). As a result of the defense of 1 693 faculty members over the past 3 years, the number of teachers with advanced degrees in higher education institutions has reached 9,636 (including 2,306 doctors of science (DSc), 7,506 candidates of science (PhD) and higher education in the country. The scientific potential of these institutions increased by 5.1%.

In the last 3 years, 1,611 faculty members have been trained and trained in foreign higher education institutions. In the framework of international cooperation, 112 young people were enrolled to master's degree in foreign universities and research institutions and 51 students to doctoral programs.

Through El-Khatim Hope Foundation, 46 faculty members have been trained in Canada, the United Kingdom, and Italy.

In 2017–2019, 1,154 foreign teachers and scholars were recruited (94 from the US, 445 from Europe, 299 from Asia, 316 from the CIS).

The salaries of professors with doctoral degrees at higher educational institutions increased 3.2 times compared to 2016.

Today, the system of higher education has a number of pressing problems and shortcomings in the system of higher education.

- ❖ coverage of higher education remains low (20%);

- ❖ existing qualification requirements, curricula and programs are not aimed at developing practical skills in the graduates;

- ❖ work on personnel training in cooperation with higher education institutions and personnel is not well organized, and employers' involvement in the formation of higher education content is insufficient;

- ❖ students do not have the skills of critical thinking, independent search and analysis of information;

- ❖ practical training at the industrial enterprises is not organized effectively; the level of qualification of the trained specialists does not meet modern requirements of the labor market;

- ❖ low level of proficiency in foreign languages and information and communication technologies by professors and teachers;

- ❖ there is a shortage of textbooks, and many of the existing ones do not meet modern requirements;

- ❖ transparent mechanisms of holding the Olympiads in higher education institutions are not implemented, systematic work with the Olympic winners is not established;

- ❖ there is no mechanism for selecting students from amongst the most promising young people to higher education institutions;

- ❖ the system of professional development of teachers is not effectively organized, including highly qualified professors are not involved in training in retraining institutions;

- ❖ scientific activity of higher education institutions is not based on the prospects of socio-economic development of the regions;

- ❖ insufficient efficiency of innovative activity, wide implementation of research results, commercialization of scientific research, attraction of talented youth to research activities, unreliable integration of education, science and production;

- ❖ the scientific potential of universities is only 36.4%;

- ❖ the average age of employees with a scientific degree is 49 (Doctors of Science - 56 years, Doctors of Philosophy and Candidates of Science - 43 years), and the proportion of retired doctors is 45%;

- ❖ research activities are not aimed at solving existing problems in the social and economic sectors;

- ❖ in recent years, the number of references to articles published in prestigious international scientific journals has decreased from 1,882 in 2017 to 604 in 2018;

- ❖ there are no effective mechanisms for stimulating the activities of faculty members, researchers and young scientists engaged in research activities;

- ❖ higher educational institutions of the republic are not included in the list of the top 1,000 in the rating of internationally recognized organizations, their official websites are not included in the 1,000 ranking of the international ranking Webometrics;

- ❖ the educational programs and students' knowledge evaluation system are not adapted to international standards;

- ❖ existing student housing and social infrastructure facilities are not adapted to the needs of international students;

- ❖ promotion of foreign citizens to study in our country, including PR-projects (organization of days of higher educational institutions of Uzbekistan, presentations)

- ❖ etc.) is not organized sufficiently, there is no interactive virtual platform in this regard.

Based on our analysis, we consider the following as the most important priorities of universities:

- ❖ expanding the coverage of higher education, improving the quality of training specialists with higher education;

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❖ introduction of digital technologies and modern methods into the educational process;

❖ increasing the effectiveness of research activities in higher education institutions, broad involvement of young people in research activities, and the creation of an innovative science infrastructure;

❖ increasing the effectiveness of spiritual and educational work;

❖ active involvement of the personnel of the personnel into the process of training of highly qualified specialists;

❖ ensuring financial independence and sustainability of higher education institutions, strengthening material and technical support;

❖ systematic development of higher education institutions and improvement of management activity;

❖ the introduction of effective mechanisms for combating corruption and ensuring transparency;

❖ increasing the investment attractiveness of the higher education system, ensuring its international recognition and competitiveness.

Under leadership of the President of Uzbekistan, a number of activities are underway to establish partnerships with leading international rating agencies to enhance the international prestige of Uzbek higher education institutions and to sign cooperation agreements with THE (Times Higher Education) rating agency.

About 1,400 universities from 92 countries participated in the ranking of universities this year. Oxford University is in first place in the second year running.

Universities of CIS countries include 39 universities of Russia, 6 Ukraine, 2 universities of Kazakhstan, one of Georgia and Belarus.

Weight of Scopus-based articles for entry into the Top-1000 Universities of the World, articles co-authored with foreign professors, international students and international faculty, prestige of research work, international scientific potential high student enrollment, faculty and so on.

At present, none of the higher educational institutions in the country meets all these requirements.

For instance, there is a high percentage of international students in universities in the neighboring regions, but they are behind the other criteria. Or, conversely, the number of foreign students is low, even though the universities in the center have high academic potential.

It is impossible to ensure that universities are ranked in the Top-1000 World Universities. At present, some work has been started to rank our national universities in the rankings of the best universities in the world.

In particular, it cooperates with THE international agency that forms the rating. It is planned to implement the 10/1000 project to help Uzbekistan

rank in the global ranking of universities by establishing partnerships with the top 100 universities in the World Universities Rankings 2020.

In order to enter the ranking of universities of the country in the “World Universities Top-1000” ranking, the following must be done:

❖ increasing the number of foreign students and international faculty;

❖ open their profile on the Elsevier Scopus HEIs and publish articles co-authored with foreign professors at Scopus;

❖ targeted incentives at the expense of internal funds of the university professors and teachers who are engaged in research activities and publishing articles on the basis of Scopus;

❖ each HEI will be able to publish at least 200 scientific articles per year on the Scopus database to be included in the TOP international ranking list;

❖ submit a questionnaire to QS and THE international rating agencies, industry leading research centers and manufacturers and analyze their results with international experts;

❖ increasing the total income of universities and the funds received from the real sector of the economy;

❖ the purposeful allocation of international grants and the state budget for the support and constant encouragement of the teaching staff;

❖ increase the income of higher education institution from scientific activity up to 5-10% annually.

At the same time, efforts should be made to increase student enrollment by 1/11 to 1/6. For this purpose, it is necessary to increase the level of scientific potential by 3-5% per year and bring the level to 80-85%, increase the number of candidates (defenses) by the end of the year. This in turn will have a positive impact on the quality of education, increase the academic capacity of universities and increase the number of people involved in research activities.

Improving the websites of universities is also an important task. It is necessary to provide access to foreign partners, including international rating agencies, with full information in both English and Uzbek.

European Association for Quality Assurance (ENQA) was established in 2000 as the European Network for Quality Assurance in Higher Education and was established to promote European cooperation in the field of quality assurance (QA) in higher education. Currently, 30 countries are members of the ENQA.

Examples of Swiss higher education rating features include the Swiss education system, the procedure for accreditation of educational programs (every higher education institution is accredited every 7 years), the rules of recognition of foreign diplomas and participation in international evaluation programs such as PISA.

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In particular, in the system of training, retraining and advanced training of teachers at the Zurich Pedagogical Institute, the teaching staff of the Swiss higher education institutions is required to have at least 2 years of experience as a school teacher for 10 years.

Students of Pedagogical Universities receive theoretical knowledge in general education for two days a week from the first year of study, and the next three days gain practical skills with teachers attached to schools.

In this case, partnerships are established between universities and educational institutions, and contracts are signed with the most experienced teachers.

Zurich Federal Institute of Technology has experience in organizing education-science-production integration. There, students will be given the opportunity to practice theoretical knowledge (in colleges) for two days a week and practice internships locally for two days by setting up a vocational education program based on the 2 + 3 professional development program.

However, it is time for the universities of our country to work in close cooperation with employers and to establish a mechanism for effective operation of the practice. In leading universities of the world this process is improving day by day. That is why the system "5 + 1" is being implemented in pedagogical universities. There are 5 days of classes at the university, and one day a week students are attached to a school teacher and are in the process of teaching children.

### Conclusion

Consequently, our research shows that in order to increase rating of higher education institutions in agrarian sector, the following tasks should be implemented:

❖ preparation of highly qualified and competitive specialists in agriculture and development strategy up to 2030, having theoretical

knowledge and practical skills in the field and its branches in the near future and future, with the use of modern technologies;

❖ wide introduction of new educational standards, programs and curricula, mechanisms for independent study of students, effectively using modern pedagogical and information technologies to guide students to innovative and innovative thinking based on advanced international experience and tasks set for the professional education system;

❖ creation of an in-house training system for agriculture and its branches, ensuring continuity and consistency of educational programs;

❖ modernization of educational and laboratory base, digitization of agriculture in science programs, formation of theoretical knowledge, skills and abilities in the field of modern production processes, high-performance and resource-saving technologies;

❖ organization of training and internships for faculty and research staff in foreign research and higher education institutions;

❖ Provision of extension services to economic entities engaged in the production, storage, processing and logistics of agricultural products, regardless of ownership ;

❖ development of professional skills, abilities and skills of students in the process of acquiring the chosen specialty, the organization of their practice to economic entities operating on the basis of advanced technologies;

❖ Ensuring effective integration of science, education and production;

❖ to educate students in the spirit of national self-consciousness, patriotism and self-sacrifice, respect for national cultural and historical traditions of the people, pride in the country;

❖ implementation of healthy lifestyles, creation of conditions for improvement of educational process.

Thus, universities as a guarantee of community development, need to be actively engaged in research.

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## WAYS TO IMPROVE ATTRACTION OF FOREIGN INVESTMENTS AND CREATION OF INVESTMENT CLIMATE FOR THEM

**Abstract:** The article describes ways to improve the attraction of foreign investments for the creation of modern and compact joint ventures, while creating a favorable investment climate for attracting investments to develop our national economy and its integration into the world economy.

**Key words:** Competition, economy, enterprise, export, foreign investment, free economic zone, investment, investor.

**Language:** English

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### Introduction

In our country, significant work is being done to improve the investment climate, increase the export potential, implement investment projects in the sectors and regions, attract and attract foreign direct investments.

In particular, the 2019 Investment Program includes more than 3,000 projects worth \$ 16.6 billion. That's 16 percent more than in 2018. In particular, it is planned to put into operation 140 production facilities worth US \$ 3.2 billion under the Investment Program this year.

### Methodology

In our country, significant work is being done to improve the investment climate, increase export potential, accelerate business and investment regulation as a basis for accelerated business development.

First of all, let's define the essence and content of "investment", the most important element of investment activity. The word "investment" comes from the English word investment, which means "investment."

**Investment (capital)** means the allocation of funds to entrepreneurial and other activities (objects) for a specified period in order to generate income or profit. (4)

It is worth noting that at the present stage of development of the world community no country can achieve social and economic development without investment.

First of all, it will create new jobs and create new jobs that will be in demand in the domestic market - the production of import substituting products.

**Secondly**, it will complement the volume of private capital of the national enterprises - the factor that ensures the expansion of production and promising development of operating enterprises in the country.

**Thirdly**, the technological modernization of the national economy will be carried out and new equipment and modern equipment will be installed in the national industrial production, which will result in the production of national products that can compete on the world market.

**Fourth**, national producers will be able to implement promising projects at the expense of credit.

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**Fifth**, integration of the national economy into the world economy will be implemented.

Thus, investment remains an important factor in economic growth, both at the macro (national economy) and micro (micro and enterprise) levels. Therefore, today one of the most urgent issues is the revision of organizational and legal mechanisms, which are based on special regulation of investment and foreign trade.

In order to increase investment potential of the republic, to attract investments in priority sectors and branches of economy, to ensure interconnection of investment process with production of competitive export products, the President of the Republic of Uzbekistan signed a resolution "On measures to improve the management system in investment and foreign trade" from January 28, 2019. In accordance with the Decree of the President of the Republic of Uzbekistan No. UP-5643 dd Movements in the direction of the uvor >> << active investment strategy and social development in the implementation of the State program.

According to this program it is advisable to carry out the following tasks:

✓ **First** - the creation of favorable investment climate and incentives for domestic and foreign entrepreneurs to invest in priority sectors, sectors and regions of Uzbekistan for the production of competitive export products, as well as the unconditional fulfillment by each government agency of active investment and trade promotion. ;

✓ **Second** is the establishment of a centralized investment management system that will improve the efficiency of the use of public financial instruments, international financial institutions and foreign governments' borrowed resources and technical assistance resources to address the country's socio-economic development priorities;

✓ **Third** - to improve the international prestige of the Republic of Uzbekistan, to ensure the accelerated development of economic sectors and regions of the country, to attract foreign, including direct investments for the transfer of advanced technologies, to gradually improve the business and investment climate;

✓ **Fourth** - to ensure effective interaction of state bodies and business entities with foreign investors, trading partners, foreign governments and international organizations on the basis of economic interests of the republic;

✓ **Fifth** - implementation of optimal customs and tariff policies for sustainable economic growth, integration with the World Trade Organization, cooperation with other multilateral trade and economic systems;

✓ **Sixth** - comprehensive support for exporters, gradual development of trade, including foreign trade infrastructure, e-commerce, improvement of legislation in this area;

✓ **Seventh** - the development of modern logistics networks to create favorable conditions for local goods and services to enter foreign markets, to create efficient transport corridors and to diversify the supply geography;

✓ **Eighth** - the introduction of advanced information and communication technologies to ensure the widespread introduction of modern product quality control systems and their compliance with international standards and technical regulations to enhance the competitiveness of domestic goods in foreign markets.

Consequently, foreign investments play an important role in the economy of our country. The reason is that they help to solve the problem of increasing the competitiveness of our national economy in the global market and give a lot of positive results. In particular, it will promote employment, increase the volume of exports, increase the volume of incoming foreign currency and master new technologies. As a result, the status of our economy on the world market will be strengthened.

Therefore, the task of creating a favorable investment climate in the country has always been in the spotlight. The state program of the year << Year of active investment and social development said: << Our diplomatic missions abroad should work hard to attract foreign investment and advanced technologies to the economy, with a focus on strengthening investment policy in our country >>

In particular, President Shavkat Mirziyoev signed more than 80 documents and agreements worth 8.9 billion dollars between various companies, agencies and organizations of South Korea.

In 2019, 18 interstate official visits were made and agreements on 1 80 80 projects worth \$ 52 billion were signed. The volume of investments jointly with the World Bank, European Bank for Reconstruction and Development, Islamic and Asian Development Bank and other international financial institutions amounted to \$ 8.5 billion. 456 projects worth 23 billion dollars are being implemented through foreign investments. Those involved under state guarantees are 14.5%. It is obvious that attraction of foreign investment in the development of the country's economy will lead to the economic growth.

The particular importance of activating foreign investments in the national economy is determined by the fact that they are all property, financial and intellectual property of foreign investors in entrepreneurship and other activities of the state with the aim of achieving high profit and significant effect. Foreign investment, unlike domestic investments, is a source of external financing. Consequently, they will provide additional opportunities for further development of the national economy.

At present we have the following forms of attraction of foreign investors:

## Impact Factor:

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ISI (Dubai, UAE) = 0.829	PIHHI (Russia) = 0.126	PIF (India) = 1.940
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JIF = 1.500	SJIF (Morocco) = 5.667	OAJI (USA) = 0.350

- Establishment of joint ventures in Uzbekistan through participation and participation;
- To open foreign enterprises with 100% ownership of foreign investors;
- Creation of large foreign companies and firms and branches of enterprises;
- Concession and lease agreements;
- Announcement of tenders;
- Creation of free economic zones (zones);
- Sale and purchase of financial assets (2)

There is also no restriction on whether a foreign investor can reinvest in his income in Uzbekistan, and the income of a foreign investor can be used in any form at his discretion. In particular, the legal rights of the investor in our country (Article 8 Investor rights):

Investors have equal rights to carry out investment activity, regardless of their form of ownership and type of activity.

➤ Input Investing in any object other than those restricted or prohibited by this Act or other laws, is an absolute right of the investor and is protected by law.

➤ The investor independently determines the purpose, direction, type and amount of investment, attracting legal entities and individuals as participants in investment activities on a contractual basis, as a rule, through tenders (tenders).

➤ The investor has the right to own, use, dispose of and invest in investment objects and their results according to the legislation.

➤ Investitsiya Investing in facilities that do not result in the acquisition of property rights does not exclude the investor's right to subsequently own, operate, or profit from the use of such facilities.

➤ By decision of the investor, the right to own, use, dispose of investment objects and their results can be transferred to other legal entities and individuals. When transferring rights, the relationship between the parties is regulated by the agreements they conclude.

➤ Investor Except as otherwise provided by the legislation, the investor has the right to receive the property he or she needs from legal entities and natural persons without any restrictions on the volume and nomenclature determined on the basis of mutual agreement.

➤ The investor may have other rights provided by the legislation.

At the same time, there are a number of obligations of the investor:

✓ Take obtaining expert opinion on compliance with the requirements of sanitary and hygiene, radiation, ecology, architectural and urban planning and other requirements in investment projects;

✓ coverage reimburse the participant of the investment activity as a result of improper or improper execution of the contract;

✓ Local state authorities and state governing bodies must fulfill the requirements that have to be delegated powers.

✓ There may also be an obligation on the investor to remain as contemplated in the law.

### Experimental results

Of course, there are also a number of cases that hinder the attraction of foreign investors. One of them is inflation. It has a very negative impact on the volume of investments in the country's economy. If the inflation rate is high, the future income of the investor will be underestimated, which will also lead to a reduction in investment incentives. This is what worries investors.

Therefore, we have sought to identify areas in which an investor can fully recover from his investment. According to the study, these areas are promising:

- agriculture and agribusiness;
- expansion of the building materials industry;
- communication services (mobile communication, Internet);
- refining of oil products;
- branches of pharmaceuticals.

In our opinion, in the process of attracting foreign investments to our national economy, it would be useful if:

- Involvement of scientists and entrepreneurs from developed economies in conferences and seminars on investment issues;
- expansion of benefits provided to foreign investors through the State Tax Committee;
- increasing the number and quality of free economic zones;
- The country should pursue an open, or rather more transparent, policy.

In addition, it should be noted that in the structure of foreign investments it is necessary to pay more attention to the sharp increase in the volume of foreign direct investments.

### Conclusion

Consequently, it is necessary to attract investment in real production, services, and first of all in the processing sectors. It is also necessary clearly define the directions of state regulation of investment activity, creation of an environment of free competition against monopoly, promotion and development of competition, support for small and medium-sized businesses, and effective and beneficial tax policy.

Results of this study may not have very high results in attracting and raising foreign investment. Nevertheless, we can say that they contribute to a wider attraction of foreign investors to the economy.



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QR – Issue



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## MEASURING SOUND INSULATION OF AIR NOISE

**Abstract:** In this article described and systematized issues of organizing and conducting measurements of sound insulation of air noise with enclosing structures (soundproofing), requirements of normative and technical documentation of the Republic of Uzbekistan for measurement and processing of results considered.

**Key words:** Air noise, enclosing structures, measuring, sound insulation, laboratory conditions, normative and technical documentation, value.

**Language:** English

**Citation:** Rashidov, J. (2019). Measuring sound insulation of air noise. *ISJ Theoretical & Applied Science*, 12 (80), 121-123.

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**Scopus ASCC:** 2215.

### Introduction

Use of building materials and structures in building acoustics suggests definition of their soundproofing properties. Measurement of insulation (sound insulation) of air noise by enclosing structures based on comparison of sound pressure levels in test (reverberation) rooms. To do this, the average sound of pressure levels measured and compared in successive frequency bands [1, 2,8]. When measuring sound insulation of enclosing structures in laboratory conditions, it is necessary to comply with requirements of normative and technical documentation of the Republic of Uzbekistan.

When performing acoustic tests, the following terms used with appropriate definitions. Isolation from air noise  $R$ , dB - a value characterizing the reduction of the level of air noise.

The actual airborne sound insulation  $R$ , dB is the tenfold decimal logarithm of the ratio of the sound power incident on the test sample to the total sound power transmitted in a low-level room, including bypass paths [3,4,5,6]. Airborne sound insulation (soundproofing)  $R$ , dB is the tenfold decimal logarithm of the ratio of the sound power incident on the test sample to the sound power transmitted through this sample.

The average sound pressure level in the room  $L_m$ , dB is the tenfold decimal logarithm of the ratio of squared sound pressure averaged in space and time to

the square of the threshold sound pressure  $p_0 = 20 \mu\text{Pa}$ . The given difference in sound pressure levels  $D_n$ , dB is the difference of the sound pressure levels averaged in space and time, created in two rooms by one or several noise sources installed in one of them.

Repeatability of the measurement results is value of embracing with 95% probability the absolute difference of the results of two measurements conducted in a short time interval and under the same conditions. The reverberation time  $T$ , s is the time required to reduce the sound pressure level in the enclosed space by 60 dB after the sound source is turned off. Sound insulation of the window unit  $R_{ArpA}$ , dBA is the value used to estimate the reduction of the urban traffic flow by the window block.

The airborne sound insulation index  $R_w$ , dB is the value used to estimate the sound insulation of the structure by a single number and is determined by comparing the frequency characteristic of the air noise insulation  $R(f)$  with the special evaluation curve from [2]. Sample for testing product suitable technical characteristics of which completely correspond to the accompanying normative and design documentation submitted to the testing center (laboratory).

The product fragment is a part of the product reflecting its basic design features and soundproof characteristics. Frequency characteristic of airborne sound insulation  $R(f)$ , dB - the value of insulation of

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air noise R in each of the one-third octave bands with frequencies Hz lying in the range of 100-150 Hz (in graphical or tabular form)[2,7,9,10].

Equivalent area of sound absorption A, m<sup>2</sup> - surface area with a sound absorption coefficient equal to one, which would have the same ability to absorb sound, as well as all the combined surfaces of the enclosing structures of the test chamber.

### Methods of research

Determine the sound pressure level; one or more microphones should be used. Measurements should be made in all one-third octave bands with average geometric frequencies of 100-31 50 Hz. The averaging time in the frequency range 100-500 Hz should be at least four s, and in the range 630-31 50 Hz - not less than 2 s. The loudspeakers in the measurement rooms must create a diffuse sound field. They should be located in at least two places in the high-level measuring room - in the corners at a distance of at least 2 m from the test object. The measuring microphone in rooms of high (HL) and low (LL) levels must be consistently installed in at least six points (at each position of the loudspeaker at three

points). The measuring points must be at least 1 m away from the surface of the enclosing structures, from each other and from the loudspeakers. The results of measurements represented by a protocol in the form of a table or a diagram for frequencies.

Measurement points corresponding to the measurement values must be connect to a straight line. According to the abscissa, the frequency should show in logarithmic scale; the ordinate should indicate the sound isolation values in decibels. The interval between the average one-third octave frequencies should correspond to 5 mm, between the values of the ordinate axis 1 dB - 2 mm. When printing a protocol, other scales of the diagram allowed.

Design points in production and auxiliary premises of industrial enterprises are chosen at workplaces and (or) in zones of permanent residence of people at a height of 1.5 m from the floor.

Evaluation of sound insulation by an auxiliary partition. When testing translucent enclosing structures, the insulation of air noise by the partition between HL and LL should be at all frequencies 6 dB higher than the value of the insulation value of noise transmitted directly through the test sample.

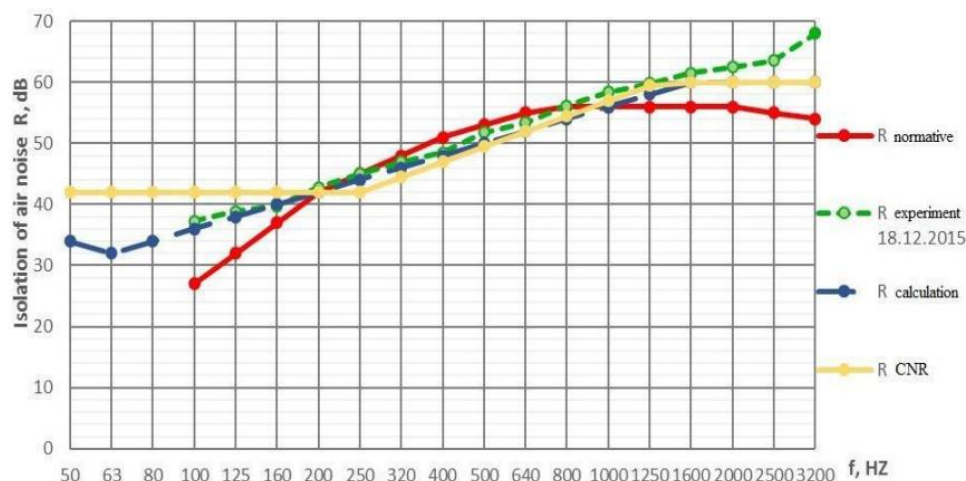


Fig.1. Frequency characteristics of sound insulation of air noise of silicate blocks with dimensions of 498x250x498 mm and density of 1800 kg / m<sup>3</sup>

Determine insulation of air noise by a partition, of silicate blocks with dimensions of 498x250x498 mm and density of 1800 kg / m<sup>3</sup> is added to the test sample installed in it, so that it is flush with the partition. Slots between the additional layer and the test specimen should filled with sound absorbing material.

Perform measurements of noise insulation R<sub>i</sub> if there is only a test sample in the opening of the auxiliary partition. Then, measurements are made of the insulation of air noise R<sub>IT</sub> after installation of an additional soundproof layer on the sample.

### Results

When testing light-transparent enclosing structures, the test specimen installed in the test opening or inside the auxiliary partition. Slots between the auxiliary partition and the specimen to install in it must sealed with an elastic sealing material or special putty. Putty applied must meet requirements. The compliance of putty with these requirements achieved by conducting special tests.

### Conclusion

Panel made of silicate block with a density of 1800 kg / m<sup>3</sup>, a modulus of elasticity of 7-104 N /

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mm<sup>2</sup>, a thickness of 10 ± 0.3 mm and a size of 498x250x498mm is mounted in the test opening between the HL and LL. All slots filled with putty of the chosen type and measurements made to determine the value of the noise reduction index (sound insulation) in one-third octave bands in the frequency range 1600-3150 Hz. First measurement should be performed no later than 1 hour after the end of installation.

The measurement results must meet the following requirements:

- 1600 Hz ... R = (62.1 + 1.6) dB;
- 2000 Hz ... R = (64, b ± 1.2) dB;
- 2500 Hz ... R = (66.1 + 1.1) dB;
- 3150 Hz ... R = (67.7 + 1.8) dB.

Repeated measurement should be carried out after 24 hours. The deviation of the results should not exceed 0.5 dB.

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## MODERN COMPLEX OF ECHOGRAPHIC DIAGNOSIS OF FOCAL THYROID FORMATIONS

**Abstract:** The article presents the results of a study of 146 patients with focal thyroid formations. Based on the modern complex ultrasound examination of patients, the main specific diagnostic criteria were determined, the use of which allows the detection of echographic signs of thyroid cancer in the early stages. It found that a comprehensive ultrasound study, including B-mode, EDC, CDK, spectral Doppler and elastography, improves the quality of the study and the early detection of thyroid cancer.

**Key words:** focal formations, thyroid gland, comprehensive ultrasound examination.

**Language:** English

**Citation:** Khushnazarov, K. K., & Mamadalieva, Y. M. (2019). Modern complex of echographic diagnosis of focal thyroid formations. *ISJ Theoretical & Applied Science*, 12 (80), 124-129.

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**Scopus ASCC:** 2730.

### Introduction

In endocrine pathology, thyroid diseases take the second place in their prevalence. Focal formations found in 30-50% of people in the population, most of these formations represented by nodular proliferating colloid goiter. Up to 5-10% of focal formations represented by various types of carcinomas, 90% of which are highly differentiated follicular cancer [2, 9, 14]. In this regard, today the issues of early and differential diagnosis of nodular formations of the thyroid gland are relevant. A special place at the present stage held by the high information content of ultrasound imaging, which allows the use of ultrasound imaging to diagnose diseases in the early and even preclinical stages of the disease. [1,11,14,22,24]. Leading specialists endocrinologists noted the versatility and high information content of ultrasound at all stages of diagnosis and treatment, as well as after surgery or during follow-up [3,14,22,23].

Increases in risk factors, a high probability of malignant changes in benign formations, a tendency

to the occurrence of latent forms of cancer, and the peculiarity in the mild severity and no specificity of the clinical symptoms of the tumor attach particular importance to the problem. Unfortunately, even when using the latest ultrasound technologies in attempts to classify echographic semiotics and systematize the data when differentiating ultrasound signs of thyroid cancer and morphological forms of cancer, the question is still considered open, and the problem is relevant [1,9,14,22]. The introduction of innovative technologies opens up new prospects in the refinement diagnostics of nodular formations [2,3,5,24]. A new direction in ultrasound diagnostics is elastography - a non-invasive method of ultrasound diagnostics, with which it is possible to study such physical properties of tissue as rigidity. Modern elastography represented by two main techniques: compression and shear wave elastography. However, the role and place of high-tech sonography is not well understood [1,11,22,23,24].

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**Aim of research.** Improving the differential and clarifying diagnostics of focal thyroid formations with multipara metric ultrasound.

### Methods of research

Under the supervision were 146 patients referred for ultrasound to clarify the nature of nodular formations in the thyroid gland. The age of patients ranged from 18 to 72 years. Among the examined patients, men and women were 55 (38%) and 91 (62%), respectively.

Ultrasound was performed on modern ultrasound machines HI VISION Preirus (Hitachi Medical Corporation, Japan), Samsung-Medison WS 80 AC ELITE (South Korea), Logiq S8 XD clear GE Healthcare (USA), MINDRAY DS-8 (China) and " MINDRAY DS-70 "(China) with a frequency range of the linear sensor 5-13 MHz, providing real-time visualization of the gray scale, obtaining the characteristics of Doppler studies, elastography. Ultrasound examination was performed according to the standard method with seroscale examination, Doppler ultrasound (CDC, EDC, spectral Doppler), as well as the elastography mode (compression and shear wave elastography), with which the stiffness of focal thyroid gland formations was assessed.

Patients were divided into 4 groups:

Group 1 (n = 38) included patients whose examination revealed a lesion with a diameter of up to 10 mm. Patients in this group were under follow-up for 5 to 10 months.

Group 2 (n = 38) consisted of patients whose examination revealed nodes with a diameter of more than 10 mm, and morphologically the analysis did not indicate a malignant tumor.

Group 3 (n = 35) underwent surgical intervention of nodular formations, and the results of a morphological study gave a dubious result.

The 4th group (n = 35) consisted of patients who were operated on with subsequent verification of the malignancy of the process in the thyroid gland.

At the same time, papillary cancer was detected in 28 (19.1%), follicular cancer - in 4 (3.2%), medullary cancer in 2 (1.6%) and the primary lesion with lesions of regional lymph nodes in 1 (0.1 %) of the patient.

### Results.

Research results and discussion. In 76 (52%) examined individuals, single thyroid nodules were detected, in 70 (48%), multiple nodular formations were revealed.

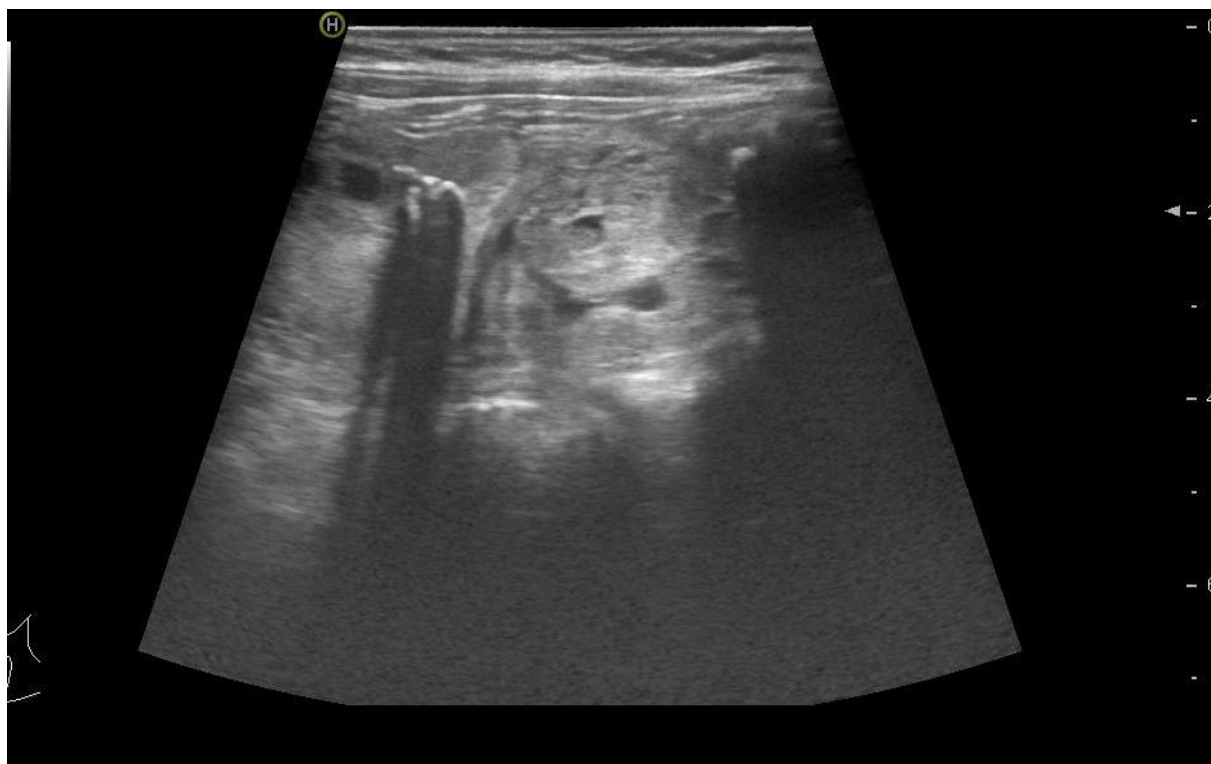
The defeat of the thyroid gland mainly observed in 67 (55%) women of reproductive age. The largest group, of the surveyed (n = 54) 45%, were various variants of diffuse-nodular goiter.

Of the 146 patients, 101 (69.2%) had a change in size, toward an enlarged gland, uneven contours were observed in 54 (36.8%) patients, uneven echogenicity in 77 (52.5%), and the "halo" rim 101 (69.5%), an increase in thyroid gland in 112 (77.3%), calcifications in 48 (33.1%), hypervascularization in 127 (87%) patients. Thyroid tissue of elasticity indices were above 163 kPa (normal 6.7-19.8 kPa.) In 104 (86.6%) patients from groups 3 and 4. When conducting shear wave elastography, the Ewing modulus in malignant tumors was 125.9-158.78 kPa. According to compression elastography, they characterized by blue staining with insignificant green areas (4 types of color maps) and a high stiffness coefficient.

The characteristic ultrasonic signs of the most common papillary cancer (n = 28) of the thyroid gland were: irregular shape, uneven borders, fuzzy contours, decreased echogenicity, heterogeneity of the echostructure of formation; preservation of the thyroid capsule; node hypervascularity, asymmetry, randomness, disorganization of the vascular pattern in its structure, pathological transformation of blood vessels. (Fig.1)

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**Fig. 1. Thyroid cancer. Fuzzy contours of education. Two-dimensional study in serscale mode**

Follicular cancer (n = 4) of the thyroid gland more often than other forms was characterized by hyperechoic and medium echogenicity nodes, the structure of which was also more often heterogeneous;

less often than with other forms, calcifications occurred, more often - the rim of delimitation (Fig.2). Avascular and hypovascular forms were also more common.



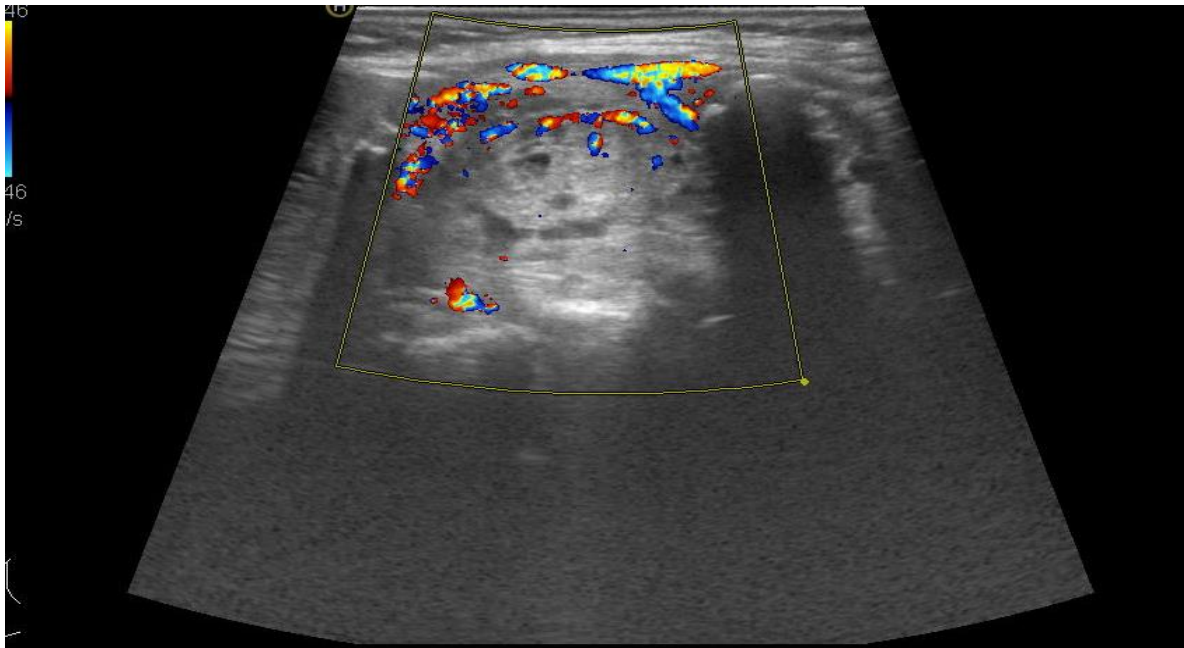
**Fig. 2. Thyroid cancer. Irregular shape, uneven knot borders, small calcifications. Two-dimensional study in serscale mode**

Medullary cancer (n = 2) of the thyroid gland, in contrast to other forms, was often defined as an oval-shaped hyperechoic mass; more often, in comparison

with other forms, the echostructure of the nodes was heterogeneous. Vascularization has always been high (Figure 3).

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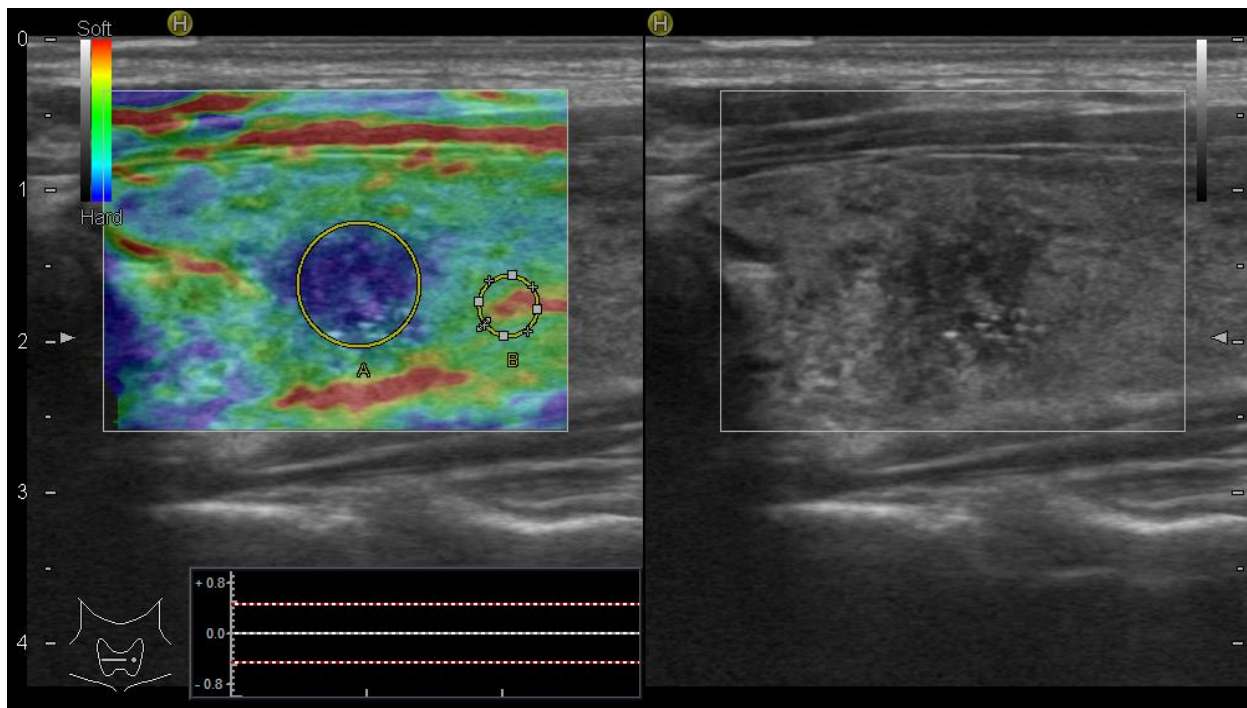
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**Fig. 3. Thyroid cancer. Hypervascularization of the node. In color Doppler mapping mode**

When conducting elastography, the normative range was  $18.4 \pm 7.8$  kPa. In benign formations, the arithmetic mean stiffness was  $47.5 \pm 10$  kPa, which was significantly higher than the norm: ( $p < 0.05$ ).

Hypoechoic focal lesions during elastography, 6-15 mm in size, characterized by uniform staining in blue (Figure 4).



**Fig. 4. Thyroid cancer. With compression elastography**

When focal formations of mixed echogenicity with sizes exceeding 10 mm detected, as well as isoechoic formations with a hypoechoic rim around the periphery, the cytological and histological findings were follicular adenomas without proliferation. The formations had a mosaic staining

structure with a predominance of areas of blue and several more rigid areas of green. In the 3rd group, a mixed type of mapping was revealed on the elastograms, with the predominance of hard sections stained in blue on the elastograms. The stiffness was  $169.2 \pm 24.3$  kPa, which was significantly higher than



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normal, and significantly higher stiffness indicators than in the 2nd group ( $p < 0.01$ ).

### Conclusion

Consequently, modern integrated ultrasound diagnostics of focal thyroid formations using elastography significantly increases the possibilities of early and accurate diagnosis of focal thyroid formations. In a modern ultrasound study of focal thyroid diseases, the most informative ultrasound criterion was the unevenness of the contours, an increase in volume, the presence of calcifications,

hyperactive vascularization and a decrease in the elasticity of the affected tissue, and an increase in the stiffness index. Elastography is a key step in modern integrated ultrasound examination of focal thyroid lesions and contributes to a more rational definition of zones for TAPB. Only modern integrated ultrasound examination, including B-mode, EDC, CDK, spectral Doppler and elastography, taking into account the information significance of the parameters, helps to improve the quality of the study, early detection of thyroid cancer and allows you to optimize the tactics of managing these patients.

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## APPLICATION OF MODERN ULTRASOUND TECHNOLOGIES AT DIAGNOSIS FOCAL FORMATIONS OF GLAND DISEASES

**Abstract:** The article presents the results of the diagnosis and treatment of 134 patients with focal thyroid diseases. Based on the modern ultrasound examination of patients, the main specific diagnostic criteria are determined, the use of which allows identifying focal thyroid diseases in the early stages.

**Key words:** thyroid tumors, modern ultrasound diagnostics, elastography.

**Language:** English

**Citation:** Khushnazarov, K. K. (2019). Application of modern ultrasound technologies at diagnosis focal formations of gland diseases. *ISJ Theoretical & Applied Science*, 12 (80), 130-135.

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### Introduction

Thyroid pathology occurs in 8-18% of the adult population of the globe, that is, approximately 1.5 billion people [2]. In endocrine pathology, thyroid diseases take the second place in their prevalence. Malignant tumors of the thyroid gland (thyroid gland) account for 1-3% in the structure of oncological pathology [16]. Significant prevalence of thyroid cancer (thyroid cancer), an increase in the incidence due to an increase in risk factors, a high probability of malignant transformation of benign tumors, a tendency to the appearance of latent and latent forms of cancer. Complexity of diagnosis in the early stages when the clinical symptoms of the tumor are weak and non-specific, give particular the severity and significance of the problem. With the advent of expert class of ultrasound equipment, the opportunities for early diagnosis of thyroid cancer have expanded. Ultrasound studies are a promising method for detecting thyroid cancer in the early stages, without clinical manifestations. Despite the work in which attempts were made to systematize echographic semiotics [1, 2, 10, 12], data on the use of the latest ultrasound technologies [2, 9, 10, 13], a complex of beam imaging methods [2, 7], to differentiate ultrasonic morphological features forms of thyroid cancer [2,10,14,15,22], to date, the issue is considered open, and the problem is relevant. The descriptive

components of the research protocols, approaches to a comprehensive analysis of the data obtained, the stages of forming conclusions in thyroid cancer are also different [2, 17]. Currently, research in B-mode, color and energy Doppler mapping is of the utmost importance in the ultrasound diagnosis of thyroid diseases. Differential diagnosis of thyroid disease based on an assessment of the size of the gland, its echogenicity, echostructure and information about regional lymph nodes. Nodular formations in the gland are differentiated by localization, size, shape, boundaries, contours, echogenicity, internal echostructure, capsule state and vascularization of the gland [6,10,22]. According to numerous domestic and foreign publications, the sensitivity and specificity of the gray scale technique in the differential diagnosis of malignant and benign processes ranges from 55–70% [18,13,21]. Modern ultrasound diagnostics, consisting of ultrasound imaging and Doppler ultrasound, supplemented by a third technology - elastography. Shear wave elastography is a method that allows a quantitative assessment of tissue elasticity, which eliminates the possibility of subjective interpretation of data [2,12,17]. Physically, a shear wave is an elastic transverse wave (ultrasonic wave - longitudinal), the displacement of the particles of the medium is perpendicular to the direction of the wave. The principle of operation of this technique

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based on the generation of a shear wave in tissues caused by an ultrasonic pulse and the subsequent assessment of its progression speed. In this case, the ultrasonic sensor itself also carries out the visualization of the passage of the shear wave. Numerical values of the elasticity index given in m / s or kPa, depending on the type of shear wave elastography, therefore the method called "quantitative ultrasound elastography or elastometry". It is reported in the literature that two methods are used for shear wave elastography: point and two-dimensional shear wave elastography [11,12,17,20,]. Point shear wave elastography as a way to obtain shear waves provides quantitative information about tissue elasticity, but only at a given depth in the focus area. To obtain shear waves at a different depth, it is necessary to shift the focus zone closer or further from the sensor and create the necessary pressure in the new powerful ultrasonic pulse to receive shear waves and measure their characteristics. The stiffness of the fabric depicted in color: blue for softer, and red for stiffer. Following the study of color elastograms, elastometry performed using one or more test volumes that are freely movable and resizable. Digital data can be presented either as indicators of shear wave velocity (in m / s) or elasticity (kPa). Thus, this technology allows to quantitatively reflect the elasticity of the thyroid gland. A significant difference between this technology and the previous one (shear wave spot elastography) is that color mapping greatly facilitates elastometry, giving the doctor the opportunity to choose only high-quality, artifact-free elastograms [3,12,13,16,17]. Most works on the use of elastography are devoted to studies of the pathology of the mammary glands, prostate gland, and liver [5,7,12,17,21,22,23].

### Methods of research

Ultrasound examinations were performed for 134 patients with suspected focal thyroid formation using a standard technique using modern ultrasound technology. The age of patients in the study ranged from 18 to 74 years. Among the examined patients, men and women were 48 (36%) and 86 (64%),

respectively. Modern ultrasound examination of the thyroid gland was performed on modern ultrasound devices Logiq S8 XD clear GE Healthcare (USA), Samsung-Medison WS80 AC ELITE (South Korea), "MINDRAY DS-70" (China) and HI VISION Preirus (Hitachi Medical Corporation, Japan using linear multi-frequency sensors (frequency range-5-13.0 MHz). Modern sonography was performed using the following modes: gray scale, tissue harmonic, pulse wave Doppler, color and energy Doppler mapping, and elastography (compression and shift wave), with the help of which the stiffness of focal thyroid gland formations was evaluated.

### Results.

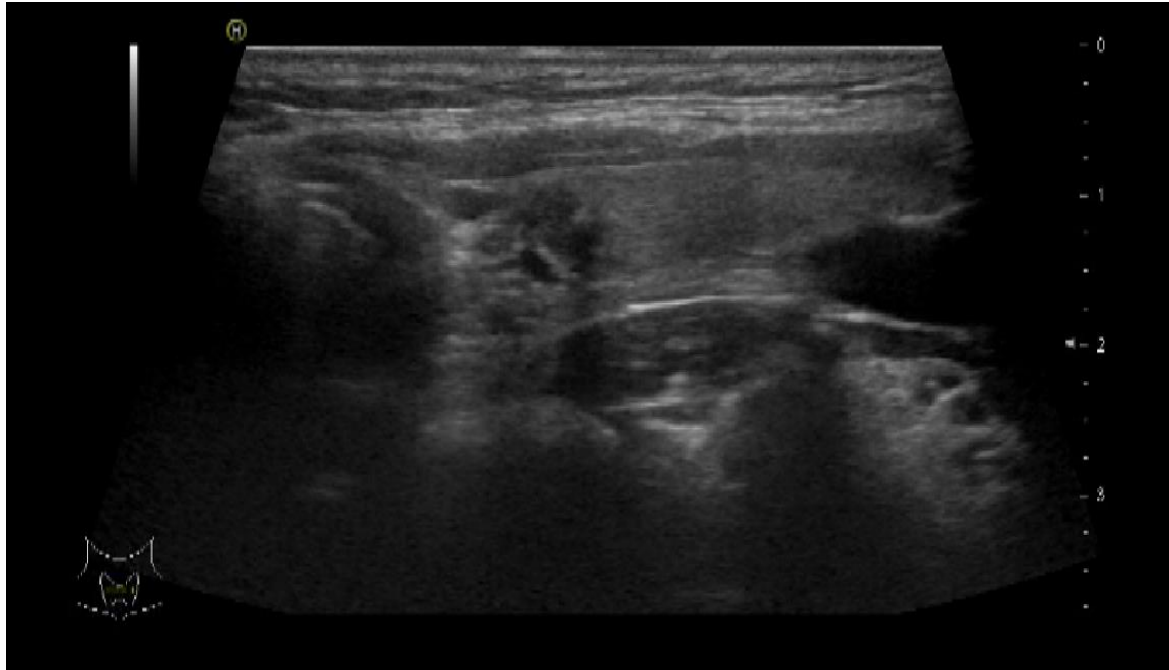
The malignant nature of focal thyroid changes is indicated by the following characteristics:

- irregular shape (Fig. 1) (75.9%);
- uneven borders (84.3%);
- fuzzy contours (Fig. 2) (73.4%);
- hypoechogenicity (74.7%);
- heterogeneity of the echostructure (Fig. 2.3) (88.9%);
- presence of hyperechoic inclusions (Fig. 2) (34.4%), rare in benign thyroid formations (in 18.9%), the inclusions were distributed in the form of microcalcifications (up to 2-3 mm in size, without an acoustic shadow and with an acoustic shadow);
- hypervascularity of focal changes (87.3%), uneven distribution of vessels in the structure of the node (87.9%), randomness, asymmetry, disorganization of the vascular pattern, pathological transformation of vessels (86.5%) (Fig. 3-4-5).
- increase in tissue density during compression elastography - tissues are dyed blue (Fig. 6).

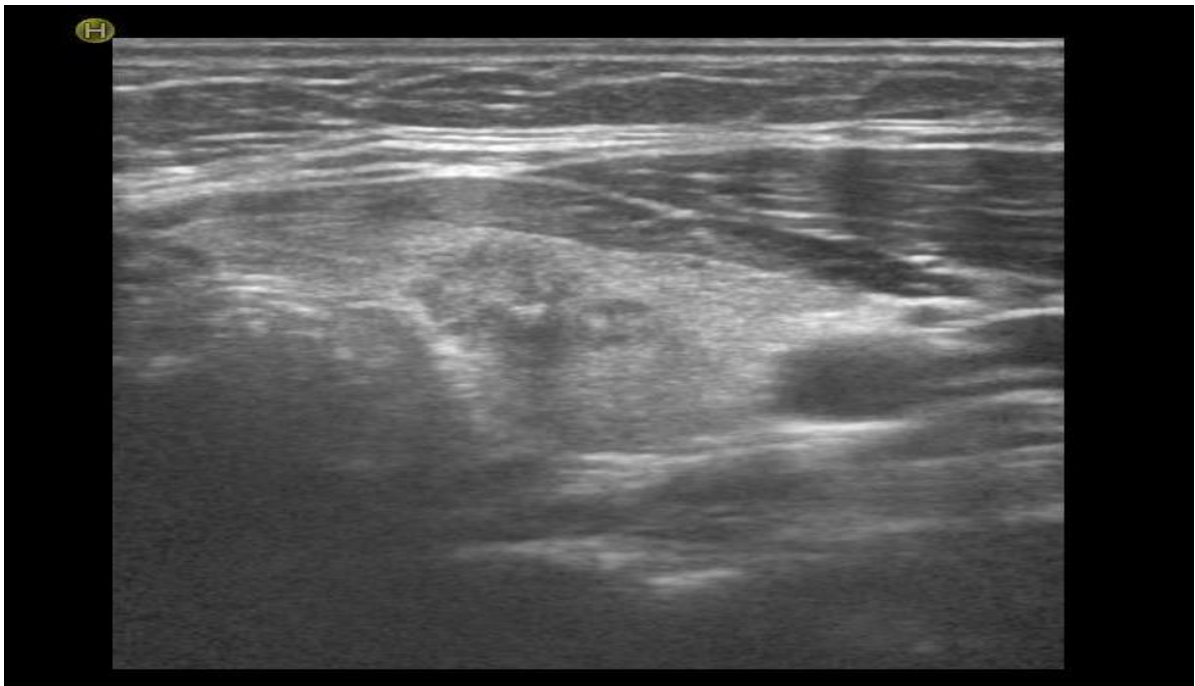
The gray scale mode was the main technique for visualization of nodular malignant thyroid formations. The tissue harmonic method in 29.6% of cases (often with large (more than 2 cm) sizes of education) made it possible to improve the visualization of the node, to assess the presence and localization of calcifications, but its value in the differential diagnosis of thyroid cancer is small.

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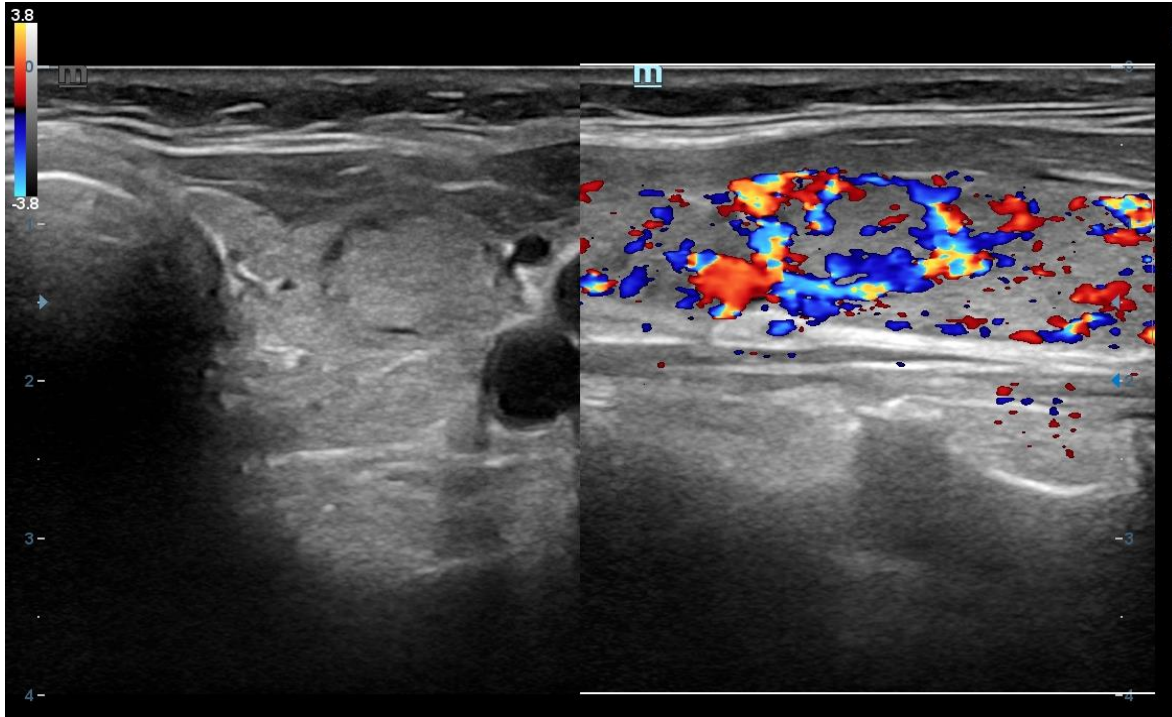
**Fig. 1. Thyroid cancer. Irregular shape, irregular knot borders. Two-dimensional study in seroscale mode**



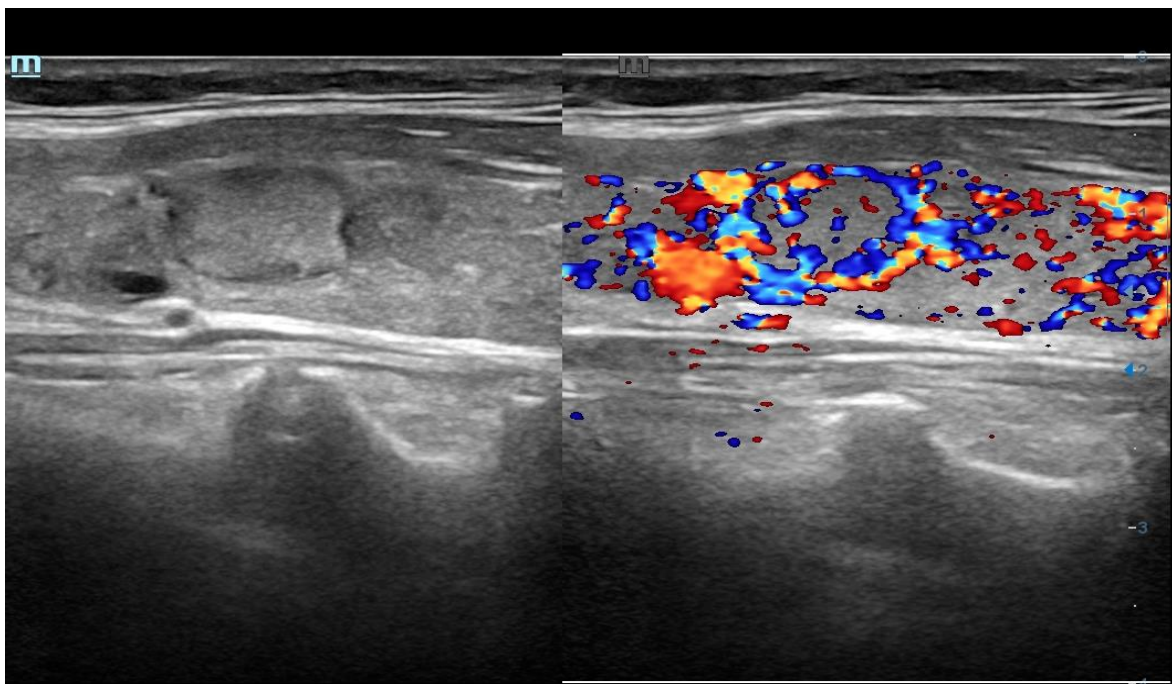
**Fig. 2. Thyroid cancer. Fuzzy contours of education. Two-dimensional study in seroscale mode**

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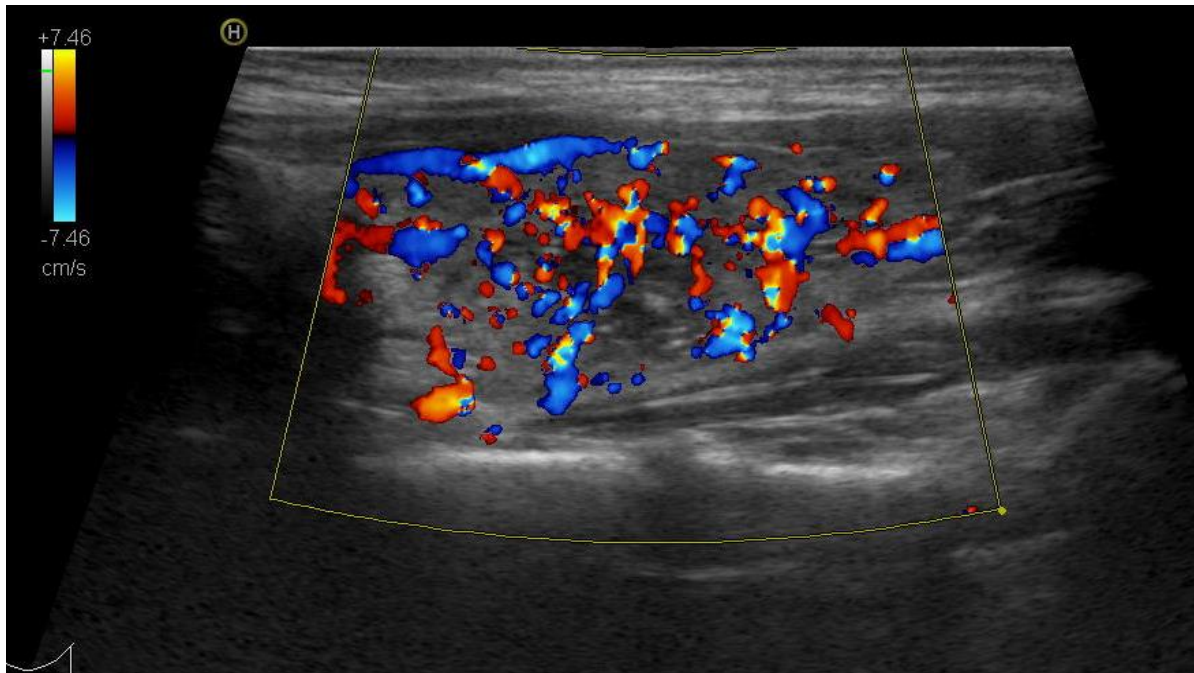
**Fig. 3. Nodular thyroid gland formation with enhanced peri and intranodular vascularization in color Doppler mapping**



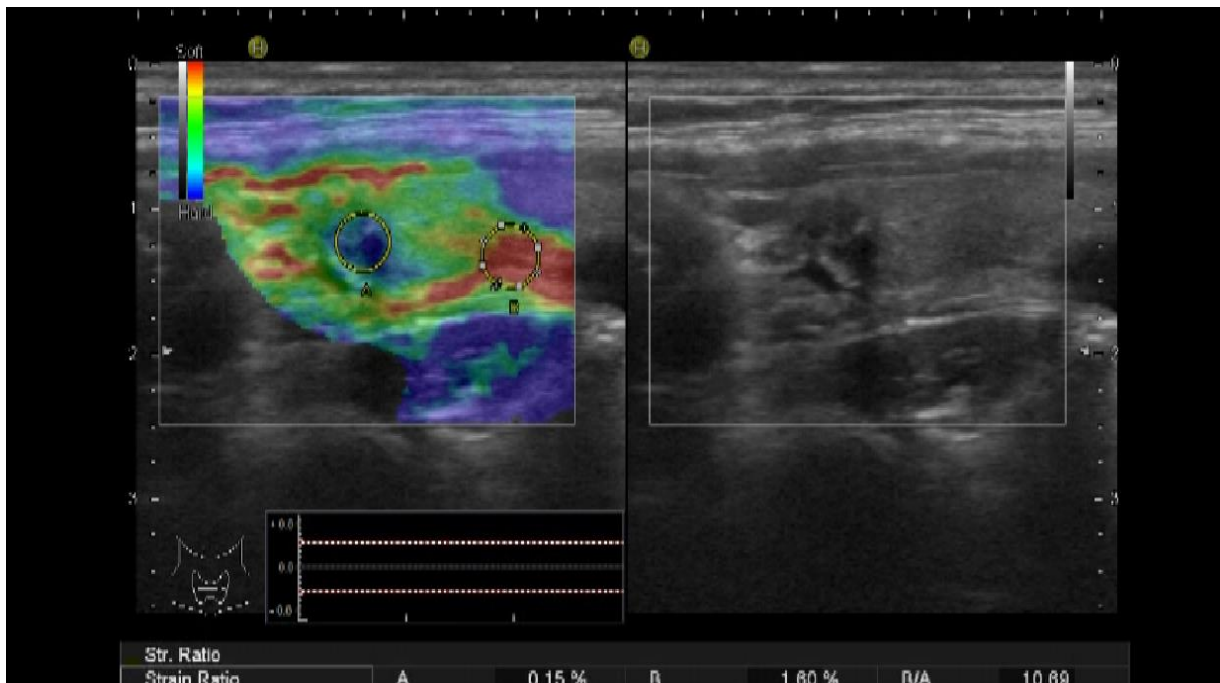
**Fig. 4. Multiple thyroid glands with enhanced peri and intranodular vascularization in color Doppler mapping mode**

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**Fig. 5. Thyroid cancer with enhanced intranodular vascularization in color Doppler mapping**



**Fig. 6. Thyroid cancer. With compression elastography**

**Conclusion**

Consequently, modern ultrasound examination is an affordable, highly informative method for early and precise diagnosis of focal thyroid formation and damage to the lymph nodes of the neck in the presence of regional metastasis. The sensitivity of modern ultrasound imaging using a complex of techniques and

technologies in the diagnosis of focal thyroid formation was 91.9%, specificity 78.6%, diagnostic accuracy 92.7%. The sensitivity of modern ultrasound in determining metastasis to the lymph nodes of the neck is 84.2%, specificity is 86.7%, and diagnostic accuracy is 83.9%.

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## GENERATION OF TERAHERTZ FIELD BY NONLINEAR INTERACTION BETWEEN LASER BEAM AND PLASMA

**Abstract:** The study is a theoretical and simulator study of nonlinear ponderomotive force interaction between RCP laser beam  $TEM_{00}$  and collisionless longitudinal magneto plasma in paraxial region and nonparaxial region. The study includes two important phenomena resulted from the above interaction, which are self-focusing of laser beam and THz radiation generation. Also discussed the behavior of these phenomena at different values of initial laser beam radius and initial plasma density. The aim of study reaches to the physical and mathematical diversion for the equation of self-focusing in paraxial and nonparaxial regions. and diverting the equation of THz radiation propagation through the magneto plasma. The self-focusing in both regions (paraxial and nonparaxial) becomes faster and stronger when the initial laser beam radius is increased. The self-focusing in both regions (paraxial and nonparaxial) becomes faster and stronger when the initial Plasma frequency is increased stability is proportional with initial radius beam in both, paraxial and nonparaxial regions without apparent high increase in its amplitude. The stability of THz is higher in nonparaxial than in paraxial region. THz stability is reversely proportional with initial plasma frequency in both, paraxial and Nonparaxial regions without apparent high increase in its amplitude. In this study, Nd:YAB with wavelength of  $\lambda = 1.06 \mu\text{m}$ , intensity of  $10^{14} \text{ W/cm}^2$  and pulsed laser is exerted on hydrogen plasma to interact nonlinearity. The following set of parameters has been used in the numerical calculations: Laser intensity  $10^{14} \text{ W/cm}^2$ . Initial beam radius  $r_0 = (2.4, 2.6, 2.8) \mu\text{m}$ . Laser wavelength  $\lambda = 1.06 \mu\text{m}$ . Laser frequency.  $\omega_0 = 1.778 \times 10^{15} \text{ rad/s}$ . Initial plasma frequency.  $\omega_1 = (0.8, 0.84, 0.88\omega_0) \text{ rad/s}$ . Applied magnetic field  $B_0 = 60 \text{ KG}$

**Key words:** Laser Beam; Magnetized Plasma; Rippled Plasma; Terahertz Generation; ponderomotive force; Nonparaxial region; Paraxial region; self-focusing.

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### Introduction

Laser and plasma interaction is one of the important phenomena that had the world wide interest of most researchers subject, when a high power electromagnetic wave enters a plasma, a number of nonlinear phenomena can happen; so this interaction is considered a source for many important phenomena are used in technology, such as filamentation or self-focusing, generation of terahertz radiation (THz R), (which will be the research focus of this study). [2,3],

stimulated Raman scattering (SRS) [4], stimulated Brillouin scattering (SBS) [5], second harmonic generation (SHG) [10,11], plasma-based acceleration (PBA), laser driven fusion (LDF), and x-ray lasers (XRL) [6,7]. THz radiation depends on self-focusing because we need high intensity laser to generate THz, which will be provided by self-focusing That's why, we will study both phenomena together. The development of high-power laser led to discover and develop the nonlinear interaction, and the first step of

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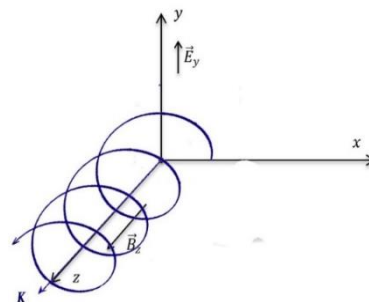
ISRA (India)	= 4.971	SIS (USA)	= 0.912	ICV (Poland)	= 6.630
ISI (Dubai, UAE)	= 0.829	PIHHI (Russia)	= 0.126	PIF (India)	= 1.940
GIF (Australia)	= 0.564	ESJI (KZ)	= 8.716	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 5.667	OAJI (USA)	= 0.350

this development was achieved by *G. Mourou and his co-workers in 1980s*, when they successfully used chirp pulse amplification (CPA) technique that produces picoseconds, terawatt laser pulses [8,9]. For instance, table-top lasers, when it's focused to a  $10\mu\text{m}$  spot size, can produce high intensity of the order  $10^{21}\text{W}/\text{cm}^2$  at  $1.06\mu\text{m}$  wavelength [10]. Recently, the production of monochromatic electromagnetic radiation with high intensity, covering all the necessary spectrum, is considered as one of the most significant challenges, THz radiation is one of them. One Terahertz One million-million times per second. "Tera- comes" from a Greek term means 'marvel' or 'monster,' with the sense that this is a huge and marvelous quantity. At the present time, (THz) physics has become the world wide researchers' special interest, that's in turn has been widely used in several applications like security identification [12,13], medical imaging [14,15], and the domain spectroscopy [9-11]. THz radiation intensity is proportional with laser intensity according to laser and plasma interaction that provides us with self-focusing. Then, the intensity of laser rises up to hundred times; so that, laser plasma interaction is considered an important source for generating THz radiation with high intensity and high conversion efficiency. The first direct observation of THz frequency by laser beam has been reported by Hamster et al. [19]. Laser pulses with a power of  $10^{12}$  W were focused on both gas and solids targets. First successful operation to produced THz radiation, observed from plasma target, was driven by ponderomotive force. Laser and plasma interaction are considered as source of a high intensity laser beam wave that has compatible phase with the electron phase in first Bohr orbit of hydrogen atom. In

other words, the rippled plasma wave. The condition of THz generation is the difference between the frequency of laser and plasma in term of THz and the phase between them equals to zero [21]. As a result of the nonlinear interaction, an excitation of electrons happens that leads to two regions in the nonlinear regime in collisionless plasma high and low electrons intensity. The main rule that describe the interaction; depended on laser intensity in term of  $10^{12}$  - $10^{14}$  the ponderomotive phenomenon considers,  $10^{14} \leq$  relativistic mass considers. In this study, we will take the ponderomotive force influence to generate THz radiation which represents a result of laser and plasma interaction in presenting longitudinal magnetic field. Self-focusing phenomena of (RCP) laser beam propagating through magneto-plasma at nonparaxial region & paraxial region is studied. The beam gets focused when the initial power of the laser beam is greater than its critical power. When the matching phase conditions are satisfied between the wave of ripple density plasma and electromagnetic laser wave and the frequency in THz range. Then, the result of beam focusing couples with the pre-existing density ripple of plasma will produce a nonlinear current driving the THz radiation.

### Nonlinear Dielectric Constants in present of Longitudinal Magnetic Field:

Consider the propagation of a circularly polarized laser beam of angular frequency  $\omega_0$  in a homogeneous magneto plasma with electronic density  $n_0$ , along the direction of static magnetic field  $\vec{B}_0 \hat{z}$ . **Figure (1).**



**Figure (1) Draw Geometry of right circularly polarized laser beam mode of longitudinal magnetic field [1].**

The electric field  $\vec{E}_{0+}$  wave equation of the right circular polarized laser beam (RCP) propagating along  $z$  – direction through the magneto plasma can be written as follows [2]:

$$\vec{E}_{0+} = \vec{A}_{0+}(x, y, z) \exp i(\omega_0 t - k_{0+} z) \quad (1)$$

where  $\vec{A}_{0+} = \vec{E}_x + i\vec{E}_y$  represents the electric field amplitude of (RCP) laser beam,  $\omega_0$  and  $k_{0+}$  are the angular n frequency and the wave vector respectively,  $\epsilon_{0+}$  represents the dielectric constant in linear regime

it is related with  $k_{0+}^2 = \frac{\epsilon_{0+}\omega_0^2}{c^2}$ .  $c$  is the light velocity in the vacuum. The electron general motion equation in electromagnetic field is:

$$m_e \frac{d}{dt} \vec{v} = -e\vec{E}_{0+} - \frac{e}{c}(\vec{v} \times \vec{B}_0), \quad (2)$$

Where  $\vec{v}$  the oscillating velocity transmit by laser beam.  $e$  and  $m_e$  represent the charge and mass of electron respectively.

Where  $\omega_{op} = \left(\frac{4\pi n_0 e^2}{m_0}\right)^{\frac{1}{2}}$  is the plasma frequency.

We will use the laser beam fundamental mode (TEM<sub>00</sub>) which is Gaussian profile intensity distribution.

laser beam (TEM<sub>00</sub>) intensity will redistribute electronic plasma density  $n_0$  to become  $n_{e+}$  which will stimulate the ponderomotive force [3]:

$$n_{e+} = n_0 \exp(-\alpha_+ A_{0+} A_{0+}^*) \quad (3)$$

Where  $\alpha_+$  is the ponderomotive force nonlinearity parameter represent by the equation [4].

$$\alpha_+ = \frac{e^2(1-\frac{\omega_c}{\omega_0})}{16k_B m_e \omega_0^2 T_0 (1-\frac{\omega_c}{\omega_0})^2} \quad (4)$$

Where  $k_B$  and  $T_0$  are the Boltzmann constant and equilibrium temperature of the plasma.

Electronic plasma density will be redistributed frequently leading to adjust the dielectric constant to become effective dielectric constant which is represented by the following equation [5]

$$\epsilon_+ = \epsilon_{xx} - i\epsilon_{xy} = \epsilon_{0+} + \epsilon_{2+}(A_{0+} A_{0+}^*) \quad (5)$$

The equation above represents the general formula of the dielectric constant of the magneto-plasma in presence longitudinal magnetic field,  $\epsilon_{0+}$  represents the liner part which will take the following formula [6]

$$\epsilon_{0+} = 1 - \frac{\left(\frac{\omega_{pe}}{\omega_0}\right)^2}{\left(1 - \frac{\omega_{ce}}{\omega_0}\right)} \quad (6)$$

$\epsilon_{2+}(A_{0+} A_{0+}^*)$  represents the nonlinear part, due to high intensity laser beam which is represented by the following equation [6]: -

$$\epsilon_{2+}(A_{0+} A_{0+}^*) = \frac{\left(\frac{\omega_p}{\omega_0}\right)^2}{\left(1 - \frac{\omega_c}{\omega_0}\right)} (1 - \exp(-\alpha_+ A_{0+} A_{0+}^*)) \quad (7)$$

At low laser intensity the nonlinear part, of the effective dielectric constant  $\epsilon_{2+}$  will approach to zero, because of  $\alpha_+ A_{0+} A_{0+}^*$  (the ponderomotive force) will approach to zero, the Influence of dielectric constant  $\epsilon_+$  will approach to linear dielectric constant  $\epsilon_{0+}$  [7].

### Ponderomotive force and Self-Focusing of (RCP) Laser Beam in Nonparaxial region:

When high intensity laser TEM<sub>00</sub> crosses plasma, the beam will propagate and interact with plasma into two regions according to mode of wavefront. These two regions are called Nonparaxial and paraxial. The paraxial region is a special case of the Nonparaxial, so the Nonparaxial region will be the general case for laser plasma interaction. As we said that the dielectric constant  $\epsilon_{0+}$  will be modified to the effective dielectric constant  $\epsilon_{+eff}$  as a result of electronic plasma density modified in this part. We will derive the general wave equation of RCP laser beam propagates through magnetized plasma by using  $\epsilon_{+eff}$  to understand the nonlinear behavior of laser beam in Nonparaxial region. [8].

$$\epsilon_{+eff} = \epsilon_{0+} + \epsilon_{2+} A_{0+} A_{0+}^* = 1 - \frac{\left(\frac{\omega_{pe}}{\omega_0}\right)^2}{\left(1 - \frac{\omega_{ce}}{\omega_0}\right)} +$$

$$\frac{\left(\frac{\omega_{pe}}{\omega_0}\right)^2}{\left(1 - \frac{\omega_{ce}}{\omega_0}\right)} \left(1 - e^{-\alpha_+ A_{0+} A_{0+}^*}\right) \quad (8)$$

The propagation of RCP laser beam inside magnetized plasma is governed by the general wave equation as the following:

$$\nabla^2 \vec{E}_{0+} - \nabla(\vec{\nabla} \cdot \vec{E}_{0+}) + \frac{\omega_0^2}{c^2} \epsilon_+ \vec{E}_{0+} = 0 \quad (9)$$

where  $\vec{E}_{0+} = \vec{A}_{0+}(x, y, z) \exp i(\omega_0 t - k_{0+} z)$  The electric field of the right circular polarized laser beam (RCP) propagating along  $z$  - direction through the magneto plasma [8].

And  $\vec{A}_{0+} = \vec{E}_x + i\vec{E}_y$  represents the electric field amplitude of (RCP) laser beam,  $\omega_0$  and  $k_{0+}$  are the angular n frequency and the wave vector respectively,  $\epsilon_{0+}$  represents the dielectric constant in linear regime it is related with  $k_{0+}^2 = \frac{\epsilon_{0+} \omega_0^2}{c^2}$ .  $c$  is the light velocity in the vacuum. Following Sodha et al. (1974b) method and using Eq. (8) so the general wave equation (9) can be written as [63].

$$\frac{\partial^2 A_{0+}}{\partial z^2} + \frac{1}{2} \left(1 + \frac{\epsilon_{0+}}{\epsilon_{0zz}}\right) \left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right) A_{0+} + \frac{\omega_0^2}{c^2} (\epsilon_{0+} + \epsilon_{2+} A_{0+} A_{0+}^*) A_{0+} = 0 \quad (10)$$

The sound dravite four RCP laser beam amplitude (TEM<sub>00</sub>),  $\left(\frac{\partial^2 A_{0+}}{\partial x^2}, \frac{\partial^2 A_{0+}}{\partial y^2}\right)$  have been neglected.

Presenting  $A_{0+} = A'_{0+} \exp i(\omega_0 t - k_{0+} z)$ , where  $A'_{0+} = A^0_{0+} \exp(ik_{0+} S_+)$ , is a complex amplitude,  $A^0_{0+}$  and  $S_+$  are a real function and the phase function of the laser beam through magnetized plasma respectively, therefore Eq.(10) can be written as [64].

$$2 \frac{\partial S_+}{\partial z} + \frac{1}{2} \left(1 + \frac{\epsilon_{0+}}{\epsilon_{0zz}}\right) \left(\frac{\partial S_+}{\partial x}\right)^2 - \frac{1}{2k_{0+}^2 A_{0+}^0} \left(1 + \frac{\epsilon_{0+}}{\epsilon_{0zz}}\right) \frac{\partial^2 A_{0+}^0}{\partial x^2} = \frac{\epsilon_{2+}}{\epsilon_{0+}} (A_{0+}^0)^2 \quad (11)$$

$$\frac{\partial (A_{0+}^0)^2}{\partial z} + \frac{1}{2} (A_{0+}^0)^2 \left(1 + \frac{\epsilon_{0+}}{\epsilon_{0zz}}\right) \frac{\partial^2 S_+}{\partial x^2} + \frac{1}{2} \left(1 + \frac{\epsilon_{0+}}{\epsilon_{0zz}}\right) \frac{\partial S_+}{\partial x} \frac{\partial (A_{0+}^0)^2}{\partial x} = 0 \quad (12)$$

The two above equations have been separated to real and imaginary parts. In Nonparaxial theory, the real function  $A_{0+}^0$  and the phase function  $S_+$  depend on the curvature of wavefront of the laser beam.

They are respectively represented as the follows [65].

$$A_{00+}^2 = \frac{E_{00+}^2}{f_{0+}^2} \left(1 + \frac{\alpha_{00} r^2}{r_0^2 f_{0+}^2} + \frac{\alpha_{02} r^4}{r^4 f_{0+}^4}\right) e^{\left(\frac{-r^2}{r_0^2 f_{0+}^2}\right)} \quad (13)$$

$$S_+ = \frac{S_{00}}{r_0^2} + \frac{S_{02} r^4}{r_0^4} \quad (14)$$

$$S_{00} = \frac{r^2}{\left(1 + \frac{\epsilon_{0+}}{\epsilon_{0zz}}\right) f_{0+}^2} \frac{\partial f_{0+}}{\partial z} \quad (15)$$

where  $f_{0+}$  is the beam width parameter so the dravite  $\frac{\partial f_{0+}}{\partial z}$  represents the variation spot size in other

word focusing and defocusing laser beam during its propagation inside plasma.  $\alpha_{00}$  represents spherical deformation coefficient of second order.  $\alpha_{02}$  represents spherical deformation coefficient of fourth order.  $\alpha_{00}, \alpha_{02}$  distinguish the Nonparaxial region contribution of the beam intensity.  $S_{00}$  represents the spherical curvature of the wavefront.  $S_{02}$  represents the deformation of wavefront from spherical shape.

Substitution equations (15) in (14) and use (14) & (13) in (11) & (12) and equating the coefficients of order  $r_0^2$  and  $r_0^4$  of the resulting equation, so the equations of beam width parameter  $f_{0+}$  and wavefront deformation from the spherical shape  $S_{02}$ . will be as follows:

$$\frac{d^2 f_{0+}}{dz^2} = \frac{1}{4} \left(1 + \frac{\varepsilon_{0+}}{\varepsilon_{0zz}}\right)^2 \frac{(1-2\alpha_{00}-3\alpha_{00}^2+8\alpha_{02})}{k_{0+}^2 r_0^4 f_{0+}^3} - \frac{(1-\varepsilon_{0+})}{2\varepsilon_{0+}} \left(1 + \frac{\varepsilon_{0+}}{\varepsilon_{0zz}}\right) \left(\alpha_+ E_{00}^2 e^{-\alpha_+ \frac{E_{00}^2}{f_{0+}^2}}\right) \frac{(1-\alpha_{00})}{r_0^2 f_{0+}^2} \quad (16)$$

We will rewrite the Eq. (16) in term of normalized propagation distance  $\zeta = z/k_{0+} r_0^2$  where  $k_{0+} r_0^2 = R_D$  which represents the diffraction length, To be more convenient for numerical programming.

$$\frac{d^2 f_{0+}}{d\zeta^2} = \frac{1}{4} \left(1 + \frac{\varepsilon_{0+}}{\varepsilon_{0zz}}\right)^2 \frac{(1-2\alpha_{00}-3\alpha_{00}^2+8\alpha_{02})}{f_{0+}^3} - \frac{(1-\varepsilon_{0+})}{2\varepsilon_{0+}} \left(1 + \frac{\varepsilon_{0+}}{\varepsilon_{0zz}}\right) \left(\alpha_+ E_{00}^2 e^{-\alpha_+ \frac{E_{00}^2}{f_{0+}^2}}\right) \frac{(1-\alpha_{00}) R_D k_{0+}}{r_0^2 f_{0+}^2} \quad (17)$$

$$\frac{\partial S_{02}}{\partial z} = \frac{(1-\alpha_{00}+\alpha_{02})(1-\varepsilon_{0+}) \left(\alpha_+ E_{00}^2 e^{-\alpha_+ \frac{E_{00}^2}{f_{0+}^2}}\right)}{2\varepsilon_{0+} f_{0+}^6} - \frac{1}{2} \left(1 + \frac{\varepsilon_{0+}}{\varepsilon_{0zz}}\right) \frac{(\alpha_{00}^2 - 7\alpha_{00}\alpha_{02} + \alpha_{00}^3 - 2\alpha_{02})}{2k_{0+}^2 r_0^2 f_{0+}^6} - \frac{4S_{02}}{f_{0+}} \frac{\partial f_{0+}}{\partial z} \quad (18)$$

Equations (17) & (18) are ruling and representing the nonlinear behavior of laser beam in Nonparaxial region through magnetized plasma.  $k_{0+}^2 r_0^4 = R_{D0}$  which is represent the diffraction length so Eq (17) represents the laser beam spot size variation due to Sequence diffraction & self-focusing, the first and second terms on the right hand respectively.

To solve the equations (17) & (18) completely we will use eq. (14) to calculate the variation of the coefficients  $\alpha_{00}, \alpha_{02}$  along z-axis as follows:

$$\frac{\partial \alpha_{00}}{\partial z} = - \left(1 + \frac{\varepsilon_{0+}}{\varepsilon_{0zz}}\right) \frac{8f_{0+}^2 S_{02}}{r_0^2} \quad (19)$$

$$\frac{\partial \alpha_{02}}{\partial z} = \left(1 + \frac{\varepsilon_{0+}}{\varepsilon_{0zz}}\right) \left(\frac{4f_{0+}^2 S_{02}}{r_0^2} - \frac{12\alpha_{00} f_{0+}^2 S_{02}}{r_0^2}\right) \quad (20)$$

The numerical calculation of the equations (17), (18), (19) & (20) will be solve numerically to understand the nonlinear self-focusing behavior of (RCP) laser beam propagated through the magneto-plasma in the Nonparaxial region. This will lead to the next step which is Terahertz generating mechanism.

### **Terahertz generating mechanism:**

THz radiation generation mechanism ( $E_{T+}, \omega_t, k_t$ ) depends on nonlinear interaction between the (RSP) high-power laser

beam ( $E_{0+}, \omega_0, k_{0+}$ ) and the density ripple plasma wave ( $E_1, \omega_1, k_1$ ) in collision-less magneto plasma. The ponderomotive force due to this interaction generates a nonlinear current at a difference frequency. If the appropriate phase matching conditions are satisfied and the difference frequencies of the laser beam and plasma ripple density in THz range we will get  $\omega_t = \omega_0 - \omega_1, \vec{k}_t = \vec{k}_{0+} - \vec{k}_1$ , then this difference frequency will be about THz frequency.

We set up the model equations For the RCP THz as follows.

$$\vec{E}_{T+} = \hat{r} E_{T+} \exp i (\omega_t t - k_t z) \quad (21)$$

Where  $\hat{r} E_{T+} = A_{T+}(x, y, z) = E_{Tx} + i E_{Ty}$  is the amplitude of the RCP THz radiation.

The equation (2.51) is the complex representation for the THz electric field,  $E_{T+}$  and the variation of electric field. For the right-(left) handed wave, we have  $\hat{r} = \hat{x} + i\hat{y}$ -( $\hat{r} = \hat{x} - i\hat{y}$ ) with  $\hat{x}$  and  $\hat{y}$  being the unit vectors along the x and y directions, respectively.

In the field of the plasma wave ( $\omega_1, k_1$ ) the electric field  $\vec{E}_1$  general equation Wave will be as the following:

$$\vec{E}_1 = \hat{z} E_1 \exp i (\omega_1 t - k_1 z) \quad (22)$$

The electrons (plasma wave) oscillating velocity  $v_1 \hat{z}$  and the electron density perturbation  $\tilde{n}_p$  are related by the following equation:

$$\mu = \frac{\tilde{n}_p}{n_e} = \frac{k_1}{\omega_1} v_1 \quad \text{where } v_1 = -\frac{ieE_1}{m_e \omega_1}$$

$\mu$  are the normalized ripple density amplitude.

The general wave equation for electric field vector  $\vec{E}_{T+}$  propagate through magneto plasma written as (Shukla & Sharma, 1982):

$$\nabla^2 \vec{E}_{T+} = \frac{4\pi}{c^2} \frac{\partial \vec{J}_{T+}}{\partial t} + \frac{1}{c^2} \frac{\partial^2 \vec{E}_{T+}}{\partial t^2} \quad (23)$$

where  $\vec{J}_{T+} = \vec{J}_{1+} + \vec{J}_{2+}$  is the total current density vector in the presence of low frequency electric field  $\vec{E}_{T+}$ , where  $\vec{J}_{1+}$  and  $\vec{J}_{2+}$  are the linear and nonlinear current densities, respectively.

Nonlinear interaction of a finite-amplitude plasma wave with high-and low frequency circularly polarized waves is governed by continuity equation.

$$\nabla \cdot (n_j \vec{v}_j) + \frac{\partial n_j}{\partial t} = 0 \quad (24)$$

Momentum transfer equation, or motion equation of electron in magneto plasma is represented below:

$$m_e \frac{\partial \vec{v}_e}{\partial t} + m_e (\vec{v}_e \cdot \nabla) \vec{v}_e = -e \vec{E}_{T+} - \frac{e}{c} \vec{v}_e \times (\vec{B}_0 + \vec{B}) \quad (25)$$

where  $n_e, m_e, v_e$  are the electron density, mass and velocity respectively  $\vec{B}, \vec{B}_0$  are the magnetic field ambient of the plasma, the magnetic field of laser wave respectively.  $\vec{B}$  is neglected in our work.

$$\vec{J}_{T+} = \vec{J}_{1+} + \vec{J}_{2+} \quad (26)$$

where  $\vec{J}_{T+}$  is the total current density vector in the presence of low frequency electric field  $\vec{E}_{T+}$ .

where  $\vec{J}_{1+}$  and  $\vec{J}_{2+}$  are the linear and nonlinear current densities, respectively.

$$\vec{J}_{1+} = -en_0\vec{v}_{1+}^e + en_0\vec{v}_{1+}^i \quad (27)$$

$$\vec{J}_{2+} = -e\vec{n}_p^*\vec{v}_{0+} - en_0\vec{v}_{2+}^e \quad (28)$$

In the above equation,  $e$  and  $\vec{n}_p^*$  are charge and density perturbation of the electron, and  $n_0$  is the background density, where  $\vec{v}_{1+}^e, \vec{v}_{1+}^i$  represents the electron and ion linear velocities, which can be extracted by solving momentum equation (2.55):

$$\vec{v}_{1+}^e = \frac{ie\vec{E}_{T+}}{m_e(\omega_T - \omega_{ce})} \quad (29)$$

The linear velocity for ion:

$$\vec{v}_{1+}^i = \frac{ie\vec{E}_{T+}}{m_i(\omega_T + \omega_{ci})} \quad (30)$$

where  $\omega_{ci} = eB_0/m_i c$  is the ion cyclotron frequency with the ion mass  $m_i$ .

Substituting  $\vec{v}_{1+}^e$  and  $\vec{v}_{1+}^i$  from Eqs. (29) and (30) into Eq. (27) we find the linear current density  $\vec{J}_{1+}$  for the right circularly mode, so  $\vec{J}_{1+}$  will be:

$$\vec{J}_{1+} = -in_0 e^2 \left( \frac{\omega_T}{m_e(\omega_T - \omega_{ce})(\omega_T + \omega_{ci})} \right) \vec{E}_{T+} \quad (31)$$

The nonlinear velocity  $\vec{v}_{2+}^e$  is produced by the beating of electron velocity  $\vec{v}_{1+}^e$  in density ripple with the laser velocity  $\vec{v}_{0+}$ , and corresponding to the laser-frequency magnetic field  $\vec{B}_0 = (c\vec{k}_{0+}/\omega_0) \times \vec{E}_{0+}$ ,  $\vec{v}_{2+}^e$  is obtained by solving the following equation (Shukla & Sharma, 1982),

$$m_e \left( \frac{\partial}{\partial t} \vec{v}_{2+}^e + \omega_{ce} \vec{v}_{2+}^e \times \hat{z} \right) = -m_e v^* \left( \frac{\partial \vec{v}_{0+}}{\partial z} - \frac{e}{m_e \omega_0} k_{0+} \vec{E}_{0+} \right) \cong -\frac{e\vec{E}_{0+}}{\omega_0} \frac{\omega_{ce}}{(\omega_0 - \omega_{ce})} k_{0+} v_1^* \quad (32)$$

If we let  $\vec{v}_{2+}^e = v_{2+}^e (\hat{x} + i\hat{y})$  Fourier transformation of Eq. (2.62) then gives:

$$\vec{v}_{2+}^e = \frac{-ie\vec{E}_{0+}\omega_{ce}k_{0+}v_1^*}{m_e\omega_0(\omega_0 - \omega_{ce})(\omega_T - \omega_{ce})} \quad (33)$$

where superscript \* implies a complex conjugate of that quantity.

Where Laser velocity

$$\vec{v}_{0+} = \frac{ie\vec{E}_{0+}}{m_e(\omega_0 - \omega_{ce})} \quad (34)$$

The low frequency wave (THz) will be Right circular polarized wave. By substituting Eq. (33), (34) in Eq. (28) we get:

$$\vec{J}_{2+} = \frac{-in_0 e^2}{m_e(\omega_0 - \omega_{ce})} \left( 1 - \frac{\omega_1 k_{0+} \omega_{ce}}{\omega_0 k_1 m_e (\omega_{ce} - \omega_T)} \right) \mu^* \vec{E}_{0+} \quad (35)$$

In the above equation, contribution of the ion term to the nonlinear coupling coefficient is small and is, therefore, neglected. Combining Eq. (31) & (35) and substituting in (26), we obtain the following wave equation for  $\vec{E}_{T+}$  in terms of the electric fields of the pump and plasma wave.

Laser beam with magnetized plasma and THz generation (at  $r=0$ ).

$$\frac{d^2 \vec{E}_{T+}}{dz^2} + \frac{\omega_T^2}{c^2} \left[ 1 - \frac{\omega_{pe}^2}{(\omega_T + \omega_{ci})(\omega_T - \omega_{ce})} \right] \vec{E}_{T+} = \frac{1}{2} \frac{\omega_T^2}{c^2} \frac{\omega_T}{(\omega_0 - \omega_{ce})} \mu^* \left[ 1 - \frac{\omega_1 k_{0+} \omega_{ce}}{\omega_0 k_1 (\omega_{ce} - \omega_T)} \right] E_{0+} \quad (36)$$

To investigate the THz electric field  $\vec{E}_{T+}$  involving in the nonparaxial region and paraxial region one may introduce the electric field  $E_{0+}$  involving of laser beam in nonparaxial region (see Eq.13).

Therefore the (Eq.36) rewrite as following:

For nonparaxial region

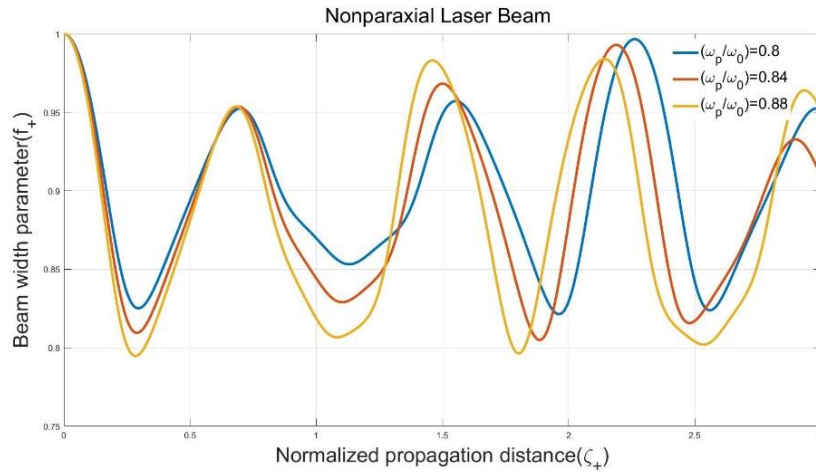
$$\frac{d^2 \vec{E}_{T+}}{dz^2} + \frac{\omega_T^2}{c^2} \left[ 1 - \frac{\omega_{pe}^2}{(\omega_T + \omega_{ci})(\omega_T - \omega_{ce})} \right] \vec{E}_{T+} = \frac{1}{2} \frac{\omega_T^2}{c^2} \frac{\omega_T}{(\omega_0 - \omega_{ce})} \mu^* \left[ 1 - \frac{\omega_1 k_{0+} \omega_{ce}}{\omega_0 k_1 (\omega_{ce} - \omega_T)} \right] \frac{E_{00+}}{f_{0+}} \left( 1 + \frac{\alpha_{00} r^2}{r_0^2 f_{0+}^2} + \frac{\alpha_{02} r^4}{r^4 f_{0+}^4} \right)^{\frac{1}{2}} e^{\left( \frac{-r^2}{2r_0^2 f_{0+}^2} \right)} \quad (37)$$

## Results and Discussion

Plasma frequency  $\omega_{pe}$  is proportional with plasma density  $n_0$  according to the equation  $\omega_{pe} = (4\pi n_0 e^2 / m_e)^{1/2}$ , so we will studying the influence of plasma density by studying the influence of plasma frequency. It is the same behavior in paraxial region with less response to the change of Plasma frequency  $\omega_{pe}$ . This is due to the intensity of laser in Nonparaxial region which is lesser than the intensity in paraxial region, and the ray is not parallel to the axis. According to the Eq. (2.34), we suppose that the influence of permittivity  $\epsilon_{eff}$  is proportional with plasma frequency  $\omega_{pe}$ , which is proportional with S.F phenomena that is clear in **Figure (2)**. **Figure (2)** illustrates laser beam self-focusing or beam width parameter ( $f_{0+}$ ) variation behavior in the paraxial region with variable values of initial plasma frequency  $\omega_{pe}$ , we note that S.F behavior is proportional with plasma frequency  $\omega_{pe}$ . When plasma density increases the focusing will increase, and beam width parameter ( $f_{0+}$ ) go deeper, this is due to, when plasma density (electrons) increase the nonlinear interaction will be larger, and that leads to the normalized ripple density amplitude  $\mu = \vec{n}_p / n_e$  will be larger, so rising up the ponderomotive force, which leads to refractive index  $\eta$  will be larger in the center which mean thicker concave lance.

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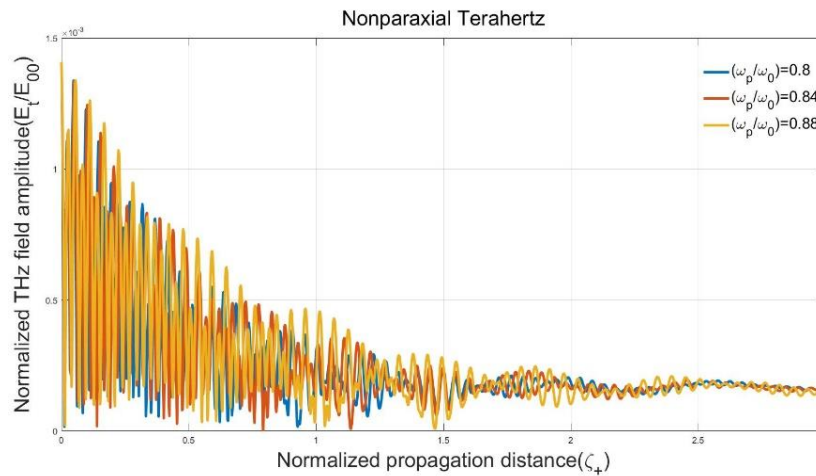


**Figure (2) Variation of beam width parameter ( $f_{0+}$ ) along normalized distance ( $\xi = z/R_D$ ) for several values of initial plasma frequency ( $\omega_{pe}$ ), in the Nonparaxial region.**

**Figure (3)** illustrates the variations of the normalized THz field amplitude  $E_t/E_{00}$  along the normalized propagation distance  $\xi = z/R_D$  in paraxial region, for several values of initial plasma frequency  $\omega_{pe}$ .

We noticed that there is an insignificant increase in THz radiation amplitude with the increase in initial

plasma frequency. Furthermore, the stability of THz radiation will be slow and less when the initial plasma frequency is increased. The oscillation pattern of THz amplitude is more regular and alternated in magnitude. That means the generated current conduct of THz is based on the density and thermal speed of electrons.



**Figure (3) Variations of the normalized THz field amplitude ( $E_t/E_{00}$ ) along normalized propagation distance ( $\xi = z/R_D$ ) with several values of initial plasma frequency ( $\omega_{pe}$ ), in Nonparaxial region.**

The increase of electronic density without increasing in its velocity (fixed intensity of laser beam), leads to the current increase, which in turn leads to the increasing stability of THz without increasing its amplitude. The THz radiation is affected by two opposite influences, the first refers to the fact that initial plasma frequency increase leads to self-focusing power that leads to increasing the amplitude and the stability of THz. The second influence affects THz radiation in the way that the initial plasma frequency increase leads to the decrease in THz

frequency according to the relation of conserving the energy and momentum, and decrease of normalized ripple density amplitude  $\mu = \bar{n}_p/n_e$  according to the Eq. (2.66) which leads to decreasing the amplitude and stability of THz according to the previous studies.

### Conclusion

At high enough intensity laser, a nonlinear pondermotive force will be created inside plasma leading to the self-focusing of laser beam. The self-focused laser beam will increase the laser beam

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intensity to high level enough to excite THz wave. The phase matching conditions between laser, plasma and THz waves should also be satisfied. The self-focusing in both regions (paraxial and nonparaxial) becomes faster and stronger when the initial Plasma frequency

is increased. THz stability is reversely proportional with initial plasma frequency in both, paraxial and Nonparaxial regions without apparent high increase in its amplitude. The stability of THz is higher in non-paraxial than in paraxial region.

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## AMIR TEMUR PYSIOGNOMY IN LITERARY SOURCES

**Abstract:** This article analyzes the interpretations of the great commander Amir Temur in the works of Alisher Navoi and in the manuscript and lithography literary sources. It clear that study of the manuscript, master and textual implementation, and its artistic value are one of the main objectives of the textual science and literary source studies and literary studies. Finding these books and presenting them to a wide readership is one of the pressing challenges of our textual science. This article provides a comparative study of the literary sources depicting physiognomy of Amir Temur and discusses the differences and similarities between their genre features.

**Key words:** manuscript, lithography, Temurnoma, Majolis un-nafois, historical story, Amir Temur, Hayrat ul-Abror, Temur Kuragon, World Khan, Temur Khan, Sultan, Temurbek.

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### Introduction

During the centuries-old history of the Uzbek people, the great Sahibkiran Amir Temur and the Temurids era has a special place. Amir Temur has eliminated the chaos and dispersion in the country. He united the Central Asian region into a single centralized state. He then ruled from Small Asian to India, from southern Iran and from Baghdad to the Volga and established a strong state. Amir Temur (1336-1405) during his thirty-five years (1370-1405) was always in the wars. He have raised the glory of his country and islam.

Political and military activities of this great Sahibkiran are fully described by the leading historians of his time. In particular, historians, such as Nizomiddin Shami and Sharafiddin Ali Yazdi, have reflected in their separate history books called "Zafarnoma". Ibn Arabshah (1389-1450) has written a book about the great Amir Temur. The historian Giyosiddin Ali has created a special history book about the great Sahibkiran's journey to India. Leading historians such as Hafezi Abru and Mirhond detailed the events of Amir Temur in his works. At the same time, the activities of Amir Temur are reflected in the literary works.

Amir Temur had gathered around him many scholars, poets and witty people. Oriental scholar Herman Wamberi reports that one of the poets of this group, Ahmad Kermony, wrote a book called "Temurnoma". The work of the great commander is illustrated in the artwork.

It is noted in historical works that an Arab poet Jaziri has a high respect among the people in the palace of Amir Temur.

Lutfulla Nishopuri, one of the great poets of his time, also was a palace poet of the Sahibkiran's son Mironshoh Mirzo.

During the time of Amir Temur the great creators of his time Kamol Khojandi and Kamoliddin Isfahani lived and worked. Kamal Khojandi was famous for his work in the field writing an ode, and Kamoliddin Isfahani was famous in the field of creating ghazal.

The great Uzbek thinker Nizomiddin Mir Alisher Navoi respects Amir Temur's name in eight of his five works. In the poem "Hayrat ul-abror" "Four ulus Khan Temur Koragon", "World Khan Temur Koragon", "Temur Khan" in the poem "Farhad and Shirin", "Sultan lord Temur Koragon" in the work "Muhokamat ul-lug'atayn" and in the works "Munshaot" and "Nasayim ul-muhabbat" is

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mentioned in the chapters in the references of Hodja Boyazid and Bobo Sungu by the Turkish saints under the name "Temurbek".<sup>1</sup>

Scientist analyses works of Navoi Olimjon Davlatov classifies the cases of Amir Temur in Navoi's works as follows:

1. To illustrate Amir Temur in the process of interpretation of certain socio-philosophical, ethical and didactic issues;

2. Stories related to Amir Temur;

3. Historical scenes from the life of Amir Temur;

4. The Prophets of the Turkic Mashaykh concerning Amir Temur

Some chapters on Amir Temur's work are published in Majolis un-nafois and in the poem Hayrat ul-abror.

It is known that at the seventh session of the Majilis un-nafois, the Temurid Sultans will be informed about the creativity of the Sultans or their poetic ability. This meeting begins with Amir Temur. Navoi calls this person the Temur Kuragon. Timur Kuragon - Although he does not like to read, when he reads a byte, it is more fascinating than saying thousand bytes. [1, 411]

Following this comment, Navoi tells a story that illustrates this aspect of Amir Temur.

One of Amir Temur's sons, Miranshah, ruled in Tabriz. He got drunk. He disrupted justice a lot and began to do unworthy things. This statement reached Samarkand to Amir Temur. The Emir was informed that three of Miranshah's pointers had misled him and allowed him to drink. The Emir ordered them to go to Tabriz as soon as possible and cut off head all three of them. The criminals involved in this terrible punishment were Hodja Abdulkadir, Mawlana Muhammad Qahi and Usta Kutb Noi. The executioner cut the heads of two of them. But the third one escaped. He showed himself as a dotty and walked with the eremite.

When Amir Temur made his way to Iraq, it was found that Khoja Abdulkadir was here. He was ordered to be seized. Despite her devotion, Khoja was seized and brought to the Emir. Amir was sitting on the throne. Khoja's main virtue was the recitation of the Qur'an with great pleasure before the death order was issued. When Khoja was captured and brought to the emir, he knelt down and began to read the Qur'an aloud. He was reading with a very pleasant voice. After that, Amir's anger changed with grace. Amir Temur read the following verse to the people of virtue and perfection around him:

Abdol zi biym chang mus`haf zad.<sup>2</sup>

(Eremite shielded the Qur'an from fear.)

In the work of Sheikh Saadi's called "Gulistan" in Arabic contains a caption:

« Izo yavsa al insonu tola lisonuhu ka sinnavrin mag`lubin yasulu ala qalbi». Contents: *The tongue of man sentenced to death lingers long, as if a defeated cat had dusted the dog.*<sup>3</sup>

Amir Temur accepted the excuse of the sinner and forgave him. He was pleased with him and made him a guest of honor.

Navoi tells the story. Amir Temur thinks that it is his great virtue to bring such a poetic piece in its place. The poet concludes with some exaggeration:

"Idrok va fahm ahli bilurkim, yillar balki qarnlarda mundoq latif so`z voqei ermas". [1, 411]

After completing the speech about Amir Temur, Navoi, in his habit he links this kind of speech, with Sultan Hussain Baikara. Sultan Hussein used many poems and bytes in their places, reports Navoi. This is Navoi's conclusion that it was a legacy him from his grandfather.

Navoi concludes the story with a prayer for both great people:

"Ul birining makoni ravzayi jinon va bu biri jahon mulkida jovidon bo`lsun." [1, 411]

The eighth article of Hayrat ul-abror, the first book of Navoi Khamsa, is about loyalty and infidelity. In this chapter, Navoi relates an incident that led to Amir Temur's march to India. During that march, the winner Amir Temur ordered the massacre.

Andoq eshitdimkim, shahi komron,

To`rt ulus xoni Amir Ko`ragon,

Fathi aqolimda qilg`onda ramz,

Hind savodida qatiq bo`ldi zamz. [2, 161]

At that moment, two friends fell into the hands of the murderers. Each of the friends begged the killer to cut off my head and not touch his friend. The killer wanted to cut off both of them. Then each one of his friends would hold his head and ask me to kill him first, so that he might live until I die.

Suddenly the order called "Alamon" was announced. The killings stopped. Navoi summarized it:

*Bir-biriga kechti alar jonidin,*

*Shoh dog`i kechti ulus qonidin. [2, 163]*

They and their people were saved from death because of their loyal friends.

In the sixteenth century, Khotifi wrote his own poem "Temurnoma" in Persian-Tajik. The Khotifi was determined to write "Hamsa". It is well known that the fifth book of Khamsa was dedicated to the great Alexander the Great. Khotifi created the Temuroma poem in place of the "Alexander the Great".

There are also several stories and epos in the Uzbek and Persian languages about Amir Temur's

<sup>1</sup> Олимжон Давлатов. Алишер Навоий ва Амир Темур // Ўзбекистон адабиёти ва санъати газетаси. Т., 2013, № 14

<sup>2</sup> This poem, read by Amir Temur, is the fourth fragment of the famous "Khavoriya" rubaiy by Sheikh Abu Said Abulkhair.

<sup>3</sup> Navoi scientist Aziz Kayumov insists that this is a reference to the Egyptian portrayal of the Egyptian Saadi.

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youth, his political and military activities. Many of these literary sources are in the fund of the Institute of Manuscripts of the Academy of Sciences of Uzbekistan. One of such sources is the manuscript "Qissayi Amir Temur".

Inventory Number of this manuscript 6537 II. The work is written in Uzbek language. The author is Sayyid Muhammadhoja ibn Jafarhoja. It does not specify when the manuscript was written and when and where it was copied. According to the paper and the letter it can be assumed that it was copied in the 19th century.

The text is written in black. The titles of the chapters are in red ink. The letter is simple, not cute. This work begins with page 131b of the manuscript and ends on page 267. The full title of the work is in Persian and in Arabic: Asori Doston's story is purely sad. This is the meaning of the phrase: "Osori doston qissai nur g'ussa Amir Temur Ko`rag`on sohibqiron navvara Allohu". «The traces of the story of Amir Temur Kuragon with whom related problems with proud years. May Allah fill his grave with light".

There is another copy of this manuscript, written in 1304 Hijri (1886 CE), 224 pages, and copied by a calligrapher in a Nastalic letter. The work is in the form of a prose and it is an artistic interpretation of the life of Amir Temur.

Another source of information on this fund is called "Temurnoma" and its inventory number 3731 and it was printed. The story was written in Persian

and Tajik language and It was published in Tashkent in 1920 by the Turkestan State Publishing House in hard copies. The book does not mention the author of the work. Author of the book is also unknown. The book is a work of prose. But there are also many poems in it. The text was written in a beautiful frame in Nasta. Titles and poems are written in bold letters. The book consists of 155 pages.

This book is the first volume of Temurnoma. The cover is made of dermantin. Beginning of the book: "Dostoni tavalludi amir sohibqiron Ami Temur Ko`ragon va bayoni padari modari-u". [4, 2p]. (Contents: "The birth of Amir Temur and the poem about his father and mother"), beginning with the words:

"Badazon Amar sohibqiron bisyor hursand va hushnud gardida sulton Shibliyro ruhsat dodand. Tammam jildul avvali Temurnoma " [4, 2b]

(Contents: After that, Amir was very happy and pleased and allowed the Sultan

People have been in interest to Amir Temur, who has liberated his country and established a powerful centralized state in Central Asia for passing years and centuries. Many legends have been created and written about him. Books about the life, political and combat activities of Amir Temur have been forgotten. Finding these books and presenting them to a wide readership is one of the pressing challenges of our textual science.

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## ABOUT US: DIALECTOLOGY TODAY AND IT'S FUTURE

**Abstract:** The article discusses the history of the Uzbek dialectology and comparative analysis of its features. conclusions are also made about the research carried out in the field. author summarized with his conclusions role and significance of the most recent researchs.

**Key words:** Dialect, Alisher Navoi, Turkish poetry, national language, lexical, phonetical, scientific resarchs.

**Language:** English

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### Introduction

The history of our dialectology dates back to the well-known Turkic linguist Mahmoud Koshghari. His book, "Devonu lughotit Turk" [1.] (See Mahmud Koshgari, "Devonu lughotit Turk", Volume III, I-T., Fan, 1960. -500 b., II-T., Fan, 1961. -428 b., III, 1963, p. 464) is one of the most excellent and valuable dictionaries of his time, which summarizes the words of the dialects of Turkic peoples in Arabic. His index dictionary was also prepared [2].

According to this dictionary, the scientific and theoretical view of the development of the languages of the Turkic tribes from one native language has been confirmed that shows the originality and historical development of our language.

Also Alisher Navoi was one of those scholars who had written poetry in ancient Turkic literary language about six centuries ago. Intellectuals such as Mavlono Lutfi, famous poet and sheikh Abdurahman Jami have especially noted the place of Nizamiddin Mir Alisher Navoi in Turkic poetry[3-5]. As a result, Husayin Ekinchi had to declare our historic decree about the level of our language. In the history of the halls, the history of our language has preserved its place in social life.

The adoption of the Law on the State Language on October 21, 1989, has further strengthened the recognition of our native tongue. This is because of national and national language issues. Our Uzbek literary language is strongly influenced by the Uzbek folklore, as there is no future for our literary language

if there are no sheets and spells. If there is no basis for life's feeding, any literary language is a dead language. Therefore, the dialects are the basis of any literary language and the foundation of development. It is called the dialect, and the dialects in the scientific literature. We think it is appropriate to call it Sheva. It is also natural that integrating Uzbek dialectology into the field of Uzbek toponymy, as the names of the people are used by the representatives of the sheva and, if necessary, justify the fact that names are generally used for dialectical words. So, dialectics are basically two main lexical units: 1) the word of Sheva; 2) colourful and meaningful names in the national language. Look, how great the dialectics are, and but ... [6-9]

The poems of poet Alisher Navoi, "Not That Easy to Be in the Square," encourage people to be vigilant so that we have tried to summarize the views of our colleagues on dialectology today, tomorrow and the future of our dialectology.

The period that learning our dialects after the time that we have been better acquainted with the works of Mahmoud Koshghari is 20-80s of the 20th century. During this period, some researches had been done on the way of dialectal texts written. At this time E.D.Polivanov, K.Yudahin, F.Abdullayev, A.Aliev, N.Rajabov, Yu.Jumanazarov, Gozi Olim Yunusov, A.Borovkov, V.Reshetov, Sh.Shoabdurahmanov, X. Doniyorov, A.Ishaev, A. Shermatov, K.Nazarov, YoGulomov, Sh. Nasirov and others conducted research on the analysis of the properties of our

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dialects. As a result, several doctoral and about a hundred candidate dissertations were defended in the field of Uzbek dialectology. However, there is no any generalization of their materials, and their research. As a result, in 1971 the "Dictionary of the Uzbek folklore" was published [10].

And then, remembering that half of it was Ahmad Ishaev's dictionary "Dictionary of family names", it is possible to ascertain how low the dialectal dictionary was [10]. Therefore, it is easy to say that at this time a great deal of research has been done, but it is time to admit that the morphological and lexical materials have not been completely collected.

And again, the demand and problem of dialectal lexicon in "sheva" dictionaries has not been resolved in the above-mentioned period. At the same time, the linguistic atlases of the Uzbek dialects were not created as they had not been a perfectly studied with linguistic aspect. Due to the lack of dialectal lexicon materials and the problem of norms of dialectal lexicon in dictionaries, the work on multilingual Uzbek dialects has not started. The reason is that dialectologist did not agree on how and in what circumstances the words included in the dialectal dictionary and involved other scientists who deal with various aspects of the Uzbek literary language. As a result, only the dialectal words are derived from the purely lexical-dialectal words that literally differ from the literary language. This does not allow the following dialectal words to get included:

1) lexical-semantic dialectal words; 2) lexical-phonetic dialectal words; 3) morphological-dialectal words; 4) frazeologic-dialectal expressions; 5) ethnographic-dialectal words [11].

It is not a secret that there are thousands of dialects in these examples, but they are not included in the dialectal words.

From the point of view of dialectology, the first reason for the lack of scientific research is that dialectic texts are not written down, not collected, and not published in the form of a book. Also, there were dialectal texts, that are a means of scientific ground for our dialectology, written by Eduard Polivanov, K.Yudakhin, and other scholars. The reason for being famous in this field these two scholars had written from the dialect representatives themselves. The subsequent achievements of Kudayakhin, as well as the dialectal texts, were the basis for the academics. It should be noted that such dialectal texts are of great scientific and practical importance.

Nowadays, we have the following scientific and practical requirement for researching our dialects, i.e. the conceptual directions. It is desirable to collect the dialectal texts written by dialect representatives and bring them into books as a whole.

Of course, we recommend that the recorded dialectal texts comprise at least fifty-sixty texts, and that the textuality and the relevance of the content, as

well as the unlimited number of themes. The number of topics to be written from dialect representatives is more than sixty, and writing them from older people will increase the reliability of dialectic texts.

In our opinion, it is good the total volume of dialectal texts to be four hundred or five hundred pages, depending on the coverage of a scientific research topic. The researcher points out that the words and phrases contained in these texts correspond to his scientific subject. In other words, the published texts are one of the main sources of scientific and practical character, and it is appropriate to refer to the published cases of the dialectal texts. Undoubtedly, today's dialectic texts will be the historical sources of information for our descendants by our early versions like the Urhun-Enasoy monuments.

The reason for being backward the Uzbek dialectology sector than that of other Turkic languages, in our opinion, as follows:

1. The negative influence of the Soviet ideology on the masses. If we sum up the history of the past, the negative influence of this ideology is well-known in Uzbek society and Uzbek legislation. Because the capital city of Tashkent, which was the center of Central Asia, was in the development of civilization in the early stages of development. In order to stop the movement earlier, the alphabet and the spellin in the Uzbek language were reformed several times. Even if the alphabet is reformed, its spelling rules are adopted only after sixteen years, which is the reason for the researchers of the Uzbek dialects to stop for a single moment.

2. The policy of repressive policies of the 20's and 30's of the 20th century and the policy of the 40's and the 80's, the serious struggle of the Soviet ideology against the national intelligentsia, and the policy aimed at crushing the Uzbek people, have also led to serious allegations. They had to keep their noble ideas in their hearts. For example, as a prominent scientist of dialectology, academician Ahmad Isayev, for two years, he was forced to work without a job because for using the word "yelvizak" in the meaning of "light wind".

3. In the 80's of the 20th century, when the Soviet policy was showing its power, I said to my teachers that I would be working as a researcher on dialects, "It's early to do that and you will have time. For now, do research on toponyms, which is a branch of dialectal lexicon." And then, when I knew, my teachers chose the right way and put me in the right direction of science. Because when I conducted scientific research on toponyms, I worked with dialectal materials, interpreted and analyzed. Together with scientific observations, I also learned many things on Uzbek dialectology and Modern Uzbek Literature, as well as comparing and analyzing them for my work as a teacher at Tashkent state university (now National University of Uzbekistan) [14-23].

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After five years of independence, prof. Karim Nazarov said: "Now you have time to deal with Uzbek dialectology issues." I still remember when talking about the content and essence of dialectological research, or when such a case being put on discussion, now I understand the reason why Professor A.Aliev, Associate Professor Y.Gulomov, Professor N.Rajabov, academician Sh.Shoabdurahmonov, Professor K.Nazarov, Ph.D. Nosirov, Ph.D. Q.Muhammadjonov were intrigued and often looked around, because they did not forget the negative features of the Soviet ideology, and they thought about both the researchers and their own souls [24-29].

When I analyze what I know and see, I try to make a scientific observation on our dialectology, to read and publish new articles and books thanks to our independence and my teachers. At the same time, I started a great work on studying Uzbek folklore. Because our sheets are represented by two large territories:

1. The representatives of the Uzbek dialects live in two large areas of the Republic of Uzbekistan.
2. In neighboring countries around us, only a few representatives live.

It would be a great work if we could record the materials of Uzbek dialects from local dialectal areas in the first place. The dialects of Uzbek in neighboring countries could be further studied. Rector of the Tashkent State University of Uzbek Language and Literature named after Alisher Navoi, a well-known philologist, professor Sh.Sirojiddinov has taken a one-on-one review of the concept of "scientifically-practical character of the Uzbek folklore" and supported the content of the folklore and dialectology department and said that many scientific tasks in the field should be fulfilled. Recently, we have received instructions for the establishment and commissioning of the Folklore and Dialectology Laboratory. If we provide materials for this laboratory in the form of computer and dialectal texts, we will do more scientific researches, and release volumes of Uzbek dialectal dictionary.

To our opinion, Academician Torkebek Dolimov, a former rector of the Tashkent State

University (now National University of Uzbekistan), who received me twice being introduces with my research, heard that I was conducting it, said "Make conclusions according to the scientific observations, write articles based on observations!" Here is a natural look of two different attitudes toward those who are researching Uzbek dialectology.

In our opinion, the lack of attention in this industry is the teaching of one subject. And if we have the opportunity to teach our philology students a variety of subjects such as "Uzbek Dialectology", "Comparative Dialectology", "Uzbek Literature", "Fundamentals of Theoretical and Applied Dialectology", "Dialectal Lexicology Problems", "Dialectal Lexicography". Our students would also make their own opinions in this field and contribute to the research of our dialects. It's time to bring these sciences to the educational system.

That is why we have put a strain on the practice of the Uzbek dialects. Of course, Uzbek dialectologists can fully study the phonetic, morphological and lexical wealth of our dialects and find the opportunity and strength to create multi-lingual dialectal dictionaries and dialectal atlases. Indeed, our president, Shavkat Mirziyoev, also underlines that, by means of a critical analysis, it is necessary to improve the scope of the field, which, undoubtedly, makes the right and appropriate decisions to fulfill the past, present and future of the Uzbek dialectology sphere, We want to do it [30-31]. Of course, in the future there will be young and well-educated specialists in Uzbek dialectology, it is natural that they fully do researches based on government grants, or on their own initiative.

At the same time, it is worth mentioning another good and appropriate situation directly related to the subject; at the beginning of the 20th century, many prominent scientists like Z. Validiy came to help our people and intellectuals closely, and we know that this tradition is also valid for the scientific researches of our dialects. We believe that it is time to continue and strengthen this kind of scientific and creative cooperation today.

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QR – Issue



QR – Article



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## THE CALCULATED DEFORMED VOLUME OF THE BRAKE DRUM CASTING OF THE CAR

**Abstract:** The deformed volume of the aluminium casting of the car brake drum after crystallization in the metal mold is presented in the article. The results of the research are recommended for preliminary assessment of stress-strain state of the brake drum casting obtained by die casting.

**Key words:** the casting, die casting, deformation, crystallization, the volume.

**Language:** English

**Citation:** Chemezov, D., et al. (2019). The calculated deformed volume of the brake drum casting of the car. *ISJ Theoretical & Applied Science*, 12 (80), 152-154.

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### Introduction

The brake drum is the main part of the brake system of the car. The brake drum is the case part, which is affected by the brake pads during braking. The brake drums are made of cast irons and silumins. These materials are frictional and have high strength.

Die casting is one of the methods obtaining the workpiece of the brake drum. This method allows to obtain higher density of the casting material in conditions of low castability of melt. The some researches of the processes of die casting of the metal workpieces are presented in the works [1-10]. So as the surfaces of the brake drum during operation in contact with the other surfaces of the parts then the material properties should be the same in the entire volume of the casting. The preliminary analysis of state of the brake drum material can be done when obtaining the solid model of the crystallized casting with casting defects.

### Materials and methods

Casting of the brake drum of the car was carried out under pressure into the mold made of X37CrMoV5-1 steel (EN). Melt of ENAC-44200 silumin (EN) was poured into the pressing chamber of the injection molding machine at the initial temperature of 690 °C. Silumin melt has high CLF up and low CLF down and CLFpres. Injection of melt into the mold cavity was carried out through two gating channels with the diameters of 10 mm. The required volume of melt for casting of the brake drum was 1265992.52 mm<sup>3</sup>.

### Results and discussion

The volume of deformed material of the brake drum casting after crystallization is presented in the Fig. 1. Compression and tensile of material are observed in 75% of the casting volume. Deformation of the casting material on periphery is more than in the centre (on the surfaces of the hole). The approximate ratio of maximum deformation of the casting material to minimum deformation is 2.3.

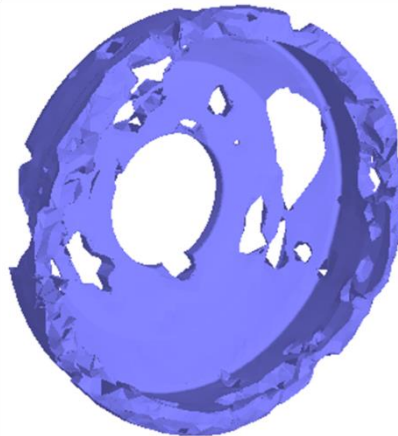


Figure 1 – The volume of deformed material of the brake drum casting after crystallization.

Rate of thermal deformation of material of the brake drum casting can be presented by the analytical formula (1):

$$v = \frac{VT_{cryst}}{4V_0t_{cryst}}, \quad (1)$$

where  $V$  is the deformed volume of the casting material after crystallization;  $T_{cryst}$  is the temperature range at which the casting crystallization occurs;  $V_0$  is the initial volume of melt;  $t_{cryst}$  is the time range at which the casting crystallization occurs.

The crystallization temperature for the casting of the brake drum is 576.323 °C; the crystallization time is 14 s.

### Conclusion

The volumes of the casting located near the injection channels of melt into the mold are subjected to less deformation after crystallization. The analytical formula presenting the dependence of rate of temperature deformation of the casting from the volume, the temperature and the crystallization time is obtained for casting of the aluminium brake drums of the car.

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## INTONATION DIFFERENCES AND SIMILARITIES OF DISCOURSES FROM VERBAL SENTENCES

**Abstract:** *The means of intonation serve to promote the relevance and integrity of the discourse in the real conversation process. Intonation ensures adequate communication in specific communication environments. In the article, we have drawn the results of phonetic analysis of dialogues selected from English for this investigation to determine intonationally similar and distinguishing features of discourses from verbal sentences.*

**Key words:** *intonation, verbal sentences, discourses, experimental-phonetically analysis, “PRAAT” program.*

**Language:** *English*

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### Introduction

Intonation includes speech melody (raising or lowering of the volume), rhythm (the connection of stressed and unstressed syllables), speed of the speech (rapid and slow pronunciation), intensity (strengthening or weakening of breathing), and logical emphasis. Intonation ensures grouping of parts of sentences correctly, and facilitates simple and complex sentences, as well as the relationship of coordination and subordination. Intonation allows you to define logical accents and words. Intonation is modality because it is related to the purpose, motives and desires of the speaker. By the help of intonation information, question and command form of the sentence is determined.

Intonation is primarily a matter of pitch variation, it is important to be aware that functions attributed to intonation such as the expression of attitudes and emotions, or highlighting aspects of grammatical structure, almost always involve concomitant variation in other prosodic features. David Crystal for example says that “intonation is not a single system of contours and levels, but the product of the interaction of features from different prosodic systems – tone, pitchchange, loudness, rhythmicity and tempo in particular” [1].

Intonation is represented not only by the sound material, the prosodic design of the language, but by

the balanced interaction of linguistic and non-linguistic factors in the spoken act as a centralized expression of the communicative semantics of heterogeneous language. Boundary markers of syntagmas were taken as pause, change of melodic contours - manifestation of the characteristic rising - falling movement of the main tone, increasing or decreasing intensity, and variation of the speed of pronunciation at the boundaries of the syntagmas.

One of the important features of the intonation is the organization of the conversation flow. L. V. Sherba notes that “in linguistic variation is the most distinctive tone (melody), the intensity of the sound (the rhythm), the relative length (or quantity), and, finally, from one sentence to the next or to the number of separate sounds, timbre is understood” [2, p.158].

According to him, “some scholars narrow down the concept of intonation to the notion of “speech melody”, except the change of timbre and power [2, p.158].

Intonation, in phonetics, is the melodic pattern of an utterance. Intonation is primarily a matter of variation in the pitch level of the voice. But in such languages as English, stress and rhythm are also involved. Intonation conveys differences of expressive meaning (e.g., surprise, anger, wariness) (3).

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Intonation serves to convey the attitude of the speaker to the expressed opinion. It (intonation – A.G.) passes colorfulness of the human emotions such as joy, sorrow, wonder, ridicule, protest, and so on. According to L. R. Zinder, “it is impossible to say something that is not expressing displeasure, anger, or mockery. In each such emotion, the attitude of the speaker to his or her own discourse is concealed, and such a determination of the nature of the category of modality means that there is no discourse deprived of this language category [4, p.6].

The British investigator Dwight Bolinger presents the peculiarities of intonation by comparing intonation with accent. “Intonation is the inclusive term, referring to all uses of fundamental pitch that reflect inner state. Accent is intonation at the service of emphasis. In the shapes of the profiles it makes certain syllables stand out in varying degrees above others, revealing to our hearer how important the words containing them are to us, and revealing to our hearer how important the words containing them are to us, and revealing also, by the buildup of accents, how important the whole message is” [5, p.3].

Recent research works are dedicated to the role of intonation in discourse. Firstly, what’s discourse? The researcher Jan Renkema in “Introduction to Discourse Studies” presents the meaning of discourse by the reference to the etymology of discourse. “The word stems from the Medieval Latin word “discurrere”, which means “to circulate”. Literally it means “to run to and fro” or “to run on”, like a person who gives a speech and runs on about a topic. A discourse is something that runs from one person to another” [6, p.48].

The scientist Robert de Beaugrande, a well-known researcher on discourse studies has formulated “seven criteria for textuality, that’s, criteria that a sequence of sentences must meet in order to qualify as a discourse: cohesion, coherence, intentionality, acceptability, informativeness, situationality, intertextuality” [6, p.49-50].

The investigators such as David Brazil, Malcolm Coulthard, and Brown, Currie and Kenworth investigate intonation in discourse. The investigators Dafydd Gibbon and Helmut Richter in their work named “Intonation, Accent and Rhythm: Studies and Discourse Phonology” overcomes weakness of traditional studies of intonation in discourse by being prepared to look beyond the tone-group, but it shares with these studies some of the other limitations in its application to discourse. Firstly, it remains atomistic in the sense that it is content to isolate individual features of the intonation pattern (the overall pitch level or the type of nuclear pattern) and to ascribe to them a specific meaning (“new topic”, “known information”, “referring” etc.) without assessing the interrelationships of the features themselves. Secondly, it seeks to identify such a meaning as

something which is external to intonation and to which the intonation pattern refers [7, p.120-121].

In the article, we used the results of phonetic analysis of English-selected dialogues to determine intonationally similar and distinguishing features of discourses from verbal sentences.

The use of dialectic materials in the investigation may be explained by the fact that a major part of a person's speech activity is the preparation for oral communication, which arises in the absence of preparation. Dialogue involvement can be explained by the fact that intonation becomes an important part of discourse and a means of discourse, because the functional load of intonation is more emphasized in pronunciation of discourses.

The importance of experimental studies in the phonetic literature is specially emphasized. In their research, linguists attach great importance to ideas based on the results of experimental studies. Academician L. V. Sherba says, “... the method of experimenting in syntax and lexicography and of course, methodology is particularly productive. Exchanging words, systematically substituting words, changing their order and intonation, without waiting for any writers to use a particular composition or combination will make us observe the differences in the meaning of acquisition. I would say that it is impossible to deal with these areas of linguistics without experimentation” [2, p.32].

In the experiment, the intonation features of one (terminal syntagma) and two-syntagmed (progredient-terminal syntagma) were analyzed.

The pronunciation of both speakers of the language material corresponds to the norms of literary pronunciation. In the experimental and phonetic study of language material, computer software "Praat" was used for obtaining the oscillograms and intonograms, acoustic parameters - time, intensity and frequency of the main tone. The language material intended for experimental-phonetic analysis was first recorded by the language carriers and recorded in the computer memory. Speakers who were pre-familiarized with the experimental materials were not given any information about the purpose of the experimental-phonetic research in the thesis, as it could in some sense have a negative impact on the results of the experiment.

Then language material was presented to auditors. In the first stage of the auditor’s analysis, the status of the discourses involved in the experiment and their soundness were evaluated for compliance with the English pronunciation norms. At the second stage of the auditor's analysis, the intonation features of the formal non-verbal discourses involved in the experimental-phonetic analysis were evaluated. Phonetic-structural features of discourses, syntagmatic substitute of syntactic whole, movement of key tone frequencies in syntagmas, determination of pronunciation rate, dynamics peak, interval

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between syntagmas and so on. are revealed by auditors at this stage. The following levels of each trait were used to determine the prosodic characteristics of the discourses:

- tone level: low, medium and upper tones;
- tonality range: narrow, medium, wide;
- types of terminal tone: falling, rising, falling-rising, rising-falling, continuous, etc.
- peak volume: low, medium, high;
- realizing speed of discourses: low, medium, high;
- length of intervals: very short, short, medium, long, very long, etc.

The Praat program was developed by P. Boersma and D. Venik of the University of Amsterdam for special phonetic investigations. The software was downloaded from the Internet. The International Phonetic Alphabet (IPA) was used in the transcription of language material. The frequency, intensity, and acoustic marks of the time parameters of the language were obtained using the capabilities of the program. In the linguistic interpretation of the acoustic parameters,

the method developed by F.Y.Vaysalli, professor at AUL was used.

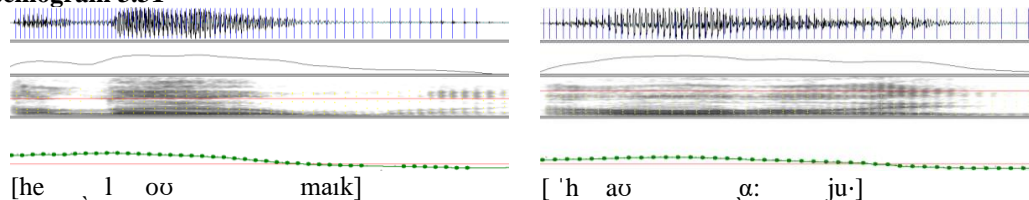
Information about Dialogue participants:

F. Ibadov, 37 years old man with a higher education and his pronunciation corresponds with an American version of English language.

N. Mehtiyeva, 23 years old woman with a higher education, her pronunciation corresponds with an American version of English language.

¡Hello, Mike! ¡How are you? /he ɫoo maik ||'haʊ α: ju:// both of the discourses have a falling intonation outline. Maximum melodicity was recorded at their beginning: the second syllable of the discourse of /he ɫoo maik// is 236 Hz, the first syllable of discourse of /'haʊ α: ju:// is 208 Hz. The minimum frequency in both discourses is 110 Hz and 135 Hz. The weakening of melody in the discourses is directly proportional to the decrease in intensity. The maximum intensity is 79 dB and 78 dB in the first syllables, and the minimum intensity is 56 dB and 69 dB in the last syllable (see oscillogram 3.31).

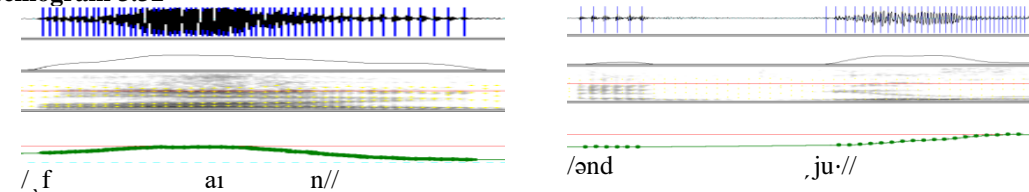
Oscillogram 3.31



In the discourse of ¡Fine ... and you? / a question intonation is realized. The maximum frequency for the low-rising intonation outlined discourse (confirmation-question) is 249 Hz for the first syllable and 244 Hz for the last syllable. Minimum frequency

recorded in the conjunction / and / : 136 Hz. Similar views are also reflected in the intensity marks: 75 dB in the first syllable, 67dB in the last syllable, and 63 dB in the conjunction / and / . (see: oscillogram 3.32).

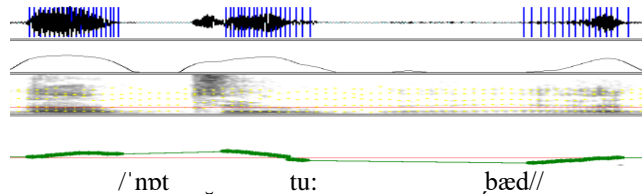
Oscillogram 3.32



The average starting frequency (241 Hz) of the discourse "Not too bad" / 'nɒt tu: bæd // is 253 Hz at the middle syllable and 180 Hz at the last syllable.

The intensity marks in the discourse were partially differently realized: 76 dB -74 DV-71 dB (see: oscillogram 3.33).

Oscillogram 3.33



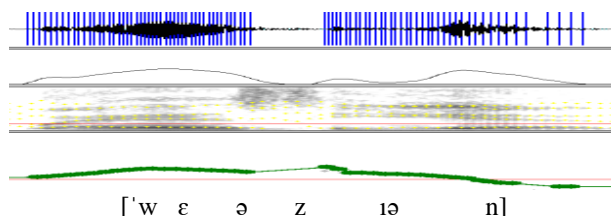
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Falling intonation outline has also been realized in the questioned discourse of ¿Where's Ian?. Key pitch frequencies: 276 Hz - 219 Hz; intensity: 72 dB - 70 dB; time: 141-168 m / s. In this statement, A. M. Peskovski's idea of "compensation principle" is justified: "... the more explicitly any syntactic

meaning is expressed with grammatical means, the less intimate its expression is (even until its complete disappearance), or vice versa. If his expression is strong, then his grammatical expression becomes weak" [8, p.181].

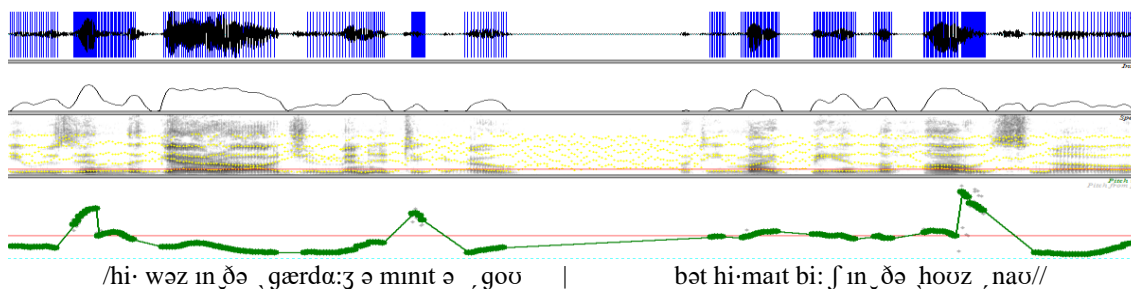
**Oscillogram 3.34**



The frequency of the main tone in two sintagma discourse of "He was in the garage a minute ago but he could be in the house now"/hi· wəz ɪn ðə ,gærdɑ:z ə mɪnɪt ə ,gou | bət hi·mɑ:t bi: ʃ ɪn ðə ˌhouz ,naʊ/ is: in the first sintagma 162–153–273–273–171–168–148–128–130–140–136–132 Hz; in the second sintagma, 192–198–218–196–179–180–196–124 Hz; intensity: 59–62–77–66–73–70–60–67–62–57–60 dB in the

first sintagma; in the second sintagma, 53–55–72–63–63–64–66–74–60 dB; time parameter: in the first sintagma 73-79-63-70-07-138-78-60-65-67-136 m / sec; in the second sintagma, 56 -68-119-96-70-76-160-184 m / s. As it's seen, at the end of both sintagmas, the marks of acoustic parameters are observed to become weaker. (see: oscillogram 3.35).

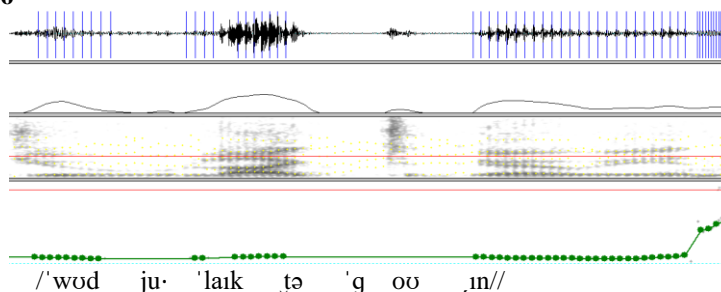
**Oscillogram 3.35**



The intonation of the question was recorded in the discourses of ¿Would you like to go in? /'wʊd ju· 'laɪk tə 'gou ,ɪn// . At the end of the discourse, there is a rise in the outline of the intonation. In the last syllable, the speed is 148 Hz. However, this is not the

case with time and intensive marks. Intensity marks: 62-52-69-54-63-57 dB, time marks are 87-56-115-60-127-78 m / sec (see: oscillogram 3.36).

**Oscillogram 3.36**



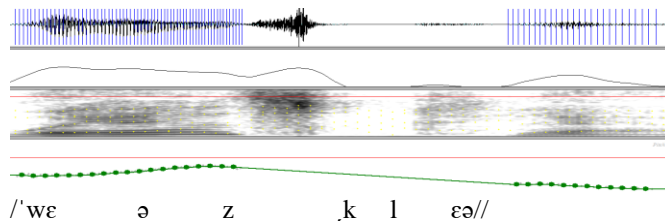
In the discourse of ¿Where's Clare? /'wɛəz ,kleə/ the acoustic parameters indicate the falling intonation outline. Key tone frequency: 302-387-204 Hz,.

Intensity: 76-69-65 dB, time marks are 87-76-120 m / sec (see: oscillogram 3.37).

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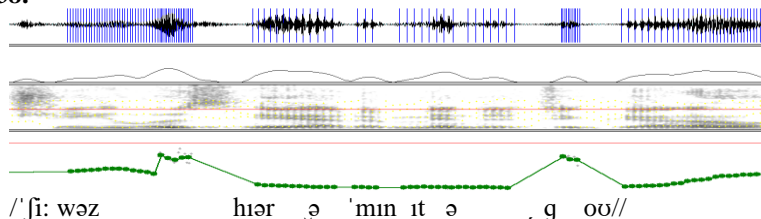
### Oscillogram 3.37



In the discourse of “She was here a minute ago” /ˈʃi: wəz hɪər ə ˈmɪnɪt ə, ɡooʔ// the frequency of the main tone is: 262-363-148-110-115-110-365-207 Hz,

intensity: 56-69-67-57-64-56-57-66 dB, time marks 84-75-114-55- 50-52-56-174 m / s (see: oscillogram 3.38).

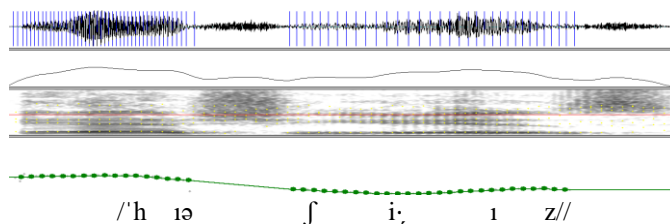
### Oscillogram 3.38.



In the discourse of “Here she is” /ˈhɪə ʃi: ɪz// the frequency of the main tone is 291-143-156 Hz, Intensity: 77-70-73 dB, time marks are 147-110-96 m / sec. The acoustic indicators of the syntagma reflect

the intonation of completeness (see: oscillogram 3.39).

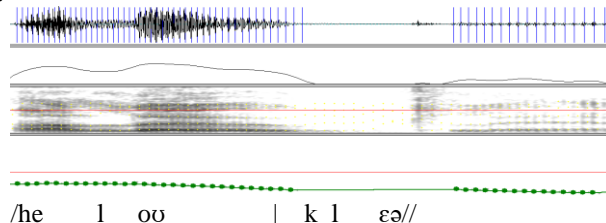
### Oscillogram 3.39.



In the two syntagmed discourse of "Hello, Clare" / hə ˈlɔʊ | klɛə // cluster // (Hello, Claire) falling intonation outline is observed in both progradient and

terminal syntagmas: frequency of key tone: 194-168 Hz; 148 Hz, intensity: 74-78 dB, 57 dB, time tags are 80-160 m / sec, 148 m / sec (see: oscillogram 3.40).

### Oscillogram 3.40.



In the discourses of !Hello” ¿Did you have a good journey? /he ˈlɔʊ || ˈdɪd ju ˈhæv ə ˈɡʊd ˌdʒɜːnɪ// the frequency of key tone is 309-287 Hz, 223-304-266-250-262-182-139 Hz , intensity is 71-67 dB, 59-69-

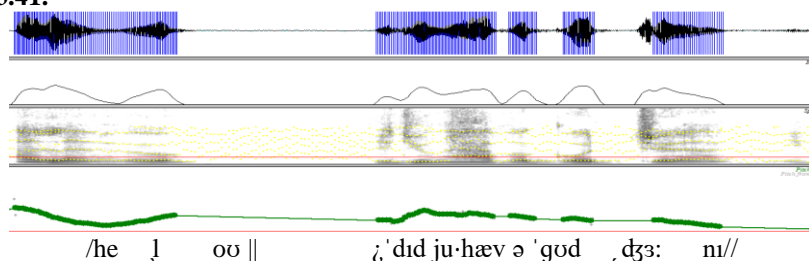
66-66-71-64-51 dB, time marks are 84-248 m / sec; 56-78-60-68-76-126-56 m / sec (see: oscillogram 3.41).



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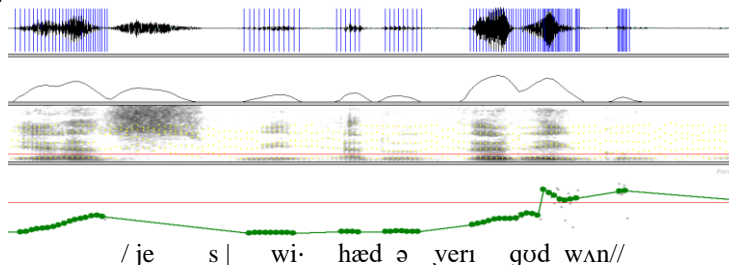
### Oscillogram 3.41.



In the discourse of “Yes, we had a very good one” /jes | wi· həd ə ʋerɪ ɡʊd wʌn// the frequency of the key tone is 244 Hz; 135-143-139-232-373-397-350 Hz, intensity is 73 dB; 59-60-56-69-75-55-52 dB, time marks are 110 m / sec; 73-62-65-82-90-69-76 m

/ sec. As it's seen in the discourse /Jes// falling intonation outline at the end, in the discourse ζ'did ju·hæv ə 'ɡʊd ,dʒɜ: nɪ// Rising intonation outline is realized (see: oscillogram 3.42).

### Oscillogram 3.42



Frequency variations in elliptic discourses are 1.6-2.1 times more than the frequency range of verbal discourses (see: oscillogram 3.31, 3.32, 3.33, 3.34, 3.37, 3.39, 3.40, 3.49, 3.51, 3.52, 3.56).

The similarity between the intonation of the discourses and the verbal sentences is that both of them have a weakening of the key tone and intensity at the end of the terminal syntagmas (in the discourses characterized by the intonation of completeness). In 75% of the terminal syntagmas, the analyzed discourses move towards the end of the intensity. Increasing or decreasing of intensity in the discourse is directly proportional to the falling-rising frequency of the main tone. The minimum indicator of intensity in both types of syntagmas is usually recorded in the last syllable.

Regardless of the communicative type in the analyzed discourses, the outline of intonation is the same - at the beginning, the tone either begins with the middle register or is characterized by maximum reflection. This deviation is almost certainly not observed. An analysis of the language material shows that there is no rise in tone outline at the end of the syntagmas (excluding discourses without question: see: intonogram 3.50, 3.51), or smooth (continuous) tone is not typical or regular tone outline (see: 3.31, 3.34, 3.37, 3.41, 3.45, 3.47, 3.56).

There is no stable correlation between the types and their complementary functions of the intonation outlines of the syntagmas, referring to the acoustic parameters' indicators, that is to say, the prosodic arrangement of discourses with their semantic content

is not advisable. In a dialogue speech, the melodic outline of discourses (replicas) is mostly accompanied by a fall, and in some cases a rise. Taking this factor into consideration, the summit of melodicity is almost characteristic for the stressed syllables in discourse, almost in dialogue. For example: in the discourse of /he ʋəʊ maɪk || 'haʊ α: ju·// (see: oscillogram 3.31), in the discourse of /[he ʋəʊ | klɛə// (see: oscillogram 3.40), in the discourse of /Hello// (see: oscillogram 3.41), in the discourse of /Jes// (see: oscillogram 3.42), in the discourse of [jes] (see: oscillogram 3.52), in the discourse of /jes [i· dʌz// (see: oscillogram 3.55), in the discourse of ɪ'ɡʊd! /'ɡʊd// (see: oscillogram 3.56), in the portion before core, the direction of movement of the tone is smooth, rising in the core, and a sharp fall in the core. Unlike verbal discourses, the tone range for these types of discourses is characteristic, and the melodic peak is localized at the core. In these types of discourses, that is, rising-falling tone outline express a positive state of mind, confidence and determination of the speakers.

Changes in the pronunciation term (length) of syntagmas have revealed the following signs: in compare with progreedient syntagma in two syntagmed discourses a weakening of the pronunciation rate in terminal (final) syntagmas are observed, maximum time consumption is seen in nuclear syllables (syllables with syntagma stress drop) (see: oscillogram 3.35; 3.39; 3.44).

In addition, the use of monophthongs and diphthongs in the syllabic structure of words in English does not allow for the precise timing of the

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time parameter, that is, doesn't allow uttering any idea about the exactly expressed communicative determined temporal prosody of intonation-prosody models in English.

The change in the frequency of the main tone is reflected in the melodic outlines of the discourses.

Depending on the nature of the changes tone outlines were defined such as Simple (smooth, rising, falling); compound (rising-falling, falling-rising); complex (falling-rising- falling, rising-falling- rising):

**Intonoqram 3.1.**

- a) rising tone outline in verbal discourses

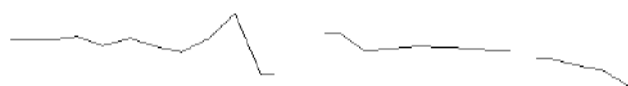


- b) rising tone outline in verbal discourses



**Intonoqram 3.2.**

- a) falling tone outline in non-verbal discourses



- b) falling tone outline in non-verbal discourses



**Intonoqram 3.3.**

Smooth intonation outline in verbal discourses (such intonation outlines were not found in non-verbal

discourses, so this outline of intonation can be regarded as a different sign between them).



**Intonoqram 3.4.**

- a) rising-falling tone outline (as such tone outline was found in verbal and non-verbal discourses, may be evaluated the same tone outline)



- b) falling-rising tone outline (as such tone outline wasn't found in non-verbal discourses may be regarded different tone outline between them).



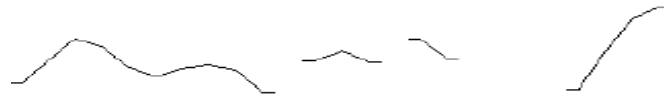
**Intonoqram 3.5.**

- a) falling-rising-falling tone outline



- b) rising-falling-rising tone outline

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The latest two tone outlines are recorded only in verbal discourses. That's why these tone outlines may be considered relevant in verbal discourses.

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## ARTISTIC EXPRESSION OF THE CURSING GENRE IN SHUKUR KHOLMIRZAYEV'S STORIES

**Abstract:** This article outlines the usage of the curse genre and its role in author's stories, Shukur Kholmiraev's main aim to apply the genre author in his creative works. In the scientific studies it is considered that the main conductors of this genre, curses have been females. The article describes the curses used by boys, chaps and old men. The nature of the curses, and their difference, peculiarities from other literary genres are characterized in the article.

**Key words:** equivalent, image, artistic, corn, the villain, evil, bad, ignorant, negative, folk, object, poetic, characteristics, curse, genre.

**Language:** English

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### Introduction

UDK 81-13

Unlike proverbs and sayings which came into being as a result of well-thought and wise ideas, curses nature of formation is defined as the product of extravagant mentality of human. Considering the structural peculiarities, the sayings which are called "winged words" can be equal to one word or one word combination semantically while one curse's meaning is considered to be equal to meaningfully finished phrase. It is natural to meet a person who has never been cursed in their life, but it is exceptionally impossible to be a person who never hears curses in their lifetime. Analyzing the peculiarities of the nature of curse genre, it is noteworthy that curse is a wide phenomenon which expresses wishing a bad luck or unhappiness to someone, influencing human's spirit directly or indirectly. Curses express the bad intentions of the speaker to the addressed person. Curses are classified according to the nature of the subject, into the curses related to natural phenomena, related to objects and events, divine curses. Therefore, there appeared a need to study the curses in Shukur Kholmiraev's creative works and his attitude towards folklore in his stories.

### Materials and Methods

Concerning the question of the curses used by Shukur Kholmiraev and how they show their artistic power and character in these works, can be specified in the following examples extracted from his stories:

-- Hush! Something is rustling!

-- Where?

-- Silence!

-- Ah, the wind! It is this bark, let its house get burnt! [Uninhabited house, p78]

The curse "let your house get burnt" (Uzbek version: Uyingkuygur) is mostly used by women, however, in above mentioned story it is used by a man. The curses that are used by boys also should not be away from investigation target.

-- No sooner than I screamed: "Aaaaa!" I found myself running as fast as a bullet. The children also followed me. In this pace, I reached the end of corn field and turned to a narrow street. Having passed through it (After being fisted earlier, even I got slapped twice, I didn't feel dizziness and it seemed to me that I didn't feel my head), when I arrived at the junction I saw "the fugitive" running towards sack street. -- Quit! Thief! He stopped suddenly, and turned to his street and pretended as if I was not chasing after him but some other one. I realized that he didn't want

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me to scream because he was afraid of someone else and I started to scream even louder:

Where on earth, did you come from? You, the evil, mauler! Why did you rob us? Do you want to make us slave? Filthy! [selected edition 3rd volume, p55]

The observing nature of the author kept growing while exploring the use of curses in quarrels and scandals among children. This confirms that the curses used in children language are performed by children themselves. Above mentioned curses such as evil, filthy are used in children's speech. As they often came across with these in other genres of folklore, children use the same curses.

The curses related to objects and events are given in the following story.

- Yeah, this, with discrete flower patterns. Embroidered with golden thread. These flowers left only, look... other parts became rotten. Nothing left from the wadding, inside part. Ugh, very old gown is this! –after thinking a little, again stared at the piece of clothing. – but I already tore it into pieces. If you sew it backwards, it will be the same again... Ah, let those days get fire. I am just opening you my heart, my kid.

With the help of the curse 'let those days get fire' there referred back to the past bad times of the history. [Selected edition, 3-volume, p85] While investigating the scientific studies, it was clarified that curses are mainly performed by elderly women. However, in our observation, in ShukurKholmirzayev's works performers of the curses are mainly boys, middle aged and old men.

Sultan smiled sadly.

- I can shoot your thirty two teeth with one stroke!- he said

- I am myself, a stupid... apologized to you, to such a person, slovenly, ignorant, coward. I came for this...why?-he cried out.

- I wanted to shrift...No, just to make you happy. On the Eve of such a holy holiday. On the day of shrifting...on the day of shrifting all human beings. Hey, do you know, he continued talking –In spring everything gets renovated, isn't it? Don't hurry! Renovates. [Сайланма 3-жилд 118-бет]

With the help of the description of the argument between Sultan and Jonikul Jondor the author tried to express important individual peculiarities of the both characters. In the end, the argument finished with a negative incident.

In this way, the writer reacts to the relative portrayals of certain individuals, to neglect and to some other unhealthy events in life with the hero's active participation.

Sultan stepped aside smiling.

- Please. The road is open.

- Eh, curse your father...

Sultan felt as if everything was spinning before his eyes. He didn't notice himself stretching his hands.

As he could grab the cloak he pulled it, he seemed as if he reached his intention. Jonibek Jondor was looking at him in a shock. Sultan crowned his cloak then searched a place to throw it away: small room. [Selective volume 3, p119]

Shukur Kholmirzaev's stories clearly describe the inner world of the characters and their psychology, and the desire to make them more widely known is important, characteristic and effective. This kind of character is revealed, not through the writer's description or the character's description, but through the hero's thoughts, inner monologue, and imagination. In this method of fiction, the writers rely on plots reflecting important puzzling events with deep philosophical meaning. In fact, without them, the writer's artistic intentions cannot be realized. Therefore, today's observation of the poetic skill of each artist in bringing folk elements into an artistic object can be the subject of many major studies. By observing the state of the relationship between folklore and written literature in today's literary process, it helps to demonstrate the creative identity of the writer on the creative impact of word art on the form of applause and curse.

I cried, "Isn't it better to die than this day?"

I am scared to there. –he bent over again and laughed.- I kept on mumbling.

Look at yourself, why did you rob a woman? You filthy!

At this moment, Tavakkal came back, rubbing his hands together. He said sitting, "Got it! Ready!"

When he heard Gulsara's last words, he suddenly nodded to praise her, showing his golden teeth. – At this time there appeared...

"Yeah", Tavakkal went on with considerable satisfaction.

Getting out of the taxi I was going to the hotel, a woman was cursing at a cobbler. [Selective volume 2, page 398]

My father's last words were:

- Oh, old woman, don't shave my head. I told him all my words. You're an unfair guy, brother. Well, come and sit here. I cursed him "Let your children cry leaving without a father, Let your possessions never multiply" That's all right, old lady. I released my heart. If he is a descendant of man, not an animal, he will come. [Selective volume 1, page 104]

Even though above mentioned curses' performers are clear from the contexts, they express negative intentions of the performers towards the addressed person and in fact, their creators were common people. The local character of the curse is also confirmed by the materials of Uzbek folklore. Shukur Kholmirzaev is famous for telling stories in the Kipchak dialect of Surkhandarya region.

Eh, brother, I can't keep any more. That man was my idol, he scolded me badly. I could hardly sit there...Look! My brother is disappointed with me! He suddenly jumped from his seat. Eh, let your house get

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fire, drinking! When did I get addicted to this?...Everything went wrong! - [Selective volume 1, p 107]

The folklore scientist D. Uraeva has divided Uzbek curses into two types, which, according to their function, are object-oriented and do not penetrate the object. In the above mentioned "Let your house get fire" curse the second, not penetrating the object type curse is expressed. Because until now, alcohol has not disappeared because of curses. Thanks to ShukurKholmirzaev's use of curses, it has been observed effective to deepen the characters' inner world, psychology, and thus to reveal important individual character traits. The use of curses, in my opinion, is used to further the narrative of the story and the tone of the story, and to show the human character more broadly and more deeply. Curses are a very old and yet very lively form of creative fantasy, with its intriguing and captivating storytelling that has served as an important artistic feature that, in many ways, stimulates the writer's creative thinking in the literary genre, as it is known from the history. Despite the

varied form and technique of cursing, this genre has its own unique characteristic features. The verbal specificity of the curses also determines their individuality as an independent genre. Curses were created long ago, when our ancient ancestors did not discover the writing, and these creations have reached us through the memory of the people. It also brought in a variety of performances in the genres of folklore as a way of living.

### Conclusion,

In conclusion, curses are the oldest and most modern, independent genre of Uzbek folklore. Considering these, it can be said that the scope of the use of public curses in human life determines its subject matter, the areas of functional cooperation. The cursing prevails over the desire to defeat any opponent by means of "hidden thorny words". Therefore, its performance doesn't match any behavioral norms or ethical standards.

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## COMMUNICATIVE COMPETENCE AS A RESULT OF EF TEACHING AND LEARNING

**Abstract:** This article defines the concept of competence and communicative competence, outline of the development of the concept as a result of EF teaching and learning and applications of the final model of communicative competence referring the description of communicative competence in the Common European Framework of Reference (CEFR) developed by Council of Europe.

**Key words:** competence, communicative competence, linguistic competence, sociolinguistic competence, discourse competence, strategic competence, socio-cultural competence, social competence, CEFR.

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### Introduction

### UDK 81-13

As we are living in an era of information technology, so today we are being drowned in the deluge of information. Gale of change has blown in the pedagogy of English Language Teaching (ELT). Modern multimedia tools (video cameras, computers, LCD projectors and etc) has initiated new possibilities into the classroom. Methods and approaches of teaching English have developed rapidly, especially in the last 50 years in both general education and language teaching. The results of prior theoretical and empirical researches and current discussions of language teaching methodology have emphasized the importance of providing opportunities for learners to communicate. Communicative language teaching (CLT) has been put forth around the world as the “new”, or “innovative” way to teach English as a second or foreign language. The essence of CLT is the engagement of learners in communication in order to allow them to develop their communicative competences. Our country also has launched a major initiative to improve English language teaching in its education system. One of the main goals is to develop communicative competence of its graduates. In the area of second language acquisition, communication,

communicative competency and communicative language teaching are all key concepts. In this article I will discuss the results of prior theoretical researches concerned to the concept “competence”, “communicative competence” and the applications of communicative competence to language teaching.

### Materials and methods

**The concept of communicative competence; and the theoretical framework of communicative competence:** “Competence” is one of the most controversial terms in the field of general and applied linguistics. In methodology the term “competence” is used as characteristics of the achieved level of the language proficiency. The process of defining the concept “communicative competence” started in the late 1960s. This term was firstly introduced by Noam Chomsky[1] in his book “Aspects of the Theory of Syntax” to define ‘competence’ as an idealized capacity that is located as a psychological or mental property or function and ‘performance’ as the production of actual utterances. Clearly, competence involves “knowing” the language and performance involves “doing” something with the language. In other words, there is a classic distinction between competence (monolingual speaker-listener’s language of knowledge) and performance (the actual use of

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language in real situation)[1]. The difficulty with this construct is that it is very difficult to assess competence without assessing performance. In an attempt to clarify the concept of communicative competence, H.G. Widdowson, Savignon, D.Hymes, M. Canale and M. Swain, Van Ek, Bachman and Palmer defined competence, communicative language ability as a concept comprised of knowledge or competence and capacity for appropriate use of knowledge in a contextual communicative language use.

According to Widdowson, communicative abilities have to be developed at the same time as linguistic skills. The reason is that students may know the rules of linguistic usage, but not unable to use the language. He distinguishes two aspects of performance: “usage” and “use”. He explains that “usage” makes evident the extent to which the language use demonstrates his ability to use the knowledge of linguistic rules, whereas “use” makes evident the extent to which the language use demonstrates his ability to use the knowledge of linguistic rules for effective communication[2]. In short, being able to communicate is more required than linguistic competence; it required communicative competence[3].

D.Hymes[3] defined the concept of ‘communicative competence’ as an ability to use grammatical competence in a variety of communicative situations. He distinguished two kinds of competence: linguistic competence and communicative competence. Linguistic competence deals with producing and understanding grammatically correct sentences, and whereas communicative competence that deals with producing and understanding sentences appropriately in real situations. Thus, Hymes coins a term “communicative competence” and defines it as knowledge of the rules for understanding and producing both referential and social meaning of language. This idea was also developed by M. Canale and M. Swain[4]. In their concept of communicative competence, knowledge and skill are needed for communication. According to them, there are three types of knowledge: knowledge of underlying grammatical principles, knowledge of how to use language in a social context in order to fulfill communicative functions and knowledge of how to combine utterances and communicative functions. Canale and Swain propose their own theory of communicative competence that minimally includes three main competences: grammatical, sociolinguistic and strategic competence.

*Grammatical competence* includes knowledge of lexical items and of rules of morphology, syntax, sentence, grammar semantics, and phonology. They point out that grammatical competence is important for communication whose goals include providing learners with knowledge how to express views accurately[4]. *Sociolinguistic competence* is made up

of two different sets of rules: socio-cultural and discourse. The former focus on the extent to which certain propositions and communicative functions are appropriate within a given socio-cultural context, and the extent to which appropriate attitude and register or style are conveyed by a particular grammatical form within a given socio-cultural context. Rules of discourse are concerned with cohesion and coherence of groups of utterances[4]. Finally, *strategic competence* is made up of verbal and nonverbal communication strategies that the speaker may resort to when breakdowns in communication take place due to performance variables or to insufficient competence. These strategies may relate to grammatical competence (how to paraphrase, how to simplify, etc.) or to sociolinguistic competence (for instance, how to address strangers when unsure of their social status).[4]

Later, Van Ek developed this new model of communicative competence through applying it to foreign language acquisition. He presented a framework for comprehensive foreign language objectives which included six dimensions of communicative competence, each of them called competence as well. These six competences are: Linguistic competence, sociolinguistic competence, discourse competence, strategic competence, socio-cultural competence and social competence

*Linguistic competence*: The ability to produce and interpret meaningful utterances which are formed in accordance with the rules of the language concerned and bear their conventional meaning ... that meaning which native speakers would normally attach to an utterance when used in isolation. [5]

*Sociolinguistic competence*: The awareness of ways in which the choice of language forms is determined by such conditions as setting, relationship between communication partners, communicative intention, and etc. This competence covers the relation between linguistic signals and their contextual or situational meaning. [5]

*Discourse competence*: The ability to use appropriate strategies in the construction and interpretation of texts.[5]

*Strategic competence*: When communication is difficult we have to find ways of ‘getting our meaning across’ or ‘finding out what somebody means’; these are communication strategies, such as rephrasing, asking for clarification. [6]

*Socio-cultural competence*: Every language is situated in a socio-cultural context and implies the use of a particular reference frame which is partly different from that of the foreign language learner; socio-cultural competence presupposes a certain degree of familiarity with that context. [7]

*Social competence*: Involves both the will and the skill to interact with others, involving motivation, attitude, self confidence, empathy and the ability to handle social situations. [8]



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We can observe that both proposals of Canale and Swain and Van Ek have some aspects in common. What Canale and Swain call grammatical competence is called as linguistic competence by Van Ek, but both of them have to do with grammatical rules; what Canale and Swain call sociolinguistic competence is split into sociolinguistic and discourse competence by Van Ek, but again they consider the same issues; and strategic competence, Van Ek probably took the concept from Canale and Swain. The main difference is Van Ek's incorporation of two more points of view, socio-cultural and social competence, which take into

account values and beliefs, on the one hand, and attitudes and behaviours, on the other. Being a more comprehensive model and more suitable for communicative language teaching purposes, Van Ek's model is refracted towards the six Reference levels in CEFR. In other words, with regard to FLT the term "competence" was developed in the frame of researches done by the Council of Europe[9]. In the CEFR, communicative competence is conceived in terms of knowledge including three basic components-linguistic competence, sociolinguistic competence and pragmatic competence. See *Figure 1*.



Figure 1

Sociolinguistic competence and pragmatic competence envelop the other ones (discourse competence, socio-cultural competence, social competence) interrelated each other. Pragmatic competence concerns the knowledge of the functions or illocutionary forces imply in the utterances/discourse that are intended to be understood and produced, as well as socio-contextual factors, strategies of communication that effect its appropriateness. It involves knowledge of cultural factors such as the rules of behavior that exist in the target language community as well as socio-cultural awareness including differences and similarities in intercultural communication. This model of communicative competence emphasizes the importance of four language skills since they are viewed as a manifestation of interpreting and producing a spoken or written piece of discourse (text+situation).

### Conclusion

A brief outline of the development of the concept and the final models of communicative competence of

this article enables the following conclusions: From the moment of its introduction into the linguistic discourse, the notion of communicative competence has been constantly changed and adapted to the context of its use. The term 'communicative competence' was defined as knowledge and abilities/skills for use by theoreticians in the field of Applied Linguistics. This shows that a competent language user should possess not only knowledge about language but also the ability and skill to activate that knowledge in communicative situations. As illustrated in Figure1, communicative competence between the models of Widdowson, Canale and Swain, Van Ek that are frequently used at present. Especially the model of Van Ek which is the the final model of communicative language competence proposed in the CEFR. In the CEFR communicative competence is conceived in terms of knowledge including three basic components-linguistic competence, sociolinguistic competence and pragmatic competence.

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## INTERACTION PATTERNS IN ELT TEACHING: GROUP WORK AND PAIR WORK

**Abstract:** In English language teaching (ELT) interaction patterns play a prominent role in language acquisition and learning process. Interaction occurs when students discuss, share their opinions or talk to each other in class. Using the right interaction pattern is a fundamental factor in the success of any activity and the achievement of aims of the lesson. The interaction pattern is: teacher to the whole group (T-Ss); other patterns include pair work (S-S), and group work (Ss-Ss). Changing interaction patterns can help vary the pace of learning and choosing an appropriate pattern can help achieve learning outcome. This article aims at describing interaction patterns in EFL classroom.

**Key words:** interaction, group work, pair work, EFL classroom.

**Language:** English

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### Introduction

### UDK 81-13

In ELT interaction patterns are the different ways learners and the teacher can interact in the class. In teaching English, students' interaction plays an important role and it should be taken into consideration by language teachers. Language learning can be taken place in and through interaction with others in various social contexts. Thomas (2012) defines interaction is not only as a learning facilitator but also primarily is as a resource for what to learn and how to learn. According to Brown (2007) interaction is "collaboration of thought, feeling, or ideas between two people, resulting in a reciprocal effect on each other". To simplify, interaction is dual communication acts between two people or more that have implication among them.

### Materials and methods

Based on who communicates with whom, Dagarin (2004) formulated the four forms of interaction in the following:

- teacher-learners
- teacher – a group of learners

- learner-learner
- learners-learners

In these forms of interaction, the teachers alternately change their roles as a controller, language model, guide, evaluator, and advisor in pair-work or group work types of communication in the classroom. In addition to Dagarin, Malamah-Thomas (1987) proposed seven types of classroom interaction:

- teacher – whole class
- teacher – individual student;
- teacher- a group of students;
- student – teacher,
- student-student,
- student – a group of students.

A variety of interactional patterns in language classroom may affect the language learning process as well as the development of language proficiency.

Hence, what is a group work? What is the benefit of working in groups? All of us agree that group and pair work are so much a part of our everyday teaching routine in order to tackle some particular communicative tasks. Studies of contemporary foreign language classes revealed that before group work coming into the standard EFL teaching, almost 80% of lesson time consisted of the teacher talking to

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the students. Teacher Talking Time (TTT) became taboo and ways were devised to stamp it out and train the students to actually perform in the language they were learning. Alternatively, group work made it possible for the teacher to devote more time to the students' oral production. Instead of being dependent on the teacher, students get used to helping and learning from each other. Meanwhile, the teacher is left free to discreetly monitor progress and give help, advice and encouragement where and when it is needed.

According to Rance-Roney (2010) group work is a student-centered way of teaching that emphasizes collaboration, cooperation, and teamwork and he describes group work as a classroom practice where "students work in teams to construct knowledge and accomplish tasks through collaborative interaction." Rance-Roney (2010). Sometimes, teachers use groups to work on short activities in an informal way. However, a more formal structure to group work can provide many benefits for the students as well. Jennifer Morris (2012) explains that working together is effective as students interact meaningfully in the target language and get helpful feedback from peers. Students develop "positive interdependence." In many cases, group work can help you manage your classroom successfully regardless of class size or content. Group work creates an atmosphere that encourages successful behaviors. Working in groups engages students with others who may have different sets of language and social skills. Using smaller groups to meet classroom goals allows students to develop skills that are valuable in life and work, such as:

- talking about ideas
- justifying opinions
- collaborating with others
- building consensus
- handling conflict
- disagreeing politely Jennifer Morris (2012)

Working in pairs or groups students can learn from one another a lot. In a class there are always weak and strong students. Arranging the class into groups the teacher should remember that there can be a mixture of different ability levels in one group. With this in mind he/she can predict which roles would be the most adequate for which students and what they could teach their classmates, and then give them the tasks. What is more, they provide an enormous number of new items and expressions for their classmates. The point the present writer is trying to make is simply that the students need to work together as often as it is possible to learn how to cooperate with other people and get used to different ways of speaking in a foreign language. Moreover, they improve their listening, speaking and comprehension skills.

Pair work and group work also develop students' fluency. As it has already been stated, students really

do not have too much possibility to practice the language in a traditional classroom. The teacher presents new grammatical structures and then makes the students do exercises or drills connected with the new material. In fact, the learners do it automatically, without thinking - if the drill is not meaningful - and can forget it easily after a week or a month. It goes without saying that they do not develop their speaking skills, let alone fluency in a foreign language. On the contrary, pair work and group work do influence these abilities. The students can use the language freely and express their opinions and thoughts without any restrictions. It is difficult not to get the impression that fluency can be improved only during constant speaking practice in the atmosphere of independence and in the state of relaxation.

There is another magnificent advantage of pair work and group work. It is the variety of available activities. It must be said here that a huge variety of activities influences the course of a lesson and its success. The more different the activities the teacher uses during his/her lessons, the bigger their motivation towards learning the language. It is true that in pair work and group work students' motivation increases because they are active and feel important during these activities. In keeping with this, the teacher is going to experience success in his/her work because motivated students are usually good language learners and they always make progress.

Pair work and group work have advantages not only for the learners but also for the teachers. First of all they save time. Instead of asking individual students to practice a structure or answer the questions, he/she can divide the class into pairs and make them do the exercise at the same time. As a result students are able to practice the language more during the course. When the time is saved, the teacher can take his/her students through much bigger material and many more activities. This will be for sure appreciated by the students who will not have time to get bored because of the variety of activities and their own participation in the lesson. As a result, the lesson will seem to be more interesting, the teacher will be liked by the students, and he/she will enjoy his/her work because it will bring him/her satisfaction, pleasure, and fulfillment.

Pair work and group work may be a good way of checking students' progress in learning. The teacher can do it without students' knowledge about the fact that they are observed and checked. Walking round the class and listening to the speakers, the teacher can not only make notes of the most common mistakes to discuss them later, but also discover whether they are able to communicate with each other in the foreign language or not. Such discovery helps the teacher to decide which parts of material need to be repeated or explained later. Another important advantage for the teacher is that pair work and group work give him/her time to consult the lesson plan and organize materials

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for the next stage of the lesson. Although the teacher can be prepared for the lesson very well, sometimes it may happen that he/she simply forgets what he/she must do next. Pair or group activities are the best for looking up the lesson plan. It is also good for organizing materials for the next activity, for example hanging pictures or pieces of a text on walls, writing something on the blackboard, etc.

Some educators can argue that pair work or group work also bring a lot of disadvantages, both for learners and teachers. One of the problems is that students often speak in their native language. The teacher should establish certain rules at the beginning of the school year and be very strict about them. After some time the good habit of speaking only English may be established.

Another disadvantage is incorrectness. During pair work and group work the teacher usually does not disturb the students, even if he/she notices some mistakes they have made, but lets them speak freely. However after the activity, he/she should discuss the most common ones. It is tempting to suggest that the

learners may learn each other's mistakes or errors, but we should not forget that errors or mistakes are an indissoluble element of the process of learning.

### Conclusion

We can conclude briefly by saying that teachers set the classroom activities to make the student interact with each other. Pair-work and group-work help the students communicate and improve their language skills. Concerning to the interaction patterns in language classroom should focus on building communication and interaction among students. In these terms, teachers play the prominent roles as being facilitator of the lesson. They control the moves of lesson, they manage who talks, when and how much, and they also become student' speaking partners and language model. Students try to correct each other rather than learn the mistakes. One of the main points of having learners speak to each other is to help them increase their confidence and reduce the anxiety that is often found in a purely student-centered classroom.

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## TASK-BASED LANGUAGE TEACHING APPROACH IN ESP CLASSROOM

**Abstract:** Upper-level English classes often pose some problems for teachers. At some universities or at the institutions, upper-level students learn English by using the technical language of their degree program, such as law, medicine, engineering, business, information technology, or some other fields known as English for Specific Purposes (ESP), this type of English instruction integrates the specialized subject matter of the field into the classroom. ESP requires the acquisition of highly specialized terminology and the ability to explain formal processes as students are prepared for acquiring the high-level competence that they will have to demonstrate in their chosen profession. This advanced material is often difficult and challenging which make students become easily nonresponsive. This article presents possible good solutions: that is task-based learning approach (TBL), an overview TBL and highlights its advantages over the more traditional Present, Practice, Produce (PPP) approach.

**Key words:** TBL approach, PPP approach, experiential learning.

**Language:** English

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### Introduction

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The emergence of English as a global language has strengthened the rationale for a task-based approach to language pedagogy, because it gives learners in English as foreign language environments not only the opportunity but, indeed, the need to use the language for authentic communication. Today, modern English becomes a tool of communication rather than an object of study. This trend is almost certain to increase. Millions of language learners around the world will have opportunities for the authentic use of language. TBLT focuses on the use of authentic language and on asking students to do meaningful tasks using the target language. Such tasks can include visiting a doctor, conducting an interview, or calling customer service for help. Assessment is primarily based on task outcome (in other words the

appropriate completion of real world tasks) rather than on accuracy of prescribed language forms. This makes TBLT become a popular for developing target language fluency and student confidence. In TBLT, learners acquire the language primarily through using the language in carefully structured situations.

### Materials and Methods

There is one popular notion “learning through doing” in teaching EFL. This notion of learning through doing has its roots in experiential learning which language educators see as a process of building bridges between what learners already know and what they have to learn. The most articulate application of experiential learning to language teaching is provided by the scientist Kohonen (1992): Experiential learning theory provides the basic philosophical view of learning as part of personal growth. The goal is to enable the learner to become increasingly self-

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directed and responsible for his or her own learning. This process means a gradual shift of the initiative to the learner, encouraging him or her to bring in personal contributions and experiences. Instead of the teacher setting the tasks and standards of acceptable performance, the learner is increasingly in charge of his or her own learning. In many respects, Kohonen's model can be seen as a theoretical blueprint for TBLT:

- Encourage the transformation of knowledge within the learner rather than the transmission of knowledge from the teacher to the learner.
- Encourage learners to participate actively in small, collaborative groups.
- Embrace a holistic attitude toward subject matter rather than a static, atomistic and hierarchical attitude
- Emphasize process rather than product, learning how to learn, self-inquiry, and social and communication skills.
- Encourage self-directed rather than teacher-directed learning.
- Promote intrinsic rather than extrinsic motivation. (Kohonen 1992)

These principles see learning as a collaborative and transformative rather than a transmissive process, one in which the teacher creates an environment within which the learners take control of their own language learning. Now, it is time to look more directly at what we mean about how to design task-based learning tasks. One of the most important features of TBLT is that task authenticity and text authenticity which focus of using spoken and written material that has been produced for purposes of communication, not for the purpose of language teaching. The authentic texts are intended to assist learners to develop strategies for comprehending such texts in the world outside the classroom. According to Rod Ellis (2003), aim of focused are to introduce learners to process, receptively or productively, some particular linguistic feature, for example, a grammatical feature. Focused tasks have two aims: one is to stimulate communicative language use; the other is to target the use of a particular predetermined target feature. A task has four main characteristics: Rod Ellis (2003)

1. A task involves a primary focus on (pragmatic) meaning.
2. A task has some kind of 'gap' (Prabhu identified the three main types as information gap, reasoning gap, and opinion gap).
3. The participants choose the linguistic resources needed to complete the task.
4. A task has a clearly defined, non-linguistic outcome.

Richard Frost introduces lesson stages of task-based teaching below.

### Pre-task

The teacher introduces the topic and gives the students clear instructions on what they will have to

do at the task stage and might help the students to recall some language that may be useful for the task. The pre-task stage can also often include playing a recording of people doing the task. This gives the students a clear model of what will be expected of them. The students can take notes and spend time preparing for the task.

### Task

The students complete a task in pairs or groups using the language resources that they have as the teacher monitors and offers encouragement.

### Planning

Students prepare a short oral or written report to tell the class what happened during their task. They then practise what they are going to say in their groups. Meanwhile the teacher is available for the students to ask for advice to clear up any language questions they may have.

### Report

Students then report back to the class orally or read the written report. The teacher chooses the order of when students will present their reports and may give the students some quick feedback on the content. At this stage the teacher may also play a recording of others doing the same task for the students to compare.

### Analysis

The teacher then highlights relevant parts from the text of the recording for the students to analyse. They may ask students to notice interesting features within this text. The teacher can also highlight the language that the students used during the report phase for analysis.

### Practice

Finally, the teacher selects language areas to practise based upon the needs of the students and what emerged from the task and report phases. The students then do practice activities to increase their confidence and make a note of useful language. "Opinion exchange" tasks can be used to practise for students to work in pairs, using mobile phones as classroom usage, they are typically open-ended. Students are distributed different kind of cue cards describing various situations which are intended to complete tasks in pairs. The choice of words could be simple everyday expressions or phrases that are often used to carry on the conversation. This technique is great fun and provides plenty of speaking practice as the students work hard with their partners. Here are some examples for pre-intermediate level classes:

**Card 1: Making a phone call to get flight information;** Sometimes booking a flight and a hotel over the phone seems a bit difficult, however it is not, if you can use essential words and expressions concisely.

- "I'd like to enquire about flights to..."

- "Could you tell me about the flight availability and prices?"

- "I'd like to book a hotel room..."

- "Is there a discount rate for..."

<b>Impact Factor:</b>	<b>ISRA (India)</b> = 4.971	<b>SIS (USA)</b> = 0.912	<b>ICV (Poland)</b> = 6.630
	<b>ISI (Dubai, UAE)</b> = 0.829	<b>PИИИ (Russia)</b> = 0.126	<b>PIF (India)</b> = 1.940
	<b>GIF (Australia)</b> = 0.564	<b>ESJI (KZ)</b> = 8.716	<b>IBI (India)</b> = 4.260
	<b>JIF</b> = 1.500	<b>SJIF (Morocco)</b> = 5.667	<b>OAJI (USA)</b> = 0.350

**Card 2: Ordering food at a restaurant by phone;**

-“Could I book a table for two people for 4 p.m, please?”

-“What do you recommend?”

-“Could we have...?”

**Card 3: To open a bank account;**

-“I'd like to open a personal account?”

-“What's the exchange rate for euros?”

-“Could I order a cheque book, please?”

**Conclusion**

A brief outline of the advantages of TBLT of this article enables the following conclusions: TBLT offers an alternative for language teachers. In a task-based lesson the teacher doesn't pre-determine what language will be studied, the lesson is based around the completion of a central task and the language studied is determined by what happens as the students complete it. TBLT makes students to complete super-tasks such as writing resume, making appointment, taking in part in an interview, renting an apartment and etc. It is a strong communicative approach where students spend a lot of time for communication and it is also enjoyable and motivating.

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## SELF-CONSCIOUSNESS OF STUDENTS IN SOCIAL AND PSYCHOLOGICAL MECHANISMS

**Abstract:** This article is about self-consciousness of students in social and psychological mechanisms. National self-awareness is manifested in the national interest, when he clearly manages the position of his nation in the social and ethnic identity of a person, in the social sphere. There are a number of objective and subjective factors of national self-consciousness. One of these is a national feeling, which reflects the emotion of a person in the process of interpersonal relationships, in experiencing high spiritual inner tensions and creative ideas.

**Key words:** Heritage, outlook, awareness, emotional experiences, social, ethnic, knowledge, external, internal, psychological maturity.

**Language:** English

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### Introduction

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The challenges of upholding the human personality, its high moral qualities, the formation of the national independence ideology, the upbringing of the younger generation in the spirit of respect for our rich cultural heritage and our historical values, and the love for our independent home country put forward important tasks. The formation of a spiritual outlook of young people with a healthy spirit, and finding effective ways of working on this issue is related to the youth's self-awareness, their competence, and the optimal behavior in the moral and social norms. Self-awareness, self-awareness, and self-esteem are primarily due to their focus on themselves, their inner potentials, abilities, emotional experiences. That is, the social behavior of the person surrounding him requires not only focusing on their behavior, but also on regular analysis of their individual actions and their consequences. It is impossible for a person to

understand another person before embracing his own "I" without having to fully understand himself and to experience the emotional experiences of others.

A clear demonstration of the fact that a person can not compromise with himself is the exemplary frustration, the essence of space vacuum, which is the main idea of existential psychology. When a person experiences a vacuum, vacuum, there is love for life, aspiration toward achievement, activeness, weakness, emotional coldness, indifference. Therefore, it is necessary to educate young people to become self-conscious, to have their own imagination, to introduce "internal discipline" in their mentality and thus to educate themselves spiritually. Because the spiritual development of a person first of all requires self-consciousness, its subsequent self-interest, and finally the familiarization of the society. A human being's awareness of society is his national self-consciousness.

National self-awareness is manifested in the national interest, when he clearly manages the

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position of his nation in the social and ethnic identity of a person, in the social sphere. There are a number of objective and subjective factors of national self-consciousness. One of these is a national feeling, which reflects the emotion of a person in the process of interpersonal relationships, in experiencing high spiritual inner tensions and creative ideas.

The national self-awareness, starting with "I," is a real "I," the "I" in the past, the present "I", the next "I", the ideal "I" dynamic expression. The appearance of self-consciousness varies from place to place, because it can only be achieved by assessing its recent past, eliminating the shortcomings in its current life, the choosing of the best ways to succeed, and the ability to diagnose its own potential.

The concept of "I - concept" occupies a special place in the concepts of human personality in psychology. This concept is interpreted as a collection of perceptions about a person's relationship with others. In the process of teaching, the concept of "I - Concept" is even more important because the pedagogue - the teacher - evaluates the youth on the basis of their own perceptions, extends and absorbed the experience they have acquired.

If a teacher has a positive "I - Concept" - that is, there is a sense of personal abstinence, emotionally stable and mature, the relationship between the teacher and the youth is based solely on positive perceptions, and the teacher does not expect a negative attitude towards young people. There will be no problem with self-evaluation. Indeed, the teacher's positive "I-Concept" positively influences the formation of the student identity, since the age at which a person needs to have a positive assessment of his / her work, plays an important role in shaping the positive character of the student.

The student will become a highly qualified, qualified specialist in the future, and will have a solid knowledge and a strong knowledge in the field of communication with the future "I". In the future, their talent as a self-employed, initiator and organizer is largely dependent upon their well-organized professional qualities. An inexperienced researcher is the main criterion for this process, in which the dynamic "I" is going to change, and the ability to control the quality and effectiveness of the process is reasonably accurate.

The image formed by the imagination of the person himself, his attitudes, characteristics, and position in society, is the image of "I" and the degree to which it is closer to reality determines the perfection of the person. Man's upbringing is manifested by his understanding of himself and his qualities. Because each person's self-esteem reduces the likelihood of contravening existing norms in society

Self-consciousness is often difficult for a person to realize that human nature is trying to "grasp" inappropriate qualities that are incompatible with the

norms of those societies that are incompatible with his or her society, and even such imagination and knowledge are absorbed into the consciousness (Austrian scholar Z. Freud according to the theory). This is a personal protective personality in every person. This protection mechanism often protects a person from various ill effects and emotions.

Self-awareness is closely linked to the self-actualization of a person. The following factors play an important role in the self-actualization of a person:

1. Self-communication, in which the person perceives himself as an obedient creature and organizes a dialogue with himself.

2. Self-reliance, in which the person is subordinate to positive norms of behavior through his ability, power, and will.

3. To give orders to yourself is a person's self-conceit in a very extreme and extreme case, and can encourage himself to optimally.

4. Self-reliance - in which the formation of competent judges based on the social norms of an individual is carried out.

5. Internal discipline is an essential criterion for self-governance that is always necessary for the regular correction and management of all its actions.

There is a theory of "control locus" in psychology that deals with the self-control of a person, which means that there are two types of activity in each human being. The first type of activity is that a person recognizes himself as the cause of all the events that occur in his life. They are internal, which are characterized by excessive trust, diligence in achieving goals, self-analysis, communication skills, sympathy and independence. The second type of activity is characteristic of all external and external factors that are the cause of the events and phenomena that are happening and are characterized by the fact that they do not believe in their capabilities, explicitly set their goals for an indefinite period, are overly excited, suspicious, conformable, aggressive, and sincere. Externals are also able to successfully perform their business on a strictly regulated basis, but exhibit better performance by others.

According to the American scientist D. Rotter, children who are trained to deal with harvesting are less likely to experience frustration, neurotics' and conformism. They are active, independent, independent thinkers. They have a sense of self-esteem, and that does not interfere with living with others. Therefore, it is necessary to create the conditions for young people to take more initiative, to have independent thinking and freedom in educational institutions where an important stage of socialization is going to be the cornerstone of today's politics. Based on this, we conducted a questionnaire for locally-supervised students. The questionnaire was attended by first and fourth year students of the psychology course. The reason for the choice of respondents is the study of students who have recently

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adapted to higher education institutions and the different aspects of graduate students' relationships to life, work, family, and other people.

**Table 1.**

COURSE	External		Internal	
	Boys	Girls	Boys	Girls
<b>I</b>	2 6%	10 27%	20 53%	5 14%
<b>IV</b>	3 11%	10 34%	7 26%	8 29%

45% of the graduating students are externals, 34% of them are girls, only 11% are young men, 55% are internal, 26% of them young men and 29% girls. The results of the first-year students also satisfied us. 67% of the students who are just beginning to adapt to the higher education institution are internals. 53% of them are in the defense of our homeland and are characterized by the fact that they have many experienced experiences. Among young people, 33 per cent of the population, only 6 per cent are young men and 27 per cent are girls.

The sooner you realize how human self-actualization depends on you, the more you look at life and the more important goals you set. In educating young people, it is important to predict their psychological maturity by instilling in them a sense of self-esteem. This feeling is not a biological phenomenon but a social phenomenon. Because this emotion develops during the process of man's spiritual formation.

A person with a psychological maturity can be more vigilant in different living conditions and circumstances. This vigilance is evidenced by practicality, accurate assessment of reality, adequate assessment of the individual's achievements and shortcomings, knowledge, skills and abilities.

Such a person is characterized by his ability to control his or her feelings, that is, the high level of internal discipline. Psychological maturity depends somewhat on understanding other people's desires, desires, and experiences. This, in turn, contributes to a dialogue, a good partnership, a positive relationship in the family and in different groups.

In one of his philosophical debates, the Great Socratic had called on you to "know yourself" about self-awareness. Thus, an important stage in the process of knowledge or the most important object of knowledge is man himself. Self-awareness creates the spirit of man. Psychological competence teaches people to be self-controlled, self-directed, self-discipline, and to use their abilities effectively.

Student self-esteem should be improved by focusing on positive things. The student should have a positive experience, that is, to work for himself, his

family, his group, and his team. There is a need to expand the practice of involving students in public affairs and increase their interest in this work. The student forms the important socio-psychological qualities, such as personal perception, the analysis of his / her positive and negative qualities, and the separation of his personality among others. This creates a self-control system for the individual.

A self-aware person can protect his own interests. Protecting your own interests means that you have the right to express your opinions, rights, claims, and self-respect. A person who believes in himself is explicit in expressing his or her own attitude towards any event. That is, he can assume responsibility for his emotions and tell others about what he is doing. This is the normal way of behavior. Not everyone has the same ideas, demands and rights that are not indifferent to the others. The only way to reach them is to be able to protect them personally. People who trust themselves understand their own needs and demand their cure. At the same time, such a person recognizes the right of others to defend their interests. Therefore, they do not go beyond the limits of their demands and respect the demands of others. People who trust themselves are honest and honest with themselves and those around them. They perceive the reality realistically, and do not discriminate on the events taking place and speak indifferently. They are real, not illusions. The mature person wants to know what he or she needs. The basic principle is to behave naturally without trying to look good.

The egoist, however, is busy in his own affairs, and most of the others deny it. We all think that egoism is bad, we need to put priority on others' interests. However, the level of care that a person has in people around him is a special philosophical issue. Protecting one's own interests means recognizing and demanding that we have the full right. To avoid lying to our own interests, we will abandon a permanent thing and eventually become alto theft, worse than egoism - for others to become self-sacrificing. In order not to condemn us egoistic, we put not only the interests of others but also our own legal desires, and we do not respect ourselves. It can be that if you can

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not help yourself, you will not be able to care for others even when you want to. The ability to safeguard the interests of the real person means honesty and respect for the rights of others.

During the period of studentship, components of self-governance, creative thinking, specific life experiences, emotional intelligence, emotions, moral values, self-awareness and sustainable beliefs are formed. Taking this into account, students should explore the interests of youth, learn more about them,

organize more meetings, arrange meetings and meetings, arrange various circles, sports sections, increase scientific research associations, organize competitions, conferences, debates, debates and other public events. . Jean Pajaja, a psychologist, believes that discussions and debates about young people on various topics, such as selfishness, selfishness, and self-awareness can also heighten the personality of others.

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## THE IMAGE EHSAN DAVLATBEK IN «BABUR-NAME»

**Abstract:** this article analyzes the image of Esan Davlatbegim on the basis of "Babur-nameh" and other historical works. The analysis focuses on the role of Esan Davlatbegim in the life of Babur, his political activities and human qualities.

**Key words:** Babur, Timurid dynasty, Esan Davlatbegim, «Babur-nameh», «Tarikhi Rashidi», ability to rule the state.

**Language:** Russian

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### ОБРАЗ ЭСАН ДАВЛАТБЕГИМ В «БАБУР-НАМЕ»

**Аннотация:** в данной статье на основе «Бабур-наме» и других исторических произведений анализируется образ Эсан Давлатбегим. В процессе анализа обращается особое внимание на роль Эсан Давлатбегим в жизни Бабура, на его политическую деятельность и человеческие качества.

**Ключевые слова:** Бабур, династия тимуридов, Эсан Давлатбегим, «Бабур-наме», «Тарихи Рашиди», умение править государством.

#### Введение

УДК 808.5

«Бабур возвеличивается, как великий народный поэт, основатель великого государства, ученый-просветитель, как мужественный богатырь и вместе с этим, как добрый глава семьи, превративший ее в одну из крупных династий мира» (Х.Болтабоев. Бабуроведение за рубежом. 2009:3.).

Бабур, известный как великий историк, в своём произведении «Бабур-наме» приводит много научных сведений, размышляет над ними, и этой чертой произведение отлично от других исторических произведений того времени. Тексту произведения, как высокохудожественному, присущи ясный четкий язык и определенный метод изложения мысли. Он описал в нем битвы и сражения, бои исторического значения, а также даны подробные сведения об исторических лицах того времени. Среди них особое значение придаётся описанию деятельности женщин. А

именно, описан жизненный путь бабушки Бабура – Эсан Давлатбегим. Среди тимуридов именно Бабур отличается особым, почтительным отношением к женщине. «Бабур не допускал насилия по отношению к женщине, не допускал держать ее в качестве заложницы с целью заключить с нею брак. Это тоже является его отличительной чертой по сравнению с другими правителями» (Кудратуллаев, 2009:152). Из произведения известно, что Эсан Давлатбегим является матерью его матери. В «Бабур-наме» автор особо выделяет качества правителя, умение руководить государством, качества военного полководца. В описании женщины, как исторической личности, использованы краткие уместные фразы и эпитеты. Он в произведении восемь раз упоминает имя бабушки Эсан Давлатбегим. Первое упоминание даётся в 9 странице: «... ещё одна дочь Ядгар Султанбегим, ее мать Ага Султан. Моя мать Эсан Давлатбегим спасла Ядгар Султанбегим» («Бабур-наме», 2002:38). Этот отрывок приводится в сведениях,

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рассказывающих о семье Умаршейха. Старшее поколение женщин-аристократок воспитывали не только будущих принцесс, но и девочек – детей простых смертных. Подробно даётся информация о Юнусхане и Эсан Давлатбегим, об их судьбе. *“В это время великим среди беков был Шер Хаджибек, он покорил Эсан Давлатбегим. Также покорил и монгольского владыку. Он посадил их на белый ковёр, оказал им все почести. От хана у Эсан Давлатбегим родились три дочери. (”Бабур-наме. 2002:39). Судьба Эсан Давлатбегим сложилась не гладко. В «Бабур-наме» мы являемся свидетелями того, что в написанных в то время произведениях судьба женщин-аристократок в феодальном обществе была не из лёгких. В результате условных перемирий принцесс выдавали замуж, и они никогда не могли видеть своих родственников, потому что вражеская сторона, куда она была выдана, запрещала им такую возможность. В произведении о Эсан Давлатбегим говорится, что она была самой мудрой, во всех делах проявляла свой проницательный ум и знания (Бабур-наме, 2002:47). Это упоминается тогда, когда Бабуру было 12 лет и он воссел на престол. В становлении юного Бабура, как правителя, в формировании в нем качеств, присущих главе государства, большую роль имела Эсан Давлатбегим. «Ходжа Казы, Казы Кавчин и Али – друзья. Они, Узун Хасан и другие государственные чиновники собрались посоветоваться с Эсан Давлатбегим по вопросу, касающемуся Хасана Якуба» (Бабур-наме, 2002:47). Из приведенного отрывка видно, что имя Ходжи Казы упоминается первым. Об этом уважаемом лице Бабур говорит с великим почтением. Вышеназванные имена указаны по рангу и все важные решения принимались в присутствии их и Эсан Давлатбегим. После смерти Умаршейха принятые ею решения, касающиеся судьбы государства, ее внешней и внутренней политики, дали свои результаты. Эсан Давлатбегим поддерживала его планы по захвату Самарканда, так как пройдя некоторое время эта его мечта осуществилась. Но вскоре Бабур заболел, положение населения города ухудшится под насилием жадных беков, и к тому же в Андижане неожиданно произойдет предательский заговор. Бабур с тяжелым сердцем пишет следующее: «... как можно пережить такое тяжелое явление...» (Бабурнаме. 2002:63). Говоря «моя мать» он имеет в виду мать своей матери Эсан Давлатбегим. По сведениям известно, что оставив Бабура в Самарканде, они возвращаются в Андижан с целью вернуть правление, перешедшее в руки чужих, наказать виновных – так отмечалось в письмах матери Кутлуг Нигарханум, Эсан Давлатбегим и Хаджи Мавлоно Казы. Это разные письма, но содержание у них одинаковое.*

Известно, что во время второго завоевания Бабуром Самарканда всех своих ближних и семью он вовлек в Самарканд, оказавшись окружённым, Бабур и в этот раз вынужден был покинуть Самарканд. В «Бабур-наме» не указывается о перемирии, но в «Шайбани-наме» и «Тахири Рашиди» вместо перемирия в Самарканде оставляют Хонзодабегим. Бабур согласно договору ночью вместе с Кутлуг Нигарханум (матерью), другими родственниками и солдатами покидает Самарканд. Эсан Давлатбегим оставшись в Самарканде, справляет свадьбу внучки Хонзодабегим, а позже возвращается к ним. Бабур пишет: «Несколько дней назад Эсан Давлатбегим, оставшись в Самарканде, возвратилась уставшая и исхудавшая» (Бабур-наме. 2002:87). Молодой Бабур не желает говорить о свадьбе, состоявшейся в Самарканде. Самый большой противник, безжалостный Шайбанихан женился на его родной сестре. Это было неизбежно, и это очень сильно подавило его. Но имевшая большой жизненный опыт, добрая Эсан Давлатбегим несколько дней находилась рядом с Хонзодабегим, не оставила ее одну и, как полагается старшему поколению; во время свадьбы она была так же печальна, как и Хонзодабегим. Присущий характеру Эсан Давлатбегим ум и смелость указываются и в других исторических источниках. В частности, в произведении «Тарихи Рашиди» Мирзы Мухаммада Хайдара (Мирза Мухаммад Хайдар. Тарихи Рашиди, 2011:152). Юнусхон подробно останавливается на событиях, связанных с Эсан Давлатбегим. Как говорится в 45 – главе произведения (события 1450 г.) Юнусхон прибывает в Ташкент весной. Но в результате заговора против Юнусхана один из чиновников Шейх Жамол по прозвищу Хар, самоуправный и недальновидный, легко захватывает Юнусхана в плен.

Захватив правительство в свои руки, в течение года держит Юнусхана в подвале, в темнице. В это время гарем хана тоже находился в Ташкенте. На этот момент три дочери Юнусхана были выданы замуж за троих сыновей Абу Саида Мирзы, родственные отношения служили как бы символом политического союза. Эсан Давлатбегим была супругой Юнусхана - пленника Шейх Жамала. Был вынесен приговор: выдать ее за Ходжу Калона – одного из беков Эсан Давлатбегим. Она беспрекословно подчиняется этому приказу. Ходжа Калон является к будущей жене: «...Ночью он сам явился к Эсан Давлатбегим. Она подбежала к нему и оказала ему надлежащее почтение. Он плотно запер дверь. Но в это время она сильным ударом палки убила его. Утром его тело вынесли во двор. Народ был свидетелем данного события...» (Мирзо Мухаммад Хайдар. Тарихи Рашиди. 2011:152).

## Impact Factor:

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ICV (Poland) = 6.630  
PIF (India) = 1.940  
IBI (India) = 4.260  
OAJI (USA) = 0.350

Проявленное такое мужество и сила воли, как у Эсан Давлатбегим, нечасто наблюдается в истории жизни цариц. В то время феодальное общество и невежество, царившее в средние века, достигло такого состояния, что женщины не имели права голоса высказывать свои мнения перед бракосочетанием: выдача их замуж в случае победы в войне врага, женщину, как какой-то предмет или вещь, выдавали замуж, и это считалось делом обычным и естественным. Откуда у Эсан Давлатбегим столько мужества и сил? Как нам известно из источников, ее муж Юнусхан был одним из мудрых правителей. Он в 12 лет прибывает в Мавераннахр, получает образование и воспитание у тимуридов, (в частности, его воспитанием занимался Шарафиддин Али Язди), в юности он уже побывав в нескольких странах, повышает свой интеллект, ум и опыт. Являясь супругой такого благородного, умного правителя, Эсан Давлатбегим тоже соответствовала уровню интеллекта своего господина. Она никогда бы не допустила бы того, чтобы честь семьи: мужа, детей была обесчещена. Узнав о произошедшем Шейх Жамал Хар допрашивает Эсан Давлатбегим. Во время вопроса она стояла гордо, считая себя до сих пор супругой Юнусхана, утверждает, что это не соответствует законам мусульман. Пораженный ее поведением Шейх Жамал Хар отменяет наказание. Он отправляет ее в темницу к Юнусхану. Кроме нее у Юнусхана были и другие жены. Но Эсан Давлатбегим и Шах бегим имели от него детей. У Эсан Давлатбегим были три дочери: старшая – Мехр Нигарханум, которую выдали замуж за старшего сына Абу Саъд Мирзы – Ахмада. Жаль, что у них не было детей. Они возвратившись из Самарканда в Кабул через Хурасан, попали в руки жестокого Абубакра. Мехр Нигарханум и ее приёмная мать Шахбегим много страдают в Баданшахе и погибают. Вторая дочь Эсан Давлатбегим Кутлуг Нигарханум, то есть мать Бабура, всегда была рядом со своим сыном. Но тяжело заболев, она умирает в Кабуле. Третью дочь выдают за Мухаммада Хусайна. У них рождаются один сын и одна дочь. Дочь выдают за племянника Шайбани Убайдуллахана.

Юнусхан и Эсан Давлатбегим обычно зиму проводили в Мавераннахре. Юнусхан с 1485 по 1487 годы правил Ташкентом. В 1487 году – в год смерти Юнусхана Бабуру было 4 года. При жизни Юнусхан поддерживал теплые отношения с зятем Умаршейхом Мирзой. После смерти Юнусхана Эсан Давлатбегим жила у дочери Кутлуг Нигарханум, матери Бабура. Несомненно, находясь рядом с Бабуром, она всячески помогала ему во всех делах.

В то время, когда Бабур только начал возобновлять строительство Кабула, мать Бабура умерла от тяжелой болезни. Об этом, негодуя

пишет Бабур: «...в месяц мухаррам мать моя тяжело заболела. Был один лекарь, звали его Сайид. Ей дали лекарства, но они не помогли, и она навсегда покинула этот бренный мир...». Все военные походы, скитания, долгие дороги Кутлуг Нигарханум провела вместе со своим сыном, и это показало свои результаты. Душа Бабура, и так раненая предательствами, не могла снести такую утрату. Ее похоронили в саду Боги Наврузи, сооруженное Улугбеком Мирзо. Но перед похоронами он, как и простой смертный спросил позволения у главного садовника: *“Согласно разрешению варасаса пришли в сад в воскресенье, я и Касым предали земле кукалдаш её прах”*. (Бабур. Бабурнаме. 2002:124) Бабур, выполняя свой сыновний долг, также желает, чтобы Касым тоже участвовал на этой церемонии, отмечая этим, что он был близким человеком их семьи. Бабур был занят проведением надлежащих обычаев – поминок. Сначала умирает Эсан Давлатбегим, потом Кутлуг Нигарханум – это, несомненно, очень тяжело пережить: потерять добрую бабушку, потерять любимую родную мать. Удручённого и обессилевшего последними событиями Бабура опять ждёт нехорошая новость: *“в эти траурные дни хана, моего дедушку Олачахана и мою величественную мать Эсан Давлатбегим оклеветали”*. (Бабур. Бабурнаме 2002:124). Ясно, что Эсан Давлатбегим и её дочь Кутлуг Нигар Ханум умирают одна за другой. В один момент потерявшему и мать, и бабушку, Бабуру приходится нелегко пережить эту потерю: *“...после того, как были проведены поминки, были поданы кушанья, прочитаны молитвы в честь упокоения души умерших, немного придя в себя, успокоившись, по настоянию Баки Чаганиёния вместе отправились в Кандахар. После приезда остановились в местечке Куш Надир. Мне не здоровилось, плохо себя чувствовал. Меня старались разбудить ото сна, но я всё уходил в сон. После четырёх-пяти дней пришёл в себя”* (Бабур. Бабурнаме; 2002:124)

После проведения поминок, Бабур опять приступает к своей работе – управлению государством, но он так обессилел за это последнее время!

Именно такое настроение ощущается во всех его творениях этого периода.

*Попал я в “вечный” сон, в сон смерти, и утихомирился,*

*Если вы хотите увидеть меня, то увидите только во сне,*

*Какая судьба ждёт тебя, то и исполнится, будьте уверены,*

*Всё напрасно: и бой, и огорчение, и старание.* (Бабур. Диван.1994:54).

Бабур – один из представителей тимуридов, великий поэт и государственный деятель, гениальный полководец и несравненный историк.

## Impact Factor:

<b>ISRA (India)</b>	<b>= 4.971</b>	<b>SIS (USA)</b>	<b>= 0.912</b>	<b>ICV (Poland)</b>	<b>= 6.630</b>
<b>ISI (Dubai, UAE)</b>	<b>= 0.829</b>	<b>РИИЦ (Russia)</b>	<b>= 0.126</b>	<b>PIF (India)</b>	<b>= 1.940</b>
<b>GIF (Australia)</b>	<b>= 0.564</b>	<b>ESJI (KZ)</b>	<b>= 8.716</b>	<b>IBI (India)</b>	<b>= 4.260</b>
<b>JIF</b>	<b>= 1.500</b>	<b>SJIF (Morocco)</b>	<b>= 5.667</b>	<b>OAJI (USA)</b>	<b>= 0.350</b>

Его творчество и жизнь всегда были в центре внимания читателей, нескольких поколений писателей, и дальше тоже должно быть так. (С.Сайид, 2011:5).

Из вышесказанного можно сделать вывод: в становлении Бабура, как дальновидного политика, талантливого поэта, мыслителя, роль Эсан Давлатбегим несравненно велика. Она хоть и не

имела своего сына, посвятила всю свою заботу и доброту делу воспитания Бабура с малых его лет. Она чувствовала ответственность за воспитание внука, на которого было возложено самой судьбой быть великим поэтом и правителем. Она до конца своих дней была верным другом, советчиком и надёжной опорой для своего внука.

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## THE ROLE OF MENTAL ARITHMETIC IN IMPROVING MATHEMATICAL LITERACY IN PRIMARY SCHOOL

**Abstract:** This article discusses the term mnemonics and tricks with mental arithmetic for children and for their two hemispheres of the brain.

**Key words:** Mnemonics, mental arithmetic, children, brain, school, child.

**Language:** Russian

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### РОЛЬ МЕНТАЛЬНОЙ АРИФМЕТИКИ В ПОВЫШЕНИИ МАТЕМАТИЧЕСКОЙ ГРАМОТНОСТИ В НАЧАЛЬНОЙ ШКОЛЕ

**Аннотация:** Данной статье рассматривается термин мнемотехника и трюки с ментальной арифметикой для детей и для их два полушария головного мозга.

**Ключевые слова:** Мнемотехника, ментальная арифметика, дети, мозг, школа, ребенок.

#### Введение

УДК 37.02

Важнейшим периодом в развитии и формировании человека является обучение его школе.

Люди всегда стремятся повысить качество образования. Существенно возрастает значимость повышения именно математического образования. Ведь от уровня ее развития зависит процветание страны. Поэтому повышения качества математической грамотности школьников является первоочередной задачей школы. Для начала необходимо научить ребенка применять полученные знания, умения и навыки в повседневной жизни. Каждый день школьник сталкивается с проблемой решения математических задач.

#### Материалы и методы

Правильно рассчитать сдачу, сумму скидки, стоимость покупки, распланировать день и т.д.

В решении повседневных вопросах помогут элементарные математические знания. Состояние математической грамотности учеников оценивается группой показателей. Один из этих показателей является уровень развития «математической компетентности». В мире создана крупнейшая международная программа по оценке учебных достижений – PISA.

Несмотря на улучшения показателей развития математической компетентности школьников, данная проблема остается актуальной и сейчас.

Что такое мнемотехника? Виды мнемотехник? Что такое ментальная арифметика? Ее влияние на развитие ребенка? Эти вопросы уже раскрыты в психолого-педагогической литературе, но, все же, выбранная тема является актуальной и значимой на сегодняшний день, так как использование ментальной арифметики в школе для развития математической компетентности школьников еще недостаточно изучено.

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Термин «мнемотехника» имеет давнюю историю использования в разных областях науки и искусства. На протяжении этой истории главная идея термина не изменилась. Надо разобраться, что же такое мнемотехника? Как указывает энциклопедический словарь мнемотехника – это совокупность приёмов, цель которых облегчить запоминание большого количества сведений, фактов, чисел; мнемотехника основана на законе ассоциации идей. В Википедии говорится, что это система внутреннего письма, позволяющая последовательно записывать в мозг информацию, преобразованную в комбинации зрительных образов. Таким образом, мы можем сказать, что мнемотехника – это средство и приемы при помощи которого человек может запоминать большие объёмы информации.

Данный метод, запоминая удобен тем, что человек может полностью контролировать ход запоминания, сохранения и припоминания информации. Вначале данный метод запоминания информации возник в ораторском искусстве. Мнемотехника была использована для запоминания длинных текстов. Со временем люди расширили возможности мнемотехники.

Благодаря этому данный метод запоминания информации может быть использован в различных областях науки. Таким образом, возможно запоминания не только текстовой информации, но и любой другой [1].

Например, мнемотехника сегодняшний день часто используется в математике.

По телевизору, по радио и в газетах мы можем увидеть рекламу «Ментальная арифметика для детей». Это говорить о том, что мнемотехника должно окружить нас уже с юных лет.

«Зачем нужна мнемотехника в математике?». На этот возникший вопрос у вас в голове, хотим ответить с примерами.

Мгновенное умножение: Давайте начнём с одного из моих любимых подвигов устной математики: как умножать в уме любое двузначное число на 11. Это очень легко, если вы знаете секрет. Представьте следующую задачу:

$$32 \times 11$$

Для решения данной задачи нужно просто сложить цифры,  $3 + 2 = 5$ , а затем поместить 5-ку между 2-ой и 3-ой. Вот и ваше решение:

$$352$$

Что может быть легче? Теперь попробуйте:

$$53 \times 11$$

С тех пор, как  $5 + 3 = 8$ , ответ достаточно простой:

$$583$$

Ещё пример. Не подглядывая и ничего не записывая, чему будет равно:

$$81 \times 11?$$

У вас получилось 891? Поздравляю!

Пока вы ещё не через чур воодушевились: я показал вам лишь половину того, что необходимо знать. Допустим задача, следующая:

$$85 \times 11$$

Несмотря на то, что  $8 + 5 = 13$ , ответ НЕ 8135! Как и прежде, цифра 3 ставится между, но 1 добавляется к цифре 8 для получения правильного ответа: 935

Представляйте задачу следующим образом:

$$\begin{array}{r} | \\ 835 \\ 935 \end{array}$$

Так, теперь ваша очередь. Как можно быстрее, сколько будет

$$77 \times 11?$$

Если вы получили ответ 847, то можете похлопать себя по спине. Вы на пути к превращению в математика.

Я знаю, что если вы скажете другу или учителю, что можете в уме умножить любое двузначное число на 11, просьба умножить 99 на 11 не заставит себя долго ждать. Так давайте сделаем это прямо сейчас, чтобы вы были готовы.

Раз уж  $9 + 9 = 18$ , то ответ:

$$\begin{array}{r} | \\ 989 \\ 1089 \end{array}$$

К этому моменту у вас, должно быть, появилось несколько вопросов, таких как: «Можем ли мы использовать данный метод для умножения трёхзначных (или больше) чисел на 11?»

Безусловно. Например, для задачки  $314 \times 11$  ответ всё ещё будет начинаться с 3 и заканчиваться на 4. Так как  $3 + 1 = 4$ , а  $1 + 4 = 5$ , ответ будет 3454.

Вот ещё один трюк. Как вы, возможно, знаете, квадрат числа — это заданное число, умноженное само на себя. Например, квадратом 7 будет  $7 \times 7 = 49$ . Позже я научу вас простому способу, который позволит вам легко вычислять квадрат любого двузначного или трёхзначного (и даже больше) числа. Этот метод особенно просто применять, когда число заканчивается на 5.

Так что давайте опробуем данный приём уже сейчас.

1) Полученный ответ должен начинаться с результата умножения первой цифры возводимого в квадрат числа на следующую после неё в иерархии

2) Полученный ответ заканчивается на 25.

Например, чтобы возвести в квадрат число 35, мы просто умножаем первую цифру (3) на

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следующую после неё в иерархии (4), после чего добавляем 25. Так как  $3 \times 4 = 12$ , ответ будет 1225. Таким образом,  $35 \times 35 = 1225$ . Прделанные шаги могут быть представлены следующим образом:

$$\begin{array}{r} 35 \\ \times 35 \\ \hline 3 \times 4 = 12 \\ 5 \times 5 = 25 \end{array}$$

Ответ: 1225

Как на счёт возведения в квадрат числа 85? Так как  $8 \times 9 = 72$ , мы мгновенно получаем  $85 \times 85 = 7225$

$$\begin{array}{r} 85 \\ \times 85 \\ \hline 8 \times 9 = 72 \\ 5 \times 5 = 25 \end{array}$$

Ответ: 7225

Мы можем использовать схожий приём, когда умножаем двузначные числа с одинаковыми первыми цифрами, и с дающими в сумме 10 вторыми цифрами. Полученный ответ начинается с цифры, полученной с помощью вышеописанного метода (первая цифра умноженная на следующую после неё в иерархии), далее идет произведение вторых цифр, участвующих в умножении чисел.

Например, попробуем  $83 \times 87$ . (оба числа начинаются на 8, а их последние цифры в сумме  $3 + 7 = 10$ ) Так как  $8 \times 9 = 72$ , и  $3 \times 7 = 21$ , ответ будет 7221.

$$\begin{array}{r} 83 \\ \times 87 \\ \hline 8 \times 9 = 72 \\ 3 \times 7 = 21 \end{array}$$

Схожим образом получаем и  $84 \times 86 = 7224$ .

На занятиях ментальной арифметики дети учатся преобразовывать число в зрительный образ. Как это работает? Информация числа из левого полушария передается в правое полушария головного мозга в виде зрительного образа абакуса. На воображаемых счетах дети производят математические операции. Затем головной мозг передает информацию из правого полушария в левое, преобразовывая его в число. Далее ребенок говорит ответ [2].

### Вывод

Таким образом, ментальная арифметика – это инструмент гармоничного развития личности с помощью работы на специальных счетах – абакус.

На занятиях ментальной арифметикой задействуются два полушария головного мозга, что способствует улучшению показателей не только в устном счете, но и по другим дисциплинам [3].

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## THE USE OF ALGORITHMS AT DIFFERENT STAGES OF EDUCATION IN SECONDARY SCHOOL

**Abstract:** In this article the author speaks about the use of algorithms in the process of teaching the native language at different stages of education in secondary school.

**Key words:** secondary school, stages of education, primary classes, methods, algorithms, problems, solutions, teachers, students.

**Language:** Russian

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### ИСПОЛЬЗОВАНИЕ АЛГОРИТМОВ НА РАЗЛИЧНЫХ ЭТАПАХ ОБУЧЕНИЯ В СРЕДНЕЙ ОБЩЕОБРАЗОВАТЕЛЬНОЙ ШКОЛЕ

**Аннотация:** В данной статье автор говорит об использовании алгоритмов в процессе обучения родному языку на различных этапах обучения в средней общеобразовательной школе.

**Ключевые слова:** средняя школа, этапы обучения, начальные классы, методы, алгоритмы, задачи, решения, преподаватели, ученики.

#### Введение

УДК 51-7

В наше время, когда почти каждый день совершаются новые открытия, а время течет с небывалой прежде скоростью, возникла потребность в установлении нового уровня знаний, преподаваемых в общеобразовательных школах.

Как известно это время условно можно разделить на три этапа:

1. Начальные классы. Этот период включает в себя обучение с 1-го по 4-ый класс включительно. Условно это время можно назвать заложением некоего фундамента, базы его будущих знаний, от которого зависит крепость всей конструкции - объема его знаний, которыми ребёнок будет владеть по окончании обучения в школе. В начальных классах ребёнок получает первую информацию о том или ином предмете, учебной дисциплине, знакомится с его

элементарными правилами и представлениями. Как показывают различные исследования, от педагогической состоятельности учителя зависит то, как ребенок в будущем сможет успешно адаптироваться в человеческом социуме. Можно сказать, что по поведению учеников в той или иной ситуации, по демонстрируемым ими навыками по тому или иному предмету можно делать выводы об уровне знаний и педагогических способностях самого преподавателя. В начальных классах это заметно особенно сильно, так как в них один преподаватель преподает по всем предметам учебной программы.

2. Педагогические технологии, применяемые в данное время обучения, разнообразны. Они призваны, прежде всего, делать процесс урока увлекательным и запоминающимся. Как правило, большинство методов включает в себя элемент некой игры. Задача преподавателя - не утомлять ребёнка и донести до него предусмотренный на урок учебный материал.

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Нужно отметить, что на сегодняшний день существуют множество методов и технологий, которые можно применить как ко всем учебным дисциплинам, так и к каждому в отдельности. Например, уроки с применением образов любимых детьми сказочных героев и мультипликационных персонажей можно с успехом применить на всех уроках в начальных классах. Правда, их применяют и рассматривают на разных уроках с различных ракурсов, заостряя внимание детей каждый раз на разных его особенностях. Было подмечено, что ученики гораздо лучше запоминают учебную информацию, преподанной им в таком виде, ежели по-другому.

3. Средние классы 5-8- классы в них ученик получает возможность познакомиться с большим количеством новых предметов и углубить знания по уже знакомым предметам.

Программа их обучения, при этом, заметно отличается от обучения в начальных классах. На данном этапе практикуется преподавание одним специалистом одного учебного предмета школьной программы.

Методы, применяемые при этом, тоже существенно отличаются от тех, к которым ученик успевае привыкнуть в начальных классах. В средних классах учебный материал преподносится, по большей части с помощью различных опытов и исследований, которые проводятся при непосредственном участии самого ученика. Как показывает практика, в данное время ученики стремятся к раскрытию неких «тайн» окружающего их мира, найти ответы на вопросы, которые свойственны их возрасту. Они на данном этапе обучения предпочитают наглядно убедиться в правильности изречений преподавателя, вместо того, чтобы верить им на слово. Именно поэтому опытные специалисты, для донесения до сознания детей информацию по своему уроку, используют живую экскурсию, научные опыты и электронные наглядные пособия, призванные давать ответы на вопросы, которые могут возникнуть у ученика в процессе всего урока.

Если учитель сможет удовлетворить естественную любознательность ученика, то можно считать, что он достиг поставленной цели. Именно в это время ученик начинает ставить перед собой цели с прицелом на будущее и подсознательно выбирает себе профессию. Как всем известно, харизма и личное обаяние преподавателя могут подтолкнуть учеников средних классов в будущем освоить профессию любимого и авторитетного для них преподавателя, и в последующем они с благодарностью вспоминают таких учителей, сохраняя уважение к ним всю свою жизнь.

4. Старшие классы. Таковыми принято считать последние три года обучения в средней

школе (с 9-го по 11-е классы). Ученики к этому периоду подходят уже вполне сформировавшимися личностями. Они уже имеют свою цель и планы на будущую жизнь. В большинстве случаев они уже определяются с выбором будущей профессии и готовятся к поступлению, после окончания школы, в соответствующие учебные заведения. Как следствие этого, ученики на уровне подсознания начинают уделять больше внимания на нужные для поступления в ряды студентов соответствующих вузов, предметные дисциплины. При этом они зачастую могут игнорировать остальные учебные дисциплины, считая, что они в будущем не могут быть полезны.

Из всего этого может сложиться следующая картина – тот или иной ученик старших классов отлично учится, схватывая на лету знания по какому – то конкретному предмету, скажем, по химии или биологии. Вместе с тем он предельно плохо подготовлен по гуманитарным наукам - географии, истории и языку. Он считает эти предметы бесполезными и обременительными для него. И наоборот, ученик, с явными признаками гуманитария, испытывает определённые трудности в решении математических задач. И аналогично первому ученику, считает точные науки ненужными и бесполезными. Именно в силу выше названной причины от учителей старших классов средней общеобразовательной школы требуется педагогическая чуткость и гибкость в преподавании. Он должен уметь преподнести классу учебный материал таким образом, чтобы каждый, находящийся в классе ученик мог взять из него информацию, которая могла бы быть в будущем полезной в выбранной им профессии. И вместе с тем уловить суть заданной темы.

Именно поэтому были разработаны ряд методов, таких как комплексное обучение или метод алгоритмов. Эти методики позволяют преподавателю полнее передавать знание, имеющиеся у него, ученикам в классе. Те, в свою очередь получают возможность всесторонне рассмотреть заданную тему.

Метод алгоритма в обучении позволяет поэтапно осваивать знания и навыки, необходимые для обучения. Нужно отметить, что не все преподаватели могут дать однозначное определение понятию алгоритм. Научное определение ему дал Алонзо Черч в 1930 году: “Алгоритм означает точное описание некоторого процесса, инструкция по его выполнению” (Кнут 1976). Это означает выполнение определённых инструкций для выполнения различных задач. Хотя этот термин обозначает, прежде всего, математическое понятие, со временем было установлено, что его можно с успехом применить на различных предметах учебных дисциплина.

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Овладение в совершенстве приёмами и навыками алгоритмизации позволят ученикам разделить процесс решения на некоторые этапы и сделать данный процесс менее трудоёмким и утомительным, и как следствие привести к потере интереса учеником к решаемой задаче.

Для этого ученик должен уметь ставить перед собой задачу разделить заданное на составляющие части и приступить - от простого к сложному.

Но чтобы следовать данной схеме, он должен быть знаком с простейшей информацией, касающейся данной темы. Как следствие, ученик, чтобы решить задачу, повторять предыдущие темы, что в свою очередь, приводит к закреплению уже пройденного материала. А это означает, что ученик не только усвоил новую тему, решил задачу, но и повторил прежние темы.

Такие методы, однозначно приводят к улучшению знаний учеников. А значит, задача преподавателя на урок выполнена.

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## MOTIVATION IN LEARNING GRAMMAR OF A SECOND LANGUAGE

**Abstract:** This article deals with identifying the influences on students' motivation towards learning grammar. The survey about the significance of grammar, with results on the topic have also been represented.

**Key words:** grammar, motivation, targeted use of language, teaching grammar, external motivations, inner motivation, questionnaire, relationship.

**Language:** English

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### Introduction

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There is no doubt that English grammar seems to be boring. The study of grammar, in my opinion, is comparable to the study of law. Just as every country has its own laws and regulations, it is reasonable to think so when it comes to languages. Law and regulations are the bread of any lawyer. It is useless to remember all the legal laws without applying them in the real situation. Similarly, English grammar is a necessary tool for becoming a good communicator. However, the most important thing for a language teacher is to give students the opportunity to use the language purposefully.

In fact, targeted use of language is not always possible. Putting a student in a foreign environment who does not have the experience of speaking in a particular language will not help to aim. Pupils should feel satisfied with the use of the language from the very beginning. Returning to a comparison with a lawyer, at the most basic level, there is a basis for winning a case in court. When it comes to a language, you can achieve this by understanding yourself through meaningful communication. A student's sense of achievement is based on his understanding of something in the language he is learning.

### LITERATURE REVIEW.

The purpose of this work is to teach visual footprint by identifying what influences on students' motivation. Important literature for this article is Ruin, Widdowson and Dornye and Schmidt. This is an important literature on motivation I choose to study.

### METHODS AND METHODOLOGY.

I decided to use a questionnaire for my research. Because it allows me to get many expected answers. I couldn't get the exact answers I needed through other research methods.

### RESULTS AND DISCUSSION.

Through my research, I have found that students are more positive about grammar. The most important factor in teaching grammar is making the lessons interesting and varied. The biggest achievement is desire to learn English grammar, according to the results and the availability of motivation. The interesting thing is that the students thought that it is important for teachers to speak and explain during the lesson, but that is not a good way to make the lessons interesting.

What strategies can motivate to learn grammar? What is the attitude of students towards grammar? Is the motivation for learning grammar spontaneous, or is it influenced by external factors? How important is grammar actually? What is important for language

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learners? What is the teacher's attitude to student motivation? What are the best ways to learn? These questions were given through a group of higher education students as a survey. The questionnaire was administered in a 24-person group. As a result, students' attitudes towards grammar were positive. According to them, teacher and student attitudes are important in learning grammar. The biggest impulse was to get good grades. However, they were told that the knowledge of the teacher and the manner in which the teacher was at the center of the lesson would benefit them. As a matter of fact, students are expected to be at the center of their goal in grammar teaching, providing almost 80% of participation, and the teacher should simply act as an instructor. Both of the above are situations that give rise to their external motivations. In addition, their intrinsic motivation also urges them to learn grammar. A number of factors, such as reading and understanding English books, watching TV programs, listening to various songs, making new friends from abroad, and traveling around the world, reflect their inner motivation.

Widdowson[5, 60 p] also states that students do not learn much from the same methods used in grammar learning. Makgroarti [3, 69 p] says that the students should all up, due to their inability to find the importance of diversity study and argue that this method is useful for teaching them. This is because many lessons that involve different tasks for the trout cause motivation.

Ruin[4,45p] distinguishes two types and kinds of teaching grammar: traditional and innovative. According to the conventional method, the teacher must give the student the knowledge that he already has, that is, he will explain when and when the grammatical rules will be used. The innovative method offers teachers and students to work together collaboratively and cooperatively to find knowledge. The role of promising exercises and assignments is important. The student learn more and the teacher only gives instructions.

Julkunen[2, 29 p] as well as a variety of writing tasks and, through them, and explain what options there are. He says the lessons which are good for the students give the opportunity to increase efforts and interesting tasks that should be included in the

curriculum of the course. Interesting classes, in turn, can enhance student motivation.

### CONCLUSION.

In conclusion, it should be clearly emphasized that this article on motivation and grammar through the study of the issues discussed the influences of motivation on grammar learners. I did the previous analysis of the results in this area of higher education students motivation and grammar about how to think. To achieve the goals I have to measure students' thoughts on the questionnaires. With students who were part of my research, grammar was generally positive, I believed that the relationship between teacher and student was important to learning, and many of the students regarded it as the main source of motivation. The next research idea might be to find out why some students feel negative about grammar. It may be interesting to know why some students think student-teacher relationships have nothing to do with grammar. Another idea that might be interesting is how teachers can inspire intrinsic motivation for learning English grammar.

How to develop a script for language use? Open any textbook or book on grammar and there are contextual exercises used in the language presented in the practical situation. Often, however, this is not the case with language learners. It does not happen every day to tell strangers on the street or to go through customs at the airport. Therefore, it is important to think about the different real situations they face in their lives and apply them in lessons.

After long sessions and opportunities for communication, it is also helpful for language learners to talk about a variety of topics related to their culture and personal history. It is also effective to compare their second languages with their first languages.

Another important work of a teacher is the ability to ask questions. This is a central part of the language method that helps students better understand their use of their language. Instead, the classroom is always grammatical rules, questions are made on the basis of learning to give. After that, the grammatical aspects of the language is to increase awareness of grammar. This is because it helps linguists have a clear idea of grammar, and English grammar is starting to look interesting.

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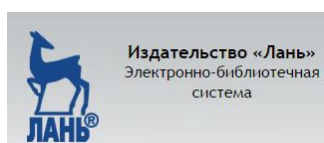
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